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**Bhandup Educational Society's
P. A. Menon College of Legal Studies**

Bhandup East, Mumbai – 400042

(Affiliated to University of Mumbai and Approved by Bar Council of India)



And

**V. K. Krishna Menon College of Commerce & Economics
And Sharad Shankar Dighe College of Science
And P. A. Menon College of Management**

Centre of Gandhian Studies and Action

Organizes

**One-Day Multidisciplinary International Conference
(Online)**

Titled

**“Emerging Frontiers in Knowledge: A
Multidisciplinary Perspective for a Global Future”**

Sunday, 4th January 2026.

ABOUT THE COLLEGES

Bhandup Educational Society, a Public Charitable Trust was established in 1962 under the Chairmanship of Adv. P. A. Menon Sir, and blessing of Late V. K. Krishna Menon with the only object of promoting the cause of education in Bhandup and neighbouring areas.

Bhandup Educational Society, which is a minority institution, established P.A. Menon College of Legal Studies in the year 2025 due to a lot of demand of the local public. The college is affiliated to University of Mumbai and is approved by Bar Council of India, New Delhi for conducting LL.B (3 Years) degree Programme. This institution is known for its quality of education and discipline. The college has a huge playground. The College aims at the total development by providing opportunities to empower the students with legal knowledge, skills and attitudes to face personal and professional challenges with confidence, inculcating values of respect, commitment and concern for the service of others.

Committed to delivering quality legal education and fostering excellence in legal studies and research, the college aims to blend theoretical knowledge with practical and analytical learning. Its mission is to make the study of law socially relevant, impactful, and enriching.

Bhandup Educational Society established V. K. Krishna Menon College of Commerce & Economics in 1982, and added the Science stream in 1992. Both streams are aided and affiliated with the University of Mumbai. Over the years, the college has expanded its academic offerings: B.Sc. Computer Science began in June 2005; B.Com Management Studies (B.M.S) in June 2009; M.Com (Advanced Accountancy); M.Com (Business Management) and B.Com Accounting & Finance (B.A.F) in June 2020; and M.Sc. Computer Science and M.Sc. Data Science in June 2023. The college has a strong tradition of imparting values that has produced generations of successful students who contribute positively to the society.

Together, both institutions aim to promote academic growth, share knowledge, and create a meaningful platform for students and faculty through this collaborative conference.

Centre of Gandhian Studies and Action

Bhandup Educational Society established a Centre of Gandhian Studies and Action in V. K. Krishna Menon College in association with the Indian Council of Gandhian Studies, New Delhi. The centre gradually emerged as a forum for study, research, and outreach activities by involving students, staff, and the community around socially relevant programs to propagate the Gandhian vision of social transformation and individual empowerment. Our institution aspires to follow Gandhiji's core philosophy of simplicity and cleanliness.

ABOUT THE CONFERENCE

Marking the centenary of our Founder Chairman, the one-day International Conference celebrates his Gandhian vision by uniting disciplines to explore knowledge for a global future. This conference titled **“Emerging Frontiers in Knowledge: A Multidisciplinary Perspective for a Global Future”** focuses the growing need for multidisciplinary collaboration to navigate the complexities of the modern world. As global challenges increasingly interconnected—from climate change and public health crisis to technological disruptions and social inequalities—solutions must emerge from the fusion of diverse fields of knowledge. By bringing together insights from Science, Engineering, Economics, Arts, and Humanities, this conference underscores the importance of a holistic, integrated approach to tackling the issues of tomorrow.

In today’s interconnected world, no single discipline holds the key to addressing global challenges, and innovation often lies at the intersection of different domains. Advances in fields such as artificial intelligence, sustainable development, and digital technologies are opening up new avenues for interdisciplinary research and action, yet these advancements also require a shared understanding across sectors. The rise of collaborative global networks, digital platforms, and open-access knowledge are driving this shift, enabling researchers, policymakers, industry experts, and students to share expertise and collectively build more resilient societies.

This conference provides a platform for thought for all of the above, to engage in rich dialogue, explore innovative solutions, and chart a path towards a future where diverse perspectives come together to solve the world’s most pressing issues.

OUR INSPIRATION



ADV. SHRI. P.A. MENON SIR

(04.10.1926 - 05.05.2019)

FOUNDER CHAIRMAN

BHANDUP EDUCATIONAL SOCIETY

यदा यदा हि धर्मस्य ग्लानिर् भवति भारत,
अभ्युत्थानम अधर्मस्य तदात्मानं सृजाम्य अहम्,



**SMT. SARADA P. MENON,
CHAIRMAN, BHANDUP EDUCATIONAL SOCIETY,
HON. DIRECTOR, P.A.MENON COLLEGE OF LEGAL STUDIES.**

It is with great pride and pleasure that I present this Chairman's Note for the One-Day Multidisciplinary International Conference on "Emerging Frontiers in Knowledge: A Multidisciplinary Perspective for a Global Future," organized by Bhandup Educational Society through P. A. Menon College of Legal Studies, in association with V. K. Krishna Menon College of Commerce & Economics, Sharad Shankar Dighe College of Science, P. A. Menon College of Management and the Centre of Gandhian Studies and Action.

This conference holds a special significance as it commemorates the centenary of our Founder Chairman, Adv. P. A. Menon Sir, whose vision laid the foundation of the Society in 1962 with the blessings of Late V. K. Krishna Menon. Over the decades, our institutions have grown into centers of academic excellence, value-based learning, and social responsibility. The establishment of P. A. Menon College of Legal Studies in 2025, affiliated to the University of Mumbai and approved by the Bar Council of India, further strengthened our mission to provide accessible and quality legal education to the community.

The theme of this conference is timely and relevant as global challenges today demand multidisciplinary collaboration, integrating insights from Science, Commerce, Law, Humanities, Technology, Health, and Environment. By bringing together academicians, researchers, students, and professionals, this conference aims to encourage dialogue, research, and shared learning. I extend my appreciation to our Patrons, Advisory Committee, speakers, paper presenters, and participants for their valuable contribution, and I acknowledge the efforts of the Conference Convenor and Organizing Committee for their dedication and coordination.

I warmly welcome all delegates and wish everyone a productive and enriching academic experience.

Chairman, Bhandup Educational Society.

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JUSTICE IN THE AGE OF MACHINES

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ABSTRACT

Artificial intelligence (AI) is rapidly transforming legal education, institutional governance, and the administration of justice. While AI-driven tools promise efficiency, accuracy, and scalability, they also introduce new risks related to bias, accountability, data protection, and ethical responsibility. This article examines how AI reshapes legal education and decision-making, and emphasizes cybersecurity as a foundational element of digital justice. It contends that justice in the age of machines must remain profoundly human, guided by ethical judgment, transparency, and accountable governance.

INTRODUCTION

The pace of technological change in the twenty-first century is unprecedented. Advances in artificial intelligence, data analytics, and automation are reshaping how societies work, learn, and govern. In the legal domain, these technologies are no longer peripheral tools; they are becoming embedded in research, education, administration, and decision-making processes.

Estimates suggest that a significant proportion of today's students will work in roles that do not yet exist, driven largely by technological disruption stated in World Economic Forum, 2023. For law and legal education, this shift raises a critical question: how can justice be preserved when decisions are increasingly influenced or even made by machines?

Drivers of Change in Law and Legal Education

Several interconnected forces are driving this transformation.

Technological advancement has enabled AI systems that are capable of analysing case law, reviewing contracts, and generating legal drafts at a stretch.

Globalisation has expanded the reach of legal practice beyond national borders, increasing the complexity of regulatory compliance and dispute resolution.

Remote work and digital platforms have changed how legal services and education are delivered.

These changes require lawyers to think critically, ethically, and interdisciplinary rather than relying solely on doctrinal knowledge.

This is a sign of shift from a purely precedent-based legal system to one increasingly shaped by code, data, and algorithms.

AI's Impact on Legal Education

AI is already reshaping legal education in significant ways. In legal research, AI-powered tools assist with large-scale case analysis, predictive outcome modelling, and automated document review. (Surden, 2019).

Within academia, AI supports plagiarism detection, data-driven research, and personalized learning platforms. This all benefits, but also disturbs the traditional boundaries of authorship, originality, and academic integrity.

Legal education therefore faces a dual responsibility: to prepare students to use AI competently, and to ensure that such use does not compromise with ethical and professional standards.

AI introduces new categories of legal risk.

Algorithmic bias: AI systems trained on historical or unrepresentative data may reproduce or amplify existing inequalities, leading to discriminatory outcomes in areas such as admissions, assessment, or legal prediction (Barocas & Selbst, 2016).

Intellectual property ownership: The legal status of AI-generated content remains contested, particularly in educational contexts where students, institutions, and technology providers all have competing claims (Ginsburg & Budiardjo, 2019).

Academic integrity: data privacy and consent issues arise when student and research data are processed by opaque AI systems, often across jurisdictions.

These risks underline a fundamental principle: AI does not remove responsibility; it redistributes it.

Cybersecurity as a Foundation of Digital Justice

Educational institutions and legal bodies are custodians of highly sensitive digital assets, including personal data, academic records, research outputs, and legal evidence. When cyber incidents occur such as ransomware attacks, data breaches, or identity theft they are not merely technical failures.

They represent violations of privacy, failures of governance, and breaches of legal and ethical duties (Solove, 2021). Increasingly, cybersecurity failures are understood as matters of institutional accountability rather than isolated IT issues.

Cybersecurity is inseparable from justice. Without secure systems, the integrity of legal processes and educational trust cannot be sustained.

Human Judgment in a Machine-Supported World

AI systems can analyse data, predict outcomes, and recommend courses of action. But does not take any moral responsibility. Accountability, ethical reasoning, and trust remain inherently human functions. This approach reflects an essential truth that technology should enhance human wisdom, not substitute for it.

The Convergence of Law, AI, and Governance

Legal professionals must therefore develop competence in AI governance, digital evidence management, cybercrime law, and data protection regimes such as the GDPR and FERPA. The future lawyer will operate not only in courtrooms, but also in boardrooms, regulatory agencies, and digital dispute resolution platforms. Legal education must evolve accordingly, emphasizing interdisciplinary knowledge and ethical leadership.

CONCLUSION

AI and cybersecurity should not be feared, but they must be governed responsibly. Technology will always evolve faster than law; the task of law is not to halt progress, but to guide it with ethical clarity and human accountability.

The future of justice does not lie in algorithms alone. It lies in lawyers, educators, and institutions that choose transparency over opacity, responsibility over convenience, and human judgment over automated authority.

In the age of machines, justice must remain profoundly human.

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EMERGING FRONTIERS IN KNOWLEDGE: A MULTIDISCIPLINARY PERSPECTIVE FOR THE FUTURE

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Experts talk at the One-Day Multidisciplinary International Conference on Emerging Frontiers in Knowledge: A Multidisciplinary Perspective for a Global Future

The paper presents a viewpoint on the nature of knowledge in the context of contemporary social issues, challenges, and technological change as discussed during the conference. It argues that the most significant knowledge expertise lies at the intersections of diverse knowledge domains, emphasizing the importance of interdisciplinary curiosity.

How is knowledge changing?

The problems we are currently facing are technological adaptations, environmental damage, leadership, and unfairness. These problems are too big for any one domain group to fix alone. The future of knowledge is not about experts in one field. It is about bringing different areas together, with context, and with a sense of what is suitable for people. Knowledge has to connect the dots. The only way forward is to understand how everything moves together.

The conference talk started with a story about a water supply project in India. On paper, the project had everything, including support from the people in charge, a budget, and a good construction plan made by engineers. At first, things appeared great. Then, a few months later, the problems began to pile up. It was not because they ran out of money or because the technology failed. The real issues were that the local community was not involved, the leaders ignored the project, and nobody understood how the beneficiaries used or cared for their water. When social scientists, managers, and engineers, along with the local groups, joined in, everything changed. The same water system that had been struggling began to work. So the fact is that most of the time, things do not fall apart because of mistakes in one area. They fail when people from different knowledge domains do not work together.

This story prompts us to rethink how we learn and discover. The education system has pushed for specialization. Being an expert is still crucial. However, we are facing problems that do not fit into one single knowledge domain. Climate change, health emergencies, digital governance, and city planning all require people from different fields to talk to each other. Technology, social sciences, management, ethics, and engineering all play their role. The way we learn is evolving to understand a complicated world. Knowledge is shifting from disciplinary silos to integrated thinking, from theory-driven to impact-driven knowledge, and from human-only to human-plus-machine intelligence.

Technology with a purpose:

Technology and computers are changing the way how we learn and make decisions. With technology like AI and machine learning, we can sail through an ocean of information. As technology becomes sophisticated, the more we have to think about what is right. We are the ones responsible for how it is used and who it affects. Technology is not just a bunch of machines or code. It is tied to people, cultures, and the rules of the place it is used. When we get that, we can work together to make technology better for everyone. We all have a stake in making technology work for good. People are discussing the interplay between technology, ethics, and governance. Systems like Aadhaar, digital payments, and online services have made life easier and more efficient for people, enabling them to access the services they need. But, as these examples show, it is not just about building the technology. It is about ensuring it actually works for people, in their real lives.

Technology projects like these always spark a mix of excitement and worry. They bring new possibilities, but people start to wonder: Can we really trust the government with all this data? Are these systems treating everyone fairly? Is our information safe, or is someone watching us behind the scenes? That is why it is essential for engineers, managers, lawmakers, legal experts, and social scientists to communicate with one another. If we ignore questions about what is right and what is wrong while building new technology, we risk compromising fairness and the core values that hold us together. Everyone involved in making or regulating technology needs to keep the conversation going, ensuring that technology works for everybody and does not move away at the cost of social justice.

Development and Sustainability:

Sustainability and development are among the most pressing issues we face right now. Climate change, inadequate water management, and sanitation are all significant problems. Switching to alternative energy and

stopping environmental damage is not just a “science and technology” challenge, though. We need to examine how people behave and how our institutions run. The benefits of making substantial changes are enormous, but it takes effort from everyone. Programs like Swachh Bharat Abhiyan and India’s Renewable Energy Mission show what is possible. These efforts demonstrate that when people change their habits, when the government step up, and when managers pay attention, we actually achieve results. Building sustainability means maintaining the health of our systems and improving them, and that is something that cuts across different fields and skills. When communities get involved, these missions not only work better, but they also make people feel like they are part of the solution.

Role of the data in decision making:

Let us also emphasize the significant role data plays in decision-making. Governments and organizations rely on data more than ever to inform policy decisions and manage things. On the one hand, the expectation is that decisions based on facts should be more informed and better. People sometimes believe data is objective, but it not that simple. Context matters. Who is involved matters. If we overlook that, policies can quickly go off track. Consider the Aspirational Districts Programme in India. It demonstrates how local knowledge, government ability, and community involvement, along with good data, can really move the project forward. Information is helpful, but ultimately, doing what is right and understanding people is what makes these programs successful.

Social Innovation and well-being:

Education stands out as a space that is changing rapidly. For learners, the future means remaining curious and adaptable. You cannot just lean on a specialized degree. What matters most is cultivating a passion for continuous learning. In today’s world, learners need to be flexible, ethical, and good at solving problems. The future means being creative, trying new ways to teach and organize. We have to learn how to understand and address problems. We can help by blending different ideas, encouraging open discussion, and ensuring every voice is heard and counted. The focus on projects and community involvement helps remain ahead of the learning curve. When we mix up subjects and connect to real-world issues, that is when real change begins.

The real challenge is in understanding how well we integrate different knowledge domains and use them wisely. Knowledge should align with our values, ethics, and what we actually need. In the long run, nobody is going to judge us by how much we know in one area. When researchers, professionals, and organizations collaborate to address complex problems, progress is made. These new frontiers are not just about thinking bigger. They are about doing right collectively. That requires humility, curiosity, and a drive to work for the benefit of everyone. The frontier in knowledge lies not only in expanding separate disciplines. It lies in our ability to connect them responsibly. The future will not assess only individual discipline, but the collective outcomes. The ability of people from diverse domains to collectively address complex issues is crucial.

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CHILD TRAFFICKING AND COMMUNITY-BASED RESCUE MECHANISMS IN INDIA: A FIELD STUDY FROM MANDAV, MADHYA PRADESH

¹Dr. Ratna Sisodiya and ²Nitin Yadav¹Associate Professor, School of Law, Renaissance University, Indore²Student, LL.B. Semester I, School of Law, Renaissance University, Indore**ABSTRACT**

Child trafficking in India continues to thrive through informal labour networks that operate beyond the immediate reach of regulatory and enforcement mechanisms. Children are frequently moved across state borders, particularly along the Rajasthan–Gujarat–Madhya Pradesh corridor, and absorbed into unregulated sectors such as brick kilns, agriculture, small industries, and roadside establishments. In these environments, they are exposed to hazardous labour, extreme working conditions, and social isolation, while remaining largely invisible within official protection systems.

This paper presents an empirical field study of a community-based rescue and rehabilitation initiative located in Mandav (Mandu), Madhya Pradesh, where a religious institution emerged as a space of protection for trafficked and exploited children. The study is based on primary field data collected by a law student, including direct observation and geotagged photographic documentation. These materials record the arrival, sheltering, and early rehabilitation of children who had been subjected to trafficking-like exploitation and severe labour conditions. In compliance with the Juvenile Justice (Care and Protection of Children) Act, 2015, the identities of all children have been anonymized.

The Mandav case is analysed within India's contemporary legal framework, particularly Article 23 of the Constitution of India, Section 143 of the Bharatiya Nyaya Sanhita, 2023, and allied child-protection legislation governing rescue, care, and rehabilitation. The study demonstrates how community-embedded and faith-based institutions often function as immediate protective spaces for trafficked children, especially in regions where formal child-protection mechanisms may be geographically or administratively distant.

Rather than positioning community initiatives as alternatives to state institutions, the paper highlights their complementary role within India's evolving child-protection system. The Mandav experience illustrates how locally rooted, morally grounded institutions can strengthen the effectiveness of statutory frameworks by ensuring that children in distress receive timely safety, dignity, and care. The study ultimately argues for a more integrated approach to anti-trafficking policy, in which community-based actors are formally recognised as vital partners in the protection and rehabilitation of trafficked children.

1. THE HIDDEN INDIA: WHEN CHILDREN DISAPPEAR INTO LABOUR MARKETS

Across large parts of western and central India, the movement of children for work has become so routine that it often goes unnoticed. From villages in Rajasthan and Gujarat, boys and girls are quietly taken away under the promise of wages, food, or a better life. Many parents, trapped in poverty or debt, do not fully understand where their children are being sent. Others have little choice. These children travel through informal routes, usually without documents, and cross into neighbouring states where demand for cheap, obedient labour is high.

Once they reach their destinations, they do not enter schools or safe workplaces. They enter brick kilns, farms, roadside eateries, workshops, construction sites and small industrial units where their presence is rarely questioned. They live where they work, sleep in unsafe spaces, and remain invisible to the outside world. Over time, they lose contact with their families and their identities begin to fade. In official records they simply do not exist.

Most of this trafficking never appears in police data or government statistics. There is no dramatic kidnapping in many cases, no missing person report, no formal complaint. The process is quiet, gradual, and disguised as employment. Middlemen move freely because their activities blend into the larger informal economy. As a result, thousands of children remain outside the reach of law, even though their exploitation is severe.

Rescue in such situations is rarely the result of a planned operation. It often happens by chance when a child escapes, when a local resident notices something wrong, or when a community institution intervenes. It is within this hidden and fragile reality that the Mandav case must be understood, not as an isolated incident, but as part of a much larger, largely unseen system in which children disappear every day.

2. WHEN LAW NEEDS SOCIETY'S SUPPORT

Child trafficking is rarely a single, easily traceable offence; it is typically sustained through informal recruitment, movement, harbouring and exploitation that blends into ordinary labour and migration patterns.

Because detection depends on someone noticing, reporting, and documenting indicators of exploitation, a substantial part of the problem remains under-identified in formal records, even when legal and institutional mechanisms exist.¹

Reaching trafficked children is especially difficult when exploitation occurs in informal and dispersed work settings. Evidence on child labour and hazardous work in India also highlights the limitations of measurement systems and data capture, explaining why official figures often under-represent the lived reality of children engaged in harmful or hidden forms of exploitation.²

In such contexts, local institutions—including community groups and faith-based spaces—often become crucial as early points of contact. Their social proximity helps them notice sudden disappearance, unusual movement, or children arriving in distress. International child-protection approaches emphasize strengthening frontline identification and referral pathways, because children may first disclose exploitation in non-traditional protection spaces such as schools, clinics, or trusted community environments.³

Community and faith-based organisations therefore act as first points of safety, providing immediate shelter and stabilisation while facilitating referral to formal authorities and child-protection processes. This is not a replacement for the State; rather, it is a bridging function that enables quicker identification and safer handover to statutory mechanisms.⁴ Practical coordination models such as joint action between enforcement agencies and child-protection partners in rescue situations demonstrate how community-linked responses strengthen outcomes for trafficked children.⁵

3. MANDAV: A TEMPLE THAT BECAME A SHELTER

Mandav, also known as Mandu, is a historic hill town in the Dhar district of Madhya Pradesh, known for its ancient forts, palaces, and sacred spaces that overlook the Narmada valley. Beyond its monuments, Mandav is surrounded by rural and semi-rural communities where poverty, seasonal migration, and informal labour are part of daily life. It is within this social landscape—far from large cities and formal welfare institutions that vulnerable children often pass unseen, quietly absorbed into labour networks stretching across Rajasthan, Gujarat, and central India.

At the heart of this region stands **Chaturbhuj Shri Ram Mandir**, a centuries-old spiritual and community space. The temple is under the spiritual and administrative leadership of **Shree 1008 Dr. Narshingh Das Ji Maharaj**, a **Mahamandaleshwar**, a position of high spiritual authority within the Hindu monastic tradition. Beyond his religious role, Maharaj Ji also oversees the day-to-day functioning of the temple, including its charitable, educational, and community-service activities. For the people of Mandav and surrounding villages, the temple has long been a place not only of worship, but also of refuge, where those in distress can find food, shelter, and guidance.

It was through this deep bond of trust between the temple and the community that trafficked and exploited children began to arrive. Some were brought by local residents who sensed that a child had been subjected to abuse or forced labour. Others reached the temple after escaping from harsh work sites, while a few were left there because there was simply nowhere else safe to take them. They came exhausted, frightened, and carrying the weight of lives spent working in extreme heat, deprivation, and isolation.

Maharaj Ji chose to protect these children not as an act of charity alone, but as an expression of his spiritual responsibility. In his understanding, the true purpose of sainthood is to serve humanity, especially those who are suffering and voiceless. He has often stated that if Lord Ram entrusts someone with the opportunity to help, that trust must be honoured through action. Guided by this belief, he opened the doors of the temple to the rescued children, providing them with food, shelter, and a sense of safety without asking about their caste, origin, or

¹ United Nations Office on Drugs and Crime, Global Report on Trafficking in Persons 2024, at 4 (U.N. Sales No. E.24.XI.5, 2024)

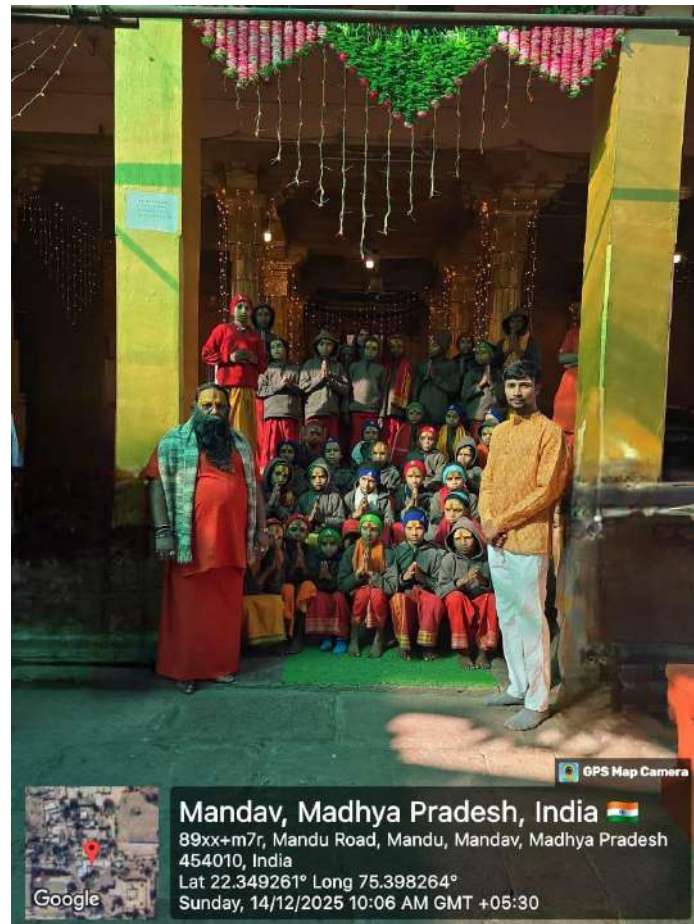
² K. G. Santhya et al., Child Labour and Schooling in India, at 11 (UNICEF Office of Research—Innocenti, Florence 2024)

³ UNICEF, UNICEF's Action against Child Trafficking, at 7–8 (UNICEF, New York 2025)

⁴ Ministry of Home Affairs, Government of India, Advisory on Preventing and Combating Human Trafficking in India, at 1–2 (Sept. 9, 2009).

⁵ *25 Minor Boys Rescued at Nagpur Railway Station in Suspected Child Trafficking Case*, Times of India (Nagpur ed.), May 2025

past. In doing so, he transformed a sacred space into a living sanctuary, where faith was expressed not only through prayer, but through the quiet, determined protection of childhood.



Nitin Yadav with Guru Maharaj ji and rescued children at Mandav Temple.

4. THE CHILDREN: FROM EXTREME EXPLOITATION TO SAFE SPACE

The children who arrived at Chaturbhuj Shri Ram Mandir did not come from ordinary hardship; they came from places where childhood itself had been taken away. Many had worked in conditions where temperatures rose above 50 degrees Celsius, performing exhausting physical labour for long hours without rest, protection, or medical care. Some had been bound by debt or informal agreements that left them trapped in work they could not leave. Others had been transferred from one employer to another, bought or sold through middlemen, and in a few cases even handed over by their own families under pressure of poverty and desperation. For these children, labour was not a choice it was a form of captivity.

When they first reached the temple, their condition revealed the cost of such exploitation. Their bodies showed signs of fatigue, malnutrition, dehydration, and untreated injuries. Yet the deeper wounds were not always visible. Many were withdrawn, frightened, and unsure of how to speak freely. Accustomed to punishment and control, they often expected kindness to be followed by cruelty. Trust, for them, was something that had been repeatedly broken.

In this context, “rescue” was not a single dramatic moment but a gradual process of being allowed to feel human again. It began with something very simple: being given clean water, a place to sit, and food without being asked to earn it. It continued with being allowed to sleep without fear of being woken for work. Slowly, as days passed, the children began to realise that they were not going to be sent back to the places that had harmed them.

Maharaj Ji’s approach to these children was neither distant nor institutional. He treated them as his own responsibility, speaking to them with patience, warmth, and respect. He did not question their past or blame them for their circumstances. Instead, he made it clear that within the temple they were safe, that no one would force them to work, and that their only duty was to heal, learn, and grow. Under his care, the temple became more than a shelter it became a space where fear slowly gave way to dignity, and where children who had been treated as labour began to remember that they were, first and foremost, children.

5. FIELD EVIDENCE: HOW THIS STUDY WAS CONDUCTED

This study is based on primary field research carried out by the researchers who visited the Mandav site and directly documented the conditions of the rescued children and the environment in which they were being sheltered. Rather than relying on secondary reports or media accounts, the researchers engaged in on-ground observation, allowing the realities of rescue and rehabilitation to be recorded as they were occurring.

As part of this fieldwork, geotagged photographs were taken at the shelter. These images establish the location, time, and physical setting of the study, providing objective evidence that the children were present at the Mandav temple premises and were living in conditions of care and safety. Such documentation strengthens the reliability of the data by linking observations to a verifiable place and context.

The researchers also conducted direct observation of shelter conditions, including the children's living arrangements, access to food, rest, and basic facilities, as well as the interactions between the children and those caring for them. In addition, the early stages of rehabilitation such as regular meals, rest, informal learning, and emotional support were recorded to understand how children were transitioning from exploitation to safety.

Because the data was collected firsthand, through personal observation and original documentation, it qualifies as primary empirical evidence. This gives the study a strong factual foundation, allowing legal analysis to be grounded not only in statutes and policies, but also in the lived experiences of trafficked children within a real community-based protection setting.

6. CONCLUSION: MANDAV AS A LIVING MODEL OF CHILD PROTECTION UNDER INDIAN LAW

This study demonstrates that child trafficking in India is not only a legal offence but a continuing social reality that often unfolds far from formal institutions. While the Bharatiya Nyaya Sanhita, 2023, the Juvenile Justice (Care and Protection of Children) Act, 2015, and allied child-protection laws provide a comprehensive legal framework for prevention, rescue, and rehabilitation, their effectiveness ultimately depends on how quickly and sensitively vulnerable children can be identified and brought into safety. The Mandav case illustrates how this first and most critical step frequently occurs within the social fabric of communities rather than through formal enforcement alone.

From a legal perspective, the actions taken at Chaturbhuj Shri Ram Mandir under the leadership of Shree 1008 Dr. Narshingh Das Ji Maharaj reflect the underlying objectives of India's child-protection regime: to remove children from exploitative situations and restore their dignity, safety, and developmental rights. By providing immediate shelter, food, and emotional security to trafficked children, the Mandav initiative effectively fulfilled the protective intent embedded in Article 23 of the Constitution and Section 143 of the Bharatiya Nyaya Sanhita, even before formal procedures could be initiated.

The case further reveals the crucial role of community guardianship in contemporary child-protection law. Maharaj Ji and the temple did not replace the State; rather, they acted as a bridge between vulnerability and legality, creating a space where children could survive long enough to re-enter the protection of law. This complements the Juvenile Justice framework, which relies on timely identification and safe care as prerequisites for any legal process to succeed.

Legally, Mandav stands as a model of how **faith-based and community institutions can function as lawful first responders** when integrated into child-protection systems. Recognising and formally linking such spaces with Child Welfare Committees, police units, and rehabilitation services would strengthen India's anti-trafficking architecture.

The Mandav experience ultimately shows that laws protect children not only when they are written, but when society acts in their spirit. By aligning moral responsibility with legal purpose, this community-based rescue created a pathway from exploitation to dignity exactly what India's child-protection laws were designed to achieve.

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USING MACHINE LEARNING TO DISCOVER NEW DRUGS, MATERIALS, AND CHEMICALS

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Machine Learning (ML) has emerged as a powerful catalyst transforming drug discovery, materials development, and chemical innovation. Traditional discovery pipelines are time-consuming, costly, and experimentally demanding, slowing the translation of scientific ideas into practical solutions. ML techniques-including deep learning, generative models, reinforcement learning, and predictive analytics-enable rapid molecular screening, property prediction, and automated compound design. This study investigates how ML-driven systems enhance computational chemistry, virtual screening, lead optimization, and materials engineering by leveraging large datasets of molecular structures, biological responses, and physicochemical properties. The findings demonstrate that ML significantly reduces discovery time, improves prediction accuracy, and identifies hidden structure property patterns that traditional methods overlook. Furthermore, ML supports multi-objective optimization, enabling the design of novel drugs, high-performance materials, and sustainable chemical compounds. The study concludes that ML-driven discovery frameworks offer a scalable, cost-effective, and highly efficient pipeline that can revolutionize pharmaceutical R&D, advanced materials engineering, and chemical science.

Keywords: Machine Learning, Drug Discovery, Computational Chemistry, Materials Science, Generative Models, Deep Learning, Predictive Analytics, Molecular Screening, Chemical Design, Artificial Intelligence

1. INTRODUCTION

The rapid advancement of modern science has increased the demand for faster and more efficient discovery of drugs, materials, and chemical compounds. Traditional discovery pipelines involve extensive experimentation, complex synthesis procedures, and high failure rates, which significantly slow innovation. Machine Learning (ML) has emerged as a transformative tool capable of automating scientific exploration by analyzing complex chemical and biological datasets. ML models can evaluate millions of molecular possibilities in seconds, offering unprecedented speed and accuracy. With growing computational power and availability of chemical databases, ML has become central to predictive modeling and virtual screening. It is increasingly being used across pharmaceutical R&D, materials science, and chemical engineering. The integration of ML enables scientists to explore chemical spaces that were previously too large or complex to analyze manually. As a result, ML is reshaping how data, computation, and experimentation are integrated in discovery workflows. In drug discovery, ML supports tasks such as target identification, compound screening, toxicity prediction, and lead optimization. Deep learning algorithms analyze molecular fingerprints, 3D structures, and protein-ligand interactions, improving the accuracy of biological activity prediction.

Generative models like GANs and variation autoencoders create entirely new molecules with optimal properties. ML-based QSAR models reveal patterns linking chemical structure to biological response, reducing reliance on costly wet-lab experiments. Similarly, in materials science, ML predicts mechanical strength, thermal conductivity, stability, and other critical properties without physically fabricating materials. These data-driven approaches accelerate the discovery of polymers, alloys, battery materials, catalysts, and semiconductors. The accelerating pace of ML integration highlights a shift toward data-centric scientific research. Researchers now rely not only on theoretical models and experiments but also on computational intelligence to guide decision-making. ML algorithms continuously learn from experimental results, improving predictive performance over time. The convergence of big data, high-performance computing, and AI has made it possible to simulate and optimize discovery processes on an unprecedented scale. Industries such as pharmaceuticals, renewable energy, agriculture, and chemicals increasingly depend on ML-driven solutions to stay competitive. The adoption of ML in discovery workflows reduces time-to-market, minimizes costs, and enhances accuracy in identifying high-potential candidates. Consequently, ML is becoming a cornerstone technology in the pursuit of innovative, sustainable, and efficient scientific advancements.

2. STATEMENT OF THE PROBLEM

Drug, material, and chemical discovery processes suffer from long development cycles, high research costs, and unpredictable outcomes. Traditional experimentation-based screening methods are not scalable for exploring vast chemical spaces containing millions of potential compounds. As a result, industries face challenges in

identifying effective molecules within a reasonable timeframe. Pharmaceutical companies struggle with high attrition rates, where only a small fraction of tested compounds proceed to clinical validation. Similarly, materials scientists often rely on trial-and-error synthesis, which delays innovation and increases resource consumption. These limitations underscore the need for more efficient discovery strategies. Another major problem is the lack of tools capable of predicting complex molecular or material behaviors with high accuracy.

Conventional computational chemistry methods, although useful, are slow and limited by computational constraints. Predicting toxicity, stability, or bioactivity still requires extensive laboratory validation. Additionally, datasets used in discovery research are often large, heterogeneous, and complex, making manual analysis ineffective. Without advanced computational tools, researchers struggle to derive meaningful insights or identify hidden correlations within chemical datasets. The complexity of molecular interactions demands intelligent systems capable of learning patterns beyond human perception. There is also a gap between academic research and practical industry applications. Many ML models developed in research settings lack real-world validation, limiting their adoption. Integrating ML tools with existing laboratory workflows, instrumentation, and databases remains challenging. The lack of standardized ML pipelines further complicates the implementation process. Industries require reliable, interpretable, and scalable ML systems that can integrate seamlessly with experimental processes. Therefore, the problem lies not only in the discovery process itself but also in the absence of fully functional ML-supported frameworks that can accelerate real-world innovation across sectors.

3. NEED OF THE STUDY

There is an urgent need to develop faster, more accurate discovery pipelines due to increasing global demand for new medicines, stronger materials, and sustainable chemicals. Diseases evolve rapidly, requiring pharmaceutical industries to accelerate drug development. Similarly, emerging technologies such as electric vehicles, renewable energy, and aerospace engineering require high-performance materials that traditional methods cannot produce quickly. ML offers a solution by accelerating the evaluation and design of molecules and materials before physical synthesis. This capability helps industries meet global demands while reducing research costs. ML-driven discovery frameworks are needed to reduce dependency on trial-and-error experimentation. With AI, researchers can analyze chemical space more efficiently, predict outcomes, and optimize properties without conducting thousands of wet-lab tests. This significantly shortens development timelines and increases the likelihood of identifying viable candidates. Additionally, ML can integrate cross-disciplinary data including genomics, chemical structures, and material performance—to support holistic decision-making. Such multi-layered insights are essential for modern scientific advancements. The study is needed to address the implementation gap between ML research and industrial application. Although significant ML innovations exist, industries require validated, robust, and interpretable solutions. Understanding how ML can be systematically integrated into discovery workflows will help organizations adopt AI-powered processes with confidence. The study will also highlight challenges and propose frameworks that ensure scalability, reliability, and regulatory compliance. Ultimately, this research contributes to the development of a more intelligent, sustainable, and efficient scientific discovery ecosystem.

4. OBJECTIVES OF THE STUDY

S.No	Objective	Explanation
1	To examine ML applications in drug discovery	Evaluate prediction, screening, and optimization techniques.
2	To analyze ML-based material design approaches	Study predictions of structural, mechanical, and chemical properties.
3	To identify generative ML models for chemical innovation	Explore VAE, GAN, and reinforcement learning methods.
4	To develop an ML-driven conceptual discovery framework	Propose a structured model integrating ML into discovery workflows.
5	To highlight challenges and future opportunities	Identify gaps, limitations, and enhancement opportunities.

5. SCOPE OF THE STUDY

S.No	Area Covered	Description
1	Drug Discovery	Virtual screening, QSAR, toxicity prediction, lead design.
2	Materials Science	Polymers, alloys, catalysts, battery materials.
3	Chemical Engineering	Reaction prediction, molecular synthesis optimization.
4	ML Techniques	Deep learning, generative modeling, predictive analytics.
5	Industry Applications	Pharmaceuticals, energy, aerospace, chemicals.

6. RESEARCH METHODOLOGY

S.No	Method	Description
1	Research Design	Descriptive and analytical.
2	Data Sources	Secondary datasets, research papers, chemical databases.
3	Tools Used	ML algorithms, Python libraries, simulation tools.
4	Data Collection	PubChem, ChEMBL, Materials Project, Kaggle datasets.
5	Data Processing	Cleaning, normalization, feature extraction.
6	Model Selection	Deep learning, regression, clustering.
7	Analysis Techniques	QSAR, molecular docking, property prediction.
8	Validation	Cross-validation, accuracy metrics, error analysis.
9	Framework Design	Development of conceptual and system architecture.
10	Interpretation	Result evaluation, gap identification.
11	Documentation	Report writing and structured presentation.
12	Conclusion Formulation	Deriving insights and recommendations.

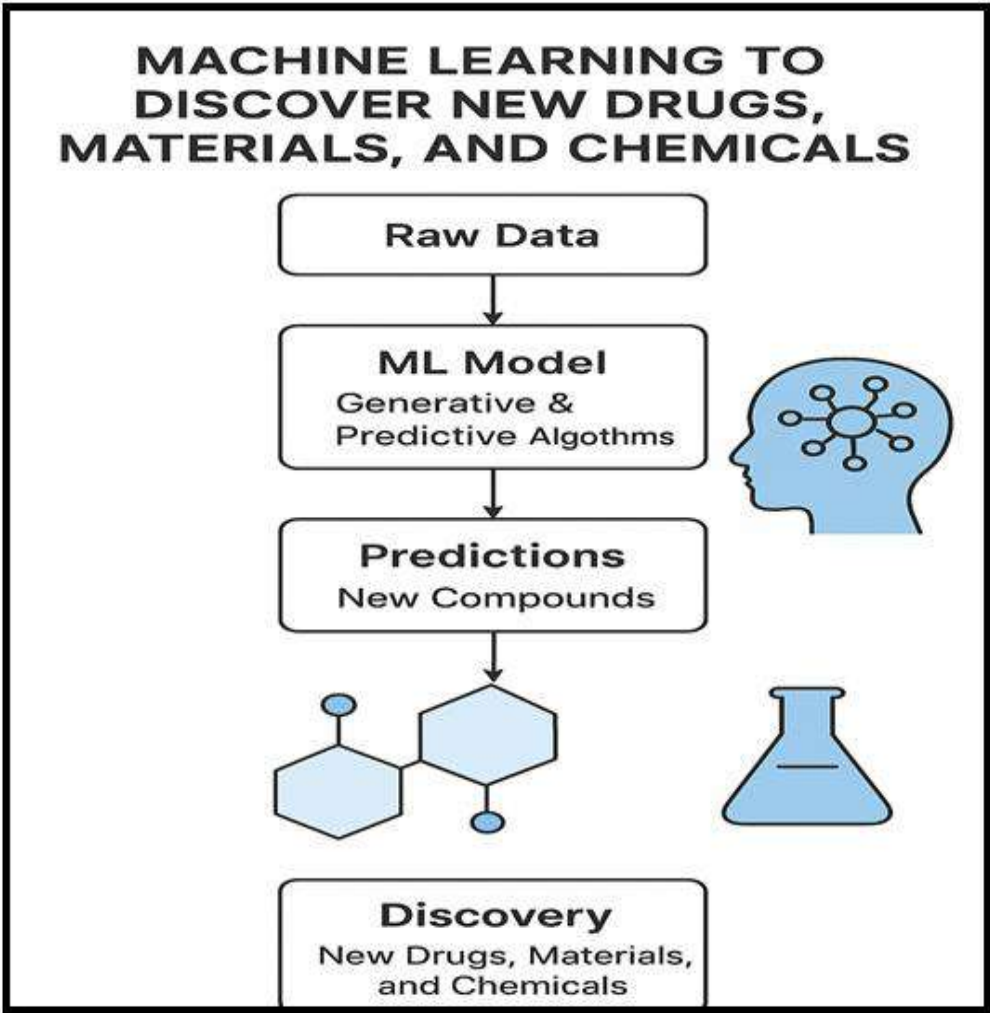
7. REVIEW OF LITERATURE

- Smith & Zhao (2022), “AI-driven Drug Discovery”** AI-enabled models significantly accelerate hit identification and lead optimization. The authors highlight how neural networks predict bioactivity with higher accuracy than conventional QSAR. They also examine transfer learning to improve predictions with limited data. The study demonstrates rapid screening of millions of molecules using deep learning. It highlights challenges related to interpretability and dataset bias. Their findings suggest that AI reduces failure rates in early discovery. The review concludes that AI is essential for modern pharmaceutical research.
- Wang et al. (2023), “Generative Models for Molecular Design”** This study explores GANs and VAEs for de novo molecular generation. The authors show that generative models produce novel compounds with optimized chemical and biological properties. They emphasize reinforcement learning for goal-directed molecular design. The review highlights how multi-objective optimization enhances drug-likeness. It also discusses dataset size, model tuning, and evaluation metrics. The findings indicate that generative AI is revolutionizing chemical innovation.
- Patel & Kumar (2023), “ML in Materials Science”** The authors explain how ML predicts structural properties, stability, and performance of materials. They highlight ML for alloys, polymers, and energy-storage materials. The study shows that ML reduces the number of physical experiments required. The researchers emphasize feature engineering and high-throughput computation. They conclude that ML enables faster development of materials for energy and aerospace applications.
- Li & Brown (2024), “Predictive Analytics in Chemical Engineering”** This work discusses ML methods for reaction prediction, catalyst design, and process optimization. The study analyzes regression models, neural networks, and hybrid ML-physics models. Results show improved accuracy in predicting reaction outcomes. The authors highlight the role of ML in industrial-scale chemical manufacturing. The study concludes that ML reduces energy usage and improves product quality.
- Hernandez et al. (2024), “Deep Learning for Toxicity Prediction”** The study investigates safety and toxicity prediction using CNNs and graph neural networks. It demonstrates rapid estimation of ADMET properties. Findings show that ML minimizes failures in later drug development stages. The authors analyze real-world datasets and hybrid modeling approaches. They conclude that deep learning strengthens risk assessment in pharmaceuticals.
- Choi & Singh (2024), “AI in Material Property Optimization”** The authors study ML techniques for optimizing thermal, electrical, and mechanical properties. They demonstrate multi-parameter modeling for

advanced composites. The research highlights automated material screening workflows. ML-driven optimization accelerates high-performance materials used in energy storage and electronics. The review stresses the need for precise datasets and model interpretability.

8. CONCEPTUAL FRAMEWORK

Variable Type	Variables Included	Description
Input Variables	Molecular data, material properties, chemical structures	Data collected from databases.
Processing Variables	ML algorithms, predictive models, generative models	Core computational mechanisms.
Output Variables	Optimal compounds, predictions, screening results	Final results used by industries.
Moderating Variables	Data quality, computational power	Influence model outcomes.
Dependent Variables	Accuracy, discovery speed	Measured performance indicators.



9. SYSTEM ANALYSIS FRAMEWORK

Component	Description
User Requirements	Need for faster, accurate discovery systems.
Functional Requirements	Prediction, screening, molecule generation.
Non-functional Requirements	Accuracy, scalability, security.
System Inputs	Datasets, molecular descriptors.
System Outputs	Predictions, optimized compounds.
Constraints	Data quality, model interpretability.

10. SYSTEM REQUIREMENT ANALYSIS

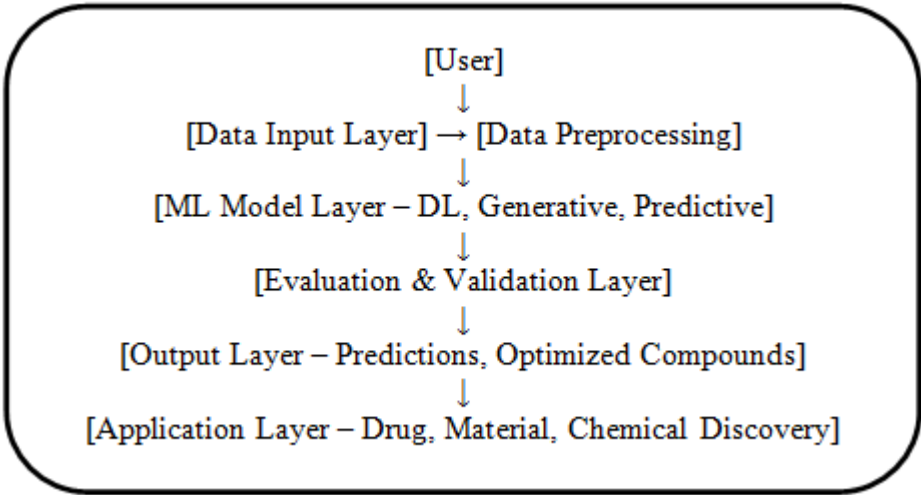
Requirement Type	Details
Hardware	High-performance GPU systems.
Software	Python, TensorFlow, RDKit, ML toolkits.
Data	Molecular datasets, material datasets.
User Access	Researchers, scientists, developers.
Interface	Dashboard, ML pipeline interface.

11. GAP ANALYSIS

Current Limitations	Required Improvements
Limited dataset diversity	Larger, more representative datasets
Weak interpretability	Explainable AI frameworks
Slow integration with lab workflows	Automated ML-lab integration
Model over fitting	Robust validation techniques
Poor scalability	Cloud-based ML pipelines

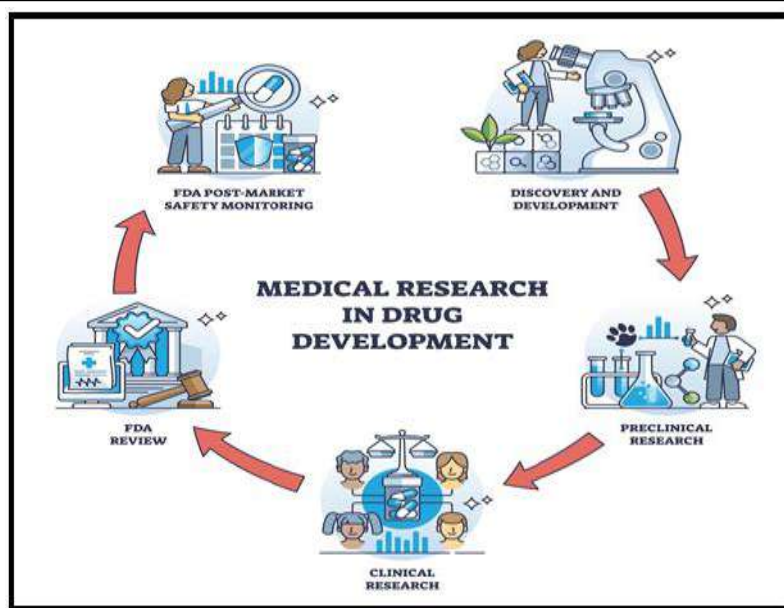
12. SYSTEM ARCHITECTURE

Diagram



Table

Layer	Function
Data Input	Collect molecular/material datasets
Preprocessing	Clean, normalize, transform data
ML Model	Apply DL, generative, predictive models
Validation	Evaluate accuracy, performance
Output	Predict properties, generate molecules
Application	Real-world drug/material discovery



13. CONCLUSION

Machine learning has emerged as a transformative force in drug, chemical, and material discovery, offering unparalleled speed, accuracy, and predictive intelligence. Traditional discovery methods suffer from long timelines and high experimental costs, restricting innovation. By integrating ML models into discovery pipelines, researchers can explore vast chemical spaces with unprecedented efficiency. ML reduces reliance on physical testing, enabling virtual screening and property prediction. These advancements streamline early-stage discovery, lowering failure rates and improving overall research productivity. The study demonstrates that ML enhances predictive accuracy by identifying complex structure property relationships that conventional approaches cannot detect. Deep learning, generative models, and graph-based algorithms enable automated compound design and multi-objective optimization. In materials science, ML accelerates the identification of high-performance materials essential for aerospace, electronics, renewable energy, and healthcare. The findings confirm that ML-driven discovery pipelines support cross-disciplinary research by integrating data from chemistry, biology, and materials engineering. Despite its potential, ML adoption faces challenges such as limited data availability, model interpretability, and integration barriers. Nonetheless, ongoing research and technological advancements are gradually overcoming these limitations. The development of explainable AI, cloud-based ML systems, and automated laboratory integration will further strengthen ML's role in discovery science. Overall, ML provides a scalable, intelligent, and cost-effective solution that can revolutionize scientific discovery across industries.

14. FUTURE ENHANCEMENT

1. Integration of ML with automated robotic laboratories.
2. Development of explainable AI for transparent predictions.
3. Expansion of multimodal datasets (genomics + chemistry + materials).
4. Cloud-based scalable ML discovery platforms.
5. Real-time molecular simulation using quantum ML.
6. Improved generative models for eco-friendly chemicals.
7. Integration with digital twins for materials innovation.
8. ML-powered personalized drug design.

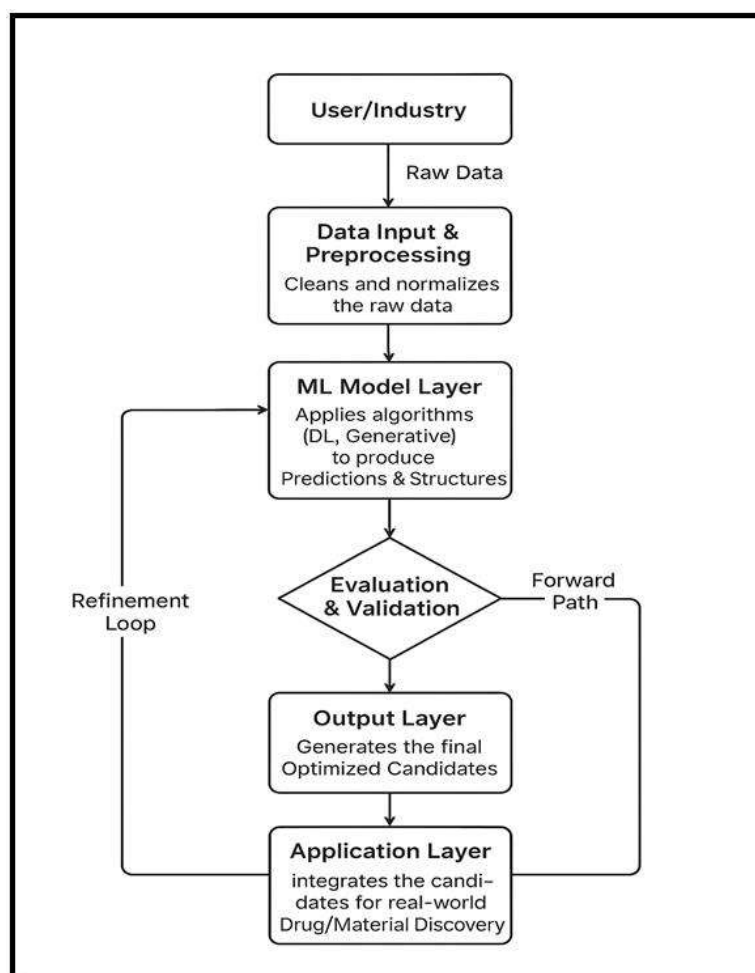
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APPENDIX

Data Flow Diagrams



FINTECH ADOPTION AND ITS IMPACT ON TRADITIONAL BANKING SERVICES

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INTRODUCTION

Financial technology, or fintech, refers to the use of innovative technologies to offer and improve financial products and services. Fintech adoption involves integrating these technologies into financial services such as digital banking, mobile payments, online lending, robo-advisors, and blockchain applications. It has transformed the financial industry by making transactions faster, more accessible, and cost-effective. Fintech adoption has accelerated especially after the 2008 financial crisis with the emergence of new technologies like blockchain and peer-to-peer lending. Digital technology eliminates barriers to service delivery, connecting consumers to financial services globally often through smartphones. The rise of fintech has led to new business models that challenge traditional banking by offering greater convenience, faster service, and financial inclusion for underserved populations. Fintech adoption encompasses a broad range of sectors including payments, lending, insurance (insurtech), investment (robo-advisors), regulatory compliance (regtech), and cybersecurity. Many consumers now use multiple fintech services as part of their daily financial activities. Despite a recent market slowdown, fintech continues to grow sustainably, with banks also developing digital fintech-inspired products. In summary, fintech adoption is the transformation of financial services through the application of innovative digital technologies to improve accessibility, efficiency, and user experience in financial markets and institutions. Fintech adoption has significantly impacted traditional banking services by disrupting their established business models and forcing banks to evolve. Fintech companies offer innovative, agile, and often more cost-effective financial products and services such as mobile banking, online payments, peer-to-peer lending, and blockchain solutions that provide customers with faster, more convenient, and personalized experiences. This rise of fintech has heightened customer expectations for digital accessibility, real-time transactions, and tailored financial advice.

However, this shift brings challenges such as regulatory complexities, cybersecurity risks, and the need for workforce upskilling within traditional banks. Overall, fintech acts not only as a disruptor but also as a catalyst for innovation, leading to more efficient, customer-centric, and inclusive financial services that reshape the future of banking.

OBJECTIVES

- Enhance customer experience by offering faster, more convenient, and personalized financial services such as mobile banking, digital payments, and robo-advisors.
- Increase operational efficiency through automation, artificial intelligence, and data analytics to streamline banking processes and reduce costs.
- Promote financial inclusion by providing affordable and accessible financial services to underserved and remote populations via digital platforms.
- Foster innovation by integrating cutting-edge technologies like blockchain and AI to develop new financial products and services.
- Facilitate collaboration between traditional banks and fintech firms to combine scale, regulatory compliance, and technological agility for better service delivery.

SCOPE:

- Digital banking services including mobile apps, online banking, and digital wallets that serve as alternatives or supplements to branch-based banking.
- Payment and lending platforms that streamline transactions and credit delivery using fintech innovations such as peer-to-peer lending and real-time payments.
- Regulatory technology (regtech) and cybersecurity measures focused on compliance, data protection, and risk management in digital financial ecosystems.

These objectives and scopes highlight how fintech adoption aims not only to enhance traditional banking services but also to expand the reach and efficiency of financial services in the digital age.

REVIEW OF LITERATURE:

Dr. Puja U Kaushik - June 2024 The impact of fintech on traditional banking is transformative, reshaping every aspect of the industry. Fintech introduces innovative technologies like AI, blockchain, and data analytics, driving enhanced customer experiences, operational efficiency, and new business models. It challenges traditional banks through increased competition, disintermediation, and changing customer expectations for faster, personalized, and accessible financial services. While fintech presents regulatory and cybersecurity challenges, traditional banks are adapting through digital transformation and partnerships with fintech firms.

Haitham Mohamed Elsaid This literature review examines the impact of fintech firms on the traditional banking industry globally. The paper reviews published research to identify benefits and challenges that fintech companies present to conventional banking systems. Key findings indicate that while fintech firms will capture some market share from traditional banks, they are not expected to completely substitute banks. However, banks must accelerate their adoption of innovations and advanced technology to remain competitive with fintech operators. The study suggests a complementary rather than substitutional relationship between fintech and traditional banking, emphasizing the need for banks to embrace digital transformation.

Dr. Shivi Mittal, Anmol Tayal, Srishti Singhal, Manvi Gupta – 2024 Fintech has profoundly transformed traditional banking by introducing digital innovations like AI, blockchain, and data analytics that enhance customer experience and operational efficiency. It has disrupted classic models by offering agile, cost-effective, and user-friendly financial services such as mobile banking, peer-to-peer lending, and digital payments. While fintech drives financial inclusion and innovation, it also presents challenges like regulatory compliance and cybersecurity risks. Ultimately, fintech acts as a catalyst for the evolution and sustainability of banking.

Mbonigaba Celestin, N Vanitha – 2015 This research investigates the disruptive impact of financial technology (Fintech) on traditional risk models in financial services, emphasizing its implications for risk assessment, consumer privacy, and market stability. Using a literature review methodology, the study compares traditional banking risk frameworks with Fintech's data-driven algorithms and machine learning models, analyzing sources up to 2015. Key findings reveal that Fintech solutions increase accessibility and efficiency, evidenced by a 62% reduction in transaction times and cost savings. However, Fintech platforms show a significant rise in security incidents, from 2 in 2010 to 40 in 2015, indicating heightened vulnerabilities in cyber security compared to traditional banking.

Nanubothu Kumaraswamy – 2023 Financial Technology (Fintech) has transformed traditional banking by introducing digital innovation, enhancing customer experience, and improving operational efficiency. Fintech offers agile, cost-effective, and personalized services through mobile banking, AI, block chain, and data analytics, challenging conventional banks to adapt. Traditional banks respond by embracing digital transformation, partnerships with Fintech firms, and investment in new technologies to stay competitive. While Fintech drives financial inclusion and cost reduction, it also introduces regulatory challenges and cybersecurity risks. Ultimately, Fintech acts as both a disruptor and catalyst for innovation, reshaping how traditional banks operate and engage with customers in a digital era

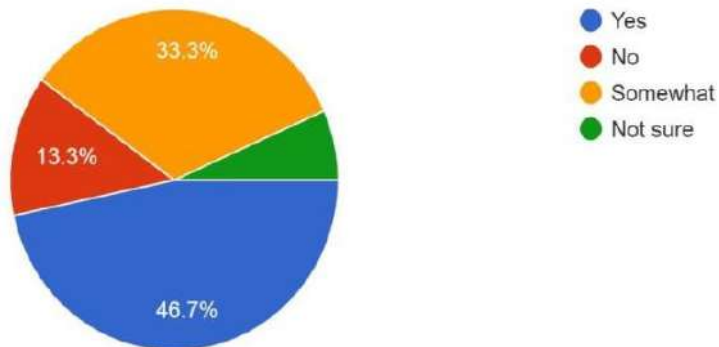
Vineela Komandla, Sri Phani Teja Perumalla – 2017 Traditional banking is undergoing a profound transformation driven by fintech innovations that enhance customer experience, operational efficiency, and introduce new financial products. Fintech's agile technologies like AI, blockchain, and mobile banking enable instant, personalized services and streamlined internal processes. Traditional banks face challenges including legacy systems, regulatory compliance, and cultural resistance but adapt by partnering with fintech startups and investing in digital solutions. This digital shift is crucial to remain competitive against fintech disruptors, meeting modern customer expectations with seamless, secure, and efficient banking services while fostering innovation and regulatory compliance.

RESEARCH METHODOLOGY

Type of Research: Mainly descriptive and correlational quantitative research with some qualitative components. Focus on customer adoption of Fintech in banking. & examines factors like trust, perceived usefulness, ease of use, and satisfaction. Structured questionnaire surveys using a Google Form. & Simple random sampling used for data collection. The sample size varies between 30 respondents. Combination of primary data collected through surveys. & Secondary data from published articles and reports. Collected via structured questionnaires. & Captures demographics and perceptions about Fintech services. Consists of prior research, institutional reports, industry publications, and regulatory documents providing background and context.

DATA INTERPRETATION**1. Are you familiar with the term “Fintech”?**

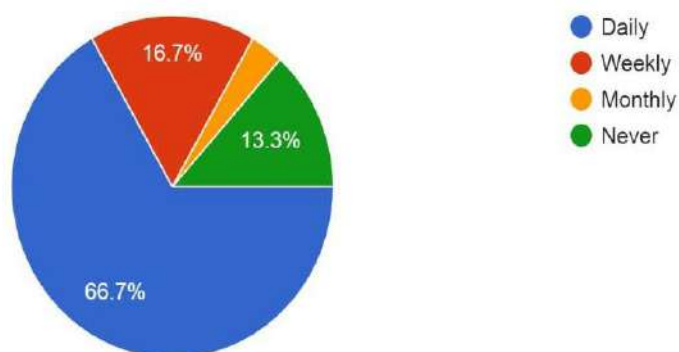
Particulars	No. of Respondents	Percentage (%)
Yes	14	46.7%
No	4	13.3%
Somewhat	10	33.3%
Not sure	2	6.7%

**Interpretation:**

1. 14 out of 30 responses which is 46.7% of the respondents are familiar with the term Fintech.
2. 4 out of 30 responses which is 13.3% of the respondents are not familiar with the term Fintech.
3. 10 out of 30 responses which is 33.3% of the respondents are somewhat familiar with the term Fintech.
4. 2 out of 30 responses which is 6.7% of the respondents are not sure if they are familiar with the term Fintech.
5. Overall, the data shows that most of the people out of 30 respondents know about Fintech.

2. How often do you use Fintech services (e.g., mobile apps, online payments)?

Particulars	No. of Respondents	Percentage (%)
Daily	20	66.7%
Weekly	5	16.7%
Monthly	1	3.3%
Never	4	13.3%

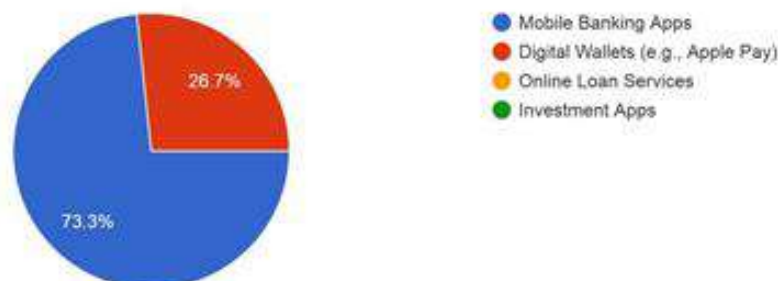
**Interpretation:**

1. 20 out of 30 responses which is 66.7% of the respondents use Fintech services daily.
2. 5 out of 30 responses which is 16.7% of the respondents use Fintech services weekly.
3. 1 out of 30 responses which is 3.3% of the respondents use Fintech services monthly.
4. 4 out of 30 responses which is 13.3% of the respondents never use Fintech services.

Overall, the data shows that more than half of the respondents know about Fintech.

3. Which Fintech service do you use most often?

Particulars	No. of Respondents	Percentage(%)
Mobile banking apps	22	73.3%
Digital wallets (e.g., apple pay)	8	26.7%
Online loan services	0	0%
Investment apps	0	0%

**Interpretation:**

The pie chart shows the distribution of Fintech services used most often by 30 respondents:

A majority of 73.3% of respondents use Mobile Banking Apps most frequently.

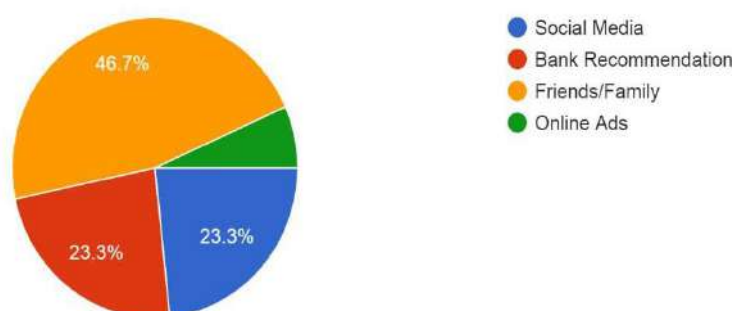
The next largest group, comprising 26.7%, uses Digital Wallets such as Apple Pay.

There were no recorded responses for Online Loan Services or Investment Apps.

This indicates that Mobile Banking Apps are the dominant Fintech service among the surveyed group, followed by Digital Wallets, while other services like online loans and investment apps are less commonly used. The data suggests strong user preference for convenience-oriented and payment-related Fintech services in this sample.

4. How did you first learn about Fintech services?

Particulars	No. of Respondents	Percentage(%)
Social media	7	23.3%
Bank recommendation	7	23.3%
Friends/family	14	46.7%
Online ads	2	6.7%

**Interpretation:**

The pie chart shows how 30 respondents first learned about Fintech services:

The largest group (46.7%) learned through Friends and Family.

23.3% became aware through Social Media.

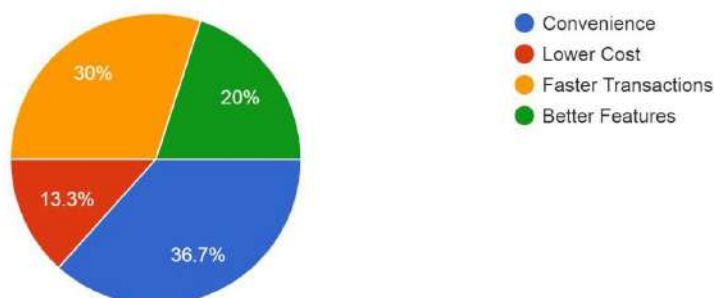
23.3% heard about Fintech through Bank Recommendations.

The smallest group (6.7%) found out via Online Ads.

This indicates that personal networks like friends and family are the most influential source of information on Fintech services in this sample, followed by social media and banks, with online advertising playing a minor role.

5. What is your main reason for using Fintech services?

Particulars	No. of Respondents	Percentage (%)
Convenience	11	36.7%
Lower cost	4	13.3%
Faster transactions	9	30%
Better features	6	20%



FINDINGS

- **Awareness of Fintech:** Almost half (46.7%) are familiar with the term Fintech, while 33.3% are somewhat familiar. Only a small fraction (13.3%) are not familiar. Indicates moderate awareness, but knowledge gaps still exist.
- **Usage Frequency:** 66.7% use Fintech services daily. 16.7% use weekly, while only 13.3% never use them. Shows Fintech services are already part of daily life for most users.
- **Most Used Services:** Mobile Banking Apps dominate (73.3%), followed by Digital Wallets (26.7%). No responses for Online Loans or Investment Apps. Suggests usage is limited to basic transactions, not advanced services.
- **Awareness Sources:** Friends & Family (46.7%) are the main source, followed by Social Media and Bank Recommendations (23.3% each). Online Ads have minimal impact (6.7%). Word-of-mouth is most influential in spreading awareness.
- **Reasons for Using Fintech:** Convenience (36.7%) and Faster Transactions (30%) are top reasons. Cost and features are secondary. Customers value speed and ease more than low cost.
- **Switching to Fintech-only Providers:** Most (66.7%) are unsure, 23.3% are willing, and only 10% reject it. There is potential, but lack of full confidence prevents switching.
- **Preferred Banking Services via Fintech:** Payments (73.3%) are most popular, followed by Savings (23.3%). Very little interest in Loans and Investments. Users trust Fintech mainly for transactions, not complex financial services.
- **Perceived Security:** 43.3% consider platforms "Somewhat Secure", while 30% consider them "Very Secure". 26.7% are unsure, but no one sees them as "Not Secure". Trust exists but uncertainty remains, highlighting the need for more reassurance.
- **Concerns with Fintech:** Cybersecurity (56.7%) is the biggest concern. Data privacy (23.3%) and service reliability (16.7%) also matter. Fear of fraud and hacking is the major barrier.
- **Trust in Money Management:** 53.3% trust both banks and fintech equally. 36.7% trust banks more, while only 3.3% trust fintech alone. Banks still hold stronger credibility, but fintech is gaining ground.

SUGGESTIONS

- **Increase Awareness & Education:** Conduct awareness campaigns (workshops, digital literacy programs, influencer partnerships). Simplify fintech concepts for "somewhat familiar" users.
- **Build Trust & Security:** Strengthen cybersecurity measures and openly communicate them to users. Use certifications, fraud protection guarantees, and transparent privacy policies.
- **Expand Services & Adoption:** Promote investment and loan-related fintech services with easy-to-understand guides. Incentivize users with rewards/discounts for exploring non-payment services.

-
- **Improve Communication Channels:** Leverage friends/family referrals (e.g., referral bonuses). Use banks as fintech ambassadors since many trust banks more.
 - **Target Convenience & Speed:** Continue focusing on user-friendly, fast, and low-friction platforms. Add AI-based personalization (smart reminders, auto-pay, and savings tracking).

CONCLUSION

The survey results show that Fintech is widely recognized and frequently used, though traditional banks still hold strong trust among people. Most respondents are at least somewhat familiar with Fintech, and two-thirds use Fintech services daily, mainly for payments and mobile banking apps, showing that convenience and accessibility are the strongest drivers. Friends, family, and social media play a major role in spreading awareness. People value convenience and speed more than cost savings or advanced features. Payments remain the most preferred service, while loans and investments through Fintech see very little interest. While many respondents feel Fintech platforms are somewhat or very secure, a significant portion is still unsure. Cybersecurity and data privacy are the biggest concerns, indicating that trust-building is essential for deeper adoption. Most people are open to the idea of switching to Fintech-only providers but remain uncertain. Importantly, more than half trust both banks and Fintech equally, though traditional banks are still trusted more when considered individually. Finally, Fintech has achieved strong usage and acceptance in everyday financial activities (especially payments), but its long-term growth depends on addressing security concerns, building trust, and expanding confidence in advanced services like loans and investments.

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JUDICIAL BACKLOG IN PRODUCT LIABILITY DISPUTES AND ITS IMPACT ON E-COMMERCE SELLERS IN POONAMALLEE

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ABSTRACT

A simple click can escalate. The rapid expansion of digital marketplaces in India has significantly transformed consumer purchasing behaviour by offering greater convenience, wider choices, and faster access to goods. However, this growth has also led to a noticeable increase in product liability disputes, particularly relating to defective, damaged, or misleading products purchased online. In emerging regions such as Poonamallee, the resolution of such disputes often faces prolonged delays, mainly due to procedural complexities and the limited availability of technical experts capable of assessing product defects accurately. These delays not only burden consumer dispute redressal forums but also contribute to judicial backlog and uncertainty for e-commerce sellers. The objective of this study is to analyse public perceptions regarding the causes of delay in resolving e-commerce product liability disputes, to assess the extent to which the absence of technical experts contributes to judicial backlog, and to examine the impact of such delays on e-commerce sellers in terms of cost, trust, and customer relationships. The study adopts an empirical research design using the convenience sampling method, with a sample size of 210 respondents drawn from in and around Poonamallee. Statistical analysis was carried out using SPSS, employing tools such as ANOVA and cluster graphs. The findings reveal that while respondents commonly acknowledge delays in resolving online product disputes, demographic factors such as age and gender do not significantly influence these perceptions. Importantly, the absence of technical experts was identified as a key factor contributing to delayed decision-making, increased backlog, and adverse effects on sellers, including financial strain, reduced platform trust, and weakened seller–customer relationships. The study concludes that strengthening expert-based evaluation mechanisms, improving communication between stakeholders, and enhancing institutional support systems are essential for ensuring faster, fairer, and more reliable resolution of e-commerce product liability disputes, particularly in developing regions like Poonamallee.

Keywords: E-commerce disputes, Product liability, Technical experts, Judicial backlog, Consumer protection.

INTRODUCTION

The rapid growth of digital marketplaces in India has made online shopping more convenient and accessible. However, this expansion has also led to more complaints about defective, damaged, or misleading products. Resolving such disputes is complex, as responsibility may lie with manufacturers, sellers, platforms, or consumers. Delays arise from procedural challenges and the need for technical evaluation, contributing to judicial backlog, particularly in regions like Poonamallee. India's consumer dispute system has evolved since the 1986 Consumer Protection Act, with further reforms under the 2019 Act addressing e-commerce. Initiatives like the Central Consumer Protection Authority, e-Daakhil portal, and mediation mechanisms aim to improve efficiency. Despite these measures, cases involving product defects still face slow resolution due to limited technical experts. As e-commerce usage grows, consumer forums face rising pending cases, affecting both consumers and sellers. While major cities have better infrastructure and expert access, smaller regions continue to struggle. This study focuses on public perceptions of delays, the role of technical experts, and their impact on e-commerce sellers.

OBJECTIVES

- ❖ To analyse public perceptions about delays in resolving e-commerce product liability disputes in Poonamallee.
- ❖ To assess the extent to which the lack of technical experts contributes to judicial backlog in e-commerce product defect cases.
- ❖ To examine the impact of delayed dispute resolution on e-commerce sellers in terms of cost, trust, and customer relationships.

REVIEW OF LITERATURE

Recent research highlights growing concern over product liability disputes in e-commerce. **Chen (2024)** points out that information gaps between buyers and sellers, along with weak platform-level grievance systems, often force consumers to approach courts, adding to judicial pressure. **Hidayati (2024)** highlights that although online

dispute resolution mechanisms exist on major marketplaces, problems related to transparency and accountability continue to affect fairness. **Tasya (2024)** observes that consumer forums such as BPSK provide an easier alternative to courts, yet procedural delays and limited public awareness reduce their effectiveness. Emphasising solutions, **Aisyah (2025)** notes that expert involvement helps resolve technical disputes more accurately and quickly, though clearer standards are needed to avoid bias. Studies by **Agistia (2025)** and **Ginting (2025)** reveal that unclear allocation of responsibility between sellers and platforms often leads to unresolved disputes and litigation. **Han (2025)** further explains that legal gaps and inconsistent judicial approaches in platform economies contribute to prolonged dispute resolution. From a comparative perspective, **Onianova (2025)** demonstrates that stronger marketplace liability models reduce prolonged litigation and strengthen consumer protection. **Sihombing (2025)** observes that complex disputes often still reach courts due to legal ambiguity. Supporting this, **Swetha (2025)** empirically shows multiple parties in e-commerce transactions complicate liability determination, reinforcing judicial backlog.

RESEARCH METHODOLOGY

This study adopts an empirical research design using convenience sampling with 210 respondents from Poonamallee. Primary data was collected via structured questionnaires, and secondary data was gathered from journals, articles, and reports. SPSS version 31 was used for analysis, employing ANOVA and cluster graphs. The study examines how demographic factors (age, gender, education, employment, marital status, and residence) relate to experiences with delays, the impact of limited technical experts, and the resulting effects on e-commerce sellers. This approach allows a clear understanding of the key factors causing delays in online product dispute resolution.

ANALYSIS

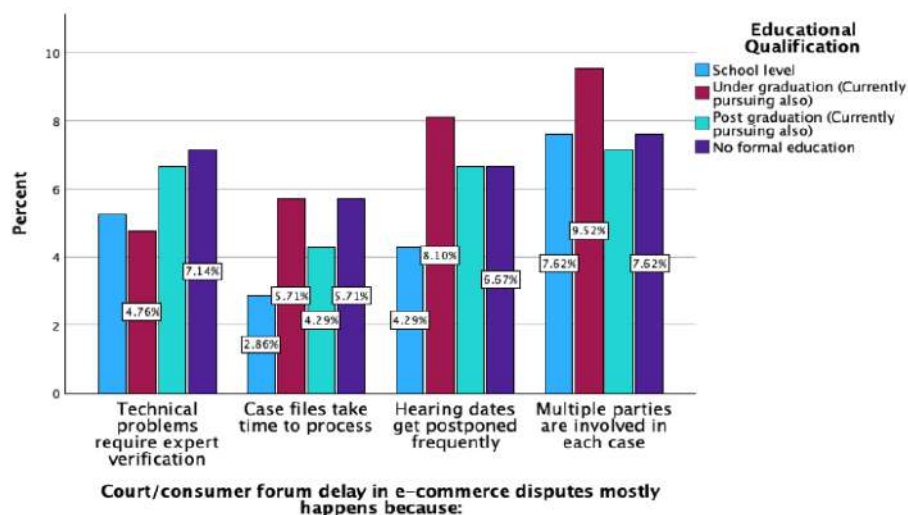


Figure 1

Legend: Figure 1 displays the primary factors contributing to delays in court and consumer forum proceedings for e-commerce disputes.

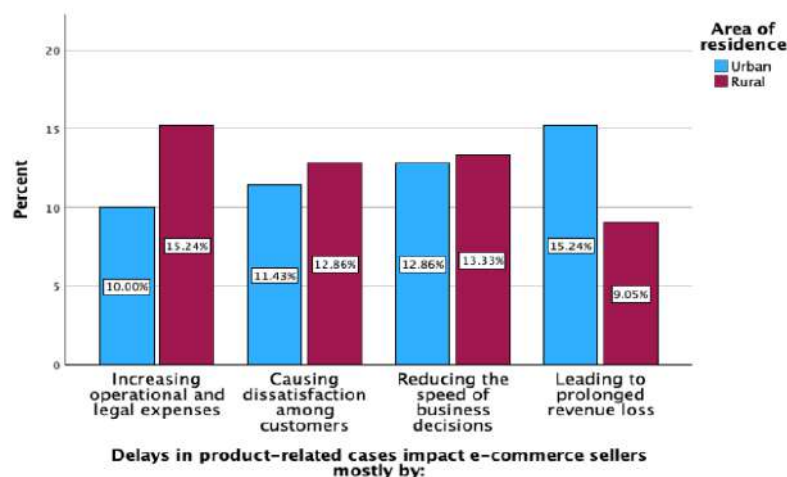


Figure 2

Legend: Figure 2 highlights the major ways in which prolonged dispute processes affect e-commerce sellers' business operations and customer relations.

ANOVA 1 (TABLE 1)

ANOVA

Cases involving product defects require expert evaluation.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.616	4	.654	.325	.861
Within Groups	413.008	205	2.015		
Total	415.624	209			

Legend: Table 1 presents the ANOVA results analysing whether age affects respondents' views on whether cases involving product defects require expert evaluation.

INFERENCE

There is no significant difference across age groups regarding the need for technical experts in product defect cases (H_0).

There is a significant difference across age groups regarding the need for technical experts in product defect cases (H_1).

ANOVA 2 (TABLE 2)

ANOVA

Expert involvement could reduce the number of pending product disputes.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.021	1	.021	.009	.923
Within Groups	459.675	208	2.210		
Total	459.695	209			

Legend: Table 2 presents the ANOVA results assessing whether gender affects respondents' views that expert involvement could reduce the number of pending product disputes.

INFERENCE

There is no significant difference between genders in their belief that expert involvement reduces pending product disputes (H_0).

There is a significant difference between genders in their belief that expert involvement reduces pending product disputes (H_1).

ANOVA 3 (TABLE 3)

ANOVA

Delayed cases increase the cost of operating an online business.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.355	1	.355	.176	.675
Within Groups	419.403	208	2.016		
Total	419.757	209			

Legend: Table 3 presents the ANOVA results determining whether gender affects respondents' perception that delayed cases increase the cost of operating an online business.

INFERENCE

There is no significant difference between genders regarding the belief that delayed cases increase operational costs for online businesses (H_0).

There is a significant difference between genders regarding the belief that delayed cases increase operational costs for online businesses (H_1).

RESULT

Figure 1 The majority of the respondents (31.90 percent) indicated that multiple parties being involved in each case is the main reason for delays in court or consumer forum proceedings in e-commerce disputes. **Figure 2** The majority of the respondents (26.19 percent) responded that delays in product-related cases mostly impact e-commerce sellers by reducing the speed of business decisions. **Table 1** The calculated p-value is 0.861, which is greater than 0.05. Thus, the null hypothesis is accepted. There is no significant association between age and the perception that expert evaluation is necessary for product defect disputes. **Table 2** The calculated p-value is 0.923, which is greater than 0.05. Thus, the null hypothesis is accepted. There is no significant association between gender and the perception that expert involvement helps reduce pending product disputes. **Table 3** The calculated p-value is 0.675, which is greater than 0.05. Thus, the null hypothesis is accepted. There is no significant association between gender and the perception that delayed cases increase online business operating costs.

DISCUSSION

Figure 1 shows that involvement of multiple parties sellers, platforms, delivery agents, and manufacturers causes significant delays in dispute resolution. Lack of clear accountability leads to repeated back-and-forth communication, increasing judicial backlog. **Figure 2** highlights that these delays negatively affect e-commerce sellers, slowing decisions on inventory, refunds, and customer retention, and creating uncertainty that impacts trust and reputation. **Table 1** indicates that respondents of all ages recognize the importance of technical experts in accurately resolving product defect disputes. **Tables 2 and 3** show that gender does not influence perceptions regarding expert involvement or the financial impact of delays. This demonstrates a broad consensus that timely expert support is essential to reduce backlog, operational costs, and inefficiency in e-commerce dispute resolution. In summary, delays are systemic, driven by coordination gaps and lack of technical expertise. Addressing these issues is crucial for faster, fairer, and more reliable resolution of online product disputes, benefiting both consumers and sellers.

SUGGESTIONS

Based on the study's findings, e-commerce platforms and authorities should improve dispute resolution through clearer communication, faster processes, and structured involvement of technical experts. Uniform updates, simple complaint systems, and transparent timelines will benefit all users. Integrating experts ensures accurate defect evaluation, reduces delays, and prevents misuse. Faster resolutions restore consumer confidence, maintain seller trust, and lower operational costs. Digital tools like AI-based screening and automated reviews can make the process more efficient, reliable, and fair.

CONCLUSION

The rapid growth of e-commerce in India has improved convenience but increased disputes over defective or misleading products, especially in regions like Poonamallee. This study examined how delays affect consumers and sellers, focusing on technical experts, reporting clarity, and platform trust. Findings show unresolved disputes result from unclear reporting, lack of trust, multiple parties, and limited technical support. These issues affect business decisions, consumer confidence, and efficiency, consistently across age and gender, indicating a systemic problem. Strengthening technical assessments, streamlining communication, and implementing clear expert-driven evaluation systems are essential. Future research could explore regional comparisons, AI-based product testing, and dedicated technical assessment units. Efficient dispute resolution is key to protecting consumers and supporting sustainable online marketplace growth.

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LIVING IN UNCERTAINTY: A 20-YEAR CASE STUDY OF SRA REDEVELOPMENT IN ANDHERI, MUMBAI

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1. ABSTRACT

This research study examines the prolonged delay of a Slum Rehabilitation Authority (SRA) redevelopment project in Mumbai through a live case study of Navdurga (SRA) Co-operative Housing Society, Telli Galli, Andheri (East). Initiated in 2002 with assurances of phased handover between 2004 and 2006, the project remains incomplete even after two decades, resulting in severe socio-economic, legal, and psychological consequences for the affected residents. The study is based on a primary interview conducted with two senior citizen residents, Shri Harish Ramji Sakpal and Smt. Suvarna Harish Sakpal, alongside secondary data relating to the initial developer, WinsWay Infrastructure Pvt. Ltd., which is currently been struck off Company from Government records.

The findings reveal systemic lapses in implementation, accountability, and monitoring of SRA schemes, including the developer's failure to complete Phase II construction, non-payment of rent since 2011, unresolved disputes between committees and the developer, and prolonged litigation pending before the High Court. The absence of timely intervention by authorities has forced residents into transit camps, deprived many of stable housing, and infringed upon their constitutional right to live with dignity under Article 21 of the Indian Constitution.

The study highlights critical policy concerns such as unregulated high-rise development, inadequate urban planning, lack of environmental consideration, and weak enforcement mechanisms against defaulting developers. It emphasizes the urgent need for structured tendering, ethical decision-making by authorities, compensation for unpaid rentals with interest, and a more humane, sustainable approach to slum rehabilitation. The research concludes that without comprehensive reform and strict accountability, SRA schemes risk undermining the very objective of rehabilitation, thereby deepening the hardships of the common man rather than alleviating them.

Keywords: “ SRA, Dignity , Environmental”.

2. INTRODUCTION

Urban cities like Mumbai face serious problems of housing due to increasing population and limited land. To solve this issue, the Government introduced the Slum Rehabilitation Authority (SRA) scheme with the aim of providing proper and permanent housing to slum dwellers. The main objective of this scheme is to rehabilitate people by giving them safe houses and improving their living conditions without causing injustice or displacement.

The Right to Life under Article 21 of the Constitution of India includes the right to live with dignity, which also covers the right to shelter. However, in many slum redevelopment projects, this right is violated due to delays, negligence by developers, and lack of effective action by government authorities. Instead of benefiting from the scheme, many residents are forced to live in transit camps or rented houses for several years.

This research study is based on a live case of Navdurga (SRA) Co-operative Housing Society, Telli Galli, Andheri (East), Mumbai, where a redevelopment project started in the year 2002 but is still incomplete. Although some residents received houses under Phase I, the remaining residents were left without permanent homes as Phase II of the project was stopped midway. The developer failed to complete the construction and also stopped paying rent to the residents, causing financial, mental, and emotional hardship.

The purpose of this study is to understand the problems faced by slum dwellers due to delayed redevelopment projects, examine the responsibility of developers and authorities, and highlight the need for proper planning and accountability. The study also aims to show how such delays affect the basic rights of the common man and why reforms are necessary to protect the interests of slum rehabilitation beneficiaries.

3. ANALYSIS AND DISCUSSION

Name's Of The Person Interviewed: - 1. Shri. Harish Ramji Sakpal

2. Smt. Suvarna Harish Sakpal.

Society Name :- Navdurga (Sra) Co-Op Housing Society – Telli Galli, Andheri (East) , Mumabi 400 069.

Date Of Interview: - 20th December 2025.

The residing members of the Telli Galli chawls came together and agreed to the phase-wise handover and several other terms of the Slum Rehabilitation scheme during their initial meeting in the year 2002. With most talks taking place with the managing committee, the members proposed a society was formed under the name of “Navadurga (SRA) Co-op Housing Society” and the developer M/s. “Winsway Infrastructure Pvt. Ltd”, presently a strike off company in Mumbai. (As per the Google search report).

The interviewee, Head of the Family Shri. Harish Ramji Sakpal is one of the members of the society and who decided to join the group and get his dwelling developed under the SRA scheme which was the common objective of each individual residing the place at Andheri, Mumbai.

The SRA scheme comprised of 127 residents with two of the three buildings designated under SRA and remaining was to form part of a commercial sale. Developer has completed and developed – Phase I of the society and the possession of 64 members as per the SRA scheme was given the keys of 64 Flats of 225 sq ft houses to the respective owners of the said resident.

While doing the Phase – II where the project was required to be completed for the remaining 63 residents of the said society which the developer started to construct where the problem arises, wherein he started constructing the commercial premises as well as the Phase – II resident premises together and the work got stopped with having only bare structure ready which is now almost 15 years old. Since then the Developer has kept the work incomplete and have stopped giving rentals to the resident from the year 2011. Due to the non-negotiating terms between the old committee and the new resident committee and the Developer, they are trying to get the amicable settlement but the same is not happening due to many reasons as all are not coming on same page. Since then, the SRA project is standstill with for no of years. Neither the SRA officials can conclude about such type of dispute which arises and now the halfway constructed structure is ruined due to Rains and summer seasons. The litigation is pending at the High Court which is yet to concluded and decided.

Here as informed by Mr. Harish Ramji Sakpal and Smt. Suvarna Harish Sakpal (both being senior Citizens now) after staying on Rented dwellings for many years have to move to the Transit camp in the year 2021 with the help of local Corporator/ Administrator and few of the residents who helped them with the necessities of livelihood which they have lost during the bad phases of life. Since then, the residents have strongly followed up and by which 30 members of the affected residents were moved in Permanent Transit Camp (PTC) in the year 2023 known as “Shradha Heights” C wing, Andheri referring to temporary housing provided for slum dwellers while their permanent homes are being redeveloped. Often under specific development control regulations like DCR 33 (11).

Here we note that the remaining 33 residents who have moved out of their houses way back in 2004 Phase -I and phase – II in 2006- don't have their dwellings which were demolished when the Slum Redevelopment Scheme was sanctioned with the Residents. As understood, many of them are struggling to pay their rents and manage their livelihood. Not to mention the mental and emotional turmoil most suffer through throughout their life as the project continues to be on a standstill.

While the key question remains, who will be paying the Rentals of the residents prolonged due to dispossession of the promised houses – schemes which the Government has recognised? There is no one to take the responsibility. Even if they must move to the so-called Self Development Scheme, they cannot take this opportunity. Since they are struggling for livelihood and with passing years, they have attained the age above 65 years and turned to senior citizens.

If the SRA authorities delays in taking decisions, with the unethical developers in stipulated timeframes it will be difficult times to the common man to withhold the dwellings which our government is keen on developing. The developers are taking undue advantage of the land surrendered leaving the city with polluted air and developing spaces with minimum circulation or proper ventilation, all of which is approved as part of the scheme by the government. The basic structures which are passed by the policy makers are requested to visit the dwellings which have happened in the city has created the horizontal hutments in the name of SRA scheme free housing rather giving them proper rehabilitation.

With high rise buildings, Over the period these hutments developed under SRA scheme don't have the shell life of 25 years from the day of the construction and where do they have to run for the shelter must be a thought process to be given. As there won't be a next developer who will be willing to develop the high-rise buildings of the SRA scheme since there will be more members and less developing space living with not much of a profitability.

4. LITERATURE REVIEW

A. The Slum Areas (Improvement and Clearance) Act, 1965

UNDER CHAPTER VI

PROTECTION OF TENANTS IN SLUM AREAS FROM EVICTION

Sec 19. Proceedings for eviction of tenants not to be taken without permission of the competent authority.

Sec. 20. Appeals.

Sec 20A. Restoration of possession of premises vacated by a tenant.

Sec . 20B. Rent of buildings in slum areas.

B. Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) (Grievance Redressal Committees) Rules 2014.

1. In exercise of the powers conferred by sub-section (1) of section 46 and sub-section (1A) of section 35 of the Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971 (Mah.XXVIII of 1971),

5. RESEARCH METHODOLOGY

Documents

1. Video Clip of the Interview taken on 20th December 2025.
2. Questionnaire Form filled of settlement and Rehabilitation
3. Current Details mentioned of the Developer extracted from Google search

WinsWay Infrastructure Pvt. Ltd. (CIN: U45201MH2000PTC127963) was a Mumbai-based private construction company, incorporated in 2000, involved in general building construction but is now listed as "**Strike Off**", meaning it's inactive or dissolved as per government records. Its last known registered office was in Jogeshwari (W), Mumbai, and its status indicates it's no longer operational, with records showing a small initial capital.

Company Name: WinsWay Infrastructure Private Limited

- **CIN:** U45201MH2000PTC127963
- **Incorporated:** July 28, 2000
- **Status:** Strike Off (Inactive/Dissolved)
- **Registrar:** RoC-Mumbai (Registrar of Companies, Maharashtra)
- **Industry:** General construction (buildings, repairs, etc.)
- **Registered Address (Last Known):** Office No. 12, Minar Tower, S. V. Road, Jogeshwari (W), Mumbai

In essence: WinsWay Infrastructure was a private entity in the construction sector that ceased operations, as indicated by its "Strike Off" status with the Ministry of Corporate Affairs (MCA) in India.

6. FINDINGS

- 1) Government should have the tenders for all the places which are going to be developed as per the demographic conditions with proper town planning and with the help of environmentalist considering the city development plan.
- 2) The high rises which are permitted to develop in Mumbai city should be curtailed and give the permission only at the specific heights for the SRA projects.
- 3) Try and move the commercial hubs within the city and the neighbouring second line city which is developing in nearby Mumbai. This will be helpful to the balanced life of the Mumbai City and the infrastructure which is becoming scarce for the current demographic population of the city.
- 4) Instead of just constructing high rise buildings they must develop the industries which will get the employment to the youth in Mumbai city who are out of Job due to mere competition.
- 5) The common roads which are always over flooded with the Traffic can be eased out if the city has been provided with the common way of Transportation rather having private Autos' and Car's plying only few sets of people rather than common man who is struggling for livelihood.

7. CONCLUSION

1. The Common man needs to be compensated with who has suffered the loss of the Rentals as per the prevailing Market Rate for the unpaid Rent and the Interest there upon for the period of unpaid ie from period 2011 to 2023 till the time shifted to PTC from the Developers Fund Deposit amount.
2. During the course of development of the houses which they have surrendered under the pretext of Slum Rehabilitation Scheme (SRA). The SRA scheme which are promoted should be well planned in the city like Mumbai where there is scarcity of land. Before giving the permission to the Developer, they should not demolish the hutments which are not being permitted. Under the unlawful pretext of developing the land it is seen the burden of Rental remains unpaid and the life of the common man is scattered and ruin the Dreams and Rights which they were supposed to live in the Mumbai city.

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COMPENSATING HARM, RESTORING DIGNITY: AN EVALUATION OF VICTIM COMPENSATION SCHEMES UNDER INDIAN CRIMINAL JUSTICE SYSTEM

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ABSTRACT

The criminal justice system in India has traditionally prioritized the prosecution and punishment of offenders, often leaving victims of crime without adequate recognition or redress. The incorporation of Victim Compensation Schemes under Section 357A of the Code of Criminal Procedure represents a significant shift towards a victim-centric approach, aimed at providing financial assistance and rehabilitative support to victims or their dependents who have suffered loss or injury due to criminal acts. These schemes are intended to supplement, rather than replace, the conventional mechanisms of criminal justice by acknowledging the harm suffered by victims beyond the outcome of the trial.

This paper critically analyses the legal framework governing Victim Compensation Schemes in India, examining their objectives, scope, and institutional mechanisms. It evaluates the role of the judiciary and State Legal Services Authorities in the implementation and administration of compensation, with particular attention to procedural requirements, assessment criteria, and disbursement practices. Through doctrinal analysis supported by empirical observations, the study identifies key challenges such as delays in processing claims, lack of uniform standards, limited awareness among victims, and inconsistencies in the quantum of compensation awarded.

The paper argues that while Victim Compensation Schemes reflect a progressive commitment to restorative justice and access to justice, their effectiveness is constrained by structural and administrative limitations. It concludes that meaningful reform—through clearer guidelines, strengthened institutional coordination, and victim-oriented implementation—is essential to transform victim compensation from a statutory entitlement into an effective instrument of justice, dignity, and rehabilitation.

INTRODUCTION

The word 'Victimology' was coined in the year of 1947 by a French Lawyer, Benjamin Mendelssohn, by deriving from a Latin word 'victima' which translate into "victim" and a Greek word 'logos' which means a system of knowledge, the direction of teaching, science and a discipline. The development of Victimology as discipline in academic field is a phenomenon of approximately six decades. In 1948, a German Criminologist, Han Von Hentig made the first overall exploration of the role of victim in crime. The discovery of victim inaugurated a new trend in criminology with increased accent on exploring the doer-sufferer' relationship. This recognition of the sociological significance of victim had immediate academic repercussions. Victimology acquired international interest and became the subject of solid scientific inquiry¹

HISTORIC EVOLUTION IN VICTIMOLOGY- Stephen Schafer

- ✚ In ancient period, criminal law was **victim oriented** and they enjoyed the **dominant position** in entire criminal legal system with certain short comings.
- ✚ Even certain **trees and animals were considered sacred** and **cutting and killing** them were considered heinous sin and criminal had to pay heavy compensation and undergo rigorous punishment.
- ✚ That's why **Stephen Schafer** calls it '**Golden Age**' of victims.

Decline

Subsequently with the advent of the **industrial revolution, renaissance and French revolution**, a sea change was noticed in every walk of lives. This gave birth to '**Adversarial System**'. This was the period, in Stephen Scafer's terminology, of **decline in victim's role in 'criminal justice system'**.

Now the **criminal law became offender oriented** and the suffering of victim, often immeasurable, were entirely overlooked in misplaced sympathy for the criminal. **The victim became the forgotten men of our criminal justice system.**

¹ <https://egyankosh.ac.in/bitstream/123456789/38793/1/Unit-11.pdf>

It was in 20th century, after the close of the Second World War **some criminologist took upon themselves, the task of understanding the importance of studying** the criminal-victim relationship, in order to obtain a better understanding of crime, its origin and implication. Because of their efforts, **U.N passed a charter** for victim's right and on similar line **the European convention** on the compensation of victims of violent crime. Therefore, many states of Europe and America enacted their legislations for victims' compensation in criminal justice system.

VICTIMOLOGY IN INDIA

¹The concept of victimology in India dates back to ancient times. The victim's authority was so strong during the Rigvedic era that he had the power to punish the offender, but the state gradually seized control of this authority. Criminals are required to pay a fine to the monarch, and victims of crime are compensated for their damages. The varna system was developed during the Vedic period and included a crucial aspect of justice administration and punishments. Here the basic principle was compensation rather than punishment. Under penal law, the criminal justice system directly involved both the accused and the victims. Concerns about the criminal-victim relationship were disregarded for years, and they are still disregarded today. The victim is given the lowest priority in the administration of the criminal justice system

During the colonial period, victimology in India evolved significantly due to the impact of British laws and their administration. The British introduced the concept of a victim-oriented justice system, which emphasized the needs and rights of the victim. The Indian Penal Code of 1860, which was based on the British legal system, included provisions for compensation and restitution for victims of crime.

After India gained independence in 1947, victimology in India began to evolve independently. The Constitution of India enshrines the rights of victims and guarantees their protection under the law. Article 21 of the Indian Constitution safeguards a person's life and personal liberty, which also includes protection from violence and abuse

WHO IS A VICTIM

'Victim' means natural person who, individually or collectively, have **suffered harm** including physical or mental injury, emotional suffering or economic loss or **violations of fundamental rights** in relation to victimizations identified under scope.

INTERVIEW QUESTIONS AND ANALYSIS OF RESULTS

Psychologist Expert- Dr. Laveena Singh

Q.1-Based on your experience, what are the most common psychological effects that victims experience immediately after the incident, and how do these effects evolve over time?

Psychological effects means effect on thought, mood and behaviour. Usually victims feel guilt, shame, fear, numbness, helplessness. Thought become rigid for example i am worthless, i am inadequate, people will negatively evaluate me.....Victims usually behave maladaptive like started socially withdrawal, loss of daily routine work. Over the period of time it may convert into PTSD, depression, Anxiety, dissociation etc.

Q.2- In your view, how does social stigma or community pressure influence a victim's willingness to report the incident or pursue legal remedies?

It influences a lot. Because of social stigma, family members or peer or community members implicitly or explicitly expect that it would be better if victim remain silent otherwise how society will think about them. Often it has been seen that victim didn't report on time, don't trust in system, feel that if they will report then might loose job and or status.

Q.3-What aspects of the current investigative and judicial process do you find most psychologically taxing for victims, and how might these procedures be made more sensitive?

ANS.3- It has been observed that at time of reporting crime/incident to police victim feel that trauma again. They feel emotionally exhausted and may trigger the trauma again due to repetitive narration. They fear about lack of privacy and confidentiality. As per my opinion initial enquiry is most negatively impacts the victim.

¹ <https://ijirl.com/wp-content/uploads/2024/02/CONCEPT-OF-VICTIMOLOGY-IN-INDIAN-CRIMINAL-JUSTICE-ADMINISTRATION.pdf>

Q.4- How does the victim's psychological condition, such as trauma or anxiety, affect their participation in the justice process and, in turn, the overall delivery of justice?

ANS.4- Due to PTSD or severe anxiety victim may feel memory loss, may not recall event properly. Some victims become numb some shows hyperarousal. All such actions including others, affect the justice because of delay or change in details. Witness testimony may perceive weak by court.

Psychologist Expert- Miss Arkita Singh

Q.1- Based on your experience, what are the most common psychological effects that victims experience immediately after the incident, and how do these effects evolve over time?

ANS. 1- The first which most victims go through is PTSD and it can worsen by time converting into Complex PTSD along with this severe social anxiety, negative self image and Depression.

Q.2- In your view, how does social stigma or community pressure influence a victim's willingness to report the incident or pursue legal remedies?

ANS.2- I believe the social stigma affects the confidence of the victim where they fail to properly report which leads to delay in legal remedies. Also a victim develops immense fear in reporting the incident and it can affect the victims personality and mentality which can lead them to believe that they might deserved what happened to them.

Q.3-What aspects of the current investigative and judicial process do you find most psychologically taxing for victims, and how might these procedures be made more sensitive?

ANS.3-The police shall be trained for speaking to the victims more properly their behavior needs to be modulated for making sure the investigation is headed in the right direction, in India during the judicial process the victims shall receive counselling or aids to make sure the memory is not affected due to high psychological impacts from the crime, social anxiety and fear.

Adv. UMANG NALWAYA (High Court Advocate, Indore)

Q.1- Based on your experience, what are the most common psychological effects that victims experience immediately after the incident, and how do these effects evolve over time?

ANS.1- First of all, it is important to understand that the word victim is a very broad term. The effects of any incident differ from case to case. They depend on what type of incident has happened, the age and background of the victim, and also the kind of support the victim gets from family and society.

From my own experience, I have personally dealt with three different types of situations which show how the psychological impact is never the same.

In the first situation, I am currently handling a case of a *14-year-old girl who faced sexual abuse*. The matter only came to light when it was discovered that she was already four months pregnant. At first, she was not even able to recall or properly understand what had happened with her. This shows how, in the case of a child, the immediate effects are usually confusion, fear, silence, and shock. With time, such victims may also suffer from long-term effects like trauma, stigma, and withdrawal from society unless proper support and counseling is given.

In the second situation, I have seen *family of a child who died in a road accident*. The immediate reaction of the family was complete heartbreak and disbelief. Later, when they realized that the accused would get only a light punishment and that the compensation money was just two or three lakh rupees, their grief turned into bitterness and a feeling that justice had not been served.

The third type is from a *cybercrime matter* which I have also handled personally. Here, my client ran a small bakery. A customer paid him ₹500 through UPI, but later it was found that the customer might have received money from some fraudulent source. Instead of blocking only the suspicious ₹500, the cyber department froze my client's entire business account which had around ₹2.50 lakhs. For months, he could not use his own hard-earned money, and his daily business was badly affected. The immediate effect was shock and helplessness, and later it became frustration, anxiety, and even fear of using online transactions again—despite the fact that he had done absolutely nothing wrong.

Q.2- In your view, how does social stigma or community pressure influence a victim's willingness to report the incident or pursue legal remedies?

From my own experience, I have seen this in different cases:

- In the case of a 14-year-old girl who was abused, her family did not come forward at first. The matter only came out when she was already four months pregnant. The reason was simple—fear of society. Families in such cases worry about their honour, the girl's future, and what people will say. Because of this, many cases of abuse never even reach the police.
- In the case of the family who lost their child in a road accident, at first they were broken and shocked. But later, when they saw that the accused will only get a small punishment and the compensation was very little, they felt helpless. Relatives and neighbours also told them that fighting a case is a waste of time and energy. This kind of pressure weakens the family's will to fight further.
- In the case of a bakery owner whose account was frozen in a cybercrime matter, people around him started doubting him, thinking he must have done something wrong. Even though he was completely innocent, this social doubt and loss of trust made him more upset than the actual financial loss. He even became afraid of using online transactions again.

We also see in cases where people are wrongly jailed for years that even after they are released, society doesn't accept them easily. Neighbours and relatives keep looking at them with doubt. This social rejection hurts them more than anything else.

So, from all these examples, one thing is very clear:

- Victims hesitate to report cases in the beginning because of fear of society.
- Even after reporting, many drop the case or lose faith because of community pressure.

If society and family stand with the victim, they feel stronger and ready to fight for justice. But when society blames, doubts, or shames them, most victims choose silence instead of justice.

Q.3- What aspects of the current investigative and judicial process do you find most psychologically taxing for victims, and how might these procedures be made more sensitive?

ANS.3- I feel that some parts of our investigative and court process become very heavy and painful for victims.

First, victims are often asked to tell their story again and again – to the police, to doctors, to the magistrate, and then in court. Every time they repeat it, they are forced to relive the trauma, which is very disturbing for them.

Second, in court, the way cross-examination happens can be very harsh. Many times, the defence lawyer tries to attack the victim's character or personal life. This makes the victim feel insulted, and instead of the accused, it seems like the victim is the one being judged.

Third, privacy is not always protected. Details sometimes leak out to media or society. This creates gossip, social stigma, and pressure on the victim and their family, which adds to their suffering.

CONCLUSION

Crime does not just break laws—it breaks people. Behind every case file lies a person carrying fear, pain, and confusion that often remain unseen in our legal system. This study has tried to look beyond the formalities of justice and focus on what victims actually feel and face when they enter the system. The experiences shared by psychologists, lawyers, and victims themselves reveal that emotional wounds such as trauma, anxiety, and shame have a deep impact on how victims respond to the justice process. Many victims hesitate to report crimes because they fear being judged, not believed, or further humiliated. Others lose hope midway, worn out by delays and insensitive treatment.

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LAW AND GOVERNANCE: INTERSECTIONS, CHALLENGES, AND CONTEMPORARY DEVELOPMENTS

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ABSTRACT

Law and governance are fundamental pillars of any organized society. Governance determines how power is exercised, decisions are made, and public resources are managed, while law provides the normative framework that regulates conduct, resolves conflicts, and ensures accountability. In contemporary societies, the relationship between law and governance has become increasingly complex due to globalization, technological advancements, democratic aspirations, and rising demands for transparency and accountability. This research paper examines the conceptual foundations of law and governance, their interrelationship, and the evolving challenges faced by modern governance systems. It analyzes the role of constitutionalism, rule of law, administrative institutions, and judicial oversight in shaping effective governance. The paper also explores emerging issues such as digital governance, decentralization, and good governance standards. It argues that law is not merely an instrument of governance but its ethical and institutional backbone. Effective governance can only be achieved when legal frameworks are responsive, inclusive, and capable of addressing contemporary social realities.

Keywords: Law, Governance, Rule of Law, Constitutionalism, Democracy, Accountability, Good Governance, Legal Institutions

1. INTRODUCTION

The concepts of law and governance are deeply interconnected and mutually reinforcing. Governance refers to the process through which authority is exercised in the management of a country's economic, political, and social affairs. Law, on the other hand, provides the normative standards and institutional mechanisms that guide and regulate governance. In the absence of law, governance becomes arbitrary; without effective governance, law remains ineffective.

In modern democratic societies, governance is no longer confined to the actions of the state alone. It involves multiple stakeholders including the executive, legislature, judiciary, civil society, private sector, and international institutions. This expanded understanding of governance has increased the importance of law as a stabilizing and legitimizing force. The study of law and governance is therefore essential to understanding how societies function, develop, and respond to change.

2. CONCEPTUAL UNDERSTANDING OF LAW

Law may be defined as a system of rules recognized and enforced by a political authority to regulate human conduct. It serves several essential functions: maintaining order, resolving disputes, protecting rights, and promoting justice. Jurists have approached the concept of law from different perspectives—natural law theory emphasizes morality, positivism stresses authority and rules, while sociological jurisprudence views law as a social institution shaped by societal needs.

In the context of governance, law performs a dual role. First, it confers legitimacy on governing institutions by defining their powers and limitations. Second, it acts as a mechanism of control by holding authorities accountable for their actions. Thus, law is both enabling and restraining in nature.

3. MEANING AND SCOPE OF GOVERNANCE

Governance refers to the processes and institutions through which decisions are made and implemented. Unlike the traditional concept of "government," governance includes formal and informal mechanisms, public and private actors, and national as well as international dimensions.

The World Bank defines governance as the manner in which power is exercised in the management of a country's resources for development¹. This definition highlights three core aspects: authority, accountability, and effectiveness. Good governance emphasizes transparency, participation, responsiveness, and adherence to the rule of law.

¹ World Bank, *Governance and Development*, World Bank Publications.

4. RELATIONSHIP BETWEEN LAW AND GOVERNANCE

The relationship between law and governance is symbiotic. Governance requires law for legitimacy and structure, while law requires governance for implementation and enforcement. This relationship can be examined through the following dimensions:

4.1 Law as the Foundation of Governance

Legal frameworks establish the structure of governance by defining the roles and responsibilities of institutions. Constitutions, statutes, and regulations provide the legal basis for policymaking, administration, and adjudication.

4.2 Governance as the Executor of Law

Governance ensures that laws are translated into practice. Administrative agencies, regulatory bodies, and enforcement mechanisms are essential for implementing legal norms. Weak governance often results in ineffective enforcement of laws.

5. RULE OF LAW AS THE CORE OF GOVERNANCE

The rule of law is universally recognized as the cornerstone of democratic governance. It implies that all individuals and institutions, including the state, are subject to law. The essential elements of the rule of law include legal certainty, equality before the law, access to justice, and accountability of authorities.

In governance discourse, the rule of law prevents arbitrariness and abuse of power. It ensures that governance is conducted within established legal boundaries and that citizens have remedies against unlawful actions of the state¹.

6. CONSTITUTIONALISM AND DEMOCRATIC GOVERNANCE

Constitutionalism refers to the principle that governmental power must be exercised in accordance with a constitution that limits authority and protects fundamental rights. Constitutions serve as the supreme legal framework for governance by:

- Defining the structure of the state
- Separating powers among institutions
- Safeguarding fundamental rights

In democratic systems, constitutional governance ensures popular sovereignty while preventing concentration of power. Judicial review plays a crucial role in enforcing constitutional limits and maintaining balance among institutions.

7. INSTITUTIONS OF GOVERNANCE AND LEGAL ACCOUNTABILITY**7.1 Legislature**

The legislature enacts laws, oversees executive action, and represents the will of the people. Legal accountability mechanisms such as parliamentary committees and legislative scrutiny strengthen governance.

7.2 Executive

The executive implements laws and formulates public policy. Administrative law regulates executive discretion, ensuring fairness, reasonableness, and non-arbitrariness.

7.3 Judiciary

The judiciary acts as the guardian of law and governance. Through judicial review, courts ensure that governance conforms to constitutional and legal standards².

8. GOOD GOVERNANCE AND LEGAL FRAMEWORKS

Good governance is characterized by transparency, accountability, participation, efficiency, and equity. Law plays a central role in institutionalizing these principles through:

- Right to Information laws
- Anti-corruption statutes
- Administrative justice mechanisms

¹ Dicey, A.V., *Introduction to the Study of the Law of the Constitution*.

² Wade & Forsyth, *Administrative Law*.

Legal reforms aimed at good governance enhance public trust and improve policy outcomes.

9. CHALLENGES TO LAW AND GOVERNANCE

9.1 Corruption and Abuse of Power

Corruption undermines governance and erodes the rule of law. Legal mechanisms such as anti-corruption agencies and independent prosecution are essential but often face implementation challenges.

9.2 Weak Enforcement

Even well-drafted laws fail in the absence of effective governance. Lack of institutional capacity and political will weakens enforcement.

9.3 Globalization

Global governance structures challenge traditional legal sovereignty. International trade, human rights norms, and transnational regulation require coordination between domestic and international legal systems¹.

10. DIGITAL GOVERNANCE AND LEGAL TRANSFORMATION

The rise of digital governance has transformed public administration, service delivery, and decision-making. E-governance initiatives promote efficiency and transparency but raise legal concerns related to data protection, cybersecurity, and digital exclusion.

Legal frameworks must adapt to regulate digital governance while protecting individual rights and ensuring inclusivity.

11. DECENTRALIZATION AND PARTICIPATORY GOVERNANCE

Decentralization empowers local institutions and enhances citizen participation. Legal frameworks governing local self-government promote accountability and responsiveness. Participatory governance strengthens democracy by involving citizens in decision-making processes.

12. LAW, GOVERNANCE, AND SUSTAINABLE DEVELOPMENT

Effective governance supported by strong legal institutions is essential for sustainable development. Laws regulating environmental protection, social welfare, and economic justice ensure that development is inclusive and equitable.

The integration of law and governance is critical to achieving development goals while preserving democratic values.

13. CONCLUSION

Law and governance are inseparable elements of a functioning society. Law provides legitimacy, structure, and accountability to governance, while governance ensures the realization of legal norms. In contemporary societies facing rapid social, economic, and technological changes, the relationship between law and governance must be continuously strengthened.

Effective governance requires legal frameworks that are responsive, transparent, and inclusive. At the same time, law must evolve to address emerging challenges such as digital transformation, globalization, and social inequality. A balanced and dynamic interaction between law and governance is essential for democracy, justice, and sustainable development.

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A STUDY ON WORK-LIFE BALANCE AND WELL-BEING OF WOMEN IN THE GIG ECONOMY

¹Mrs. Anita Dilip Chavan and ²Dr. Mrs. Anita Manna¹Research Scholar, K. M. Agrawal College, Kalyan²Research Guide, Principal & Ph. D. Guide, K. M. Agrawal College, Kalyan**ABSTRACT**

The gig economy has transformed contemporary work structures by promoting flexibility, autonomy, and digitally mediated employment opportunities. While gig work is often perceived as enabling better work–life integration, its implications for the work-life balance and well-being of women workers remain insufficiently explored. This study examines the lived experiences of women engaged in diverse gig roles and analyses the challenges they encounter in managing professional responsibilities alongside household and caregiving duties. The study further explores how irregular work schedules, income insecurity, platform dependence, and blurred work–home boundaries influence their physical, psychological, and social well-being. Findings highlight a complex interplay between flexibility and precarity, wherein autonomy in work timing coexists with heightened workload, financial instability, and emotional strain. The study underscores the need for gender-sensitive policy interventions, social protection measures, and supportive platform practices to promote sustainable work–life balance and enhance the overall well-being of women in the gig economy. give three key words for the above abstract.

Keywords: Gig Economy, Work–Life Balance, Women’s Well-being

INTRODUCTION

The rapid expansion of the gig economy has significantly reshaped contemporary labour markets by promoting flexible, task-based, and digitally mediated work arrangements. Unlike traditional forms of employment, gig work is characterised by short-term contracts, platform-based engagements, and autonomy in work selection and scheduling. This emerging work structure is often viewed as an opportunity for individuals—particularly women—to balance employment with household and caregiving responsibilities. However, the lived realities of women participating in the gig economy reveal a more complex interaction between flexibility, precarity, and personal well-being.

Work–life balance plays a crucial role in understanding this experience, as women continue to shoulder a disproportionate share of unpaid domestic and caregiving work alongside paid employment. While gig work may offer temporal flexibility, irregular income patterns, uncertain work availability, and blurred boundaries between work and home can disrupt the ability to maintain a healthy work–life balance. These challenges directly influence women’s well-being, encompassing their physical health, emotional stability, psychological resilience, social relationships, and overall quality of life.

In this context, examining the work–life balance and well-being of women in the gig economy becomes essential for understanding how gender roles, platform structures, and labour conditions intersect. This study seeks to explore the experiences of women gig workers, highlighting the dual realities of empowerment and vulnerability, and emphasising the need for gender-responsive policies and supportive work frameworks that foster sustainable participation and holistic well-being.

OBJECTIVES OF THE STUDY

1. To assess the current state of work-life balance among women gig workers and identify key challenges.
2. To examine the impact of the gig economy on the mental and physical well-being of women gig workers.
3. To evaluate the effectiveness of existing support systems and identify opportunities for improvement to promote work-life balance and well-being.

RESEARCH METHODOLOGY

For this study, the relevant information is collected from secondary data such as news, journals, published papers, websites etc. Primary Data is collected through a questionnaire from 40 Women Employees.

REVIEW OF LITERATURE

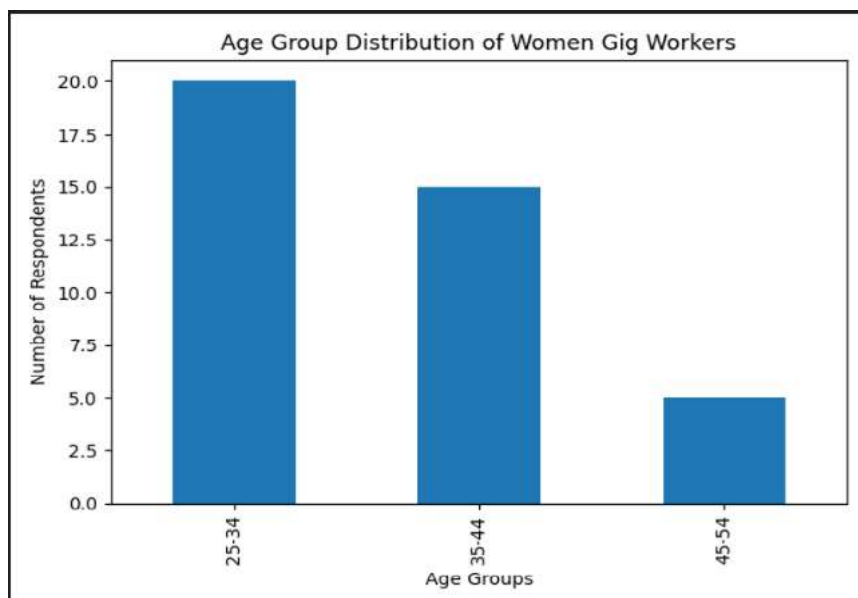
1. **Janardhan C et al. (2025):** This study explores the challenges faced by women gig workers, including algorithmic discrimination, occupational segregation, and wage gaps.
2. **Lekchiri S & Eversole B A W (2020):** This research examines the perceived work-life balance of professional Moroccan women, highlighting the importance of flexible work arrangements.

3. **Anastasopoulou A et al. (2023):** This study finds that work-life balance mediates the relationship between recovery and quality of life among women employees.
4. **Jabeen F et al. (2021):** This research reveals that workplace bullying negatively impacts psychological well-being among female nurses.
5. **Mohanty A & Jena L K (2016):** This study explores work-life balance challenges faced by Indian employees, highlighting socio-cultural implications and strategies.
6. **Noronha S D & Aithal P S (2020):** This research examines work-life balance issues encountered by working women in higher education sectors.
7. **Akanji B et al. (2020):** This study investigates the experiences of work-life balance, stress, and coping lifestyles among female professionals in developing countries.

DATA COLLECTION AND ANALYSIS

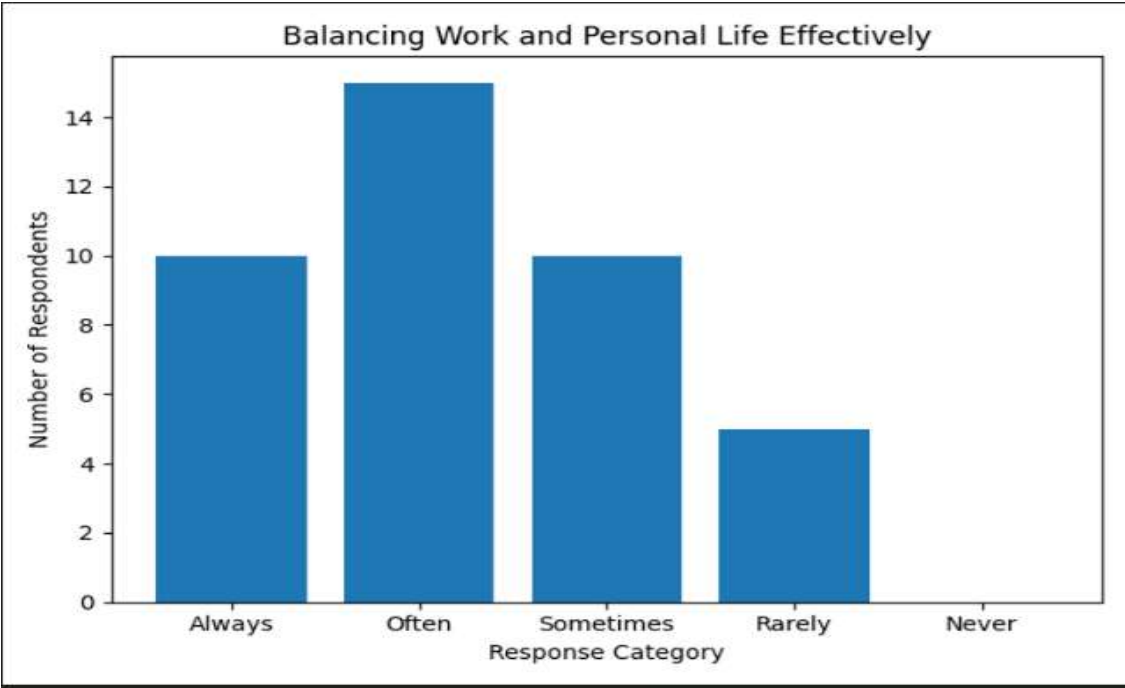
Demographic

Category	Count
Age 25-34	20
Age 35-44	15
Age 45-54	5
Married	25
Unmarried	15
Dependents 1-2	15
Dependents 3-4	15
Dependents 5 and more	5
Freelance writing	10
Virtual assistance	10
Online Tutoring	10
20-30 hours	15
20-30 hours	20
40+ hours	5



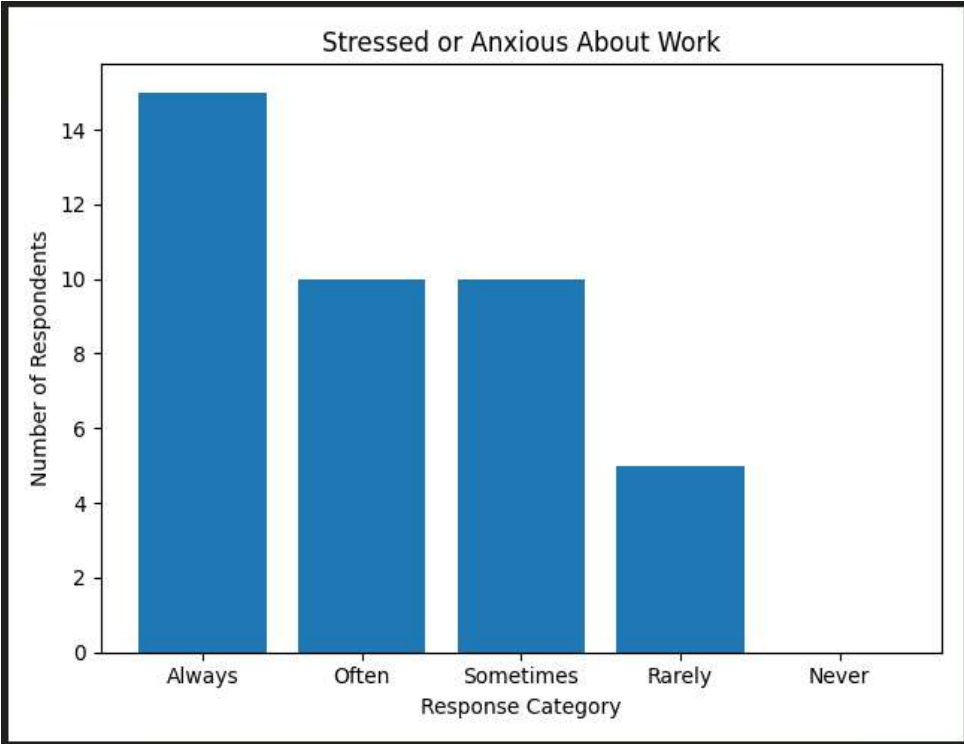
Work Life Balance

Questions	Always	Often	Sometimes	Rarely	Never
Balancing work and personal life effectively	10	15	10	5	0
Conflicts between work and Family responsibilities	5	10	15	10	0
Available for family and personal activity	5	10	15	10	0
Able to take breaks and prioritize self-care	0	5	10	15	10



Well-being

Questions	Always	Often	Sometimes	Rarely	Never
Stress or anxious about work	10	10	10	5	0
Happy and fulfilled with work	15	15	10	5	0
Overall physical health good/excellent	20				
Overall mental health good/excellent	15				



FINDINGS

Hours Worked per Week

- 37.5% of respondents (15/40) work 20-30 hours per week.
- 50% of respondents (20/40) work 30-40 hours per week.
- 12.5% of respondents (5/40) work 40+ hours per week.

Work-Life Balance and Wel being

- 62.5% of respondents (25/40) often or sometimes feel like they're balancing work and personal life effectively.
- 62.5% of respondents (25/40) often or sometimes experience conflicts between work and family responsibilities.
- 75% of respondents (30/40) often or sometimes feel available for family and personal activities.
- 62.5% of respondents (25/40) rarely or never feel able to take breaks and prioritize self-care.

RECOMMENDATIONS

Based on the findings, the following recommendations are made:

1. **Gig platforms and employers should provide more support and resources:** This could include flexible work arrangements, mental health resources, and training on work-life balance.
2. **Increase awareness of available resources:** Gig platforms and employers should communicate available resources and benefits to women gig workers.
3. **Implement policies to reduce work-life conflict:** This could include setting boundaries around work hours, providing paid time off, and encouraging self-care.
4. **Provide training on work-life balance:** Gig platforms and employers should offer training and workshops on managing work-life balance, stress management, and self-care.

CONCLUSION

The study highlights the challenges faced by women in the gig economy in maintaining work-life balance and accessing support and resources. The findings suggest that gig platforms and employers have a critical role to play in supporting women gig workers and promoting work-life balance. By implementing policies and providing resources to support work-life balance, gig platforms and employers can improve the well-being and productivity of women gig workers. Women in the gig economy need more support and resources to achieve work-life balance and improve their well-being.

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THE INCLUSION ILLUSION: WHY A "SCHOOL FOR ALL" IS STILL A DISTANT DREAM?

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ABSTRACT

In a world that is designed for the 'normal' people with disabilities are often sidelined. This is especially true in the case of children with special needs (CWSN). They are often denied the chance to have formal education and access to other facilities like the 'normal' children. Inclusive education is the process of bringing students with disabilities to regular class rooms. An inclusive classroom addresses the specific needs and abilities of every student. Right to Education Act, 2009 puts a special emphasis on inclusive education. Sarva Shiksha Abhiyan (SSA) and Rashtriya Madhyamik Shiksha Abhiyaan (RMSA) act as the foundation of inclusive education that asserts a zero-rejection policy. Parents on their own, can opt to home school the children, but schools cannot reject a student based on disability. This paper examines the reality of inclusive education in India and how far we have successfully implemented this ideal goal.

Keywords: Inclusive Education, Right to Education, Children with Special Needs

INTRODUCTION

The world we live is designed for the normal or the average. People falling beyond this so-called normal range often struggle to find their space in this world. Disability is defined as “any long-term physical, mental, intellectual or sensory impairment which, in interaction with various barriers, may hinder the full and effective participation of disabled people in society on an equal basis with others” (UNCRPD). As per the WHO statistics approximately 1.3. billion people suffer from some form of disability, that comes around 16% of the world population (WHO, 2023). When it comes to India, based on the report published by National Statistical Office 2021 as per census 2011, there are 26.8 million persons with disabilities in India of which 14.9 million are males and 11.9 million are females, making up 2.21 per cent of the total population. The report further says that 69% of this disabled population lives in rural India and the remaining 31% in urban India.

Rights of Persons with Disability Act, 2016 lists down 21 disabilities such as sensory disabilities (Blindness, Low Vision, Hearing Impairment (Deaf and Hard of Hearing), Speech and Language Disability), physical disabilities such as (Locomotor Disability, Dwarfism, Leprosy-Cured Persons, Muscular Dystrophy, Acid Attack Victims) intellectual and developmental disabilities such as (Intellectual Disability (formerly Mental Retardation), Autism Spectrum Disorder (ASD), Cerebral Palsy, Specific Learning Disabilities, Mental Illness) Blood disorders and chronic conditions such as Thalassemia, Haemophilia, Sickle Cell Disease, Multiple Sclerosis, Chronic Neurological Conditions) and other categories such as Parkinson's disease and multiple disabilities.

Children with Disabilities in India

As per UNICEF 1 in 10 children suffer from some form of disability. According to 2011 census, 1.7% of Indian children suffered from some form of disability. The number will vary greatly now due to the inclusion of 21 disabilities from 7 in the Rights of Persons with Disabilities Act of 2016 at the time of 2011 census. 2027 census will be able to provide with the latest statistics. With the modern diagnosis, most of the developmental delays and disabilities are caught on early. The first response of parents upon knowing the delay/disability of the child is denial (ho & Keily, 2003). Adequate social support at this stage helps in the prognosis of the child. Government of India has introduced various welfare measures to address the needs of the disabled population especially children. The Anganwadi protocol rolled out in 2023 gives a training framework for the Anganwadi staff that will enable them to screen the children for early disability signs, inclusion of children with special needs and their families and also referral support through RBSK (Rashtriya Bal Swasthya Karyakram) teams. Also, with the introduction of Divyang Protocol, district administration will get special guidance to monitor the educational and nutritional needs of Children with Special needs. Poshan tracker the ICT based governance – the last mile tracking of nutrition service delivery under Saksham Anganwadi is used as a tracker for developmental milestone delays.

Through the Years: Evolution of Inclusive Education through the years

Special Education, Inclusive Education, Integrated Education and Mainstreaming are four terms often used in the context of the education of Children with special needs.

Special education is a system of providing education to disabled children which is not a part of the mainstream education. Special education emphasizes that children with special needs cannot be accommodated in the

mainstream due to their varied needs. Integrated education expects children with disabilities to fit into the existing system of education. Inclusive education aims to bring changes to the system to accommodate the needs of the children. It is more holistic and student centered than the integrated education system. The salient features of inclusive education are diversity and equality, Accessible Infrastructure and Resources, Individualized Support, Teacher Training and Professional Development, Collaboration and Community Engagement, Curricular Adaptations, Awareness and Sensitization (Kumari, 2024). Inclusive education makes an attempt to educate children with special needs keeping diversity as the corner stone (Jardinez & Natividad, 2024)

Integrated Education for Disabled Children (IEDC), Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA), National Plan of Action for Inclusion in Education for Children and Youth with Disabilities, 2005, National Institute of Open Schooling (NIOS) & IGNOU are some of the schemes available in the country for the education of special needs population (Bhargava, 2018).

India has a long history of inclusive education. Article 21 A, of the Indian Constitution makes education free and compulsory for children under the age of 14 years with the amendment made in 2002. The Kothari Commission, 1964 stated that “education of the handicapped children should be an inseparable part of the education system”. National Policy on Education, 1986, encourage the integration of students with mild disabilities into the mainstream by providing some basic guidelines for inclusive education. Integrated Education of Disabled Children (IEDC) 1974, launched by the Union Ministry of Welfare sponsored the integrated education of disabled children at a central level. This scheme emphasised on equal educational opportunities to disabled children, their retention and also on the mainstreaming of children after attaining the necessary skills required for regular schooling. The 1992 Program of Action also emphasized on mainstreaming children with disabilities after providing them with special training in resource rooms or special schools. The enactment of the Rehabilitation Council of India Act in 1992 established a monitoring mechanism for the training of 16 professional categories required in the fields of special education and rehabilitation. The training for the resource teachers working with children with special needs should be given by RCI. Persons with disabilities act passed in 1995 promotes the integration of students with disabilities in normal schools. Under the DPEP (District Primary Education Program) launched in 1994, promoted inclusive education through the following strategies such as early disability detection, teacher training, provision for resources and appliances.

Sarva Shiksha Abhiyan a project launched by the Government of India has exclusive provisions for inclusive Education to all children with special needs for achieving its target of universalization of elementary education in the age group of 6-14 years. The primary aim of Sarva Shiksha Abhiyan is to provide accessible and good quality primary education (Devkumar, 2017). Currently along with SSA, the government of India also supports the Rashtriya Madhyamik Shiksha Abhiyan (RMSA). The RPWD Act, 2016 provides a framework for inclusive education such as children with disabilities should be admitted to schools without discrimination and should be provided equal opportunities for sports and recreation activities, institutions should provide accessible facilities, accommodation, individualized support to achieve the potential. Though RPWD Act, doesn't specify any policy on inclusive education, it provides a strong foundational frame work for the former defining it as “a system of education wherein students with and without disability learn together and the system of teaching and learning is suitably adapted to meet the learning needs of different types of students with disabilities” The National Education Policy 2020 also takes a similar stance to the RPWD act in the matter of inclusive education. (UNICEF) Through the years, it can be observed that there is a shift in the policies from integrated education to inclusive education and main streaming.

Problems faced in the implementation of Inclusive Education

Even when there are policies in place with regard to inclusive education, the goal is not completely achieved. There is a steady rate of attrition in the number of students with disabilities from primary to secondary levels (National Institute of Educational Planning and Administration, Flash Statistics, 2018). There are multiple reasons for this.

1) Lack of Awareness

Though awareness has steadily improved over the years, even now people who cannot differentiate between autism and Down's syndrome can be found around us. So, people in general try to put all types of disabilities into intellectual disabilities or such broader groups without understanding the abilities and difficulties of specific disability groups.

2) Lack of Training

Teachers with a general B.Ed. are not equipped to handle the diverse needs of the students. Along with training, teachers should also be accepting and sensitive to the needs of the students.

3) Rigid Curriculum

The curriculum is quite rigid forcing the students with difficulties to drop out of the system.

4) Lack of Facilities

Schools are not equipped with adequate facilities to cater to the needs of children with disabilities.

5) Lack of Support from the other stakeholders

The attitudes of teachers, other students, parents of neurotypical students, school management can all influence the successful implementation of inclusive education. Often, they carry negative attitudes towards inclusive education.

6) Financial difficulties

There is a lot of expenses involved in providing facilities/resources to Children with special needs. Schools have financial constraints in spending funds or are reluctant to spend funds in this regard.

7) Implementation in the private schools

Several parents face difficulties in getting admission in the private schools for their wards once they make disclosure of the disability. Private schools deny admission to the students with disabilities citing various reasons other than that of disability.

CONCLUSION

Inclusive education can pave the foundation for a more equitable society. It helps in sensitizing the students towards the needs of people with disabilities and enhance the academic achievements and independence of students with special needs. Though there are policies and frameworks available, often there is a problem with the implementation. It is the responsibility of the society to help the children with special needs to reach their optimum potential. Collective efforts from all the stake holders are required to bridge the gap between the policies and reality.

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MSME FAILURES IN INDIA: EMERGING TRENDS AND SYSTEMATIC APPROACH

¹Joyce James Jacob and ^{2*}Dr Sayyad Vakeel¹Assistant Professor, Vidya Bhavan College of Commerce, Pune²Assistant Professor, Poona College, Pune**ABSTRACT**

Twenty first century paves way for blooming business to sustain the aggressive market competition. Business failures are inevitable in nature, yet capturing the insights from failures and eliminating the causes of failure still remains a major obstacle in emerging business world. In this paper we present an overview of the literature on business failure and attempt to clarify some key issues on the subject. One of the key technique to revive a failing business is to identify the root causes of the failing business by conduction a thorough research. This involves examining the financial statements, market trends, customer feedback and any loopholes in the internal operations to know the areas of opportunities and improvement. By identifying these areas directors and executives can chalk out the best strategic plan to to reevaluate the business model. Well designed and modified model adapts to the changing environment and can position itself for future success. However seeking expert guide can be of great help to sustain the changing market conditions. Implementing cost cutting measures and enhancing operational performances can help revive a failing startup. This may include reworking of contracts and negotiating with the clients, aligning the processes, elimination unnecessary expenses and an attempt to optimize the resource allocation to maximize the profitability. With determination, strategic planning and constant perseverance, a failing business can emerge as one of the stronger and more resilient than ever before.

Keywords:

- Small Business Failure
- Startups in India
- Business Sustainability
- Market Competition
- Financial Management
- Cash Flow Management
- Market Research
- Product Differentiation
- Scalability
- Strategic Planning
- Business Revival Strategies
- Economic Downturn
- Innovation and Diversification
- Branding and Marketing
- Regulatory Compliance

INTRODUCTION

In recent times, many businesses have ceased to operate, often attributed to pandemic, weak financial position, mismanagement and intense market competition. Incidences on business failures are not uncommon. However, it is extremely important to interpret the causes of such failures. This issue of failure is particularly important in this century as it can pave a way for even more financially strong and sustainable business which in turn can reduce the percentage of failures.

These high-profile bankruptcies exemplify the growing incidences of business failures while it simultaneously emphasizes the importances of policy makers and emerging entrepreneurs to explore and learn from business failures. Business failures must be viewed as an opportunity to avoid past mistakes and strategically implement new strategies to revive a failing business model. Business failure may entail both structures and unstructured

all which culminate in decline or eventual demise. Organization on the verge of collapse often show up for features such as decline in both financial as well as human resource.

OBJECTIVES OF THE STUDY

1. to analyze the factors responsible for major business failures in India
2. to assess the significance of the scalability and operational efficiency in sustaining the businesses in India.
3. To know how strategic planning and decision-making influence business revival.
4. To suggest a systematic framework for reducing the impact of business failure.

LITERATURE REVIEW

Business failure is a comprehensive approach resulting from internal weakness and external pressures. MSMEs are particularly more prone to failures due to limited access to resources. In India cashflow constraints, compliance procedures and scalability challenges significantly increase failure risk. Understanding these complexities is a major requirement in framing effective revival techniques.

RESEARCH METHODOLOGY

1. Research Design

The study adopts a **descriptive and analytical research design** to determine the causes of business failure among small businesses and startups in India. The research combines both **qualitative and quantitative approaches** to gain a comprehensive understanding of internal and external factors influencing business failure and sustainability.

2. Nature of the Study

The study is **empirical in nature**, supported by secondary data and limited primary insights. It focuses on identifying patterns, trends, and relationships between financial, managerial, operational, and environmental variables affecting business performance.

3. Sources of Data

Secondary data are collected from:

- Research journals, books, and conference proceedings
- Government publications such as MSME Annual Reports, RBI and SIDBI reports
- Newspaper articles and business magazines (Economic Times, Business Standard)
- Online databases and official websites related to startups and MSMEs

4. Sample Design

The study uses convenience and purposive sampling techniques. The sample consists of:

- Small business owners and startup founders
- Enterprises operating in manufacturing, service, and trading sectors

The sample size may vary depending on accessibility and response rate.

6. Period of the Study

The study covers a period of **5–10 years**, focusing on recent trends in business failures and revival strategies in India.

7. Scope of the Study

The study is confined to small businesses and startups in India and examines financial, market, operational, and regulatory factors influencing business failure.

8. Limitations of the Study

- The study relies partially on secondary data, which may have inherent limitations.
- Findings may not be generalizable to all sectors or regions.
- Time and accessibility constraints may affect sample size.

Reasons for failed business

There can be various reasons why a startup may fail: some common reasons include.

Lack of Market Demand:

The product or service the small and tiny business offer may not have a strong demand in the market, which could lead to low sales. These businesses ought to conduct a thorough market research about the product or service they intend to offer. Insufficient market

research often leads to lack of awareness about the competition. This lack of knowledge can lead to targeting the wrong audience, inappropriate marketing strategies and an inability to implement product differentiation. One of the major challenges in conducting market research is ensuring that the collected data is both accurate and reliable. The small and tiny business units lose a lot of opportunities due to lack of clarity and unidentified objectives. A significant risk in conducting a market research is facing a biased opinion, where the researchers consciously or unconsciously influence the data to support predetermined notions. This manipulation of data may have significant impact on the decisions related to business model.

Insufficient funding:

Capital is the lifeline of business. This situation arises when a business does not possess enough financial resources in order to meet the goals. This could result in delayed execution of projects and also have a significant impact on the customer satisfaction. Timely designing of products and services to make it reach the customer as per their needs is the ultimate objective of small and tiny businesses. Businesses are required to know various financial assistance which can truly aid in times of crisis. There are countless programs and assistance designed specifically to assist small businesses to thrive. Small businesses usually have restricted budget, limited access to expertise making it strenuous to handle complex tasks. Access to business networks can help navigate better business opportunities like crowd funding, partnerships and pave a way to new customers, suppliers, investors and mentors.

Lack of scalability:

A lot of small businesses struggle their way down to ensure scalability in their operation and adapt to growth due to operational challenges. Scalability refers to the ability of a business to perform best under an increased amount of work pressure. A business that scales well will be able to withstand the market challenges and meet the increasing demand. Basically it just means balance out between market challenges and market demand. Scalable businesses have an expert group of leaders including executives, business analysts, investors and advisors who give strategic guidance for favorable business outcomes. However it becomes difficult for the businesses to have such a panel of experts. A lack of brand enforcement may sometimes cause business to lose sight on their core values decreasing scalability.

Fierce Competition:

Competitive intensity is the extent to which the businesses within the specific industry are able to exert pressure on. It comprises of threats to new entrants, threat of substitutes, bargaining power of buyers and suppliers. If a business is unable to differentiate its product/service from its competitors it is likely to face fierce competition in the market which may pose a major challenge for its survival. Intense competition enhances productivity and improved quality of goods and services. Businesses can satisfy the customer wants and acquire a better stand in the market. Businesses must see fierce competition as one of the aspects which prevents formation of monopolies, and also keeps a strict check on prices.

Competition between rival businesses as it attempts to critically enhance problem solving capabilities in the employees to withstand the intense competition. Most of the businesses often view competition as one of the major threats, but seldom realize that it enables to differentiate the brand set apart from competition by establishing a unique brand identity.

Fierce competition also helps in effectively communicating the brand values to the target audience. The businesses keeping a strict check on competitor's tagline, service or product, unique qualities, target audience, location and marketing are likely to survive the competition and succeed.

Legal or regulatory issues:

Addressing legal and regulatory issues often require careful attention as to thorough understanding of laws and regulations and sometimes the involvement of legal professionals such as lawyers and compliance experts. It is essential for the businesses to be well informed about the various legal changes happening in the business environment.

Noncompliance with laws and regulations can lead to fines, legal battles or even closure of the business. Small and tiny businesses need to be aware about all the legalities about the as well as copyright, patent, trademark. Businesses must seek legal advice before venturing into a particular model.

Economic downturn:

Banks and other financial institutions may tighten lending criteria during an economic downturn making it more challenging for small businesses to acquire the capital they need to operate or grow. Economic downturn can also disrupt the supply chain management which might affect the time of procuring raw material and supplying finished goods to the consumers. Small businesses may not be in a position to fulfill the order requirements which ultimately leads to customer dissatisfaction. Small businesses face extreme cash flow challenges due to decline in payments from clients or a longer credit period. This makes it difficult for small businesses to meet working capital needs and meet financial obligations. Small businesses may face workforce reduction where the workers are forced to quit business due to untimely payment of wages, also some businesses have to voluntarily ask the employees to leave in order to cut down on operational expenses to become profitable in future. Overall economic downturn can be extremely demanding making the small business to adapt and emerge as a proactive startup unit.

Strategies for avoiding business failure

To avoid business failure small businesses in India can implement innovative strategies to revive the business and also attain long term success. Here follows some key strategies.

Cashflow management:

Cashflow management is crucially important for the businesses to be aware of its financial stability and not just that but also whether the businesses will be able to meet its current liability. Businesses might head towards insolvency if they show up for signs like sales remaining static, increased borrowings, increased amount of work in progress. Long term survival is completely dependent on its short term survival and this happens only if the businesses implement some aggressive cash management program to ensure there is enough cash for the business to keep going. Small businesses find it difficult to collect the payments from their clients and therefore can appoint a recovery team who will completely be responsible for timely collection of bills. Businesses must regularly review the financial statements and seek professional advice to stay aligned on the path of success.

Comprehensive market research:

Small businesses must conduct a market survey where they become well informed about the customer needs, buying behavior, preferences, and competitors. This will help them to identify the potential opportunities to be adaptable towards changing industrial trends.

Product differentiation is the key element where small businesses can actually stand out amongst the rest. Pricing policy plays major role in a company's overall growth and development.

Diversification and innovation

Diversification refers to the ability of small businesses to be able to develop some new business ideas to cater the needs of the society. Innovation is creating value to the existing product. Small and tiny businesses must increase their capabilities to diversify and bring significant innovation in the products and services they intend to offer. This will benefit the small businesses and also help them to find a suitable business model with product differentiation and ensure ultimate survival in the most competitive environment. Small business must also design their model in a way that it easily adapts to the innovative technologies.

Effective marketing and branding

Small business must evolve with a strong brand identity and implement effective marketing strategies to reach and engage the targeted customers. This may include leveraging digital marketing channels, social media platform, and customer relationship management tools. Effective branding and marketing are essential for build a strong and recognizable presence in the market. The brand identity should reflect company's values, mission, and unique selling points. This includes company's logo, color scheme, tone of voice and overall visual elements. Small businesses must also ensure that there is consistent communication across all channels including websites, social media, advertising. Consistency helps build transparency and recognition. Effective marketing is something that the businesses must focus on to ensure stability in business.

Build a Strong Network:

Create Partnerships: Establish strategic partnerships and alliances to enhance your business capabilities and market presence.

Engage with Industry Groups: Join industry associations and networks to gain insights, share knowledge, and explore new opportunities.

CONCLUSION

In examining the causes and implications of business failure, several critical insights emerge that underscore the complexity and multifaceted nature of why businesses may falter. The study highlights that failure is rarely attributable to a single factor; rather, it is often the result of a combination of internal and external challenges.

In conclusion, the study reveals that business failure is a complex phenomenon resulting from a combination of strategic, financial, operational, and leadership factors. Addressing these issues requires a holistic approach that encompasses sound strategic planning, rigorous financial management, operational efficiency, strong leadership, and a keen understanding of market dynamics. By recognizing and addressing these factors proactively, businesses can better navigate potential pitfalls and enhance their chances of long-term success and sustainability. The study on business success in India reveals several key factors that contribute to the achievement and sustainability of enterprises in one of the world's most dynamic and diverse markets. The findings underscore that success in India is influenced by a combination of strategic adaptability, market understanding, and leveraging local opportunities already mentioned in the study above

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THE SUBJECTS CONFIDENTIALITY AND DATA PROTECTION: LEGAL IMPLICATIONS OF HEALTH RECORDS IN CLINICAL TRIALS

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ABSTRACT

The protection of sensitive subject data has become a primary concern as digital tools such as health records are being incorporated into the clinical research environment in India. In clinical trials subjects private health data that needs to be protected from abuse and illegal access in order to preserve patient confidence and clinical trial integrity. Informed permission and respect for participant privacy are prerequisites for ethical clinical research. This procedure guarantees that before consenting to participate, participants are well informed of the trial's goals, risks, and advantages, free from coercion.

The Indian Council of Medical Research emphasizes the need of open, voluntary participation in clinical trials and offers national guidelines for informed consent. However, there is an increasing need to bring India's data protection policies into compliance with foreign norms, such the General Data Protection Regulation as digital health records become more prevalent. This study explores how India may improve its regulatory framework to preserve patient privacy and conform to international data security standards by analyzing the ethical and legal issues surrounding informed consent and data protection in clinical research.

Keywords: *Informed Consent, Clinical Trials, Confidentiality, Ethical and Legal Requirement, Medical Treatment.*

INTRODUCTION

Protecting a person's privacy in clinical research with human subjects is a core ethical obligation that goes far beyond simply fulfilling legal requirements. According to both national and international research norms, protecting medical and personal data is crucial to preserving the integrity of the study process. The potential of privacy violations, unauthorized data disclosure, and improper treatment of sensitive information has increased with the adoption of digital systems such as health records in healthcare and research settings. As a result, these issues require careful, continuous attention.

The notion of informed consent is fundamental to research that adheres to ethical standards. This idea is far more than just getting a participant to sign a document; it's a continuous, open dialogue between the participant and the research team. Through this approach, participants receive comprehensive and intelligible information about the study, including its goals, methods, possible risks, and advantages. More significantly, it upholds each participant's freedom to freely and voluntarily decide whether or not to participate without feeling coerced or misinformed. By doing this, it protects each participant's autonomy and dignity when they decide to participate in a study.

Experimental medications, cells and other biological products, surgical and radiological procedures, medical gadgets, health maintenance, behavioral treatments, and care processes are only a few examples of clinical trial interventions.

Clinical trials are defined by the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use and Good Clinical Practice (ICH GCP) as any study conducted on human subjects with the goal of determining the safety and/or efficacy of an investigational product or products, as well as any adverse reactions to the product or products, as well as the absorption, distribution, metabolism, and excretion of the product or products.

There was a study published in an Indian medical journal, and they referred to several medical experimental cases, like the Nazi medical experimental case, the Belmont report, the Nuremberg Code, the ICMR guideline, the India GCP guideline, and the ICM GCP guideline. After the study, all summaries of certain universal ethical requirements for that we have seven ethical principles to regulate clinical trials, which should have value to the society.

1. Scientific value and validity.
2. Social value.
3. Fair subjects or volunteer selection.

4. Favorable benefits and risk ratio.
5. Independent review and accountability.
6. Informed consent and subject rights.

In clinical trials ethical committee and the National Council for Human Resources in Health agencies prescribing standards to conducted the clinical trials to find out new drugs and techniques with proper planning and coordinated development of medical and allied health education throughout the country. (Ethical Guidelines for Biomedical Research on Human Participants, 2023)

Statement of the Problem

1. To protecting the interests of the subject without endanger the delicate Doctor- patient relationship between them pertaining to the legal aspect.
2. The Judicial decision for the protection of subject's rights and the accountability of the Doctors under the law of negligence has emerged as a debatable issue among the medical fraternity.

Significance of Study

1. The clinical trial is significant protect the value of human life which cannot be left carefree in the hands of negligent clinical trials researcher who diverted their duties from the professional code of ethics.
2. A subject who have hopefully surrenders himself in clinical trials with full faith to his doctors.
3. The medical practitioners, who owe immense onus to provide Medicare to the society, are under obligation to discharge their duties with care, skill and assiduity.

Objectives of Study

1. Informed consent plays a crucial role in ensuring subject confidentiality and data protection during research
2. To empower participants to make informed decisions about their involvement, respecting their autonomy and promoting ethical research practices.
3. To providing clear and comprehensive information about the study, including potential risks and benefits.
4. To ensuring participants understand the purpose and procedures of data collection.

Sources Of Data Collection

1. The relevant material can be collected from primary as well as secondary Sources.
2. Material and information can be collected from various national enactments, legal and other sources like published works, Law Journals and websites on various topics.

The book's editors collected papers about many facets of the right to health. Through a detailed description of human rights and its viewpoint on health, the book primarily focuses on the relationship between health and human rights. Establishing development as a fundamental human right and establishing it as a human right to health is done through established treaties. Subsequently, it links human rights and health to development and developing technology. It also outlines the obligations of states and non-state actors to provide, uphold, and fulfill everyone's right to health. It talks about the part medical professionals play in preserving and advancing health. Since no right can exist in isolation and the right to health can be better promoted when human rights are also upheld, the book focuses on how rights relate to one another.

History of Human Experimentation

Experiments on human subjects are not a recent development. Historians have shown that the practice of examining guilty persons was common in ancient Alexandria but disappeared between the time of Rome and the Middle Ages. However, even in medieval times, erroneous instances of human experimentation were discovered in certain civilizations. The purpose of these experiments was to examine the changes that occur in the human body immediately before and after execution.

The number of human experiments in the 19th and 20th centuries has increased once more. However, those individuals were utilized for vulnerable human experimentation until the middle of the 20th century. history of using condemned and executed people in experiments. Therefore, the idea of consent was not even regarded as standad practice in human experiments. These experiments' subjects were not treated like human beings, and the settings under which they were carried out on living people were extremely dehumanizing. These tests were conducted in the past to observe how weaponry affected the body, and later to purge the body of impurities and

purify the race. Last but not least, the development of novel diagnostic methods and medications for the benefit of humanity and the progress of medical knowledge is the current justification for human clinical trials.

After years of conflict between the axis and allied countries, the allied powers won World War II in 1945. The winning nations established an International Military Tribunal to try the top military and political criminals as well as other war criminals. The first trial, which is renowned as the "Doctor's Trial," began in 1947 in Nuremberg, Germany, which was then occupied by the US military. It was started against 23 German doctors.

Role of informed consent in clinical trials:

In clinical trials, the subject must give informed consent, which is viewed as the same as getting the subject's signature on the consent form. Informed consent can be obtained in a research subject's verbal or written form. Informed consent is only part of the process. Informed consent involves a potential subject with Sufficient information to provide subjects those who are involving clinical trials.

- a. Recognition and facilitation of the potential subject's understanding of the information about clinical trials.
- b. The subject should get appropriate time to ask questions and to discuss with family and friends about the clinical trials.
- c. The research subject must have obtained the potential to ask the question about the clinical trials.
- d. The clinical trials center must provide continuing information as the clinical investigation progresses to the subject and their relatives.

When some new medicine, cosmetics, or food stuff is to be marketed, its suitability has to be confirmed by applying the invented medicine, cosmetics, or food stuff to human subjects. It becomes necessary that certain types of medicine cannot be experimented on human subjects directly. Such experiments are conducted on animals first, results are analyzed, and if found satisfactory, they are applied to human subjects next.

Subjects who participate in scientific research are generally of two categories. The first category is healthy volunteers, and the second category is patients. In each category there shall be persons of different age groups, viz., infants, children, adults, and elderly persons. Healthy volunteers are recruited through advertisements in the media. Apart from recruited volunteers, medical, nursing, and pharmacy institutional students and interns also participate in research studies. These calls from volunteers are the most wanted ones.

Subjects Are Clinical Trials**Individuals participating in studies at clinical centers include:****i) Children and Adults:**

These participants often seek to improve their health. They may be patients recently diagnosed with medical conditions, those dealing with long-term illnesses, or individuals with a family history of specific diseases.

ii) Healthy Volunteers:

Healthy individuals who aim to contribute to scientific understanding regarding disease causes, progression, and treatment may also participate. By doing so, they help researchers distinguish the differences between healthy individuals and those with certain medical conditions. Each study outlines specific eligibility criteria for participation.

This mechanism allows pharmaceutical companies to provide investigational drugs under specific conditions to patients who are unable to participate in a controlled clinical trial.

Before enrolling in a clinical trial:

Every participant must be adequately informed about the nature and structure of the clinical trial before enrollment. The process of informed consent must include detailed disclosures and ensure that the individual fully understands all aspects of the trial.

Key elements to be disclosed include:**• Statement of Research Purpose:**

A clear declaration that the study is research-based, including a description of how it contributes to medical knowledge or treatment development.

- **Explanation of Research Goals:**

The objectives of the trial should be articulated, such as evaluating drug efficacy, discovering side effects, or comparing treatment approaches.

- **Duration of Participation:**

Participants must be informed of how long they will be involved in the study, including the frequency of visits, follow-ups, and total time commitment.

- **Procedural Description:**

All procedures standard and experimental must be described in detail, including medical tests, blood draws, imaging, or surveys.

- **Explanation of Experimental Interventions:**

If any aspect of the treatment or drug is investigational, this must be clearly stated, along with potential unknown risks.

- **Disclosure of Risks and Benefits:**

The possible side effects, discomforts, or inconveniences should be listed alongside the anticipated benefits, even if minimal.

- **Right to Withdraw:**

Participants must be told explicitly that they can withdraw at any time without penalty or loss of benefits.

This process ensures transparency and promotes autonomy, empowering participants to make decisions based on full knowledge of what the trial entails.

Confidentiality of clinical trials information:

Clinical trials involve collecting a large volume of personal data from participants. Protecting this information is essential, especially as digital health records and trial databases are increasingly used for data storage and analysis.

- Personal data collected during a clinical trial may include: (e.g., name, age, gender, address).
- Medical history and diagnosis.
- Test results, scans, and laboratory findings.
- Treatment protocols and outcomes.

This information is typically stored in secure databases, where each participant is assigned a unique identification code or number. Instead of using names, researchers refer to participants by their assigned ID to maintain anonymity. (Renu sobti, 2000)

To protect confidentiality:

Access to data is restricted to authorized personnel only.

- Trial forms are encrypted and stored with password protection.
- Regular audits and security checks are conducted to prevent data breaches.

Participants are informed about how their data will be stored, used, and potentially published in anonymous form.

Breaches of confidentiality can severely damage the trust participants place in researchers and may also lead to legal consequences under data protection laws and ethical guidelines. Ensuring strong privacy standards is crucial throughout every stage of the research process.

CONCLUSION

It is completely voluntary to participate in clinical trials. People are free to decline participation or to leave at any time without fear of repercussions or prejudice. Participation must be chosen after careful consideration and personal judgment. Informed consent is a fundamental ethical obligation as well as a legal one. It ensures that during the trial, the participant's autonomy, dignity, and right to self-determination will be upheld. But in India, there is frequently a disconnect between the laws that are in place and how they are actually implemented. Participants may have minimal literacy, come from a variety of socioeconomic backgrounds, and have limited access to trustworthy medical information. This may make it more difficult for them to understand and provide informed consent. Adequate knowledge and risks associated with such trials information must be provided to

the person. The experimentation must be carried out as per the rules, regulations and guideline as enumerated by the appropriate authority. The responsible person, the immediate family members must be informed about the risk associated and repercussions if attached to it.

Subjects are required to make a valid decision, and hence the process of informed consent demands that the patient should have adequate knowledge about it. It is seen that patients come from varied social and cultural backgrounds, with limited literacy about the process. Hence, it is suggested that innovative communication strategies should be developed to encourage and facilitate informed decision-making in India.

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AI ENGINEERING AND COMPUTATIONAL STUDIES IN ENHANCING MODERN MANAGEMENT SYSTEMS THROUGH PURVIEW OF FINANCIAL RE-ENGINEERING

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Advancements AI engineering and computational studies have evolved exponentially and enhanced modern management, especially in the area of financial re-engineering. The study investigates how AI-enabled engineering systems and advanced computational techniques stimulate managerial decision-making, operational efficiency, and financial sustainability in modern-day organizations. Financial management of organizations can integrate machine learning algorithms, data analytics, optimization techniques, and intelligent automation to redesign traditional financial structures and achieve greater accuracy, agility, and strategic alignment.

The study considers the application of AI engineering, computational modeling and management sciences and their impact on financial planning, risk management, cost optimization and performance management through an interdisciplinary framework. Artificially intelligent systems can do financial re-engineering in a way that enable, through sensors, the processing of data in real time, forecasting and control reactively.

Besides, the research demonstrates how computational intelligence enhances evidence-based management through decreasing human bias, augmenting transparency, and reinforcing governance mechanisms. As per findings AI engineering and computer sciences with contemporary management practices creates new financial structures, which improves the performance and better adaptability of the organizations. This study not only adds to the knowledge base on technology-driven management transformation, but also provides strategic takeaways for implicated policymakers, managers, and researchers striving for sustainable organizational growth through AI-enabled financial re-engineering.

Primary Keywords: AI-enabled financial re-engineering, AI engineering, Computational intelligence, Financial management, Technology-driven management transformation

INTRODUCTION

In the modern age of rapid digitalization, organizations are faced with the challenge of efficiently managing complex financial systems while ensuring transparency and strategic agility. Traditional management and financial frameworks which are often rigid and reactive are no longer justified in the context of globalized and data-intensive business environments. One of the major enablers of modern management systems through the financial re-engineering approach is the combination of Artificial Intelligence (AI) engineering and computing studies.

Artificial Intelligence engineering is the combination of intelligent algorithms, automation, system design to create solutions that learn, reason and optimize managerial processes. When underpinned by advanced computational studies such as data analytics, mathematical modeling and simulation, organizations can redesign financial processes, structures and decision-making mechanisms. Financial re-engineering refers to a fundamental re-design of financial processes in an organization with an aim to enhance performance, reduce cost and reduce risk.

The harmonization of AI computing and management makes organizations use real-time inputs, prediction, and intelligent control of financial instruments. The addition of these approaches offers support for strategic planning, resource allotment, and governance. Thus, AI engineering and computational studies are important fields of modern management to transform contemporary managerial systems in organizations to become more adaptive, efficient, and better financially engineered.

Statement of the problem: The statement of the paper is: **AI Engineering and Computational Studies in Enhancing Modern Management Systems through Purview of Financial Re-Engineering.**

Significance of the problem: The problem is significant because traditional management and financial systems are increasingly insufficient to deal with complex, data-intensive, and dynamic business environments. AI

engineering uses advanced computing techniques to facilitate reengineering of finance through precision, rapidity and smartness in managerial decision-making.

RESEARCH OBJECTIVES

- 1) To examine the role of AI engineering and computational studies in transforming modern management systems.
- 2) To analyze how financial re-engineering integrates AI-driven computational tools to improve financial planning, control, and decision-making.
- 3) To evaluate the impact of AI-enabled financial re-engineering on managerial efficiency, cost optimization, and risk management.

DEFINITIONS

- 1) **Artificial Intelligence (AI) Engineering-** According to Russell and Norvig (2021), “AI engineering is the process of creating intelligent computer systems that can learn, think, and make decisions similar to humans by using data and algorithms”.
- 2) **Computational Studies-** According to Wing (2006), “Computational studies involve using algorithms, mathematical models, and computer-based methods to understand and solve complex problems efficiently”.
- 3) **Financial Re-engineering-** According to Hammer and Champy (1993), “Financial re-engineering is the complete redesign of financial processes and systems to improve efficiency, accuracy, and overall organizational performance”.

Assumptions: It is assumed that AI engineering and computational tools can significantly improve the efficiency and accuracy of financial decision-making in management systems.

LIMITATIONS

- 1) The study is constrained because of the unavailability and unreliable secondary data on AI-based financial management practices.
- 2) The results may not be valid everywhere since organization size, industry type, technological maturity, etc., differ to a great extent.
- 3) The research mainly emphasizes conceptual and analytical facets rather than actual application of AI systems.

DELIMITATIONS

- 1) The focus of the study is restricted to AI engineering and computational studies within financial re-engineering. It does not examine in detail other functional areas of marketing or human resource management.
- 2) The study will focus on modern management system of organizations and corporation skipping the public administration and non-profit sectors as their parameters.
- 3) The focus of the study is on theoretical frameworks, models, and existing literature. Not on primary data collection, or experimental validation.

The Secondary Data:

- 1) Research indicates that artificial intelligence may enhance the processing of financial data and decision-making. AI can detect patterns and anomalies in financial data that people will miss. In addition, researchers indicated that AI will improve predictive forecasting and enhance risk management.
- 2) Studies has proven that AI technologies like machine learning and natural language processing are changing financing process, assessment of risk and decision-making across financial services.
- 3) According to a survey by Accenture in 2020, a financial organization making use of AI powered processes reported an improvement of up to 82% in data processing efficiency of the organization. Further, it also reported a 91% reduction in manual interventions. As a consequence, it was able to achieve major cost savings, and accuracy improvements.
- 4) Nearly 40% of companies in the financial industry reported a 10% reduction in operational costs due to their use of artificial intelligence across multiple business functions. Companies that adopted artificial intelligence also reported 15% more profitability than competitors that do not.

- 5) With costs potentially reduced by AI-driven automation, a study showed that operational expenditures were driven down from \$60M to \$40M on the use of Ai tools.

The Findings Of Our Research Paper Are As Follow:

- 1) The accuracy and speed of financial decision making are significantly improved with AI engineering in Modern Management.
- 2) Through computational studies, it is possible to Predict and a Budget with high accuracy.
- 3) Artificial intelligence software allows for the financial re-engineering of business processes, which can greatly cut operational costs and manual workload.
- 4) Risk management, fraud detection, and financial control systems benefit from AI-based systems.
- 5) The use of artificial intelligence and computer tools boosts management efficiency and strategic planning.
- 6) The key to a successful implementation lies in investing in quality data and overcoming skill gaps.

Criticism:

- 1) **Over-Dependence on Technology:** According to expert's views, this topic has a strong emphasis on AI engineering and computational systems which may lead to an overlying on technology and less on human judgment in management and finance.
- 2) **Limited Practical Feasibility:** The assumption that organizations can readily adopt AI-driven financial re-engineering may not be realistic due to high costs, lack of infrastructure, and shortage of skilled professionals.
- 3) **Neglect of Human and Organizational Factors:** The topic focuses more on technical and financial aspects while giving less importance to organizational culture, employee adaptability, and managerial expertise.
- 4) **Ethical and Data Privacy Concerns:** AI-based financial systems involve large volumes of sensitive data, and the topic does not sufficiently address issues related to data security, privacy, and ethical accountability.
- 5) **Rapid Technological Advancement:** Continuous advancements in artificial intelligence and computational studies may quickly render existing models outdated, potentially reducing the long-term relevance of the topic itself.

SUGGESTIONS

- 1) **Balanced Integration of Human and AI Decision Making:** The organizations must not use AI as a substitute but as a support tool. Human judgment and experience must remain at the center of financial decision-making.
- 2) **Phased and Scalable Implementation :** The implementation of AI-based financial re-engineering must be gradual too so that organizations can manage costs, build infrastructure, train personnel, etc.
- 3) **Focus on Skill Development and Change Management:** Employees and management must be given continuous training to improve AI literacy and gain trust in technological change.
- 4) **Strengthening Ethical and Data Governance Frameworks:** In order to ensure transparency and accountability in financial systems, establish clear policies for data privacy, security, and ethical use of AI.
- 5) **Continuous System Evaluation and Upgradation:** AI and computational models need to be regularly reviewed and updated to remain relevant, accurate, and aligned with changing organizational and technological requirements.

CONCLUSION

Overall, the findings indicate that Artificial Intelligence (AI) in combination with traditional Finance and the use of Computational Methods can significantly improve current-day Management Systems through Financial Re-Engineering. By using AI to redesign traditional Finance Systems by using Intelligent Algorithms, Data Analytics, and Computational Models, Organizations can create much more efficient, accurate, and strategically responsive systems. Managers can use AI to process massive amounts of Financial Data in Real-Time and enhance their forecasting, budgeting and Risk Management and Control. The results of this study also indicate that AI-assisted Financial Re-Engineering decreases Operating Cost / Manual Effort, increases Transparency and Inconsistency in Managerial Decision-Making but there are still some Issues that must be addressed. These Challenges include Data Quality Problems, This High Implementable Cost, Lack of Skills and Ethical Issues

and Resistance to Change within Organizations, highlighting the need for AI to be integrated in a Balanced Way That Supports But Does Not Replace Human Judgment.

With the proper use of Governance, Continuous Training, and Ethical Considerations, Organizations will be able to create Systems That Are Adaptive, Resilient, and Prepared for The Future. The study provides some valuable lessons for Managers, Researchers, and Policy Makers in their pursuit of Sustainable Technology-Driven Financial and Managerial Excellence.

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STUDENTS AWARENESS AND RESPONSES TO CLIMATE CHANGE AS A GLOBAL EMERGENCY

¹Adv. Leelavathy S. Nair and ²Mr. Pranav M. Oza¹Assistant Professor and ²Student- SYBMS, V.K.Krishna Menon College of Commerce and Economics, Bhandup East, Mumbai- 400 042**ABSTRACT*****Climate Change: What Students Know and What We Must Do***

Climate change is transforming our planet right now. Since the Industrial Revolution in 1850, human activities—especially burning coal and oil—have pushed carbon dioxide levels from 280 to 420 parts per million. This has raised Earth's average temperature by just 1°C, but that small change is causing massive problems: melting ice, rising seas, devastating floods, severe droughts, and unpredictable weather that threatens our food supply.

This research explored how students understand and respond to this crisis. The findings are both hopeful and concerning.

The Good News: *Students are aware and paying attention. Nearly half have noticed their governments taking climate action. Most have personally witnessed changing weather patterns in their communities. They understand this is real and happening now.*

The Challenge: *Awareness isn't enough. Many students hold misconceptions about climate risks and don't fully understand how climate change affects different regions differently. Most doubt we can meet our 2030 climate goals. And critically, despite knowing about the problem, very few students actively participate in climate-friendly actions.*

What Must Happen: *We need better climate education that corrects misunderstandings and connects to students' real experiences. Governments must be more transparent about their climate efforts. Students need clear, practical ways to take action—not just knowledge, but pathways to make a difference.*

The Bottom Line: *Young people are essential to solving climate change. They can become powerful voices and change-makers in their communities. But we must bridge the gap between what they know and what they do. With proper education and real opportunities to engage, students can transform from worried observers into effective climate leaders who create the future we desperately need.*

Keywords: *Climate change, student awareness, global warming*

INTRODUCTION**What's climate change**

Climate change refers to large -scale, long-term shift in the planet's weather patterns and average temperatures. It is happening because of two main reasons, Natural and Man-made.

Currently changes in climate is highly affected by the man-made factors rather than of the natural factors.

In order to understand Climate Change we have to compare climate with two different eras before industrial revolution and after industrial revolution. Before Industrial revolution the earth's Global Average Temperature was 14.7-degree celsius. Which was ideal for the survival of the living beings. This is because presence of Carbon Dioxide in the atmosphere was 280 PPM {Part Per Million}. It is one of the greenhouse gases and it absorbed the sun ray in order to make our globe warm.

From 1850 Industrial Revolution has started and in these two products were used more extensively they are Coal and Petroleum.

We use near about 8 Billion metric tons of coal every year for 37% of the world electricity productions. Another product is the Petroleum. Near about 6,000+ industries consume it. We can't even imagine our world without airplane, ships, trains, car and many more. From Nylon to Nail-polish and from Paraffin to Parachute petroleum products are integral part of our life. And for these 97,10,000 barrels of petroleum is required daily. These excessive use of coal and petroleum emits carbon in the atmosphere and it form CO₂. This result to 38 Billion Matric Tone CO₂ emission. It has a life time of almost 300 -1000years.

The amount of CO₂ Which was 280 PPM before 1850 because of excessive use it is now 420 PPM and due to this the average temperature of the earth increased by approximately 01-degree celsius. This 01-degree climate change might feel small but this change has a very serious impact across the globe. If this continues average temperature would increase by 1.5 degree in near future and by end of this century it may go up to 6 degree.

So, The Consequences Of This Result Into Big Chain Reaction.

Temperature is rising every year and we are setting new records for the highest temperature. This causes extreme heat and humidity. This rising temperature silently melts the glaciers, Ice sheet and Ice on river and sea. Research say that by the end of 21st century third of all glaciers would be evaporated. This melting of glaciers and ice sheet increases the sea level. This is a direct threat to the costal life all around the world. Increase in temperature leads to more moisture in the atmosphere and this more moisture-laden air interacts with mountainous region results into cloud burst, flood landslides and mud flows. This all are resulting to natural disasters and we are witnessing it regularly. Many lives are lost because of this event in order to rehabilitate the victim's huge cost is to be paid by the government and by the common people.

Increase in temperature causes drought or heavy rainfall. In the different part of the globe. Which effects the agricultural activities which creates scarcity of food. Which is result into rise in price of agricultural commodities this causes inflation.

The above mention are few impact of climate change.

After telling all this one question strikes in my mind. So far what we have achieved development? but at what cost?

We all are on a race of development and we all ignored the consequences of it and we destroyed the balance of our nature this is the cost.

The word emergency perfectly fits the current situation. Scientist predicted that we have time till 2030 after that it would be beyond our control.

The goal is to raise awareness, not fear. As citizens, we must spread awareness and conserve resources. Simple actions, like knocking on doors instead of using doorbells, can save significant electricity globally. As citizen, we should lead in reducing carbon emissions and spreading awareness. While global leaders and scientists work to address the crisis, it's up to each of us to contribute.

LITERATURE REVIEW**1. Climate Change and Its Impact on India**

Authors: M Balasubramanian & V Dhulasi Birundha (2012)

Source: The IUP Journal of Environmental Sciences

Key Findings:

- Climate change poses severe threats to India's agriculture, water resources, forests, health, and coastal areas
- Agricultural productivity decline is the main impact, affecting the majority of the population dependent on farming
- A 0.5°C rise in winter temperature could reduce wheat yield by 0.45 ton per hectare
- Climate change could cause farmers to lose 9-25% of net revenue, adversely affecting GDP by 1.8-3.4%
- India may lose 125 million tons (18%) of rainfed cereal production
- Water availability per person decreased from 3,450 cm³ in 1951 to 1,250 cm³ in 1999
- Rising sea levels could displace 7 million people in India
- Health impacts include increased malnutrition, vector-borne diseases (malaria, dengue), and heat-related deaths

Scope for Further Research:

- Long-term monitoring of climate impact on specific crop varieties
- Development of drought-resistant and heat-tolerant crop species
- Economic assessment of adaptation strategies in different regions
- Community-based adaptation approaches for vulnerable populations

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- Integration of traditional knowledge with scientific methods

2. A Review of Global Climate Change Impacts, Adaptation, and Sustainable Mitigation Measures

Authors: Kashif Abbass, Muhammad Zeeshan Qasim, Huaming Song, Muntasir Murshed, Haider Mahmood, & Ijaz Younis (2022)

Source: Environmental Science and Pollution Research

Key Findings:

- Climate change threatens multiple sectors: agriculture, biodiversity, human health, tourism, forestry, and economy
- Agricultural sector contributes 30-40% of greenhouse gas emissions while being severely impacted by climate change
- Temperature increases of 1-3.7°C expected by end of century
- Antimicrobial resistance (AMR) is worsened by climate change, threatening post-antibiotic era
- Vector-borne diseases expanding to new geographic areas due to warming
- Global forests face increased risks from droughts, pests, fires, and storms
- Tourism industry suffers from changing climate conditions at popular destinations
- Paris Agreement aims to limit temperature increase to well below 2°C above pre-industrial levels

Scope for Further Research:

- Development of climate-resilient agricultural practices
- Economic modeling of climate adaptation costs across sectors
- Integration of renewable energy technologies in developing countries
- Behavioral studies on climate change adaptation
- Cross-sectoral climate policy coordination
- Mental health impacts of climate change on vulnerable communities

3. Understanding the Global Warming Discussion: Climate Change as Context for Research Skills

Author: Rich Seymour (2008)

Source: Dominican University of California, Master's Thesis

Key Findings:

- American students' science scores lag behind other developed countries
- Only 48% of Americans believe there is scientific consensus on climate change causes
- 40% believe there is substantial scientific disagreement
- Climate change is rarely taught in secondary schools due to lack of time, resources, and preparedness
- Educational resources on climate change present conflicting viewpoints
- Critical thinking and research skills are essential for students to navigate climate information
- The Intergovernmental Panel on Climate Change (IPCC) declared 90% certainty that global warming is related to human greenhouse gas emissions

Scope for Further Research:

- Development of standardized climate change curriculum for K-12 education
 - Teacher training programs on climate science and pedagogy
 - Assessment of student learning outcomes from climate change education
 - Integration of climate change across multiple subject areas
 - Methods for teaching scientific controversy and critical thinking
 - Longitudinal studies on how climate education affects student attitudes and behaviors
-

Common Themes Across All Studies:

1. **Urgency:** All papers emphasize climate change as a pressing global challenge requiring immediate attention
2. **Multi-sector Impact:** Climate change affects agriculture, health, economy, biodiversity, and social systems simultaneously
3. **Educational Gap:** There is a significant need for improved science education and climate literacy
4. **Adaptation and Mitigation:** Both strategies are necessary and should be implemented together
5. **Global Cooperation:** International collaboration is essential for effective climate action
6. **Vulnerable Populations:** Developing countries and marginalized communities face disproportionate climate risks

Overall Research Gaps Identified:

- Long-term monitoring data on climate impacts in specific regions
- Integration of traditional and scientific knowledge systems
- Economic cost-benefit analyses of various adaptation strategies
- Effective communication strategies for climate science
- Curriculum development for climate change education
- Mental health and psychological impacts of climate change
- Role of technology transfer in climate adaptation
- Community-based adaptation approaches

ANALYSIS

- 1) Misconceptions, low risk perception and limited participation in climate friendly actions raise concerns about the effectiveness of climate education
- 2) High level of personal awareness and lived experience of climate related changes among students.
- 3) 42.1% of respondents have noticed government actions related to climate change suggesting the government efforts may be highly visible and well communicated to students.
- 4) An overwhelming majority report noticing changes in weather patterns, indicating strong public awareness or lived experience of weather variability. Very few respondents deny noticing changes, while a small fraction are uncertain. This suggests a clear consensus toward perceived change among the surveyed group.
- 5) The chart highlights that while most respondents see climate change as uniform worldwide, a substantial portion understands—or suspects—that its impacts are **not the same everywhere**, pointing to an opportunity for clearer education on regional climate differences.
- 6) A **majority (over half)** of respondents are **uncertain**, indicating doubt or mixed feelings about whether the goal will be achieved by 2030.

SUGGESTIONS AND RECOMMENDATIONS**1. Strengthen climate education to address misconceptions and risk perception**

Climate education programs should move beyond awareness-building to explicitly address common misconceptions and low risk perception. Integrating problem-based learning, real-world case studies, and behavioral change frameworks can encourage greater participation in climate-friendly actions.

2. Leverage students' lived experiences in climate communication

Since students already demonstrate high personal awareness and firsthand experience of climate-related changes, educational approaches should connect scientific concepts to local observations and everyday experiences to reinforce relevance and deepen understanding.

3. Enhance transparency and youth engagement in government climate actions

While a notable proportion of students recognize government initiatives, efforts should be made to further engage young people through youth-targeted communication strategies, participatory platforms, and educational partnerships that explain the purpose, impact, and outcomes of these actions.

4. Use observed weather changes as entry points for climate literacy

The widespread recognition of changing weather patterns presents an opportunity to improve climate literacy by clearly differentiating between short-term weather variability and long-term climate change, helping students develop more accurate scientific understanding.

5. Improve education on regional and localized climate impacts

Curriculum content should emphasize that climate change does not affect all regions equally. Incorporating regional data, local climate projections, and place-based learning can help students better understand differential vulnerabilities and adaptive needs.

6. Clarify pathways toward achieving 2030 climate goals

Given the high level of uncertainty regarding the achievement of 2030 targets, policymakers and educators should communicate clearer roadmaps, progress indicators, and achievable milestones to build confidence and trust among young people.

CONCLUSION

Students represent a critical force in the global response to climate change due to their high levels of awareness, lived experience of climate impacts, and capacity for collective action. The findings indicate that while students clearly recognize changes in weather patterns and climate-related phenomena, gaps remain in risk perception, regional understanding, and active engagement in climate-friendly behaviours. Addressing these gaps through targeted, experience-based climate education can empower students to translate awareness into meaningful action.

By leveraging their direct experiences, students can act as informed advocates within their communities, promoting sustainable practices and supporting evidence-based climate policies. Furthermore, increased involvement of students in government and institutional climate initiatives can enhance transparency, accountability, and public trust. With appropriate guidance, resources, and platforms for participation, students can contribute not only as learners but also as innovators, communicators, and change agents in achieving climate goals. Strengthening student engagement is therefore essential for accelerating progress toward climate resilience and long-term sustainability.

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LEGAL ANALYSIS OF SECTION 50A AND STRUCTURAL CHALLENGES UNDER THE MAHARASHTRA PUBLIC TRUST ACT 1950 WITH SPECIAL REFERENCE TO IMPLEMENTATION DEFECTS AND REFORM MEASURES

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ABSTRACT

The Maharashtra Public Trust Act, 1950 was enacted to ensure effective regulation, transparency, and proper administration of public charitable trusts in the State of Maharashtra. Section 50A of the Act plays a significant role by empowering the Charity Commissioner to frame, modify, or amalgamate schemes for the better management of public trusts. However, despite its reformative intent, the practical implementation of Section 50A has revealed several legal, administrative, and structural challenges. This paper undertakes a critical legal analysis of Section 50A, examining its scope, objectives, and judicial interpretation, while identifying key defects such as excessive discretionary powers, procedural delays, lack of uniform standards, and inadequate stakeholder participation.

The study also highlights broader structural challenges within the Act, including weak enforcement mechanisms, limited accountability, and gaps in governance and transparency. Through doctrinal analysis of statutory provisions, case law, and administrative practices, the paper evaluates how these shortcomings affect the effective functioning of public trusts. Finally, the paper proposes targeted reform measures, including legislative amendments, clearer procedural safeguards, capacity building of regulatory authorities, and the adoption of technology-driven compliance mechanisms, to strengthen trust governance and ensure that the objectives of the Maharashtra Public Trust Act, 1950 are achieved in a fair, efficient, and accountable manner.

Keywords: Maharashtra Public Trust Act 1950, Section 50A, Public Charitable Trusts, Charity Commissioner, Trust Governance, Implementation Challenges, Regulatory Defects, Legal Reforms

1. INTRODUCTION

The regulation of public charitable and religious trusts occupies a crucial position in Indian legal and social governance, particularly in a state like Maharashtra where such trusts play a significant role in education, health care, religious activities, and social welfare. The Maharashtra Public Trust Act, 1950 (hereinafter “MPT Act”) was enacted with the objective of ensuring transparency, accountability, and proper administration of public trusts by bringing them under a statutory regulatory framework. Unlike the Indian Trusts Act, 1882, which governs private trusts, the MPT Act specifically addresses the public character of charitable and religious institutions and seeks to prevent mismanagement, misuse of trust property, and deviation from charitable objects. The Act establishes a comprehensive administrative mechanism under the supervision of the Charity Commissioner, reflecting the State’s *parens patriae* role in safeguarding public interest in trust administration.¹

Within this statutory scheme, Section 50A assumes particular significance as it empowers the Charity Commissioner to frame, modify, or amalgamate schemes for the effective management and administration of public trusts. The provision is intended as a remedial and reformative tool to address situations where the existing trust management structure proves inadequate, dysfunctional, or contrary to the objects of the trust. However, despite its benevolent purpose, the exercise of powers under Section 50A has often attracted criticism due to allegations of excessive discretion, procedural delays, and inconsistent application. Judicial scrutiny has further highlighted the tension between regulatory intervention and the autonomy of trust administration, raising important questions about the limits of statutory control over charitable institutions.²

Against this background, the present paper undertakes a critical legal analysis of Section 50A of the Maharashtra Public Trust Act, 1950, with special emphasis on implementation defects and broader structural challenges within the Act. The study adopts a doctrinal research methodology, relying on statutory provisions, judicial pronouncements, scholarly writings, and government reports to examine how Section 50A operates in practice. The paper aims to identify key deficiencies in the existing framework and to propose pragmatic reform

¹ Maharashtra Public Trusts Act, No. 29 of 1950, Statement of Objects and Reasons (India).

² See, e.g., 2005 (4) ALL MR 296 (Bom. HC) (discussing the scope and limits of the Charity Commissioner’s powers under Section 50A).

measures that balance effective regulation with functional autonomy of public trusts, thereby strengthening governance, accountability, and public confidence in the charitable sector.¹

2. HISTORICAL EVOLUTION AND LEGISLATIVE INTENT OF THE MAHARASHTRA PUBLIC TRUST ACT, 1950

The regulation of public charitable and religious trusts in Maharashtra has its roots in the socio-economic conditions of the pre-independence era, when widespread mismanagement of trust properties and absence of uniform supervision necessitated state intervention. Prior to the enactment of the Maharashtra Public Trust Act, 1950, public trusts were largely governed by fragmented legal principles derived from customary law, religious practices, and limited judicial oversight. The Indian Trusts Act, 1882 was inadequate for this purpose, as it expressly excluded public and charitable trusts from its ambit. Consequently, the Bombay State legislature introduced a comprehensive framework through the Bombay Public Trusts Act, 1950, which later became applicable to the State of Maharashtra after its formation in 1960. The legislation was conceived as a welfare-oriented statute aimed at protecting public interest in trust properties and ensuring that charitable objectives were not defeated by maladministration or abuse of power by trustees.²

The legislative intent behind the MPT Act is evident from its broad regulatory architecture, which mandates compulsory registration of public trusts, periodic audits, supervision of alienation of trust property, and adjudicatory powers vested in statutory authorities. A distinctive feature of the Act is the creation of the office of the Charity Commissioner, envisaged as a quasi-judicial authority entrusted with extensive supervisory and corrective powers. The inclusion of provisions such as Sections 36 (control over alienation of trust property), 41A (issuance of directions), and 50A (framing of schemes) reflects the legislature's intention to move beyond passive regulation and adopt an interventionist approach where trust administration deviates from its charitable purpose. Section 50A, in particular, was introduced to provide a flexible mechanism enabling the Charity Commissioner to restructure management schemes in situations where litigation under Section 50 would be time-consuming or impractical.³

Judicial pronouncements have consistently recognised the remedial and protective character of the MPT Act, describing it as a piece of social welfare legislation that must be interpreted purposively rather than restrictively. Courts have observed that the Act seeks to strike a balance between respecting the autonomy of trust founders and ensuring accountability in the administration of properties dedicated to public use. However, the historical evolution of the Act also reveals an expanding scope of regulatory control, which has led to concerns regarding over-centralisation of authority and administrative overreach. Understanding this legislative background is essential for evaluating the contemporary challenges associated with Section 50A and for assessing whether its current implementation aligns with the original legislative intent of ensuring efficient, fair, and transparent governance of public trusts.⁴

3. CONCEPT, SCOPE, AND NATURE OF SECTION 50A

Section 50A of the Maharashtra Public Trust Act, 1950 confers special powers upon the Charity Commissioner to frame, modify, or amalgamate schemes for the proper administration of public trusts. The provision operates as an alternative to instituting a civil suit under Section 50 of the Act and is intended to provide a swift and effective administrative remedy in cases where trust management is found to be inadequate, impractical, or inconsistent with the objects of the trust. The scope of Section 50A is wide, enabling intervention in matters relating to the constitution of managing bodies, distribution of powers among trustees, financial management, and overall governance structure. The legislative design reflects an intention to empower the Charity Commissioner to act in the larger public interest, particularly where prolonged litigation could adversely affect the functioning of charitable institutions.⁵

¹ Aaryana Anand & Soumya Ukil, Analyzing the Regulatory Framework for Public Trusts in India - Is There a Need for Reform?, Indian J. L. & Legal Rsch. (2022); Government of Maharashtra, Office of the Charity Commissioner, *Annual Administrative Reports* (various years).

² Maharashtra Public Trusts Act, No. 29 of 1950 (India); *see also* Indian Trusts Act, No. 2 of 1882, § 1 (India).

³ Radhika Gaggar & Shaishavi Kadakia, Public Trusts in Maharashtra: The Changing Legal Landscape, BCAJ (2019); Maharashtra Public Trusts Act, 1950, Sec. 50A.

⁴ *See Charity Commr., Maharashtra State v. Shantilal Khushaldas*, AIR 1965 SC 1223 (India) (recognising the welfare nature of trust regulation).

⁵ Maharashtra Public Trusts Act, No. 29 of 1950, § 50A (India); Radhika Gaggar & Shaishavi Kadakia, Public Trusts in Maharashtra: The Changing Legal Landscape, BCAJ (2019).

The nature of powers exercised under Section 50A is quasi-judicial, requiring adherence to principles of natural justice, including notice, hearing, and reasoned decision-making. Judicial interpretation has clarified that although Section 50A contains a non-obstante clause, the discretion conferred is not absolute and must be exercised within the confines of the Act and its objectives. Courts have emphasised that scheme-making power should not be used arbitrarily or mechanically and must be supported by demonstrable necessity for better administration of the trust. The provision thus represents a delicate balance between regulatory oversight and trust autonomy, making its application both legally significant and administratively sensitive within the broader framework of the MPT Act.¹

4. JUDICIAL INTERPRETATION OF SECTION 50A

Indian courts, particularly the Bombay High Court, have played a crucial role in defining the contours of the powers exercised under Section 50A of the Maharashtra Public Trust Act, 1950. Judicial interpretation has consistently held that the scheme-making power of the Charity Commissioner is remedial in nature and must be exercised only when it is demonstrably necessary for the proper administration of a public trust. Courts have clarified that Section 50A cannot be invoked merely because an alternative administrative arrangement appears preferable; rather, there must be material indicating mismanagement, dysfunction, or failure of the existing governance structure. The presence of a non-obstante clause has been interpreted as giving overriding effect to the provision, but not as excluding judicial review or statutory limitations.²

At the same time, the judiciary has imposed important procedural safeguards on the exercise of powers under Section 50A. It has been repeatedly emphasised that the Charity Commissioner must follow principles of natural justice, including granting a fair hearing to trustees and interested persons, recording reasons, and ensuring proportionality in intervention. Courts have cautioned against excessive interference with the autonomy of trusts, holding that regulatory supervision should not result in virtual takeover or substitution of trustees' discretionary powers unless justified by compelling circumstances. These judicial pronouncements reflect an attempt to balance public interest in effective trust governance with respect for the founder's intent and institutional independence, thereby shaping the operational limits of Section 50A in practice.³

5. STRUCTURAL FRAMEWORK OF THE MAHARASHTRA PUBLIC TRUST ACT, 1950

The Maharashtra Public Trust Act, 1950 establishes a comprehensive statutory framework for the regulation and supervision of public charitable and religious trusts in the State. The Act mandates compulsory registration of all public trusts and creates a centralized regulatory mechanism headed by the Charity Commissioner, assisted by Joint, Deputy, and Assistant Charity Commissioners. Key structural features include maintenance of public trust registers, submission of annual accounts, compulsory auditing of trust finances, and prior sanction for alienation or encumbrance of trust property. Provisions such as Sections 22 (change reports), 32–35 (accounts and audit), and 36 (control over transfer of trust property) reflect a strong emphasis on financial discipline, transparency, and protection of trust assets dedicated for public purposes.⁴

This structural framework positions the Charity Commissioner as both an administrative and quasi-judicial authority, entrusted with supervisory, corrective, and adjudicatory functions. Powers under Sections 41A (issuance of directions) and 50A (scheme framing) further strengthen regulatory oversight, enabling proactive intervention where trust administration deviates from statutory or charitable objectives. However, the concentration of wide-ranging powers within the regulatory machinery has also led to concerns regarding administrative overload, delays in decision-making, and uneven enforcement across regions. Scholars have observed that while the Act's structure is robust in design, its effectiveness largely depends on institutional

¹ See 2005 (4) ALL MR 296 (Bom. HC) (holding that powers under Section 50A are discretionary but subject to judicial scrutiny); see also *Charity Commr. v. Shantilal Khushaldas*, AIR 1965 SC 1223 (India).

² See 2005 (4) ALL MR 296 (Bom. HC) (interpreting scope and necessity requirement under Section 50A); Maharashtra Public Trusts Act, No. 29 of 1950, § 50A (India).

³ See *Shri Govindlalji Maharaj Temple Trust v. State of Rajasthan*, AIR 1963 SC 1638 (India) (principles on autonomy of religious and charitable trusts applied by analogy); *Charity Commr., Maharashtra State v. Shantilal Khushaldas*, AIR 1965 SC 1223 (India).

⁴ Maharashtra Public Trusts Act, No. 29 of 1950, §§ 22, 32–36, 41A (India); Office of the Charity Commissioner, Maharashtra State, *Administrative Structure and Functions* (Gov't of Maharashtra).

capacity, procedural clarity, and consistent implementation, without which the objectives of accountability and good governance may remain only partially fulfilled.¹

6. IMPLEMENTATION DEFECTS AND PRACTICAL CHALLENGES UNDER SECTION 50A

Despite the statutory intent of Section 50A to ensure efficient and corrective intervention in the management of public trusts, its implementation has been fraught with several practical difficulties. One of the foremost challenges is the absence of clear statutory guidelines defining the circumstances that warrant invocation of scheme-framing powers. This often results in inconsistent application across cases, leading to allegations of arbitrariness and uncertainty among trustees. Procedural delays in issuing notices, conducting hearings, and finalising schemes further undermine the objective of providing a swift administrative remedy. In many instances, prolonged proceedings under Section 50A defeat its very purpose, causing disruption in trust administration and adversely affecting beneficiaries.²

Another significant implementation defect relates to the excessive discretionary space available to regulatory authorities without adequate checks at the administrative level. Trustees frequently contend that scheme modifications under Section 50A intrude upon the autonomy of trust governance and dilute the founder's intent. Limited stakeholder participation, lack of transparency in decision-making, and inadequate reasoning in scheme orders have also been highlighted as recurring concerns. Empirical studies and academic commentaries indicate that capacity constraints within the Charity Commissioner's office, such as understaffing and uneven training—further aggravate these challenges. These practical impediments suggest that while Section 50A is conceptually sound, its effectiveness is compromised by procedural and institutional shortcomings that necessitate structural and policy-level reforms.³

7. STRUCTURAL CHALLENGES AFFECTING EFFECTIVE TRUST GOVERNANCE

Beyond the specific operational issues associated with Section 50A, the Maharashtra Public Trust Act, 1950 faces broader structural challenges that affect the overall governance of public trusts. One major concern is the limited institutional capacity of the regulatory machinery to effectively supervise a vast number of registered trusts across the State. The Charity Commissioner's office is often burdened with multiple quasi-judicial and administrative functions, leading to delays in adjudication, inspections, and enforcement actions. Additionally, the audit and compliance mechanisms under the Act, though mandatory, frequently suffer from delayed submissions, superficial scrutiny, and inadequate follow-up, thereby weakening financial accountability and transparency in trust administration.⁴

Another structural challenge lies in the lack of integration of modern governance tools and stakeholder-centric approaches within the trust regulatory framework. The absence of comprehensive digitisation, real-time monitoring systems, and publicly accessible data limits transparency and public oversight. Further, trustees and beneficiaries often lack adequate legal awareness regarding their rights and obligations under the Act, resulting in underreporting of mismanagement and weak participatory governance. Scholars have also pointed out that excessive centralisation of authority, without proportionate appellate and review safeguards at the administrative level, may erode trust autonomy and public confidence. These systemic challenges indicate the need for structural reforms that strengthen institutional capacity, promote transparency, and align trust governance with contemporary standards of accountability.⁵

8. COMPARATIVE PERSPECTIVE AND BEST PRACTICES

A comparative examination of trust governance frameworks reveals that several jurisdictions have adopted clearer statutory standards and stronger institutional mechanisms to regulate charitable organizations

¹ See Gaikwad & Vaidya, Critical Analysis of Audit Reports under the Maharashtra Public Trusts Act, 1950, J. Neonatal Surg. (Special Issue on Governance & Compliance) (2023); Radhika Gaggar & Shaishavi Kadakia, Public Trusts in Maharashtra: The Changing Legal Landscape, BCAJ (2019).

² Maharashtra Public Trusts Act, No. 29 of 1950, Sec. 50A (India).

³ See Gaikwad & Vaidya, Critical Analysis of Audit Reports under the Maharashtra Public Trusts Act, 1950, J. Neonatal Surg. (2023); Government of Maharashtra, Office of the Charity Commissioner, *Annual Administrative Reports* (various years).

⁴ Maharashtra Public Trusts Act, No. 29 of 1950, §§ 32–36 (India); Gaikwad & Vaidya, Critical Analysis of Audit Reports under the Maharashtra Public Trusts Act, 1950, J. Neonatal Surg. (2023).

⁵ See JETIR Research Paper, Structural Issues in the Implementation of the Maharashtra Public Trusts Act, 1950, JETIR (2019); Government of Maharashtra, *E-Governance Initiatives and Reports of the Charity Commissioner's Office* (various years).

effectively. In the United Kingdom, the Charity Commission functions as an independent regulator with well-defined powers, detailed guidance notes, and transparent public disclosure requirements, enabling consistent oversight while respecting organizational autonomy. Similarly, Australia's Australian Charities and Not-for-profits Commission (ACNC) emphasizes proportionate regulation, risk-based monitoring, and extensive use of digital platforms for registration, reporting, and public access to trust-related information. These models demonstrate that regulatory effectiveness is enhanced when discretion is guided by detailed norms, procedural clarity, and stakeholder engagement, rather than broad, undefined statutory powers.¹

In contrast, the Maharashtra Public Trust Act, 1950 relies heavily on discretionary supervision by statutory authorities, with limited codified guidance on scheme framing and governance standards. Comparative best practices suggest that Maharashtra could benefit from issuing comprehensive administrative guidelines under Section 50A, strengthening digital transparency, and institutionalizing participatory mechanisms for trustees and beneficiaries. Academic literature emphasizes that adopting comparative governance principles, such as proportionality, accountability, and transparency, can significantly improve regulatory legitimacy and compliance outcomes. By learning from national and international experiences, the trust governance regime in Maharashtra can be recalibrated to ensure effective oversight without undermining the functional independence of charitable institutions.²

9. REFORM MEASURES AND POLICY RECOMMENDATIONS

In order to address the implementation defects of Section 50A and the broader structural challenges under the Maharashtra Public Trust Act, 1950, the following seven reform measures are suggested:

- **Statutory Guidelines for Section 50A** - Clear legislative or rule-based guidelines should be framed specifying circumstances, thresholds, and parameters for invoking scheme-making powers to reduce arbitrariness.
- **Time-Bound Procedures** - Mandatory timelines for notice, hearing, and final orders under Section 50A should be prescribed to avoid prolonged administrative delays.
- **Strengthening Natural Justice Safeguards** - Detailed requirements for stakeholder participation, reasoned orders, and proportional intervention must be institutionalized.
- **Capacity Building of Regulatory Authorities** - Regular training and augmentation of staff in the Charity Commissioner's office to improve efficiency and legal competence.
- **Digitisation and E-Governance** - Adoption of technology-driven systems for scheme proceedings, audits, compliance tracking, and public access to trust records.
- **Independent Review Mechanism** - Introduction of an internal appellate or review framework to check excessive discretionary exercise at the administrative level.
- **Awareness and Compliance Support for Trustees** - Structured legal awareness programmes and compliance toolkits to promote voluntary adherence to statutory obligations.

These reform measures aim to strengthen accountability, transparency, and efficiency while maintaining an appropriate balance between regulatory oversight and trust autonomy.

10. CONCLUSION AND SUGGESTIONS

The Maharashtra Public Trust Act, 1950 represents a significant legislative effort to ensure transparency, accountability, and proper administration of public charitable and religious trusts. Within this framework, Section 50A plays a pivotal role by empowering the Charity Commissioner to intervene through scheme framing and modification when trust administration becomes ineffective or inconsistent with statutory and charitable objectives. However, the analysis undertaken in this paper demonstrates that while Section 50A is conceptually well-intentioned, its practical implementation has exposed several legal, procedural, and structural deficiencies. Excessive discretion, procedural delays, and lack of uniform standards have often diluted the effectiveness of this provision, leading to friction between regulatory control and trust autonomy.

¹ Charity Commission for England and Wales, *The Essential Trustee: What You Need to Know* (UK Gov't, 2022); Australian Charities & Not-for-profits Commission, *Governance Standards Guidance* (Commonwealth of Australia, 2021).

² See S. Gandhi, *Regulating Charities: A Comparative Study of Trust Governance Models, Trusts & Trustees* (Oxford Univ. Press, 2023).

The study further reveals that challenges under Section 50A cannot be viewed in isolation, as they are closely linked to broader structural issues within the Maharashtra Public Trust Act, including institutional capacity constraints, weak enforcement mechanisms, and limited adoption of modern governance tools. Judicial interpretations have attempted to strike a balance by subjecting the exercise of powers under Section 50A to principles of natural justice and proportionality, yet inconsistent administrative practices continue to undermine predictability and stakeholder confidence. These shortcomings highlight the need for a more coherent and transparent regulatory approach that aligns statutory objectives with contemporary standards of governance and accountability.

In conclusion, meaningful reform of Section 50A and the overall trust governance framework requires a combination of legislative clarity, administrative efficiency, and participatory oversight. Introducing clear guidelines, time-bound procedures, technological integration, and capacity building measures can significantly enhance the effectiveness of regulatory intervention without compromising the foundational autonomy of public trusts. Strengthening this balance is essential not only for protecting trust property and beneficiaries but also for reinforcing public confidence in the regulatory regime governing charitable institutions in Maharashtra.

A STUDY OF CONSUMER TRUST AND PURCHASE INTENT TOWARDS AI-GENERATED MARKETING CONTENT

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ABSTRACT

This study aims to explore consumer awareness of AI-generated marketing content, its impact on trust and purchase intention, and the role of brand size in shaping consumer preferences. Understanding these aspects is important, as consumer awareness regarding AI marketing remain an underexplored area. An online survey was conducted using a mixed convenience and snowball sampling method to gather responses. Analysis of the data revealed that consumers are highly aware of and can identify AI-generated marketing content. Trust in such content was found to be moderate to low, and exposure to AI-generated marketing tended to reduce purchase intention. Brand size influenced consumer preferences, with many respondents favouring larger companies, although some indicated that other factors, such as price, quality, and convenience, also play a role in their decisions. These findings provide valuable insights for marketers, especially small businesses, suggesting that emphasizing authenticity and minimizing reliance on AI may help maintain consumer trust and engagement.

Keywords: *Ai generated marketing content, consumer awareness, brand size, purchase intent, consumer trust in ai marketing.*

INTRODUCTION

With the rapid rise of generative artificial intelligence across various industries, marketing has been no exception. AI-generated marketing content is increasingly used by brands to create advertisements, product descriptions, and promotional messages. This growing presence raises important questions regarding consumer trust in such content.

Artificial intelligence offers significant advantages to businesses by improving efficiency, reducing costs, and enabling large-scale content creation. However, the effectiveness of marketing ultimately depends on the consumer, making it essential to understand how AI-generated content influences consumer perceptions and decision-making.

As advancements in artificial intelligence continue to accelerate, consumers are increasingly exposed to AI-generated content in their daily interactions with brands. Despite this widespread exposure, it remains unclear

Whether consumers are aware of when generative ai is used in marketing content?

While prior research has extensively examined consumer trust and purchase intention toward AI-generated marketing content, limited attention has been paid to whether consumers are aware of, or able to differentiate, AI-generated content from human-created content. This gap is significant, as trust and purchase decisions may be formed without accurate recognition of content origin.

Most studies assume consumers can recognize AI-generated marketing content, but do not empirically examine whether this awareness exists or how it influences trust and purchase intention.

Another aspect that will be explored in this study is

Does brand size matter to consumers when it comes to trust factors?**The objectives of this study are**

- 1) To assess consumers awareness and perceived ability to differentiate between AI-generated and human-generated marketing content.
- 2) To examine whether brand size large established brands versus small startups influence consumer trust and purchase intention toward AI-generated marketing content.
- 3) To examine the impact of AI-generated marketing content on consumers purchase intention.
- 4) To determine consumer trust when AI marketing content is implemented.

REVIEW OF LITERATURE

- Consumer Trust & Purchase Intentions in AI-Generated Advertisements: Examining the Role of Third-Party Certifications/Assurance (TPCA) seals and Quick Response (QR) Codes

Dave Sarraan and Vejendra Datt

Despite the growing use of AI in advertising, there is a lack of research on how specific mechanisms, such as third-party certification/assurance (TPCA) seals and quick response (QR) codes, influence consumer perceptions and behaviour. This research addresses this gap by investigating the effects of TPCA seals and QR codes on consumer trust and purchase intention for AI-generated advertisements. The study focuses on combating ad falsity, countering misinformation, and enhancing the authenticity of AI-generated advertisements.

- Impact of AI on Consumers' Purchase Intention Towards Online Grocery Shopping in India

Pankaj Bhatt* and Ashish Kumar Singh

This study bridges a critical research gap by revealing the interplay between AI technologies and consumer behavior in India's INR 760.2 billion online grocery market. Using India's grocery sector, the contribution of the study is in the recommendation of developing a technology-based consumer experience enhancement framework for online grocery platforms to effectively target consumers, particularly in regions with similar socio-economic characteristics

- The Impact of AI-Powered Influencer Marketing on Consumer Engagement and Purchase Intent: An Indian Perspective

Dr. Swati Patil

This research investigates the emerging intersection of artificial intelligence and influencer marketing, exploring how AI-powered tools and strategies reshape consumer engagement metrics and influence purchase decisions in the Indian market.

- The Impact of AI-Driven Marketing on Consumer Trust: Analyzing Ethical Implications by BIEGUO Ifeanyi Kingsley

Consumer trust is a crucial factor in marketing. A few studies have explored consumer trust-based decision-making, e-commerce, brand credibility, and relationship management. Currently, there is growing attention on sustainability, AI ethics, and consumer trust. The focus of this study is to uncover the implications associated with integrating AI technologies into marketing practice

A significant gap identified in the existing literature is the lack of research on consumer awareness of AI-generated marketing content specifically, whether consumers can recognize when AI is being used. Another underexplored area is the influence of brand size on consumer perceptions and trust in AI-generated marketing: do consumers trust small startups or established companies more when AI is involved? This study aims to address these gaps by examining both consumer awareness and the role of brand size in shaping trust and purchase intentions in the context of AI-generated marketing.

RESEARCH METHODOLOGY

This study was conducted to gain firsthand primary data, with quantitative data type.

Data collection

For data collection, an online survey was conducted using Google Forms. A non-probability sampling technique was used, combining convenience sampling and snowball sampling methods. A total of 109 respondents participated in the survey. The questionnaire mainly includes closed-ended questions, incorporating multiple-choice, checkbox, and Likert-scale formats to effectively capture respondents' views and opinions but also a few open-ended ones as well.

Methods of Analysis

The data collected through the survey was analysed using Microsoft Excel. Responses from Google Forms were reviewed and organized into tables and charts for better understanding. Simple comparisons were made by observing patterns and trends in the responses, and the results were presented clearly in the study to support the findings.

Rationale for Research Approach

Primary research was chosen to obtain firsthand and up-to-date information from respondents belonging to different age groups. A quantitative research approach was used because it allows data to be measured and analysed easily. This method helped in gaining a clearer understanding of consumer awareness.

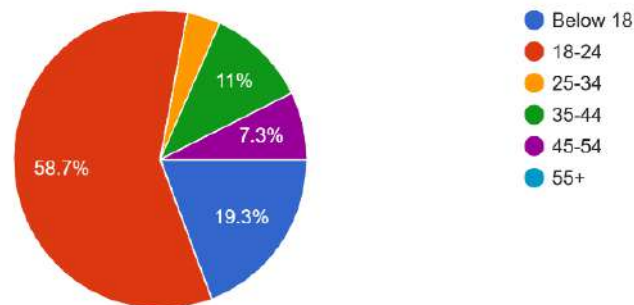
Online surveys were used as they provided respondents with a convenient, easy-to-answer, and private environment, which encouraged honest and accurate responses.

OBSERVATION AND ANALYSIS

An online survey was conducted via google forms and 109 participants responded.

What Age group do you belong to?

109 responses

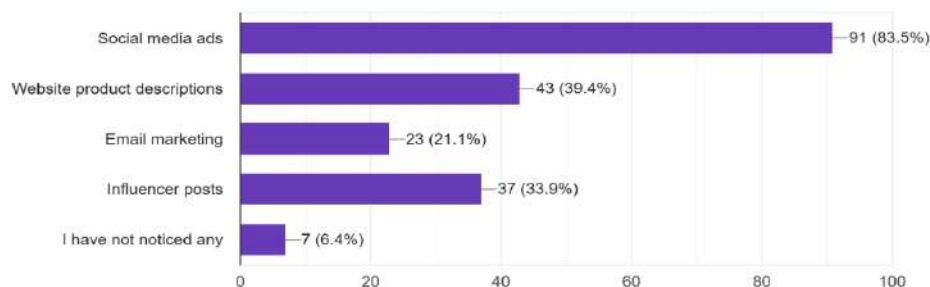


The pie chart shows that the majority of respondents belonged to the 18–24 age group at 58.7%. This was followed by respondents below 18 years of age, accounting for 19.3% of the total sample. The 35–44 age group represented 11% of respondents, while the 45–54 age group accounted for 7.3%. The 25–34 age group had the lowest participation at 3.7%. No responses were recorded from the 55 and above age group, indicating a lack of representation from this segment in the study.

Consumer Awareness regarding AI generated marketing content

Where have you noticed or come across AI-generated marketing content? (Select all that apply)

109 responses

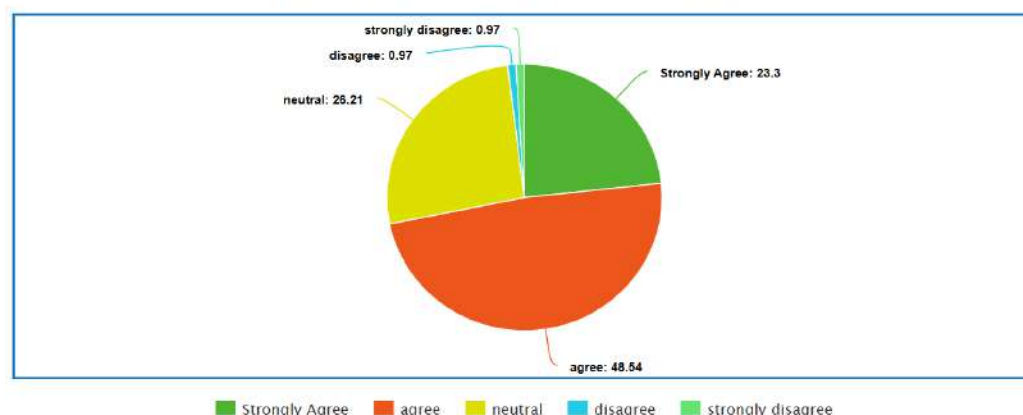


The platform on which the most respondents noticed ai generated marketing content is Social Media ads (83.5%), followed by website product descriptions (39.4%), influencer posts (33.9%) and then email marketing (21.1%). Lastly, respondents selected the option “I have not noticed any,” accounting for 6.4% of responses. These respondents will be excluded from the following questions, as their responses will be considered invalid if they have not noticed AI-generated marketing content on any platform. As a result, the next pie charts will look different, as they were created manually by adding percentages rather than through Google Forms.

After excluding the respondents that have not noticed any AI generated marketing:

- When asked if the respondents can easily identify the marketing content generated using Ai these were the results

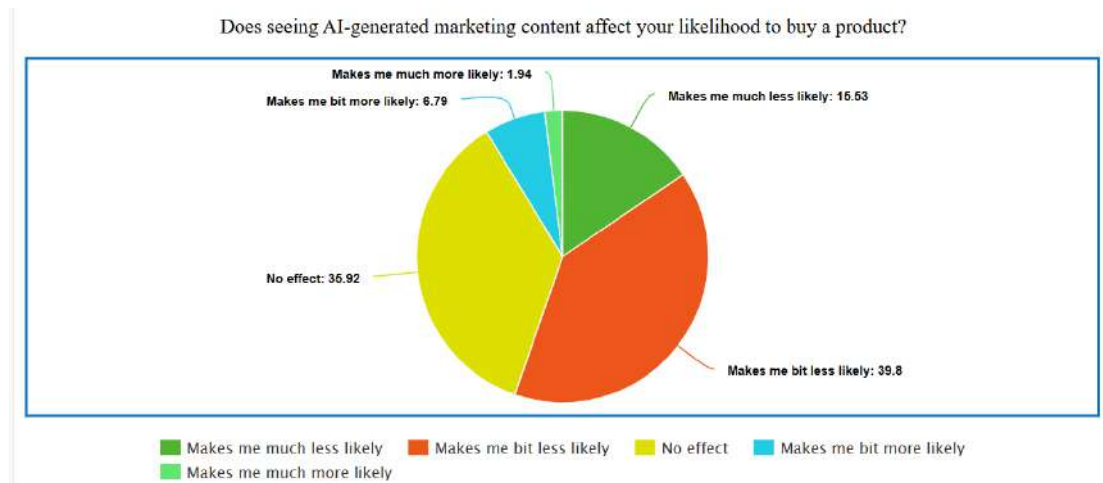
I can easily identify when marketing content is created using AI.



The most chosen option was Agree (48.54%), followed by strongly agree (23.3%), neutral (26.21%), and Disagree (0.97%) Strongly disagree (0.97%).

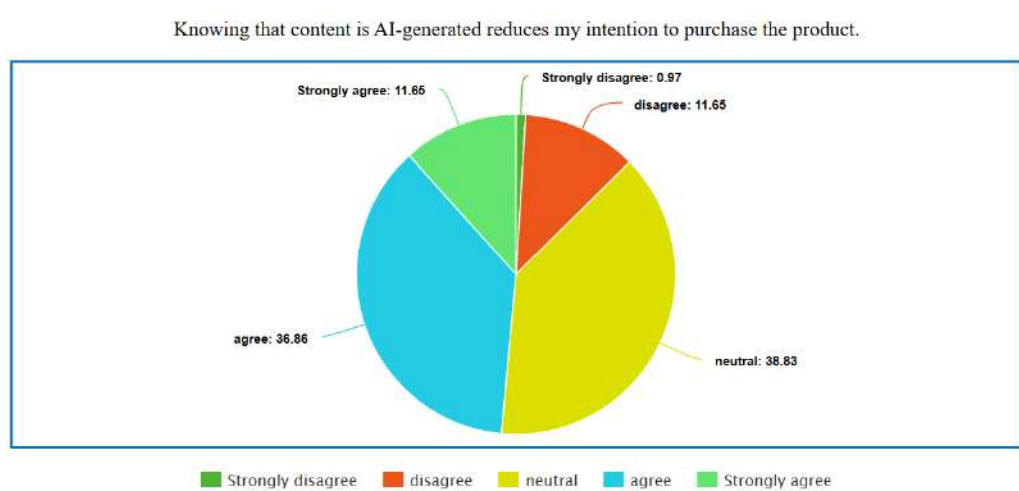
Purchase Intent

- When asked if seeing AI-generated marketing content affect your likelihood to buy a product?



The most chosen option was makes me a bit less likely (39.38%), followed by no effect (35.92%), makes me much less likely (15.53%), makes me a bit more likely (6.79%), makes me much more likely (1.94%)

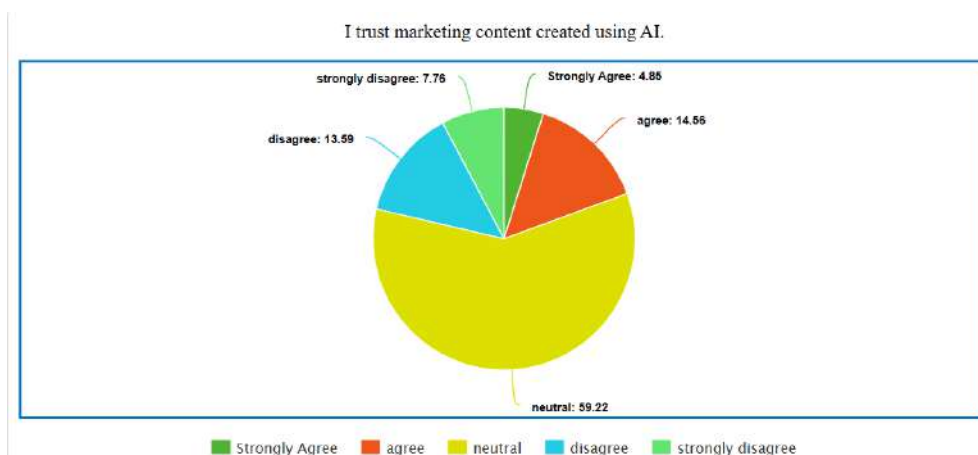
- When asked if knowing that content is ai generated the intention to purchase the product reduces -



The most chosen option was Neutral (38.83%), followed by agree (36.86%), strongly agree (11.65%) and disagree (11.65%), strongly disagree (0.97%).

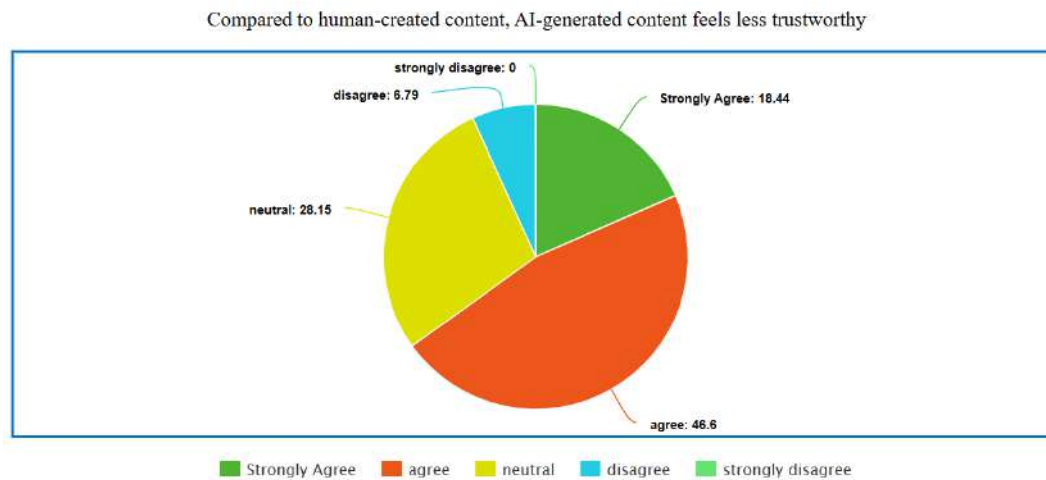
Consumer Trust regarding AI generated marketing content

- When asked if the respondents trust marketing content created using Ai



The most chosen option was Neutral (59.22%), followed by Agree (14.56%), Disagree (13.59%), Strongly Disagree (7.76%), Strongly agree (4.85%).

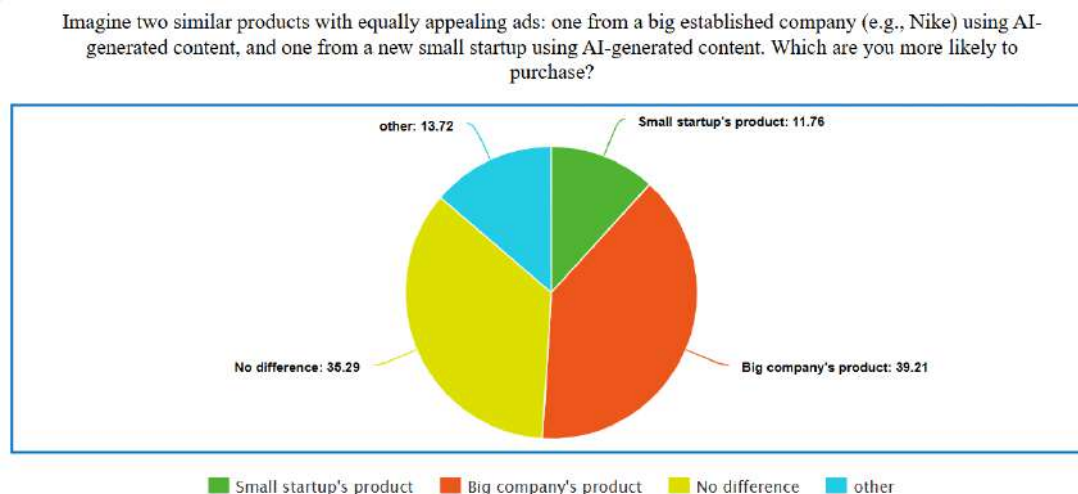
- When asked if the respondents feel that ai generated content is less trustworthy compared to human created content



The most chosen option was Agree (46.6%), followed by Neutral (28.15%), Strongly agree (18.44%), Disagree (6.79) and strongly disagree (0%).

Brand size

- When asked two similar products, brand size differs who would they most likely buy from when used AI marketing content



The most chosen response was Big Company's product (39.21%), followed by No difference (35.29%), Small startup's product (11.76%), and other factors (13.72%).

In 'depends on other factors' option respondents mentioned the following factors

- Price, quality
- Convenience
- How much value does the product provide etc.

FINDINGS

- Social media emerged as the most common platform where respondents encountered AI-generated marketing content, followed by website product descriptions, influencer posts, and email marketing, while a small group of respondents reported not noticing any AI-generated marketing and were excluded from further analysis.
- Respondents demonstrated a high level of awareness of AI-generated marketing content, with most indicating that they were able to easily identify such content.

- The findings indicate that AI-generated marketing content tends to reduce purchase intent, as many respondents reported feeling less likely to purchase a product and agreed that knowing content was AI-generated negatively influenced their buying intention.
- Brand size was found to influence purchase decisions in the context of AI-generated marketing, with respondents showing a preference for products from larger companies, although a substantial number indicated that brand size made no difference; other influencing factors mentioned included price, quality, convenience, and perceived value.
- Consumer trust in AI-generated marketing content was generally moderate to low, with many respondents expressing neutral views and a noticeable tendency to perceive AI-generated content as less trustworthy than content created by humans.

LIMITATIONS

The study used a convenience and snowball sampling method, making it a non-probability sample, and limiting the generalizability of the findings. Additionally, participants' ability to identify AI-generated marketing content was self-reported, and no experimental verification was conducted to confirm these claims.

CONCLUSION

The study aimed to assess consumer awareness, purchase intent, trust, and the influence of brand size regarding AI-generated marketing content. The results indicate that consumers are generally aware of AI-generated marketing, their purchase intent tends to decrease when exposed to it, trust is moderate to low, and brand size influences preference. This study shows that consumers are generally highly aware of AI marketing, trust human-created work more, and are more likely to prefer non-AI content. It provides valuable insights for small businesses, suggesting they may benefit from emphasizing authenticity and using AI minimally in marketing strategies.

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- The Impact of Consumer Skepticism of AI-Generated Marketing Content
<https://www.nim.org/en/publications/detail/transparency-without-trust>
- AI-Driven Personalization: Impact on Consumer Trust and Purchase Behaviour Sneha Nath Ph.D. Research Scholar
<https://ijrpr.com/uploads/V6ISSUE1/IJRPR38190.pdf>
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- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5824947

THE RIGHT TO A CLEAN ENVIRONMENT UNDER ARTICLE 21: A CONSTITUTIONAL IMPERATIVE FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT

Article 21 of the Indian Constitution recognizes the right to a clean and healthy environment as an essential part of the right to life, which is a significant advancement in Indian constitutional law. Over time, judicial interpretation has broadened the scope of “Article 21 to include the right to live with dignity, health, and ecological well-being”, even though the Constitution does not specifically guarantee environmental preservation as a basic right. This essay critically analyses the legal and constitutional development of India's right to a clean environment, emphasizing the judiciary's function in balancing basic rights and environmental preservation.

The research examines significant Supreme Court and High Court rulings that have elevated environmental preservation to the status of an enforceable fundamental right by reading environmental rights into Article 21. The constitutional synergy between “Article 21 and the Directive Principles of State Policy—specifically, Articles 48A and 51A(g)”, which have guided the evolution of environmental jurisprudence—is further examined. The importance of public interest litigation as a tool for advancing environmental justice and enabling democratic access to constitutional remedies is also evaluated in this study.

The article also identifies significant obstacles to environmental rights enforcement, such as inadequate regulatory frameworks, conflicting developmental agendas, and the intrinsic constraints of judicial action. It contends that sustainable environmental management cannot rely exclusively on judicial actions, even though judicial activism has been crucial in advancing environmental rights. The study comes to the conclusion that the “Right to a clean environment under Article 21” has developed from a judicial innovation into a constitutional need, serving as a cornerstone of India's intergenerational justice and sustainable development.

Keywords: *Article 21, Right to Clean Environment, Environmental Jurisprudence, Judicial Interpretation, Sustainable Development.*

INTRODUCTION

Due to rising pollution levels, climate vulnerability, and unsustainable development practices, environmental protection has become a fundamental priority of Indian constitutional government. Air quality, water supplies, and ecological balance have all been negatively damaged by rapid industrialization, urbanization, and population growth, which has a direct influence on human health and quality of life¹. The connection between environmental preservation and fundamental rights has become more important from a constitutional standpoint.

The right to life and personal freedom are safeguarded by Article 21 of the Indian Constitution. This article, which judicial interpretation has consistently expanded to cover more than merely physical existence, includes the right to life with dignity, health, and a healthy environment². The Supreme Court has recognized that human life is directly threatened by environmental degradation, necessitating constitutional protection. Although the right to a clean environment is not expressly recognized in the Constitution, judicial creativity has read it into Article 21 by reconciling it with the Directive Principles of State Policy and Fundamental Duties³.

This essay looks at the background of “The Right to a Clean Environment as a key component of Article 21”. It examines the constitutional foundation of environmental rights, the contribution of judicial interpretation to their evolution, and the right's current significance in relation to sustainable development. The goal of the study is to evaluate whether judicial recognition on its own is adequate to guarantee successful environmental protection in India.

¹ Agarwal, A. (1999). *Greening the Constitution*. Centre for Science and Environment.

² *Francis Coralie Mullin v. Administrator, Union Territory of Delhi*, (1981) 1 SCC 608.

³ *Virendra Gaur v. State of Haryana*, (1995) 2 SCC 577.

REVIEW OF LITERATURE

The judiciary's involvement in converting environmental protection from a policy goal into a rights-based constitutional framework is frequently highlighted in academic writing on environmental rights in India. Environmental management was mostly viewed by early constitutional writers as an administrative and legislative task with little judicial intervention¹. But with the 42nd Amendment to the Constitution, scholarly discussions focused more on how environmental protection and fundamental rights could coexist, especially when Article 21 was interpreted more broadly.

Legal experts like *Upendra Baxi* and *S.P. Sathe* have examined the judicial extension of Article 21 in relation to social justice and the environment, highlighting significant rulings like “*Maneka Gandhi v. Union of India*” and “*Subhash Kumar v. State of Bihar*”, which established the constitutional basis for acknowledging environmental rights as part of the right to life². Numerous studies emphasize the importance of public interest litigation in improving access to environmental justice, particularly in instances like “*M.C. Mehta v. Union of India*”³, where courts actively addressed public health issues, hazardous practices, and industrial pollution. However, critical research warns that persistent judicial intervention—especially through ongoing mandamus—may give rise to questions about institutional competency and the separation of powers⁴.

The obstacles of enforcement, such as poor environmental impact assessments, weak regulatory agencies, and tensions between environmental sustainability and development, are also the subject of contemporary writing. Although cases like “*Vellore Citizens' Welfare Forum v. Union of India*” have articulated *judicial doctrines* like **sustainable development**, the **polluter pays principle**, and the **precautionary principle**, scholars observe that their efficacy is frequently limited by inconsistent application and subpar administrative implementation⁵. By analysing the constitutional standing of the “right to a clean environment under Article 21” and its implications for environmental governance and sustainable development in India, this study expands on previous research.

Constitutional and Judicial Basis of the Right to a Clean Environment

The **Forty-Second Constitutional Amendment Act of 1976** included **Articles 48A and 51A(g)**, which impose *obligations on the State and citizens to protect and develop the environment*, despite the fact that the previous Constitution did not specifically recognize environmental rights. Despite being non-justiciable, courts have interpreted Article 21 broadly using these clauses⁶. The Supreme Court established the basis for environmental protection under Article 21 in ***Maneka Gandhi v. Union of India***⁷ by connecting the right to life with justice and dignity. The right to clean air and water was later acknowledged as a component of the right to life in ***Subhash Kumar v. State of Bihar***⁸. Through the creation of concepts like **sustainable development**, the **polluter pays principle**, and the **precautionary principle**⁹, the ***M.C. Mehta v. Union of India*** cases further improved environmental jurisprudence.

Public Interest Litigation and Environmental Governance

In India, public interest litigation has played a crucial role in upholding environmental rights. Courts have made it possible for people and civil society organizations to petition constitutional courts on behalf of impacted communities by liberalizing locus standi¹⁰. Environmental PILs have tackled problems like waste management, industrial dangers, river pollution, and deforestation.

To guarantee adherence to environmental standards, the courts has also embraced cutting-edge instruments like ongoing mandamus and court-monitored panels. PIL has greatly improved access to environmental justice, but

¹ Jain, M. P. (2018). *Indian Constitutional Law* (8th ed.). LexisNexis.

² Baxi, U. (2000). The avatars of Indian judicial activism. *Supreme Court Law Review*, 12, 156–209.

³ *M.C. Mehta v. Union of India*, (1987) 1 SCC 395.

⁴ Sathe, S. P. (2002). *Judicial Activism in India*. Oxford University Press.

⁵ *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647.

⁶ Constitution of India, Articles 48A & 51A(g).

⁷ *Maneka Gandhi v. Union of India*, (1978) 1 SCC 248.

⁸ *Subhash Kumar v. State of Bihar*, (1991) 1 SCC 598.

⁹ Divan, S., & Rosencranz, A. (2001). *Environmental Law and Policy in India*. Oxford University Press.

¹⁰ *S.P. Gupta v. Union of India*, 1981 Supp SCC 87.

it has also sparked questions about institutional capacity and court overreach¹. Despite these reservations, PIL continues to be an essential tool for putting Article 21's right to a clean environment into practice.

- 1) The Nashik case from the Tapovan area is a recent example of how public involvement can aid in managing environmental issues. The Western Zone Bench of the National Green Tribunal placed a stay on the cutting of trees in Tapovan until January 15, 2026, following an application made by resident Shriram Pingale. The applicant said that under the pretext of Kumbh Mela 2027 development needs, the Nashik administration was systematically removing trees without conducting a suitable Environmental Impact Assessment. The Tribunal further ordered the formation of a joint committee including representatives from the Maharashtra Pollution Control Board, the Nashik Divisional Forest Officer, and the Nashik Municipal Commissioner to look into the issue and prepare a report. Under Article 21, this case shows plainly how judicial procedures for the defense of environmental rights depend on public awareness and individual activity².
- 2) In its orders made between November and December 2025, the Supreme Court of India examined the Committee's recommendations on the establishment of a consistent policy-level definition of the Aravalli Hills and Ranges, particularly for the aim of controlling mining activities, in line with its order of May 9, 2024, as well as subsequent instructions delivered on August 12, 2025. Additionally trying to incorporate the ideas of the appropriate state governments, the Court Committee, led by the Ministry of Environment, Forest and Climate Change, comprised representatives from the Geological Survey of India, the Central Empowered Committee, the Forest Survey of India, and the Secretaries of Forest Departments from the Union Territory of Delhi and the States of Haryana, Rajasthan, and Gujarat. The Supreme Court underlined the ecological significance of the Aravalli range by noting its roles as a groundwater recharge zone, a crucial biodiversity center, and a defense against desertification.

Widespread public outcry erupted in Rajasthan, Gujarat, Haryana, and Delhi when the Court's November decision provided a strict definition as environmentalists and activists cautioned that fewer protection could enable unrestrained mining in the mountains. They said that such acts would weaken the Aravallis' function as a green barrier against eastward expansion of the Thar Desert and aggravate air pollution in cities like Delhi³.

CHALLENGES IN ENFORCEMENT OF ENVIRONMENTAL RIGHTS

There are significant barriers to the implementation of the right to a clean environment, even with strong legal recognition. Regulatory bodies frequently lack independence, technical expertise, and efficient monitoring systems. Poor implementation and low compliance are common ways that environmental rules are compromised.

Furthermore, complicated constitutional issues are still raised by the conflict between environmental preservation and economic growth. Judicial intervention is frequently prompted by ecological devastation caused by mining activities, infrastructure developments, and industrial expansion. The theory of sustainable development aims to reconcile these conflicting interests, but its implementation is still inconsistent. Long-term environmental governance runs the risk of being undermined by an excessive reliance on the courts without a commensurate legislative and executive commitment.

LIMITATIONS OF THE STUDY

The study is doctrinal in character and mostly draws from secondary legal literature, court rulings, and constitutional provisions. It does not include field-based environmental governance studies or empirical data. A comparable foreign examination is not included, and the scope is limited to the Indian legal system. Recent policy developments might not be fully covered due to the dynamic nature of environmental law.

CONCLUSION

The recognition of the right to a clean environment under Article 21 marks a major development in Indian constitutional law. Through judicial interpretation, environmental protection has become a fundamental right linked to life and dignity. However, effective environmental governance requires public participation, accountable institutions, and recognition of environmental protection as both a constitutional duty and an enforceable right.

¹ Rajamani, L. (2007). Public interest environmental litigation in India. *Journal of Environmental Law*, 19(3), 293–321.

² <https://www.thehindu.com/news/national/maharashtra/kumbh-preparation-ngt-stays-cutting-of-trees-in-tapovan-at-nashik/article70391601.ece>

³ *In Re: Issue Relating to Definition of Aravali Hills and Ranges* (2025 INSC 1338).

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TELEMEDICINE THROUGH AN ETHICAL LENS: CONCEPTUAL REFLECTIONS ON PRINCIPLES, PRACTICES, AND PITFALLS

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ABSTRACT

The sudden growth in telemedicine has changed the way healthcare is delivered by making it more accessible, efficient and continuous. Although the benefits of telemedicine are commonly agreed as technological, the ethical issues it brings are highly problematic, and therefore, they should be examined in a systematic way. This paper discusses the case of telemedicine, in the ethical perspective of analysing its principles, and practices, which are emerging, and the pitfalls to be avoided. Based on the main principles of bioethics, namely autonomy, beneficence, non-maleficence, justice, and confidentiality the paper focuses on the remaking of traditional ethical standards in digitally mediated clinical encounters. Specific consideration is given to the idea of informed consent in virtual environment, restructuring of the patient-physician relationship, and the threats to privacy and data security of telehealth environments. The analysis also concerns the problem of equity and access and how the digital divide could contribute to the existing health inequalities even though telemedicine is supposed to be an inclusive tool. The ethically important aspects of remote care include professional responsibility, clinical accountability, and cross-jurisdictional practice as well. Instead of providing empirical evidence, this paper forms a theoretical model that explains the ethical conflicts and explores normative issues that are crucial in the practice of ethical telemedicine. The paper argues that ethical integration is necessary to be transformed with the technological innovation by critically examining both the advantages and constraints of telemedicine. Finally, the research is relevant to the current perspectives in medical ethics as it offers a formalized approach to ethics that can be used by clinicians, policymakers, and researchers in the development of ethically adequate and patient-centered telemedicine systems.

Keywords: Telemedicine, Medical Ethics, Bioethical Principles, Patient Autonomy, Digital Health Governance

• INTRODUCTION

Telemedicine has transformed healthcare, especially since the COVID-19 pandemic forced us to rethink how we deliver medical care. It's a game-changer for a country like India, where millions live far from hospitals or specialists. But with great power comes great responsibility, and that's where ethics come in. This chapter is going to unpack the moral dilemmas tied to telemedicine, from patient privacy to equitable access, and see how they align with India's laws, like the Telemedicine Practice Guidelines of 2020. The ethical backbone of medicine, including telemedicine, rests on four principles laid out by Beauchamp and Childress: autonomy (patients' right to choose), beneficence (doing good), non-maleficence (avoiding harm), and justice (fair distribution of resources)¹. Privacy and confidentiality are non-negotiable in healthcare, but telemedicine puts them at risk. In a clinic, your records are in a locked cabinet. Online, they're in the cloud, vulnerable to hacks or leaks. India's Information Technology Act of 2000 and the Digital Personal Data Protection Act of 2023 set some ground rules, but they're not tailored to health data². The Telemedicine Guidelines insist on secure platforms and patient consent for data sharing, yet breaches happen. A study in the Indian Journal of Medical Ethics found cases where unregulated apps leaked sensitive patient info, like mental health records, causing stigma³. Ethically, this violates autonomy (patients lose control over their data) and non-maleficence (leaks can harm). In India, where cultural taboos around certain illnesses are strong, a breach isn't just a technical glitch it's a social disaster. Ethics emphasize trust, empathy, and human connection, but a screen can make things feel cold. How do you comfort someone over Zoom? Indian patients often value personal rapport, and doctors worry that telemedicine dilutes it⁴. The guidelines push for professionalism, but they don't address cultural factors, like how families often make decisions together in India or the role of regional languages. Ethically, we need to ensure telemedicine doesn't strip away the humanity of care.

¹ Beauchamp, T. L., & Childress, J. F. (2019). Principles of Biomedical Ethics. Oxford University Press.

² Government of India. (2000). Information Technology Act; (2023). Digital Personal Data Protection Act.

³ Mahajan, V., & Mullick, S. (2021). Telemedicine and ethics: opportunities in India. Indian Journal of Medical Ethics, 6(2), 119-124.

⁴ El-Sayed, A., et al. (2021). The ethical and medico-legal challenges of telemedicine. Clinical Ethics, 17(2), 172-179.

• INFORMED CONSENT IN TELEMEDICINE

Informed consent sits at the heart of any medical interaction, and telemedicine brings its own set of twists to it. In a standard doctor's office, you can have a back-and-forth conversation, read body language, and make sure the patient really gets what they're signing up for. With telemedicine, where everything happens through a screen or a phone, that process gets more complicated. This section explores informed consent in the context of India's telemedicine landscape, drawing from the Telemedicine Practice Guidelines of 2020 and more recent developments up to 2025.

The Indian Medical Council (now part of the National Medical Commission) has long emphasized consent as a patient's right, rooted in autonomy¹. But with telemedicine's rise, especially post-COVID, consent has evolved. By 2025, platforms like eSanjeevani have handled over 370 million consultations, making consent a daily reality for millions².

The ethical underpinning comes from principles like those in Beauchamp and Childress's work: autonomy demands that patients make decisions based on full information, while non-maleficence requires avoiding harm from misunderstandings³. In India, this ties into Article 21 of the Constitution, which protects life and personal liberty, including the right to informed medical choices, as affirmed in the Puttaswamy judgment on privacy⁴. Legally, the Telemedicine Practice Guidelines require doctors to obtain consent before proceeding, with distinctions between implied (when patient initiates) and explicit (when doctor does)⁵. But as we'll see, implementation varies, and challenges persist. Historically, informed consent in Indian medicine was more implied in traditional settings, but globalization and legal cases pushed for explicit standards. The 2010 case of Samira Kohli vs. Dr. Prabha Manchanda highlighted the need for detailed disclosure, even if not always written⁶. These challenges link to ethics: autonomy weakens if consent is not truly informed⁷. In India's diverse rural-urban landscape, telemedicine helps many but can leave vulnerable people unprotected without fixes.

• ETHICAL AND LEGAL STANDARDS FOR CONSENT-

Consent in telemedicine is not just a formality; it is the foundation that ensures patients are treated with respect and that doctors stay within ethical and legal bounds. This subsection explores the standards that guide consent in India's telemedicine practice.⁸ In telemedicine, autonomy stands out because distance and technology can make it harder for patients to feel in control. Consent must be informed, meaning patients know the benefits, risks, limits like no physical exam, and alternatives⁹. The 2023 Digital Personal Data Protection Act adds data-specific consent: it must be free, specific, informed, and easy to withdraw, with bundled consents limited to what's necessary¹⁰. For example, a telemedicine app asking for contact list access along with health data would only get consent for the health part if contacts aren't needed. Violations can mean heavy fines.

This framework evolved from informal practices before 2020, when telemedicine lacked clear rules¹¹. The pandemic pushed the Guidelines out quickly, focusing on access with practical consent. The data act tightened things for privacy, aligning with global shifts.

Court cases are still emerging, but earlier ones like Samira Kohli (2010) stressed detailed disclosure, influencing telemedicine¹². A few negligence claims post-2020 have touched on inadequate explanations of remote limits¹. No major 2024-2025 cases directly on consent yet, but rising complaints suggest more ahead.

¹ National Medical Commission. (2020). Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations.

² MoHFW. (2025). eSanjeevani Annual Report.

³ Beauchamp & Childress. (2019). Principles of Biomedical Ethics.

⁴ Supreme Court of India. (2017). Puttaswamy v. Union of India.

⁵ MoHFW. (2020). Telemedicine Practice Guidelines.

⁶ Supreme Court of India. (2010). Samira Kohli v. Dr. Prabha Manchanda.

⁷ Mahajan & Mullick (2021, updated).

⁸ Beauchamp, T. L., & Childress, J. F. (2019). Principles of Biomedical Ethics. Oxford University Press.

⁹ Telemedicine Practice Guidelines, Ministry of Health and Family Welfare (2020).

¹⁰ Digital Personal Data Protection Act (2023).

¹¹ Pre-2020 reviews in PMC articles.

¹² Supreme Court of India (2010). Samira Kohli case.

• PRIVACY AND CONFIDENTIALITY -

Legally, before 2020, privacy relied on general laws like the IT Act 2000, which penalized wrongful data disclosure but wasn't health-specific². The guidelines made confidentiality explicit: doctors liable for breaches not due to platform faults; platforms must secure data³. No recordings without consent; no sharing images or info without permission⁴. The big change came with the DPDPA 2023, treating health data as sensitive personal data. It requires informed consent for processing, data minimization collect only what's needed and security measures like encryption. An example in the act: a telemedicine app can't access contacts unless necessary; consent is limited to essentials. Breach notifications mandatory; fines up to ₹250 crore. By 2025, draft rules added details on retention and cross-border flows.

Pre-pandemic, telemedicine was informal, with privacy gaps. COVID pushed guidelines for quick access, but privacy was secondary. Puttaswamy judgment 2017 made privacy fundamental under Article 21, covering health data⁵. DPDPA filled gaps, though not health-exclusive like HIPAA. eSanjeevani uses end-to-end encryption, anonymized data for reports, no third-party sharing without consent⁶.

Common technical vulnerabilities include:

- Weak or missing encryption during data transmission and storage
- Outdated software with known security holes that have not been patched
- Poor access controls (for example, doctors using the same generic login credentials across multiple users)
- Misconfigured cloud storage buckets that are accidentally left publicly accessible
- Lack of multi-factor authentication
- Insufficient logging and monitoring, so intrusions are not detected quickly

A 2024 analysis of Indian telemedicine apps found that roughly one-third had at least one critical vulnerability that could allow an attacker to access patient records⁷. Another study from the same year reported that many platforms still allowed unencrypted transmission of consultation notes or images⁸.

• RECOMMENDATIONS

At the platform level: adopt “privacy by design” principles – build security into the system from the beginning. Use end-to-end encryption for video and messages. Enforce multi-factor authentication. Conduct regular penetration testing and vulnerability scans. Limit data retention to what is strictly necessary.

At the provider level: doctors should choose platforms with known security track records, avoid using general-purpose tools like WhatsApp for consultations, and document their due diligence when selecting a service.

At the patient level: simple habits matter – using secure Wi-Fi, keeping software updated, and being cautious about sharing consultation links.

At the policy level: India could consider health-specific data protection rules, mandatory annual security audits for large platforms, and clearer guidance on third-party liability. Strengthening the enforcement capacity of the Data Protection Board would also help.

In short, the risks of data breaches in telemedicine platforms are real, growing, and multifaceted. They threaten patient safety, trust and equity. While legal tools have improved significantly since 2020, the gap between law on paper and actual protection remains wide. Closing that gap will require sustained effort from regulators, platform developers, doctors and patients alike.

¹ Cureus and other medico-legal reviews (2023-2025).

² IT Act 2000.

³ Telemedicine Practice Guidelines (2020).

⁴ Ibid.

⁵ Puttaswamy v. Union of India (2017).

⁶ eSanjeevani Privacy Policy.

⁷ Security analysis of Indian telemedicine apps (2024), cited in multiple cybersecurity reports.

⁸ Patel et al. (2024 update), Security vulnerabilities in Indian health apps.

• CONCLUSION

As a chapter conclusion, It can comfortably say that the “ethico-legal implications” of telemedicine laws in India lie precisely in this mismatch: ethics already tells a fairly coherent story about what good telemedicine should be, while law is still catching up, selectively incorporating some duties into enforceable liabilities and leaving critical gaps around equity, data justice, and shared accountability. In your subsequent work, that gap becomes both your problem and your opportunity: a space to argue for a more integrated, principle-sensitive telemedicine framework that is not only technically functional, but also substantively fair, safe and worthy of patient trust.

CHALLENGES OF A DIGITAL FIRST NATION: BALANCING PRIVACY AND SECURITY IN INDIA'S CONSTITUTIONAL FRAMEWORK

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ABSTRACT

The landmark case Justice K.S. Puttaswamy v. Union of India (2017) was a turning point in India's legal history which treated privacy as a fundamental right. The Supreme Court articulated privacy as central to dignity, autonomy, and liberty, introducing a proportionality test to evaluate state intrusions. This paper traces the evolution of India's data protection framework from Aadhaar-linked controversies to the Digital Personal Data Protection Act, 2023 and Draft Rules, 2025. Using doctrinal analysis, it examines how courts and legislations have attempted to reconcile privacy with national security, surveillance, and governance imperatives. Case law including Puttaswamy I & II, Anuradha Bhasin, and the Pegasus spyware litigation highlight persistent tensions between individual rights and executive discretion. The DPDP Act operationalizes privacy through consent and fiduciary obligations but broad government exemptions and weak oversight dilute safeguards. The paper contributes by mapping India's constitutional arc of privacy, identifying gaps in current frameworks, and proposing reforms to strengthen judicial oversight and independent regulation in the digital age.

Keywords: Privacy and Security, Doctrine of Proportionality, Puttaswamy, Digital Personal Data Protection Act (DPDP) Act, Fundamental Rights, Surveillance and Governance.

1. INTRODUCTION

India's constitutional journey on privacy reflects a shift from denial to recognition. Early cases such as M.P. Sharma v. Satish Chandra (1954) and Kharak Singh v. State of Uttar Pradesh (1962) rejected privacy as a fundamental right [1]. The digital age has transformed privacy from a physical concept into a complex play of data, technology, and power of state [2]. It is bringing out new risks such as, data mining, biometric surveillance, and exclusion from welfare schemes, culminating in Justice K.S. Puttaswamy (Retd.) v. Union of India (2017) [3-4]. The Court's unanimous ruling recognized privacy as fundamental, linking it to dignity and autonomy [5]. It introduced a structured proportionality test of "legality", "legitimacy", "necessity", and "proportionality", to evaluate restrictions [6]. This test has since guided legislative responses, notably the DPDP Act, 2023 and Draft Rules, 2025 [4].

2. LANDMARK CASES LEADING TO INDIA'S DIGITAL PERSONAL DATA PROTECTION ACT

The *Puttaswamy I* ruling in 2017 arose from challenges to Aadhaar's biometric authentication [7]. Petitioners raised concerns about Aadhaar's mandatory biometric authentication leading to surveillance, exclusion, and misuse. They argued that privacy was implicit in Article 21 and cited earlier precedents like *Gobind v. State of MP* (1975). The Court ruling held privacy to be a fundamental right under Articles 14, 19, and 21, while rejecting earlier precedents. It introduced the proportionality test, requiring that any intrusion be backed by law (Legality), serve a legitimate aim (Necessity), and adopt the least intrusive means (Proportionality). This was a landmark judgement emphasizing the dignity, autonomy, and informational self-determination in this crucial area of the data privacy. But the conflict continued later too.

In *Puttaswamy II* (2018), the Court upheld Aadhaar for welfare delivery but struck down its use by private entities [8]. The majority balanced welfare objectives with privacy, while Justice Chandrachud's dissent warned against surveillance potential [9].

The principle was extended in *Anuradha Bhasin v. Union of India* (2020), where the Court raised concerns about indefinite internet shutdown in Jammu & Kashmir. It held that freedom of speech and trade extends to the internet. Tapping the law of proportionality, it ruled that restrictions such as shutdowns must be proportionate, legal, and subject to review [10].

The Pegasus spyware litigation (2021-23) further reinforced judicial oversight. Allegations of surveillance on journalists and activists led the Court to appoint a technical committee, rejecting blanket "national security" justifications [11]. This case reinforced the need for transparency and accountability in surveillance practices and judicial oversight.

3. LEGISLATIVE RESPONSE TO PRIVACY: DPDP ACT, 2023 AND DRAFT RULES, 2025

The Digital Personal Data Protection (DPDP) Act operationalizes privacy by codifying consent, fiduciary duties, and enforcement (Table 1) i.e. a rights-based framework that establishes the rights and duties of individuals (Data Principals) and the obligations of entities processing their data (Data Fiduciaries) [12].

Table 1 Key provisions of DPDP Act, 2023

Provision	Content	Constitutional Link
Section 2(t)	Defines personal data	Informational autonomy (Art. 21)
Section 3	Extraterritorial scope	Sovereignty, global standards
Section 6	Consent: free, informed, revocable	Self-determination
Section 8	Purpose limitation, breach reporting (72 hrs)	Necessity & proportionality
Section 9(5)	Children’s data and parental consent	Protection of vulnerable groups
Section 17	Government exemptions	National security vs. privacy
Section 19	Data Protection Board	Enforcement, independence concerns

The DPDP Act operationalizes privacy by codifying consent, fiduciary duties, and enforcement. But it’s not absolute, and broad government exemptions under Section 17(2)(a) raise constitutional concerns [13].

4. CRITICAL CONCERNS IN DPDP FRAMEWORK: PRIVACY VS SECURITY TENSIONS

The DPDP Act’s design reveals recurring tensions. Section 17 grants sweeping exemptions to government agencies, undermining proportionality. The Data Protection Board’s short tenure and reappointment eligibility raise concerns of its being independent. Amendments to the RTI Act restrict disclosure of personal information, weakening its principle of transparency. Consent mechanisms remain ambiguous, risking uneven practices. Encryption debates highlight pressure to dilute security, while cross-border transfers lack clear adequacy criteria.

Table 2 Privacy vs Security debate in digital age

Issue	Statutory Clause	Judicial Standard	Concern
Government Exemptions	Sec. 17	Puttaswamy proportionality	Risk of mass surveillance
Board Independence	Sec. 19	Tribunal autonomy (Rojer Mathew, 2020)	Executive influence
RTI Dilution	Amendment to Sec. 8(1)(j) RTI Act	Transparency principle	Weakens accountability
Consent Mechanisms	Sec. 6, Draft Rules	Informational self-determination	Ambiguity, uneven practices
Encryption	Policy debates	Freedom of expression	Pressure to dilute security
Cross-border transfers	Sec. 16	Global adequacy standards	Lack of clear criteria

5. COMPARATIVE INSIGHTS

India’s framework aligns partially with global standards but diverges in oversight and exemptions. The EU’s General Data Protection Regulation (GDPR) mandates independent regulators, granular consent, and adequacy-based cross-border transfers [14]. The UK’s Information Commissioner’s Office (ICO) is a non- government public body, free from political interference, directly accountable to Parliament to ensure its independence in enforcing data protection and information rights [15]. India’s DPDP Act relies on government-appointed, executive controlled boards and a negative list regime for transfers, leading to weaker redressal mechanisms [16]. Table 3 compares the DRDP Act vs GDPR.

Table 3 India DPDP Act, 2023 vs EU GDPR

Aspect	India DPDP Act	EU GDPR
Consent	Free, revocable	Explicit, granular
Oversight	Govt-appointed Board	Independent authority
Breach reporting by Data controller	72 hrs	72 hrs (Art. 33 GDPR)
Exemptions	Broad (Sec. 17)	Narrow, judicially reviewable
Children’s Data	Parental consent, no ads	Similar, but stricter
Cross-border	Negative list regime	Adequacy decisions

In essence, the lack of robust checks and balances and the broad wording of Section 17 in the DPDP Act have led legal experts to argue that it tilts the balance of power heavily towards government interests, potentially undermining fundamental rights and democratic principles.

6. LESSONS FROM JUDICIAL REASONING AND WAY FORWARD

While India's framework converges with global norms like GDPR in some respects, its reliance on executive-controlled enforcement weakens independence. Indian judicial system has consistently linked privacy to autonomy and dignity ("Privacy as dignity"). Legality, necessity, proportionality remain the gold standard, emphasizing as safeguard against state intrusion. Judicial oversight was essential and seen in cases like Pegasus, resisting unchecked executive power. But the transparency vs secrecy fight remained live, with amendments diluting RTI undermine accountability.

Hence, the future of India's data protection regime depends on narrowing the scope of government exemptions and ensuring the independence of the regulatory board. Judicial oversight of surveillance claims and parliamentary accountability for various bodies would strengthen trust in the system. Equally important is the refinement of consent mechanisms so that individuals can exercise meaningful control over their data, supported by transparent and multilingual processes. Protecting encryption standards remains vital to safeguard digital rights, while new regulations must address emerging challenges such as algorithmic bias and automated decision-making. Taken together, these measures would align India's framework more closely with constitutional principles of dignity and autonomy, while also harmonizing with international standards of privacy protection [17-18].

7. CONCLUSION

India's legal journey from the *Puttaswamy* verdict to the DPDP Act demonstrates both progress and fragility in protecting individual freedoms in a digital society. The judiciary established a strong doctrinal foundation through proportionality and oversight, yet subsequent legislation has left wide openings for executive discretion. Experiences with Aadhaar, internet restrictions, and spyware controversies reveal how easily safeguards can be eroded when accountability is weak. To secure trust in governance, reforms must embed independence in regulatory bodies, ensure transparency in surveillance practices, and adapt rules to emerging technologies. Only by reinforcing dignity and autonomy, at the core of digital regulation, can India reconcile these two extremes of security imperatives and the promise of constitutional rights.

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**ASSESSING JUSTICE MECHANISMS, PROTECTIVE SOLUTIONS, AND REGIONAL REALITIES
IN DOMESTIC VIOLENCE CASES**

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ABSTRACT

Domestic violence remains a persistent issue in societies globally, affecting the rights, safety, and dignity of countless individuals, especially women. While legal frameworks exist to address this violence, their efficacy often varies based on enforcement, accessibility, regional socio-cultural factors, and victim support systems. This paper assesses justice mechanisms, protective solutions, and regional realities of domestic violence cases, with a particular focus on India and comparative insights from selected global contexts. Through a multidisciplinary lens, it explores the intersection of law, policy, society, and individual agency, highlighting gaps and proposing inclusive, rights-based approaches to combat domestic violence effectively.

Keywords: Domestic Violence, Survivor-Centric Justice, Protection Mechanisms, Regional Disparities, Gender-Based Violence, Legal Empowerment, Socio-Cultural Norms, Community Engagement, Trauma-Informed Care, Access to Justice

1. INTRODUCTION

Domestic violence represents one of the most pervasive human rights violations, affecting individuals across all socioeconomic, cultural, and geographic boundaries. It encompasses not only physical harm but also emotional, psychological, sexual, and economic abuse within intimate or familial relationships. The *World Health Organization (WHO)* estimates that nearly one in three women globally have experienced physical and/or sexual violence by an intimate partner during their lifetime.¹ Such violence severely compromises a person's autonomy, security, and dignity, often leading to long-term mental health challenges, social exclusion, and economic dependency. Domestic violence is not merely a private or isolated incident it is a structural issue that mirrors broader gender inequalities embedded in law, custom, and daily life.

In India, the situation is equally alarming. According to the *National Family Health Survey-5 (NFHS-5)*, about 29.3% of women aged 18-49 have experienced spousal violence, with significant underreporting due to stigma, fear of reprisal, and normalization of abuse.² Despite the enactment of the *Protection of Women from Domestic Violence Act, 2005*, enforcement gaps, limited legal awareness, and societal pressures often prevent survivors from accessing timely protection and redress. Survivors, especially those from marginalized castes, tribal groups, or LGBTQ+ identities face disproportionate hurdles due to intersectional forms of discrimination and exclusion. Domestic violence remains both a legal and developmental challenge, requiring a holistic response that includes prevention, protection, prosecution, and psychosocial support.

This paper begins by defining the various dimensions of domestic violence and examining the scope of the problem both globally and within the Indian context. It assesses the effectiveness of existing justice mechanisms, the availability and limitations of protective solutions, and the influence of regional, socio-economic, and cultural factors in shaping survivor experiences. Drawing on comparative perspectives and real-world interventions, the paper argues for a multi-pronged and rights-based strategy that integrates legal reform with institutional strengthening, community engagement, and trauma-informed care. As highlighted by *UN Women*, meaningful change demands survivor-centred approaches that are inclusive, localized, and sustainable.³

2. LEGAL AND JUSTICE MECHANISMS**2.1 Overview of Existing Legal Frameworks**

Domestic violence jurisprudence in India has developed through a combination of statutory interventions and judicial activism. While historically governed by the Indian Penal Code's general provisions on assault and cruelty, the enactment of targeted legislation like the *Protection of Women from Domestic Violence Act, 2005* (PWDVA) marked a pivotal shift. The PWDVA was designed to provide not only punitive but also preventive and remedial measures, including protection orders, residence rights, and custody arrangements. Its civil nature

¹ WHO, "Violence Against Women Prevalence Estimates," 2021, <https://www.who.int>

² NFHS-5, *International Institute for Population Sciences (IIPS)*, 2021–22, <https://ruralindiaonline.org>

³ UN Women, "Handbook for Legislation on Violence Against Women," 2012, <https://www.unwomen.org>

was intended to offer expedited relief and minimize adversarial confrontation, particularly significant in a country where victims often hesitate to engage with criminal law processes due to stigma and dependency.¹

However, the implementation has been far from uniform. A report by the *Ministry of Women and Child Development* revealed significant gaps in state-level budgetary allocations, awareness generation, and appointment of Protection Officers, especially in rural and tribal areas.² Judicial recognition of the broader intent behind the PWDVA is evident in cases like *Hiral P. Harsora v. Kusum Narottamdas Harsora*, where the Supreme Court expanded the scope of “respondents” beyond adult male members to include female perpetrators within domestic spaces, recognizing the complex social realities of abuse.³

2.2 Role of Judiciary and Law Enforcement

The judiciary plays a pivotal role in interpreting and enforcing domestic violence laws. However, inconsistency in judicial attitudes ranging from ‘progressive to patriarchal’ often determines the efficacy of justice delivery. In *Indra Sarma v. V.K.V. Sarma*, the Supreme Court took a liberal view of “domestic relationship” under the PWDVA, reinforcing the principle that protection should not be denied merely because a relationship does not conform to traditional marital norms.⁴ Yet, lower courts frequently impose reconciliation or mediation without assessing power asymmetries, inadvertently perpetuating trauma and silencing survivors.⁵

Law enforcement agencies, despite being the first point of contact, remain undertrained in handling domestic violence complaints. The *National Family Health Survey-5* (NFHS-5) indicates that 70% of women who faced domestic violence never sought help, and among those who did, only 3% approached the police.⁶ A 2020 *Human Rights Watch* report highlighted police apathy and procedural delays, which disincentivize survivors from initiating complaints.⁷ Moreover, structural biases such as dowry-linked assumptions and moral judgments frequently undermine the neutral role of the police.

2.3. Access to Legal Aid and Representation

Access to legal aid is fundamental for ensuring justice in domestic violence cases, especially for women from marginalized communities who often lack the financial, educational, and social resources to pursue legal remedies. In India, Article 39A of the Constitution, along with the *Legal Services Authorities Act, 1987*, mandates free legal aid for eligible persons, including women. Despite these provisions, the delivery of legal aid remains patchy and underfunded. A 2018 study by the *Commonwealth Human Rights Initiative (CHRI)* found that many women were unaware of their right to legal aid or found the process of accessing it too bureaucratic and intimidating.⁸

Moreover, the infrastructure of legal aid institutions such as District Legal Services Authorities (DLSAs) suffers from understaffing and a lack of coordination with other support systems like shelter homes and Protection Officers. An audit by *NITI Aayog* acknowledged the disconnect between legal aid bodies and women's helplines, police, and civil society actors, recommending better inter-agency protocols and digital outreach.⁹

Judicial initiatives like the Legal Services Clinics at family courts have made some progress in urban areas, yet they rarely reach rural or tribal women effectively. The role of NGOs and feminist legal collectives has been significant in bridging these gaps. For instance, organizations like *Majlis Legal Centre* in Mumbai offer survivors legal counselling, court representation, and psychosocial support, demonstrating how rights-based legal aid can be made survivor-centric.¹⁰ Yet such efforts remain fragmented and donor-dependent, making state-supported, integrated, and decentralized legal aid crucial.

¹ See Flavia Agnes, “Law, Justice and Gender: Family Law and Constitutional Provisions in India” (OUP 2011)

² MWCD Annual Report 2022–23, Government of India

³ *Hiral P. Harsora v. Kusum Narottamdas Harsora* 2016] 10 SCC 165

⁴ *Indra Sarma v. V.K.V. Sarma* 2013, 15 SCC 755

⁵ See Pratiksha Baxi, “Public Secrets of Law: Rape Trials in India” (OUP 2014)

⁶ NFHS-5 Fact Sheet, International Institute for Population Sciences, 2021

⁷ “India: COVID-19 Lockdown Increases Domestic Violence”, HRW Report, April 2020

⁸ CHRI, *Hope Behind Bars?*, 2018, available at <https://www.humanrightsinitiative.org/publications>

⁹ NITI Aayog, *Strategy for New India@75*, 2018, available at <https://niti.gov.in/strategy-new-india>

¹⁰ See Flavia Agnes & Madhura Lohokare, “Of Women Inside: Women in Postcolonial India”, 2016

The *Supreme Court Legal Services Committee (SCLSC)* has also made strides in facilitating access at the apex level, but procedural complexities often deter victims from reaching that stage. More systemic engagement is required to ensure not just legal representation but also the dignity, agency, and safety of survivors throughout the legal process.

3. PROTECTIVE SOLUTIONS AND SUPPORT SYSTEMS

3.1. Emergency and Long-Term Protection Orders

Protection orders are one of the most immediate legal tools available to survivors of domestic violence. Under the *Protection of Women from Domestic Violence Act, 2005 (PWDVA)*, courts are empowered to issue different forms of orders protection, residence, maintenance, custody, and monetary relief to ensure the survivor's safety and economic security. Section 18 of the Act allows for protection orders restraining the abuser from committing acts of domestic violence, contacting the victim, or visiting her workplace or residence. Despite their potential to offer immediate safety, the actual enforcement and accessibility of these orders vary widely across regions.¹

A study by the *Centre for Social Research (CSR)* revealed that in many states, women found it difficult to access the courts for such orders due to lack of legal awareness, reluctance of court staff, and procedural delays.² Even when orders are issued, enforcement remains a major hurdle. There are widespread reports of police inaction and reluctance to arrest violators, often dismissing such breaches as "family matters." In *Krishna Bhattacharjee v. Sarathi Choudhury*, the Supreme Court clarified that protection orders under PWDVA are civil in nature but enforceable through the criminal justice system, emphasizing that violations can and should attract penal consequences under Section 31 of the Act, 2016.³

Protection Officers (POs), mandated under the Act to assist victims in obtaining orders and facilitating services, are often overburdened and undertrained. A 2019 audit by *Jagori*, a Delhi-based feminist organization, found that many POs lacked basic infrastructure such as office space, staff, and transport thus hampering their ability to respond quickly in emergency situations.⁴

In contrast, jurisdictions like Tamil Nadu have pioneered the integration of fast-track courts and digital complaint portals to expedite the issuance of orders. Global practices also offer useful insights: for example, the *Domestic Violence Act of South Africa* allows for interim protection orders to be granted without the respondent's presence, which is later followed by a confirmation hearing offering survivors immediate relief without procedural delays.⁵ Such models could inform procedural innovations in Indian domestic violence jurisprudence.

3.2. Shelter Homes and Counselling Services

Shelter homes and counselling services form a crucial pillar of survivor support under the *Protection of Women from Domestic Violence Act, 2005 (PWDVA)*, which empowers Protection Officers to facilitate access to temporary shelter and psychological aid. However, implementation remains uneven across Indian states. According to the *National Commission for Women*, a significant number of One Stop Centres (OSCs) lack essential infrastructure, including trained counsellors and legal staff, limiting their effectiveness in handling complex trauma cases.⁶ Many survivors report overcrowding, lack of hygiene, and absence of confidentiality in government-run shelter homes, which discourages women especially from conservative or rural backgrounds from seeking refuge. The *Tata Institute of Social Sciences* also observed that referrals to shelter homes are frequently delayed or mishandled due to insufficient inter-agency coordination and lack of police sensitization.⁷

Civil society initiatives have attempted to fill these institutional gaps. Organizations like *Snehalaya* in Maharashtra and *Shakti Shalini* in Delhi provide holistic care, combining shelter, legal aid, vocational training,

¹ PWDVA, No. 43 of 2005, Acts of Parliament, 2005 (India)

² Centre for Social Research, "Impact Assessment of PWDVA," 2012, available at <http://www.csrindia.org/>

³ *Krishna Bhattacharjee v. Sarathi Choudhury* 2 SCC 705

⁴ Jagori, "Responding to Domestic Violence: A Study on the Functioning of Protection Officers," 2019, available at <https://jagori.org/>

⁵ *Domestic Violence Act 116 of 1998* (S. Afr.)

⁶ *NCW Annual Report 2021–22*, <https://ncw.nic.in/>

⁷ *TISS Report on Swadhar Greh Scheme*, MWCD, 2020

and psychological counselling. These rights-based models demonstrate better survivor recovery and reintegration, yet they remain geographically limited and dependent on private funding. Counselling, while mandated in the PWDVA and schemes like *Swadhar Greh*, is often undervalued and delivered without a trauma-informed approach. A recent study in the *Indian Journal of Psychiatry* emphasized the need for culturally sensitive and intersectional mental health services, noting the absence of trained professionals who can address the unique needs of survivors from marginalized communities.¹ To make these services truly impactful, the state must integrate survivor-centred counselling into the broader legal and welfare ecosystem, ensuring dignity and psychosocial healing alongside physical protection.

3.3. Role of Community-Based and Non-State Actors

Community-based mechanisms and non-state actors play a pivotal role in both facilitating and obstructing responses to domestic violence. In several rural regions, women's collectives, panchayats, and local NGOs act as first responders, mediators, and referral agents, often stepping in where formal institutions fail. While this grassroots engagement increases access to help, it sometimes risks informal settlements that prioritize family harmony over survivor rights. A study by *ActionAid India* noted that while community forums often provide rapid relief, they may inadvertently pressure women into reconciliation without addressing the root violence.²

Conversely, trained feminist organizations like *Jagori* and *Majlis* have built parallel systems of support through legal counselling, shelter referrals, and police sensitization programs. These actors have proven effective in urban and semi-urban settings, especially in reaching survivors reluctant to approach formal courts or police. Yet their reach remains limited due to reliance on donor funding and inadequate integration into the state machinery. According to a *UN Women* report, the inclusion of such non-state actors in policy implementation frameworks can significantly enhance survivor-centric outcomes.³

4. REGIONAL REALITIES AND DISPARITIES

4.1. Urban vs Rural Experiences

The experience of domestic violence and the accessibility of justice mechanisms vary significantly between urban and rural areas in India. Urban survivors typically have relatively better access to police, courts, legal aid, and shelters, though stigma and social pressures still persist. In contrast, women in rural areas often face deep-rooted patriarchal norms, lower literacy, and limited mobility, which significantly hinder reporting. A *National Family Health Survey-5* (NFHS-5) report found that only a fraction of rural women experiencing abuse ever seek help, and among them, most turn to family or neighbors rather than institutions.⁴

Infrastructure gaps in rural justice delivery such as inadequate police presence, limited shelter homes, and lack of legal awareness compound the problem. Women in remote areas may have to travel long distances to file complaints, often facing hostile or dismissive officials. NGOs operating in rural belts highlight that survivors are frequently discouraged from pursuing legal cases due to fears of social isolation or retaliation. A study by *Oxfam India* emphasized that rural women are disproportionately affected by legal illiteracy and economic dependence, making empowerment through localized support systems crucial.⁵

4.2. Socio-Cultural and Economic Factors

Socio-cultural norms such as patriarchy, caste hierarchies, and religious customs deeply influence how domestic violence is perceived and addressed across India. In many communities, violence is normalized as a "private matter," and women are conditioned to endure abuse for the sake of family honor. This societal conditioning often prevents survivors from seeking help. A field study by *International Center for Research on Women* (ICRW) revealed that economic dependence, fear of social ostracism, and internalized stigma are major deterrents to reporting violence, especially among Dalit and minority women.⁶

Economically vulnerable women face an even greater risk of prolonged abuse due to their inability to access legal aid, leave abusive homes, or support themselves independently. Informal laborers and migrant women often lack identity documents or proof of residence, which are essential for accessing state services. In urban

¹ Geeta & Kumar, *Indian J. Psychiatry*, 2020

² ActionAid, "Voices from the Field: Domestic Violence in Rural India," 2020

³ UN Women, "Realising Women's Rights: Progress and Promise," 2015

⁴ NFHS-5, IIPS, 2021, available at <https://ruralindiaonline.org>

⁵ Oxfam India, "Domestic Violence in India: The Hidden Epidemic," 2019

⁶ ICRW, "Masculinity, Son Preference and Intimate Partner Violence in India," 2014

slums and remote tribal regions, the absence of financial autonomy reinforces cycles of dependency and silence. A *World Bank* report highlighted the strong correlation between women's income generation and reduced tolerance for abuse, underscoring the role of economic empowerment in long-term violence prevention.¹

4.3. State-Level Implementation Gaps

Despite a unified national legal framework like the *Protection of Women from Domestic Violence Act, 2005*, its enforcement varies greatly across Indian states due to differences in political will, administrative efficiency, and resource allocation. Some states, such as Kerala and Tamil Nadu, have institutionalized better support mechanisms, including state-funded shelters and gender-sensitive police units. In contrast, states with weaker governance or socio-political instability often lag in appointing Protection Officers, running One Stop Centres, or allocating funds for victim services. A *National Crime Records Bureau (NCRB)* report revealed wide disparities in the registration of domestic violence cases across states, reflecting both underreporting and inconsistent police responsiveness.²

In Maharashtra, for example, while metropolitan regions like Mumbai show higher reporting and greater availability of legal aid, rural districts still suffer from lack of implementation infrastructure and social stigma. A policy analysis by *Vidhi Centre for Legal Policy* noted that many state governments fail to issue timely budgetary allocations under schemes like *Swadhar Greh* and *Ujjawala*, leading to closure or inactivity of crucial support institutions.³ This patchy execution undermines the promise of legal protection and exacerbates regional inequality in access to justice.

5. COMPARATIVE GLOBAL PERSPECTIVES

Examining global responses to domestic violence provides valuable insights into how alternative justice models and survivor-focused systems can inform Indian policy reforms. For instance, the United Kingdom operates *Multi-Agency Risk Assessment Conferences (MARACs)*, where law enforcement, health, housing, and legal services collaborate to create safety plans for high-risk survivors. These coordinated interventions have led to significant reductions in repeat violence and improved survivor satisfaction. According to the *UK Home Office*, MARACs have proven effective in improving early intervention outcomes and reducing fatality risks.⁴

South Africa offers another instructive example through its *Domestic Violence Act of 1998*, which allows for the issuance of interim protection orders without the presence of the abuser, followed by a hearing for confirmation. This ensures swift protection without procedural delays, a critical advantage for survivors in immediate danger. A report by *UN Women* highlighted South Africa's progress in integrating victim-friendly police units and specialized courts, although it also noted challenges in rural implementation.⁵ These models demonstrate how procedural innovation and cross-agency coordination can enhance survivor protection—lessons that could inform India's evolving legal approach.

6. CHALLENGES AND BARRIERS TO JUSTICE

Despite legal protections, survivors of domestic violence in India encounter numerous barriers when seeking justice. These include institutional apathy, victim-blaming attitudes, and procedural delays that discourage reporting and erode trust in the legal system. Many police officials lack training in gender sensitivity, often discouraging complaints or attempting informal reconciliation, which prioritizes social harmony over justice. Judicial delays and repeated adjournments add further emotional and financial burdens on survivors. A *Human Rights Watch* investigation during the COVID-19 pandemic found that lockdowns worsened the situation, with women trapped with their abusers and little access to police or courts.⁶

Further compounding these challenges is the inadequacy of protection infrastructure. Many survivors lack access to safe housing, legal counsel, and consistent follow-up mechanisms. Courts sometimes place an undue burden on victims to prove abuse, disregarding the difficulties in collecting evidence in domestic spaces.

¹ World Bank, "Gender-Based Violence and Development," 2019

² NCRB, "Crime in India 2022," Ministry of Home Affairs, available at <https://ncrb.gov.in>

³ Vidhi Legal Policy, "Mapping Domestic Violence Laws in India," 2021

⁴ UK Home Office, "Multi-Agency Working and Information Sharing Project," 2016

⁵ UN Women, "Global Database on Violence Against Women: South Africa," 2020, available at <https://evaw-global-database.unwomen.org>

⁶ Human Rights Watch, "India: COVID-19 Lockdown Increases Domestic Violence," Apr. 2020, available at <https://www.hrw.org>

Additionally, intersectional vulnerabilities such as caste, disability, and sexual orientation can amplify marginalization within the justice process. A *UNDP India* report emphasized that legal mechanisms must account for systemic discrimination and adopt trauma-informed, inclusive procedures that centre the survivor's dignity and rights.¹

7. POLICY RECOMMENDATIONS AND WAY FORWARD

Improving institutional response is foundational to ensuring timely justice and protection for survivors. Police personnel, Protection Officers, and the judiciary must receive mandatory training in gender sensitivity and domestic violence protocols. Institutional reforms should include integrated case management systems to track complaints, protection orders, and service delivery, reducing delays and victim re-traumatization. Budget allocations for legal aid, shelter homes, and One Stop Centres must be increased and disbursed efficiently. *NITI Aayog* has emphasized that effective convergence between departments and timely data collection are crucial to building an accountable and survivor-centric ecosystem.²

7.1. Enhancing Community Engagement

Legal and social interventions are more effective when grounded in community involvement. Awareness campaigns in schools, workplaces, and local governance institutions can challenge stigma and normalize help-seeking behaviour. Collaborating with religious leaders, panchayat members, and local influencers helps reach underrepresented populations and counter culturally ingrained acceptance of domestic violence. As shown by *Oxfam India*, community-based initiatives that include men and boys in dialogue have been successful in reshaping gender norms and reducing violence in rural areas.³

7.2. Technology and Innovation in Protection

Technology offers promising tools to increase accessibility and response in domestic violence cases. Digital helplines like *181*, emergency response apps such as *112 India*, and mobile-based counselling platforms can provide confidential, immediate support. These tools, however, must be integrated with physical services such as police, legal aid, and shelter networks for impact. A study by *UNDP India* highlights that technology-supported services can improve survivor outreach but must be backed by privacy safeguards, local language access, and capacity building.⁴

7.3. Victim-Centered and Trauma-Informed Approaches

Any effective policy must prioritize the emotional, physical, and legal dignity of survivors. Trauma-informed approaches require systems to validate survivor experiences, avoid re-traumatization, and offer psychological healing alongside legal support. Measures include private courtrooms, respectful police interactions, and long-term counselling. *UN Women* advocates a "dignity-first" model where survivors lead decision-making processes, enhancing trust and long-term recovery.⁵

8. CONCLUSION

Domestic violence is deeply entrenched in structural inequalities, patriarchal norms, and cultural silences. While legal frameworks like the *Protection of Women from Domestic Violence Act, 2005* represent important milestones, legislation alone cannot dismantle the systemic oppression that normalizes abuse within private and familial spaces. Survivors often navigate complex emotional, social, and financial dependencies that inhibit them from seeking justice or protection. As highlighted by the *UN Special Rapporteur on Violence Against Women*, addressing domestic violence requires more than punitive responses; it demands a coordinated prevention strategy rooted in gender equality, education, and economic empowerment.⁶

Justice mechanisms judicial access, police response, protection orders, and legal aid must be harmonized with support systems such as shelter homes, mental health services, and community resources. Regional disparities in service delivery, gaps in institutional capacity, and socio-cultural resistance all complicate implementation. Rural and marginalized women, in particular, face a double bind of invisibility and inaccessibility. Responsive policies must therefore be localized, intersectional, and survivor-informed. As per *UNDP India*, integrating

¹ *UNDP India*, "Gender Justice and Legal Empowerment," 2018, available at <https://www.in.undp.org>

² *NITI Aayog*, "Strategy for New India @75," 2018, <https://niti.gov.in>

³ *Oxfam India*, "Ending Violence Against Women," 2018, <https://www.oxfamindia.org>

⁴ *UNDP India*, "Innovations for Women's Safety," 2019, <https://www.in.undp.org>

⁵ *UN Women*, "A Framework to Underpin Action to Prevent Violence Against Women," 2015, <https://www.unwomen.org>

⁶ *UN HRC*, Report of the Special Rapporteur on Violence Against Women, A/HRC/35/30, 2017, <https://www.ohchr.org>

trauma-informed care with legal proceedings and ensuring safe, dignified recovery spaces significantly enhances outcomes for survivors.¹

Ultimately, the path forward lies in a multi-pronged, rights-based approach that centres survivor agency, strengthens institutions, and transforms social norms. Community engagement, especially involving men and youth, must be a cornerstone of prevention strategies. Investment in data systems, accountability mechanisms, and technology-driven outreach will improve transparency and effectiveness. Most importantly, survivor voices must shape law, policy, and service delivery to ensure that justice is not just available, but truly accessible and affirming. As emphasized in *UN Women's* global framework, lasting change requires a whole-of-society commitment to uphold the principles of dignity, equality, and non-discrimination.²

¹ *UNDP India, Gender Justice and Legal Empowerment Report, 2018*, <https://www.in.undp.org>

² *UN Women, "Realising Women's Rights: Progress and Promise," 2015*, <https://www.unwomen.org>

LAW AND GOVERNANCE THE ROLE OF PUBLIC PROSECUTOR IN THE ERA OF ARTIFICIAL INTELLIGENCE (AI)

¹Suhas Narhari Toradmal and ²Dr. Nayana Nitin Mahajan¹Research Scholar, KBC, NMU Jalgaon²Research Guide Principal, Dr.Ulhas Patil Law College, Jalgaon**ABSTRACT**

The integration of Artificial Intelligence (AI) into the criminal justice system in India represents a significant paradigm shift with far-reaching implications. This article explores the multifaceted intersection of AI and the criminal justice system in the Indian context, investigating the potential benefits and challenges associated with the deployment of AI technologies. The article begins by providing an overview of the key areas where AI applications can enhance efficiency, accuracy, and fairness and identifies current state of the criminal justice system in India. It delves into the utilization of AI in crime prevention, investigation, and adjudication processes, highlighting the promising outcomes and improvements witnessed in these domains. With every progressing day Artificial Intelligence (AI) is getting a grip in every sphere of our daily life. In such an environment, Criminal Justice System, which is an ever-expanding domain trying to cater to the contemporary need of the society to make it a safer place to live, it tries to adopt every possible method and technique to accomplish this objective. AI too has been adopted in the functioning of the criminal justice system to adopt more scientific and sophisticated approach to crime prevention and crime detection. Artificial intelligence (AI) has been making waves across various industries worldwide, and the criminal justice system is no exception.

Keyword: Public Prosecutor, Artificial intelligence, Criminal justice system

INTRODUCTION

The integration of Artificial Intelligence into the role of Public Prosecutors has the potential to revolutionize the justice system. While AI is not a replacement for human judgment, It can be act as powerful tool to support public prosecutors in performing their duties more efficiently and effectively. AI enhances efficiency, accuracy and fairness in legal proceedings by automating routine tasks assisting legal research and predicting case outcomes¹.

Evidence Processing and Investigation support:

AI can process vast amounts of digital evidence, including CCTV footage, phone records, emails and forensic reports.

Machine learning algorithms: It help identify patterns in evidence, linking suspects to crimes more efficiently. AI powered tools like facial recognition and voice analysis assist in verifying identities and detecting fraudulent statements.

Framing of Charges and Legal Issues: AI helping drafting charge sheets by identifying the most relevant legal provisions. AI-assisted tools can ensure consistent application of legal standards, reducing errors in framing charges².

The Public Prosecutor plays a pivotal role in the Indian criminal justice system. As representatives of the state, they are responsible for prosecuting criminal cases on behalf of the government. Their primary duty is to ensure that justice is served while maintaining the rights of the accused. The integrity of a person chosen to be in charge of a prosecution does not need to be emphasised. The purpose of a criminal trial being to determine the guilt or innocence of the accused person, the duty of a Public Prosecutor is not to represent any particular party, but the State³. The prosecution of accused persons has to be conducted with the utmost fairness. In undertaking the prosecution, the State is not actuated by any motives of revenge but seeks only to protect the community.

There should not therefore be "an unseemly eagerness for, or grasping at a conviction". A Public Prosecutor should be personally indifferent to the result of the case. His duty should consist only in placing all the available evidence irrespective of the fact whether it goes against the accused or helps him, before the court, in order to aid the court in discovering the truth. It would thus be seen, that in the machinery of justice, a public prosecutor

¹ www.indiankanoon.com

² Artificial Intelligence Law. Swan, Edward J.

³ Bhartiya Nagari Surkasha Sanhita-2023

has to play a very responsible role: the impartiality of his conduct is as vital as the impartiality of the court itself.

He is the holder of public office and has to discharge his function impartially and independently. They are not to suppress material facts, evidences or witnesses even if it is not in favour of his case. In other words, he is not to secure a conviction by any means. His duty is to aid the court in finding the truth.

Legal Provisions under BNSS Regarding public Prosecutor

Section 18: Public Prosecutors

The Bharatiya Nagarik Suraksha Sanhita (BNSS) outlines the provisions for Public Prosecutors, including their appointment, eligibility, and roles. Section 18 of the BNSS focuses on the appointment of Public Prosecutors and Additional Public Prosecutors for High Courts and districts, requiring consultation with the relevant High Court and District Magistrate/Sessions Judge for appointments. Section 19 details the appointment and functions of Assistant Public Prosecutors.

Public Prosecutor plays a vital role in the administration of the Criminal Justice System in India. The Police, the Prosecution, the Judiciary, and the Prison and Correctional Services constitute the components of the Criminal Justice System.

A Public Prosecutor represents the State in a criminal case as a crime is considered to be an offense against the State. His role came into the picture after charge sheet is submitted by the police. He presents the multiple aspects of the case during the trial and assists the Court in the delivery of Justice. Accordingly guidelines on the Role of the Prosecutors requires Prosecutors to perform their duties fairly, impartially, and consistently, protecting human dignity, upholding human rights and avoiding all political, social, religious, cultural, sexual or any other kind of discrimination¹.

In order to ensure the fairness and effectiveness of prosecution, prosecutors must strive to cooperate with the police, the courts, the legal profession, public defenders and other government agencies or institutions. Complying with these provisions, the Code of Criminal Procedure, 1973 mandates the appointment of Public Prosecutors in the High Courts and District Courts.

Public Prosecutor and His Appointment

A Public Prosecutor is a lawyer who acts for the government against someone accused of a crime and prosecutes them in the Court.

According to the Code of Criminal Procedure, 1973 (Cr.PC, 1973) "Public Prosecutor" means any person appointed under Section 24, and includes any person acting under the directions of a Public Prosecutor. While, under Bhartiya Nagarik Suraksha Sanhita, 2023 (BNSS), he is a person appointed under Section 18 and includes any person acting under his directions².

Categories of Public Prosecutor

Section 24 of Cr.PC (now, Section 18 of BNSS, 2023) provides three main categories of Public Prosecutors:

A. Category I: Those who are attached to a particular High Court or district;

B. Category II: Assistant Public Prosecutors who are linked to a particular case or a class of cases but in a specified jurisdiction;

C. Category III: Special Public Prosecutors appointed under Section 24(8) of the Code [or Section 18(8), BNSS].

A. Appointment of Public Prosecutor under Cr.PC, 1973 (Category I)

Section 24 of the CrPC, 1973 (Section 18 of BNSS, 2023) mandates the appointment of a Public Prosecutor or Additional Public Prosecutor for every High Court and District Court. The provisions of this section can be explained in the following steps:

¹ Bhartiya Sakshya Adhiniyam-Dr.Ashok Kumar Jain, Acent Publication

² www.indiankanoon.com

1. Who Appoints

Section 24(1) of Cr.PC provides that the Central Government and the State Government appoint a Public Prosecutor and may appoint one or more Additional Public Prosecutors for every High Court and they have to conduct prosecution, appeal or other proceeding in such Court on behalf of the respective Government.

This provision is similar to Section 18(1) of BNSS. However, the BNSS includes a proviso clause for NCT Delhi, according to which only Central Government shall appoint the Public Prosecutor or Additional Public Prosecutors, after consultation with the High Court of Delhi.

The point to be noted here is that the power of the State Government to appoint a Public Prosecutor or Additional Public Prosecutor would extend only for conducting prosecution, appeal or other proceedings in the courts within that State (*Jayendra Saraswathi Swamigal v. State of Tamil Nadu*¹).

2. Panel of Names

To appoint a Public Prosecutor or Additional Public Prosecutors for every district, the District Magistrate u/s 24(4) of Cr.PC (now, Section 18(4) of BNSS) shall prepare a panel of names in consultation with the session judge.

The panel of names includes the name of those who are in their opinion fit to be appointed as Public Prosecutor or Additional Public Prosecutor. The State government shall appoint them from these panel of names u/s 24(3) Cr.PC [similar to Section 18(3) BNSS].

Further, Section 24(5) Cr.PC [similar to Section 18(5), BNSS] puts an obligation on the State that it cannot appoint any person as the Public Prosecutor or Additional Public Prosecutor unless his name is not in the list of *panel of names* prepared by the District Magistrate.

3. Regular Cadre of Prosecuting Officers

Section 24(6) of the Cr.PC mandates that, if there exists a regular Cadre of Prosecuting Officers in a State, the State Governments are obliged to appoint Public Prosecutors or Additional Public Prosecutors only from amongst the persons constituting such cadres. The same provision is also laid down by BNSS u/s 18(6).

If in the opinion of the State Government, no suitable person is available in such Cadre for such appointment that Government may appoint a person as Public Prosecutor or Additional Public Prosecutor, as the case may be, from the panel of names prepared by the District Magistrate under sub-section.

The expression “regular cadre of Prosecuting Officers”² “as held by Supreme Court in the case of *A.K. Ahlawat v. State of Haryana*, (2010)³ comprised a service with the Assistant Public Prosecutor at the lowest level and Public Prosecutors at the top. Further the court in the case of *K.J. John, Asst. Public Prosecutor v. State of Kerala* held that in case a regular cadre of Prosecuting Officers did not go up to the Public Prosecutor at the top, the State Government cannot be considered as bound to appoint Public Prosecutor or Additional Public Prosecutor only from among the persons constituting such cadre under the Code of Criminal Procedure for conducting cases in the sessions court.

4. Experience

Section 24(7) of Cr.PC [similar to Section 18(7) of BNSS] laid down a mandatory provision that the person has been in practice as an advocate for not less than seven years to be appointed as an Additional Public Prosecutor or an Additional Public Prosecutor under sub-section (1) or sub-section (2) or sub-section (3) or sub-section (6) of this Code.

In short, Public Prosecutor and Assistant Public Prosecutor is appointed by Centre and State Government in High Court and in a district the Public Prosecutor or assistant Public Prosecutor is appointed from the panel of names prepared by District Magistrate in general.

B. Assistant Public Prosecutor (Category II)

Section 25 of Cr.PC [S.19 of BNSS] deals with the appointment of Assistant Public Prosecutors in the district for prosecution in the courts of Magistrate. Section 25(1) of Cr.PC states that the State Government shall appoint in every district one or more Assistant Public Prosecutors for conducting prosecutions in the Courts of Magistrates.

¹ AIR 2005 SC716

² Code of Criminal Procedure 1973

³ (2010) SCC On Line P&H 5139

Further, u/s 25(2) Cr.PC, no police officer shall be eligible to be appointed as an Additional Public Prosecutor subject to the provision under sub-section (3). According to Section 25(3), where no Assistant {Public Prosecutor is available for the purpose of any particular case, the District Magistrate may appoint any other person to be Assistant Public Prosecutor in charge of that case:

Provided that a police officer shall not be so appointed –

- (a) If he has taken any part in the investigation into the offence with respect to which the accused is being prosecuted; or
- (b) If he is below the rank of inspector.

C. Special Public Prosecutor

The Central Government or the State Government may appoint, for the purposes of any case or class of cases, a person who has been in practice as an advocate for not less than ten years as a Special Public Prosecutor u/s 24(8) of Cr.PC[s.18(8) of BNSS].

It is to be noted that Supreme Court in the case of *Poonamchand Jain v. State of M.P.*¹ held that the appointment of Special Public Prosecutor is not with reference to the High Court or district, but is an appointment for a case or class of cases in any court. Without disclosing a special reason, order appointing a Special Public Prosecutor is illegal.

Key Roles of a Public Prosecutor

A public prosecutor is responsible for

1. Representing the State in criminal cases
2. **Ensuring Justice:** Their role is not just to secure convictions but to ensure fair and impartial trials
3. **Analyzing Evidence:** They must examine evidence provided by law enforcement and decide whether to proceed with charges
4. **Presenting Arguments:** Prosecutors must take strong evidence based argument in court.
5. **Guiding Investigation:** Collaborating with law enforcement agencies to strengthen cases.

Role of AI in supporting Public Prosecutors:

1. **Enhancing Evidence Analysis:** AI can analyze large volume of evidence, such as videos, text and digital data, identifying relevant patterns or inconsistencies.
2. **Cross-referencing:** AI tools can cross check evidence with prior cases, highlighting similarities or contradictions.
3. **Legal Research and Documentation:** Quick Access to Legal Precedents-AI system like legal research tools can identify relevant case law and precedents in seconds.
4. **Drafting Documents:** AI can assist in preparing charges, legal notices and reports, reducing the workload on prosecutors.
5. **Case Prioritization:** Resource management: AI can help prioritize cases based on their complexity societal impact or likelihood of conviction.
6. **Predictive Analytics:** Using historical data, AI can predict case outcomes, helping prosecutors decide whether to proceed or seek plea agreement.
7. **Fairness and Bias Detection:** Identifying Disparities: AI can detect patterns of bias in case handling, such as disparities in charging decisions or sentencing recommendations, ensuring fairness.
8. **Reducing Human Error:** AI helps minimize subjective errors in evidence analysis or legal reasoning.
9. **Collaboration with Law Enforcement:** AI-powered tools can streamline the communication between law enforcement and public prosecutors ensuring better case preparation and stronger investigation.
10. **Sentencing and Plea Bargain Recommendations:** AI can provide data-driven sentencing guidelines or plea bargain suggestions based on historical data, ensuring consistency.

¹ (2001) SCC OnLine MP27

CHALLENGES IN USING AI FOR PUBLIC PROSECUTORS:

1. **Ethical Concerns:** AI decisions must not replace human judgment, prosecutors must refrain ultimate authority.
2. **Bias in AI Algorithms:** AI systems must be transparent and free from inherent biases to ensure justice.
3. **Data Privacy:** Handling sensitive information requires robust safeguards
4. **Accountability:** Prosecutors must ensure AI tools are used responsibly and explain how AI influences their decisions.

In *Prabhu Dayal Gupta V. State the High Court Delhi*¹ Viewed that a Public Prosecutor must be free & flaxen in any presentation of the criminal case. He has to present a whole movie of the prosecution case. This is a duty of the public prosecutor to present an absolute picture and not the one-sided movie. He must be impartial and not be biased to the state (hearing) or bias to the accused side. A public prosecutor has a duty to be fair to both sides of the criminal case².

The job and role of a Public Prosecutor in between the pre-trial stage of a criminal case are deciding. The role of a public prosecutor is crucial in this stage. It is important in following ways; to deciding in the degree of discretion in the choices of "not to charge" and "to charge", in the choices of control and the degree of coordination between the prosecutor and police, the space of the prosecutor to facilitate the investigators or the investigation, to obtain a feasible prosecution file, on the need to extend the work of the Public Prosecutor by attributing to him one or more powers which are presently practiced by the Magistrate to awaken the strict dismissals.

All these above-said functions are to be performed in this stage of the prosecution. The cornerstone of the play includes standards: prosecutions will be initiated just when there is sufficient proof and relevant evidence not otherwise; the choice to induct charge or not to introduce charge is a choice of prosecution and should not be the jurisdictional capacity of the court. These powers can be transferred to the public prosecutor for justice and to strengthen the criminal administration of justice.

CONCLUSION

AI can serve as a valuable assistant to public prosecutors, enhancing their ability to process information, reduce backlogs and promote fairness in the justice system. However, its use must be balanced with ethical considerations and human oversight to ensure justice is upheld in its true sense.



¹ Bhartiya Nyaya Suraksha Sanhita, 2023

² Radha Krishna krupa sagar, The role of public prosecutor in criminal justice system 174-175(2013)

CRISIS OF GOVERNANCE: WHEN LAW FAILS TO DELIVER JUSTICE, A CRITICAL SOCIO-LEGAL ANALYSIS

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ABSTRACT

Effective governance in a democratic society is largely determined by the law's capacity to administer justice in a timely, equitable, and fair manner. Many legal systems especially in developing democracies continue to struggle with a recurring crisis of governance in spite of comprehensive laws and elaborate constitutional frameworks. Delays in the administration of justice, lax enforcement of the law, institutional inefficiencies, and the steady decline in public trust in legal institutions are all signs of this problem. The study highlights how governance shortcomings jeopardize the administration of justice by critically analyzing the discrepancy between law as a normative ideal and its actual operation.

The study examines institutional and structural reasons for governance failure, such as bureaucratic stagnation, lax enforcement, a lack of accountability, political meddling, and unequal access to justice, using a socio-legal and doctrinal approach. It draws attention to how they disproportionately affect minorities, women, and economically disadvantaged populations.

The study looks at how structural flaws impede justice-oriented legislative goals and assesses the function of important governance institutions, such as the legislature, executive branch, judiciary, and law enforcement agencies. It examines significant judicial interventions while criticizing judicial activism as a reaction to more serious governance shortcomings rather than a long-term fix, drawing on constitutional concepts including the rule of law, separation of powers, and judicial accountability.

The urgent need for governance reforms based on accountability, transparency, institutional coordination, and citizen participation is emphasized in the paper's conclusion in order to ensure that laws are implemented effectively and to rebuild public trust across the country.

Keyword: *Institutional Accountability, Law and Governance, Crisis of Justice, Rule of Law, and Access to Justice.*

1. INTRODUCTION

In any democratic system, law and governance are inextricably intertwined, working together to control social behavior, allocate authority, and maintain justice. While law serves as the primary tool via which governance aims to promote justice, social order, equality, and public welfare, governance offers the institutional and procedural framework within which laws are created, carried out, and enforced. The efficacy of a democratic polity's legal system in administering justice in a fair, efficient, and unbiased manner is directly related to the legitimacy of governance.

Around the world, democratic constitutions especially in post-colonial and developing countries embody high values like due process, equality before the law, protection of fundamental rights, and access to justice. These constitutional commitments seek to change society that have historically been characterized by exploitation, inequality, and exclusion into ones that are ruled by justice and the rule of law. Thus, the constitution functions as a political and moral blueprint for social change in addition to being a legal instrument.

The way that legal and governance institutions actually operate, however, frequently contrasts sharply with these normative standards. The law continues to be far away, complicated, costly, and inaccessible for a substantial portion of the populace, particularly marginalized, impoverished, and vulnerable groups. Many people believe that the legal system is slow, complicated, and controlled by powerful people who have more access to resources and power. Because of this, constitutional guarantees often do not result in real justice.

When legal systems are unable to convert legislative intent into efficient justice delivery, the crisis of governance becomes especially apparent. The trust of governance institutions is compromised by a number of factors, including political meddling, bureaucratic incompetence, selective execution of the law, persistent delays in court procedures, and administrative corruption. Law is often seen as a tool governed by procedural intricacy, socioeconomic privilege, and power hierarchies rather than as a conduit for empowerment and protection. This decline in public trust undermines democratic legitimacy and increases mistrust of governmental institutions.

The following paper contends that the inability of the law to provide justice represents a deeper issue of governance rather than just a legal or procedural flaw. It is a reflection of structural flaws in institutional frameworks, a lack of accountability, and unequal power distribution and use. The research looks at how legal norms function in larger social, political, and administrative contexts by taking a socio-legal approach, which goes beyond black-letter law. Through this study, the article aims to highlight the critical need for fundamental governance reforms and pinpoint the structural roots of justice failure.

2. CONCEPTUAL STRUCTURE: JUSTICE, LAW, AND GOVERNANCE

The procedures, organizations, and systems that are used to manage public resources, exercise authority, and make decisions are referred to as governance. It encompasses informal customs, administrative cultures, and interactions between the state and civil society in addition to official state institutions including the legislature, executive branch, and court. Thus, governance influences how authority is used and how public duties are carried out.

Transparency, accountability, involvement, responsiveness, efficacy, and respect for the law are traits of good governance. Instead of serving specific political or economic interests, these principles guarantee that governance is people-centric and focused on the general benefit. Even well-crafted laws fall short of their intended goals in situations when governing systems are weak or compromised.

The law has two roles in government. By controlling behavior, settling conflicts, and carrying out public policy, it serves as a tool of governance on the one hand. However, by preventing the arbitrary use of authority and defending individual rights, it serves as a check on governance. A democratic system's laws are supposed to be predictable, equitable, and fair, fostering a stable atmosphere that supports social and economic advancement. As the primary goal of the law, justice goes beyond simple adherence to the law. It consists of distributive justice, which tackles systemic injustices in society, substantive justice, which concentrates on equitable results, and procedural justice, which guarantees unbiased and fair procedures. Achieving justice requires prompt resolution of complaints and the availability of efficient remedies. Law loses its transformative power and is unable to remedy social injustices when governing systems do not support these goals.

A fundamental tenet of democracy is the rule of law, which mandates that laws be administered fairly, consistently, and impartially. It requires that the law be applied to all people and organizations, including the state. The rule of law is directly threatened by a breakdown in governance, which can result in selective enforcement, arbitrariness, and a decline in equality before the law. In cultures where institutions lack ability, independence, or political will, the discrepancy between law as an ideal and law in practice is most noticeable. The governance dilemma this study examines is centered on this divide.

3. STRUCTURAL AND INSTITUTIONAL REASONS FOR GOVERNANCE FAILURE

3.1 Bureaucratic Inertia and Inefficiency

As the administrative framework that puts legislative directives into practice, bureaucracy is essential to the execution of laws and public policy. However, institutional inertia, procedural rigidity, and bureaucratic inefficiency frequently impede the effective administration of justice. Delays and discontent among citizens are caused by excessive red tape, redundant processes, a lack of departmental collaboration, and a dependence on antiquated administrative techniques.

Governance failure is exacerbated by corruption in bureaucratic systems. Administrative integrity is compromised by actions like partiality, rent-seeking, and misuse of discretionary power. Bureaucratic inefficiency results in increasing reliance on middlemen, delayed justice, and denial of welfare benefits for disadvantaged communities. Trust in governmental institutions is damaged by bureaucracy's incapacity to react to citizens' needs in a timely and considerate manner.

3.2 Inadequate Enforcement Systems

Laws lose their corrective and deterrent power if they are not effectively enforced. Ensuring adherence to legal standards is the responsibility of enforcement agencies, including police, regulatory entities, and local administration bodies. However, these organizations frequently have poor infrastructure, minimal staffing, inadequate training, and a lack of technology assistance, all of which significantly reduce their efficacy.

Enforcement agencies' independence and impartiality are further undermined by political interference. The idea of equality before the law is compromised by selective enforcement of the law, especially against socially or politically marginalized groups. The public's trust in the administration of justice declines when powerful people or organizations are thought to be above the law.

3.3 Insufficient Accountability of Institutions

Good governance is based on accountability. To maintain integrity and efficacy, institutions must be held responsible for their deeds and inactions. However, governing institutions' accountability systems are frequently inadequate or ineffectual. While external oversight organizations lack adequate authority and enforcement power, internal disciplinary procedures are cumbersome and opaque.

A culture of impunity is fostered by the lack of genuine accountability, which permits wrongdoing, carelessness, and power abuse to continue unchecked. People who experience injustice have few options for recourse, which perpetuates the idea that the government is unfair and inattentive.

3.4 Interference in Politics

Institutional independence is seriously threatened by political meddling in legislative procedures, law enforcement, and judicial appointments. Justice and democratic values are compromised by governance decisions that are motivated by political expediency rather than legal standards. Institutional credibility is damaged by partisan legislation, frequent policy changes, and meddling in investigations.

In particular, judicial independence is essential to preserving constitutional principles. The governance dilemma is made worse by any perception of political control over the judiciary, which undermines democratic legitimacy and public confidence.

3.5 Inequitable Access to the Law

In many democracies, obtaining justice continues to be a significant difficulty. Effective use of legal remedies is hampered by high litigation costs, complicated procedures, a lack of legal knowledge, language difficulties, and social discrimination. Because of systematic injustice, women, minorities, and economically disadvantaged groups confront additional obstacles.

Despite constitutional recognition, legal aid is still insufficient. As a result, in the absence of inclusive governance, formal legal safeguards frequently fail to produce real justice, revealing the limitations of the law.

4. EFFECTS ON UNDERPRIVILEGED COMMUNITIES

Marginalized populations are disproportionately affected by governance failures. In situations involving assault and discrimination, women often experience insensitivity and delays, which deters reporting and perpetuates inequity. When protracted litigation and administrative delays essentially deny justice, economically disadvantaged groups suffer. Minority communities may experience under-protection of their rights, selective enforcement, or institutional bias. These facts demonstrate how existing societal injustices are exacerbated by poor governance.

5. THE FUNCTION OF INSTITUTIONS OF GOVERNANCE

The legislature passes laws that reflect societal demands, yet they frequently lack adequate preparation and are poorly drafted. The executive carries out the legislation, but its efficacy is hampered by corruption and inefficiency. The court protects constitutional principles and has used judicial activism to correct governance shortcomings, but relying too much on it runs the risk of overburdening institutions. As the initial point of contact for citizens, law enforcement organizations need professional autonomy and structural reform to rebuild public trust.

6. IS JUDICIAL ACTIVISM A SYMPTOM OR A CURE?

As a reaction to governance shortcomings, judicial activism has surfaced, with courts stepping in to defend rights and oversee administrative actions. Although useful in many situations, an excessive dependence on judicial activism is a sign of more serious governance flaws. Effective legislative and executive operations cannot be replaced by courts. Judicial replacement is not necessary for sustainable justice; instead, institutional transformation is.

7. REFORMS IN GOVERNANCE ARE NEEDED

Comprehensive reforms emphasizing accountability, transparency, administrative effectiveness, and citizen participation are necessary to address the governance crisis. To close the gap between law and justice, inclusive policies, judicial changes to cut down on delays, and enforcement agency capacity building are crucial.

8. CONCLUSION

The inability of the law to provide justice is a sign of more serious governance issues rather than just a legal shortcoming. Due to institutional inefficiencies, a lack of accountability, and unequal access, justice is nevertheless elusive for many people despite constitutional protections. To guarantee that the legislation carries out its justice-oriented mandate, governance structures must be strengthened. Legal reforms by themselves cannot ensure justice in the absence of efficient government. Transforming legal aspirations into lived realities

and enabling the law to serve as a genuine tool of justice in a democratic society requires transparent, responsible, and participatory governance.

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REVISITING THE CONTOURS OF THE LEGAL PROFESSION: AN INQUIRY INTO SKILLS IN THE AGE OF AI

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As artificial intelligence (AI) systems continue to evolve through advances in machine learning, they are increasingly capable of performing tasks traditionally associated with human cognition and expertise. The widespread automation of tasks across multiple sectors has fundamentally altered the nature of professional competencies.

This holds true for the legal profession too. More and more tasks are getting automated and technology integration is visible in various legal functions. Digitisation, Digitalisation and Automation play key role in today's Legal Professional Services. Where the core legal services like legal research, drafting, analysis, advocacy and presentation were in particular human centric and performed by individual professionals, today can be done by machines and automation. Legal Tech has become a parallel industry itself and is increasingly adopted by the professionals. Today when professional services are being capable of being provided by machines through chatbots, the friendly interface, litigation being getting transformed where records are digitisation and court room are getting automated through adopted of predictive modelling and robotic judges, the routine tasks which enable to build legal relations like contract which use to take hours and days now can be performed with efficient by softwares just by feeding some data and most important compliances where departments were very cautious always and teams were on their toes to ensure no penalties or delays, today are being swiftly performed by various systems and softwares, it is pertinent to revisit the countours of legal profession and do a detailed analysis to design a plan for the present and future professionals for the skill sets that will be required to compete and complement the technology that is used and will be used in the future.

This paper examines the functioning of the legal profession and the way technology integration and use has changed the functions and role of the legal professionals in the given domain of legal function. It further suggests the way forward in the changes that will be required in the pedagogical and multi stream collaboration through which these skills can be effectively imparted, with the objective of ensuring the continued relevance, ethical grounding, and societal value of the legal profession in an AI-driven age. This paper is in three parts – Part One presents the contours of legal profession, Part 2 presents the way forward competencies that may be required and part 3 presents a multidisciplinary learning model as an important need of the hour which can be adopted in law schools to make practice ready legal tech professionals ready

The Contours of the Legal Profession

No one is above Law and Law is for everyone underlines the significance of legal profession. From Cradle to Grave everyone is bound by some or the other law. Law, in its simplest sense, may be understood as the regulation of human conduct through a system of uniform rules enforced by the State. Compliance with these rules ensures social order, while non-compliance entitles the aggrieved party to seek remedies through legally established mechanisms. It is in this context that institutions constituted under the Constitution and other statutory frameworks—such as courts and tribunals—play a central role in the administration of justice.

Within this institutional framework, lawyers occupy a pivotal position. They are vested with the authority to represent individuals and entities before courts, tribunals, and other adjudicatory bodies, thereby acting as essential intermediaries between the legal system and the public. Beyond dispute resolution, law also governs the creation and regulation of legal relationships, which may arise through statutory mandates or contractual arrangements. In such contexts, lawyers perform a critical function by drafting contracts and legal instruments that ensure compliance with applicable legal requirements and protect the interests of the parties involved.

Accordingly, the practice of law encompasses a wide range of professional functions, including communication with clients and public officials, drafting pleadings and other legal documents, advising on legal rights and obligations, and representing clients in judicial and quasi-judicial proceedings. The effective performance of these functions demands a diverse set of skills, such as oral and written communication, advocacy, legal research, case management, analytical reasoning, and critical thinking.

These competencies form the cornerstone of contemporary legal education. The curriculum prescribed by regulatory bodies, including practical and clinical courses, is largely designed to cultivate these skills among law students. Pedagogical approaches in law schools traditionally emphasize experiential and simulated learning methods, such as moot courts, mock trials, internships, and case study analysis. Classroom instruction often adopts the Socratic method, supplemented by information and communication technologies (ICT), including

digital presentations and online legal research tools, to enhance student engagement and learning outcomes. Hence in the era where we are witnessing the technology integration in every function and at the same time increased compliances and laws to meet the complexities in society and organisations it is crucial to understand some of the basic functions and how legal tech has is shaping them.

Integration of Technology in the various functions forming part of Legal Profession

Technology has played a transformative role in the legal profession, beginning with the digitisation and digitalisation of records and documents. Traditional paper-based systems have gradually been replaced by electronic record-keeping, enabling easier storage, retrieval, and management of legal information. A significant portion of procedural requirements and statutory compliances has now shifted to online platforms, thereby enhancing efficiency, transparency, and accessibility. With Artificial Intelligence (AI) through large language learning models, several routine, repetitive, and time-intensive tasks are now done in less time AI-driven systems. A lot of routine tasks are eliminated in the day to day functioning and other new roles are added in the present day legal roles. In the times to come this change will further increase as technological advancement is moving at a fast pace. To understand the extent of technological integration in contemporary legal practice, it is crucial to analyse its adoption across specific functional areas and critically think on the legal skills that the present day professionals may need. Important functional areas are discussed below.

Client Interaction and Communication:

Client interaction and communication form the foundation of legal practice. Traditionally dependent on physical meetings and written correspondence, this aspect has increasingly moved to digital modes. The availability of online communication platforms has enabled lawyers and clients to conduct meetings, consultations, and discussions virtually through video conferencing, emails, and other digital tools. This shift has significantly reduced geographical and logistical barriers, making legal services more accessible and cost-effective. A significant AI tool which is today often used is also AI note making and which is later relied on by the parties and the lawyers. A lot of legal tech catering to legal professional is been designed and there is lot of more potential to have sector specific systems being designed .For instance Space Law Disputes or Environment disputes . While the technical models may remain same, the nature of disputes may need some special features which the respective stream lawyers can suggest . For instance in environmental matters public hearings are crucial and if the same can be conducted online, there can be larger participation and better representation.

Compliances:

Compliances constitute an essential component of legal practice. It involves timely submissions of reports and data and involves adherence to procedural, statutory, and regulatory obligations under various laws. In recent years, most compliance-related activities, including filings, registrations, and periodic returns, have transitioned to online portals operated by regulatory authorities and government departments. This shift has simplified procedural formalities, reduced manual errors, and saved considerable time for legal professionals and clients alike. However, it has also necessitated that compliance teams and legal practitioners continuously update their technical knowledge to effectively navigate digital platforms. Familiarity with online filing systems, portal updates, and electronic documentation has become indispensable. Additionally, the maintenance of accurate and secure online records has emerged as a critical requirement in compliance management.

Drafting:

Drafting of legal documents remains one of the most significant and skill-intensive aspects of legal practice. It includes both litigation and non-litigation drafting, ranging from simple applications, notices, and affidavits to complex pleadings, agreements, and commercial contracts. Drafting requires not only legal knowledge and experience but also precision, clarity, and meticulous attention to detail. Time is a crucial factor in this process, particularly in litigation and commercial transactions. Once a document is executed or filed, it generally permits limited scope for alteration, making accuracy and thoroughness imperative.

The advent of AI-based drafting tools has brought about a notable transformation in this domain. Legal drafting tasks that earlier required several days can now be completed within hours. Numerous software solutions, often customised to suit the specific requirements of law firms and individual practitioners, assist in generating structured legal documents based on data inputs and predefined templates. While these tools enhance efficiency and productivity, careful oversight by legal professionals remains essential to ensure legal accuracy, contextual relevance, and compliance with applicable laws. The increasing adoption of AI-driven drafting tools and the rapid growth of legal technology providers reflect a positive and progressive shift in the future of legal drafting within the profession. This has certainly opened up new opportunities and roles for lawyers too in designing and developing these systems.

Negotiation:

Negotiation means at times taking crucial and calculative decisions after weighing all the options. The parties to negotiation can be related to commercial transactions. Negotiation forms a key role in transactional lawyering, where parties have to take impactful business decisions after weighing all the factors. With AI integration and predictive modelling systems, negotiation can be automated, thereby giving an indicative understanding to the parties of the probable negotiation. These automated negotiations are completely online and can be done through a blind bidding process. These models can be applied to a large number of small claims disputes, which are usually one-sided but have the scope of compromise and settlement. This certainly helps the lawyers getting different perspective and probable guidelines for completing the negotiations. “Smart settle” is one such system that is existing where parties can negotiate with the Robot or parties can negotiate amongst themselves through a blind bidding process, and the system gives the optimal solution

Court Systems

Courts worldwide have increasingly adopted technology, both incrementally and comprehensively, to enhance access to justice. Judicial systems have progressively transitioned from basic digitisation to more advanced forms of automation. Processes that were once time-consuming and restricted to limited working hours—such as the physical filing of cases—have now been transformed through the introduction of electronic filing (e-filing) systems in many jurisdictions. These systems have significantly improved efficiency, reduced procedural delays, and enhanced accessibility for litigants and legal practitioners.

Tribunals have also advanced technologically by enabling parties to file electronic complaints through user-friendly online platforms. Such developments have streamlined procedural requirements and facilitated greater participation, particularly for individuals located in remote or underserved regions. At the apex level, several Supreme Courts have implemented sophisticated digital tools, including case analysis and management systems, such as SUPACE (Supreme Court Portal for Assistance in Courts Efficiency), aimed at improving judicial efficiency and decision-making processes.

In some jurisdictions, reports indicate the experimental use of artificial intelligence-driven legal tools, including so-called “robotic lawyers,” and it is anticipated that further advancements may eventually extend to automated or semi-automated judicial functions. While the prospect of robotic judges remains speculative, the increasing automation of court systems underscores the growing role of technology within the judiciary.

The integration of automation in court systems has become a necessity rather than a mere innovation. This transformation demands close collaboration and synergy between legal professionals and legal technology experts. Consequently, it has also created new opportunities for lawyers to contribute to the design, development, and implementation of technological systems that can enhance access to justice for the general public. Simultaneously, these developments necessitate targeted training for legal professionals and judicial officers to ensure effective and ethical use of emerging technologies within the justice delivery system.

Alternative Dispute Resolution (ADR) Methods

Alternative Dispute Resolution (ADR) encompasses a range of dispute settlement mechanisms, viz **arbitration, mediation, and conciliation**, which provide procedural autonomy and flexibility compared to formal litigation. They have many advantages compared to court litigation especially of time and cost .

Arbitration is a consensual process in which the disputing parties agree to submit their conflict to one or more neutral arbitrators who decides the case on the basis of the pleading submitted by the parties. The parties retain significant autonomy to determine key procedural elements, such as the venue, timing, applicable rules, and selection of the arbitrator(s). The arbitrator’s decision, typically rendered in the form of an award, is binding and enforceable under applicable statutory frameworks.

Mediation is a party-centric and interest-based method in which a neutral mediator assists the parties in negotiating a mutually acceptable settlement. The mediator’s role is not to impose a decision, but rather to facilitate communication, clarify interests, and explore potential solutions. Mediation is characterized by high degrees of flexibility and party control over both process and outcome, which often leads to greater satisfaction with the resolution and improved prospects for preserving ongoing relationships.

Conciliation similarly involves the appointment of an impartial third party who actively proposes terms of settlement to the disputants. While distinct in form and practice, conciliation shares with mediation the goal of achieving a consensual resolution and is particularly prevalent in labor, consumer, and community disputes.

In recent years, ADR has increasingly migrated to digital platforms, giving rise to Online Dispute Resolution (ODR)—the use of information and communications technology to facilitate the resolution of disputes through

electronic means. ODR encompasses online arbitration, mediation, and negotiation, offering enhanced accessibility, convenience, and efficiency. ODR platforms are developed both by institutional bodies and private entities to support asynchronous and synchronous interactions, document exchange, and case management online. Moreover, automated dispute resolution systems, which integrate algorithmic decision-making to propose outcomes, are being explored as extensions of ODR, particularly for low-value and high-volume disputes.

The emergence of ODR presents significant opportunities and challenges for the legal profession. Lawyers can not only leverage ODR to streamline practice and improve client service but also contribute to the design and development of legal technology solutions tailored to specific categories of disputes, reflecting the specialized knowledge of practitioners in various legal domains. As ODR systems evolve to address the nuanced needs of commercial, consumer, family, and cross-border disputes, specialist legal input will be essential to ensure procedural fairness, ethical standards, and substantive accuracy.

In the Indian context, several ODR service providers have gained prominence, such as Presolv360, which offers technology-enabled dispute resolution solutions for contractual and commercial conflicts. Projections indicate that the ODR industry in India is poised for substantial growth, with market estimates suggesting it may reach significant economic scale by 2030. Such projections underscore the importance for emerging lawyers to acquire competencies in digital dispute resolution and to actively engage with the ODR ecosystem as part of contemporary legal practice.

Way Forward: Preparing Legal-Tech-Ready Professionals

The rapid integration of technology into legal services necessitates a fundamental reorientation of legal education and professional training. While it is essential to upskill existing legal practitioners, the more critical imperative lies in preparing aspiring lawyers to acquire and adapt to emerging technological competencies. Contemporary legal professionals are no longer defined solely by their mastery of substantive and procedural law; they must also possess the ability to understand, evaluate, and effectively leverage technology to enhance efficiency, scalability, and accessibility of legal services.

Developing such competencies demands a multidisciplinary approach, requiring close collaboration between law, technology, data science, and allied domains. Lawyers of the present and future will increasingly be required to play an instrumental role in the design, development, and deployment of legal technology solutions. In this context, academic institutions have a pivotal responsibility to provide enabling platforms that facilitate experiential learning. Establishing legal technology laboratories within law schools—preferably in collaboration with industry professionals—would allow students to experiment with tools, understand system design, and bridge the gap between academic learning and industry practice. Such industry-academia partnerships can significantly enhance the relevance and practical orientation of legal education.

Moreover, as artificial intelligence and data-driven tools become integral to legal decision-making, future lawyers must develop competencies in data collection, analysis, and interpretation of algorithmic outputs. The legal services market is also witnessing a shift towards digital platforms, where users may operate in a monopsonistic environment, choosing among limited service providers. In such a landscape, legal professionals must adopt new strategies for presenting legal-tech-enabled services, building trust, and ensuring transparency and accountability.

Accordingly, the emerging skill set for legal professionals extends beyond traditional advocacy to include ethical design of legal technology, contextual sensitivity to geographical and socio-cultural realities, and a commitment to eliminating bias while promoting inclusivity. Lawyers will increasingly perform a dual role—representing clients in courts while simultaneously deploying legal technologies that complement and augment their professional functions.

As the legal sector enters an era of cobotics, where human professionals and intelligent machines work collaboratively, careful governance of human-machine interaction becomes imperative. Such collaboration must be guided by ethical principles to ensure that technological advancement does not undermine the societal objectives of law or marginalize vulnerable populations. Ultimately, the future readiness of the legal profession depends on its ability to balance innovation with responsibility, ensuring that technology serves as an enabler of justice rather than a barrier to it.

Multidisciplinary Project - ODR LAB

Some concrete steps are certainly required to build the eco system where multi-disciplinary approach can be easily adopted by students and teachers . One such model currently existing designed by an academician and industry expert is odrlab.com

Odrlab is designed with the objective of a multidisciplinary approach with the motto of ABC – Aspire, Build, Create. In the ODR Lab, ideators from diverse fields having an idea to build ODR system can present their idea on the odrlab and collaborate online to develop legal technology suited for online dispute resolution. This lab aims to foster industry collaboration by engaging mentors from various fields to guide ideators in designing ODR systems. Ultimately, it seeks to build ODR systems that ensure easy access to justice. The most interesting feature of this lab is it is not restricted to any one discipline. It is multidisciplinary in approach. The success stories emerging from the lab demonstrate that such a multidisciplinary framework can significantly enhance the value and impact of the project.

The age of artificial intelligence undoubtedly necessitates the creation of more such labs with fewer procedural constraints and greater scope for seamless collaboration, where meaningful engagements can lead to more impactful solutions. Above and beyond the skills discussed in the foregoing paragraphs, the most critical competency required in this evolving landscape is an open-minded and collaborative approach.

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**ZOOPLANKTON DIVERSITY IN VAITARNA ESTUARY OF DISTRICT PALGHAR,
MAHARASHTRA**

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Maharashtra, India**ABSTRACT**

The present study documents zooplankton diversity in Vaitarna estuary of Palghar district. Estuarine sites were visited in May 2024 during the summer season and in August 2024 during the monsoon season and in December 2024 during the winter season for the collection of plankton samples. Zooplankton samples were collected from the subsurface water using a zooplankton net with a mesh size of 0.2mm. The investigation of zooplankton diversity in the Vaitarna Estuary revealed notable variations in species composition, density, and dominance across different seasons. In the present investigation, a total of 19 species of zooplankton belong to 7 classes along with fish eggs were observed in winter and monsoon. Copepoda emerged as the dominant group, followed by rotifers and cladocerans, indicating a productive and nutrient-enriched estuarine environment. The presence of meroplanktonic forms such as nauplii, fish larvae, and crab larvae suggests the estuary functions as an important breeding and nursery ground for aquatic fauna. Seasonal analysis showed higher zooplankton abundance during winter periods. The zooplankton diversity of the Vaitarna Estuary indicates a moderately productive ecosystem with signs of environmental stress in localized regions and thus conservation of estuarine habitats, are essential to maintain the ecological balance and biodiversity of the Vaitarna Estuary.

Keywords: Copepoda, Vaitarna estuary, zooplankton diversity.

INTRODUCTION

Zooplanktons which are ubiquitous in distribution form a vital link for turnover of organic matter and transfer from primary producers like diatoms to secondary consumers like fishes. The rate of zooplankton production can be used as a tool to estimate the exploitable fish stock of an area (Tiwari and Nair, 1991). Zooplankton provides an important food source for larval fish and shrimp in natural waters and in aquaculture ponds. It has been reported that in many countries the failure of fishery was attributed to the reduced zooplankton especially copepod population (Stotttrup, 2000).

Studies on zooplankton communities, especially copepods are very important in assessing the health of coastal ecosystems (Ramaiah and Nair, 1997). The abundance and variations in zooplankton of estuaries are mainly related with salinity regime. Among the 3 sub orders of the order-copepoda, the sub-order calanoida represented by the bulk of the copepods with 26 species. This may be due to their continuous breeding behaviour, quick larval development and that they adopt well to the widely changing environmental conditions of the estuary. Further, among the calanoids, Acartia spp. dominated the other forms throughout study period (Madhupratap, 1987) and that of Oithona spp. among cyclopoid was noticed (Mckinnon and Klumpp, 1998). Similar findings were earlier reported in Parangipettai coastal waters by Santhanam and Perumal (2003) who have pointed out that the abundance of Oithona spp was mainly due to its high reproductive capacity.

The observed low zooplankton productivity during monsoon might be due to the non-availability of food, low temperature and low salinity. The disturbances of the food web and minimum production of plankton during the monsoon season have been observed in many Indian estuaries (Kannan and Kannan, 1996; Satpathy, 1996). During the monsoon, the salinity decreased to 4.0 owing to the inflow of freshwater. The low salinity would drastically affect the plankton abundance (Godhandaraman, 1994). In the present investigation, the increase or decrease of salinity in the water column exerts either a direct or an indirect effect in the appearance or disappearance of some forms and replacement by others. The second effect is probably due to the migration of some species from one station to another to avoid either low or high salinity. The indirect effect might be due to the scarcity of food caused by the fluctuations of salinity in the waters ultimately affecting the population abundance of zooplankton.

The Vaitarna Estuary, located along the western coast of Maharashtra, experiences dynamic environmental conditions influenced by tidal fluctuations, freshwater inflow, salinity gradients, and seasonal monsoon patterns. These factors collectively shape the composition, abundance, and distribution of zooplankton communities.

The zooplankton assemblage of the Vaitarna Estuary typically includes groups such as Copepoda, Cladocera, Rotifera, Ostracoda, Protozoa, and larval forms of fishes, crustaceans, and mollusks. Among these, copepods

are generally the most dominant group due to their adaptability to varying salinity and nutrient conditions. Zooplankton diversity in estuaries serves as a reliable biological indicator of water quality, nutrient status, and ecological health, making their study vital for environmental monitoring and management.

MATERIALS AND METHODS

Estuarine sites were visited in May 2024 during the summer season and in August, 2024 during the monsoon season and December 2024 for the collection of plankton samples. Zooplankton samples were collected from the subsurface water using a zooplankton net with a mesh size of 0.2mm (41 micron). The filtered zooplankton samples were collected and preserved in 4 – 5% formaldehyde (formalin) solution prepared in filtered estuarine water and the species diversity of Zooplanktons was studied in the laboratory. (Krishna Pillai N., 1986).

RESULTS

The investigation of zooplankton diversity in the Vaitarna Estuary revealed notable variations in species composition, density, and dominance across different seasons. In the present investigation, a total of 19 species of zooplankton belong to 7 classes along with fish eggs were observed in winter and monsoon. Copepoda emerged as the dominant group, followed by rotifers and cladocerans, indicating a productive and nutrient-enriched estuarine environment. The presence of meroplanktonic forms such as nauplii, fish larvae, and crab larvae suggests the estuary functions as an important breeding and nursery ground for aquatic fauna. In winter total 16 species, in summer total 9 species & during monsoon total 7 species, (Table 1).

DISCUSSION

Seasonal analysis showed higher zooplankton abundance during winter periods, attributed to increased nutrient availability and favourable salinity conditions. In contrast, lower abundance during the monsoon season may be linked to heavy freshwater inflow, dilution of salinity, and increased turbidity, which can adversely affect zooplankton survival and reproduction.

The observed diversity patterns also reflect the influence of anthropogenic activities such as domestic sewage discharge, agricultural runoff, and industrial effluents in the surrounding areas. Moderate enrichment appeared to enhance zooplankton productivity; however, excessive nutrient loading may lead to community imbalance and dominance of pollution-tolerant species. The zooplankton diversity of the Vaitarna Estuary indicates a moderately productive ecosystem with signs of environmental stress in localized regions.

CONCLUSION

The study of zooplankton diversity in the Vaitarna Estuary highlights the ecological significance of estuarine ecosystems as dynamic and productive habitats. The dominance of copepods and the presence of diverse larval forms underscore the estuary's role in supporting aquatic food webs and fisheries resources. Seasonal fluctuations in zooplankton abundance and composition reflect the combined influence of natural factors such as monsoon-driven hydrology and tidal mixing, as well as human-induced pressures.

Continuous monitoring of zooplankton diversity is recommended to assess long-term ecological changes and to detect early signs of environmental degradation. Effective management strategies, including control of pollution sources and conservation of estuarine habitats, are essential to maintain the ecological balance and biodiversity of the Vaitarna Estuary.

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Table 1: Occurrence of Zootoplankton from Vaitarna estuary

Sr. No	Class	Name of the species	Winter season	Monsoon season	Summer season
1	Maxillopoda	<i>Acartia plumose</i>	+	+	
2		<i>Acartia danae</i>	+		+
3		<i>Heliodiaptomus cinctus</i>	+		+
4		<i>Paracalanus parvus</i>	+		
5		<i>Eucalanus subcrassus</i>		+	+
6		<i>Pseudodiaptomus aurivilli</i>	+		+
7		<i>Cypris larvae</i>	+		
8	Malacostraca	<i>Lucifer hansenii</i>	+		+
9		<i>Zoea larvae</i>	+	+	
10		<i>Nauplius larvae</i>	+	+	
11	Branchiopoda	<i>Evadne tergestina</i>			+
12	Foraminifera	<i>Globigerina bulloides</i>	+		
13	Spirotrichea	<i>Tintinnopsis radix</i>	+	+	
14	Sagittoidea	<i>Sagitta elegans</i>	+		+
15	Monogononta	<i>Brachionus calyciflorus</i>	+		+
16		<i>Brachionus plicatilis</i>	+		+
17		<i>Platylas quadricornis</i>		+	
18		<i>Monostyla lunaris</i>	+		+
19		Fish Eggs	+	+	

LAW GOVERNING HUMAN SACRIFICE, OTHER INHUMAN, EVIL AND AGHORI PRACTICES AND BLACK MAGIC, IN STATE OF MAHARASHTRA

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ABSTRACT

In the state of Maharashtra, numerous incidence of human sacrifice, other evil, aghori practices, black magic etc. were taking place and this has forced to have some effective and specific legal mechanism. Such aghori, evil practices, black magic etc. are used as tool by black magician, conmen and other concerned, to exploit the common people and destroy the social fabric of our society. By taking into account these realities and to deal with it urgently, the Government of Maharashtra enacted the Maharashtra Prevention and Eradication of Human Sacrifice, Other Inhuman Evil and Aghori Practices and Black Magic Act, 2013. This Act of 2013, has provided very wider definition of "Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic", having stringent punishment thereto ranging from 06 months to 07 years along with the fine. And if person get convicted, then the concerned court order to police to publicize said inform in local newspaper by police. The provision for the appointment of vigilance officer is made therein, by providing him duties and powers. By realizing the importance of this Act of 2013, some of neighboring States like Karnataka, Gujarat have also enacted such law for their States. Although, the Act of 2013 seems to be effective tools, still it appears that, there is lack of awareness about it, among the peoples of society and this has resulted in not controlling fully, the incidence of human sacrifice, other aghori practices, black magic etc. from the State of Maharashtra. Hence, there is need to have extensive awareness programme about this Act. Moreover there is also need to have effective implementation of this law, by the vigilance officer and other stakeholders by performing their duties in true spirit of law, to stop the exploitation of peoples by fully eradicating such offences from the society.

Keywords: *Inhuman practices, Punishment, Vigilance officer, Society, Awareness*

INTRODUCTION

In the state of Maharashtra, numerous incidence of human sacrifice, other evil, aghori practices, black magic etc. were taking place and this has forced to have some effective and specific legal mechanism to eradicate such practices of evil nature. For this it was very much essential to bring the awareness among the peoples, to have safe and healthy atmosphere to protect them from becoming victim of such evil, aghori practices prevailing in the society. Such aghori, evil practices, black magic etc. are used as tool by magician, conmen and other concerned, to exploit the common people and destroy the social fabric of our society. By taking into account these realities and to deal with it urgently, the Government of Maharashtra finally decided to have specific an effective law. But, whereas at that time there was no session of both the houses of State and at that time the Governor of Maharashtra had satisfied with the ground reality and had thought to have immediate action to deals with the such incidence of human sacrifice, other aghori practices, black magic etc. promulgated the Maharashtra Prevention and Eradication of Human Sacrifice, Other Inhuman Evil and Aghori Practices and Black Magic Ordinance, 2013 on August 26, 2013. Thereafter, the state legislature replaced this ordinance by enacting Maharashtra Prevention and Eradication of Human Sacrifice, Other Inhuman Evil and Aghori Practices and Black Magic Act, 2013 having effect from the same date as mentioned in the ordinance. The Act of 2013 has provided very wider definition of "Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic", having stringent punishment thereto ranging from 06 months to 07 years along with the fine. There is a provision for the appointment of vigilance officer having him important duties and power etc.

Meaning of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic': As per the section 2 (1) (b), in the Schedule attached with Act of 2013, the detailed meaning of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic' is mentioned or described. It says that, if anyone assaults the person under the pretext of ejecting the ghost, fixing him by rope, using heated object to the body, forcing to have sexual act in open place or in case of women, who is unable to conceive falsely assure her about the motherhood and keep sexual relation with the her or by creating the impression that, he possess some super natural power or he is incarnation or holy spirit and devotee is his wife in past birth and by this way he indulge her into sexual activity with her etc. Further, with the display or use of miracles he earns the money by defrauding and terrorizing the people. If he instigate, compel the others by putting them under the fear of grievous hurt or danger to the life and also if he say that, the person would not get the blessing of some supernatural power, if the people not follows his inhuman, evil practices. If the person commits black magic

and other aghori, evil act to get from other person the bounty, precious things by using the name of 'Karani' 'Bhanamati' and compel them to have human sacrifice or advice, encourage them to do such inhuman act. If the person, create the fear, to follow his advice for the removing the inapprehensible power from the body of person like ghost, Saitan, incarnation of Saitan, having intention to defraud and terrorize the person. Sometime the conmen or magicians prevent the person from the taking the medical treatment in case of bite of snake dog scorpion and divert the person to do some inhuman evil acts or use the mantra-tantra or other things etc. are considered under the said definition.

All the person, who has committed any of the above acts of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic', by himself or if he commits such illegal act through another or if he abets any other person to do such illegal act are liable to punish for the same under this Act of 2013. Recently, in the case of *Rohan Kulkarni v. State of Maharashtra* in 2025, the Hon'ble High Court of Bombay has mentioned that, the Act of 2013 was enacted with an object, to remove the harmful practices, human sacrifices, psychological exploitation and fraudulent rituals by excluding legitimate religious practices traditional knowledge etc. which has posed the serious risk or danger to the society as well as individual.

Exceptions: In the section 12 of said Act of 2013, certain exceptions have been given to maintain the balance between the some religious, cultural etc. activities and the act of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic' in the society. Those exceptions are performance of worship like Yatra, Pradakshina, Varis or Kirtan, Bhajan., teaching propagating the incident/traditional practices thereof, stating the miracles of diseased saints or religious preachers which are not physically harmful or do not cause financial loss. Moreover, all the religious prayers, celebration procession, festivals etc are covered under the exception.

In addition to this, surprisingly the under the exception, the advice given regarding the Vastushatra, advice of Jotishi, Nandibailwale Jotishi and also other astrologers including the person who advice about the source of ground water etc. have been covered. This list of exceptions is not comprehensive or exhaustive and the State Government may notify and add the any other traditional religious acts or rites into the exception. It appears that, the advice given by any Jotishi or astrologers or the person who give advice about Vastushastra, with intent to defraud the person or by defrauding the person causes financial loss, have not been specifically mentioned in the definition of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic'. It is important to note that the Act of 2013 has provided exceptions therein, to remove the doubt about the some form of religious, social activities which does not cause any financial loss or physical injury.

Offences and Punishment:

As per section 03 (1) and Section 3 (2) of Act of 2013, If any person do or support or spread or practices any of the above mentioned act of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic' either by himself or through any other person then such person would be guilty for offence and would be punished for not less the 06 months which may extend to 07 years along with fine from Rs. 5000/- to Rs. 50,000/-.

In the section 03 (3) the person who abets or attempt the any act or offence punishable as mentioned above is liable to have same punishment as like person, who actually do said offence. This offence is cognizable and non-bailable triable by the JMFC court or Metropolitan Magistrate. When the person has been punished under the Act of 2013, the concerned competent court has to order to police officials for the publication of that criminal's name residential address, conviction details etc. in local newspaper where the offence had committed. If the convicted person makes an appeal then till the finalization of appeal no such publication allowed.

Powers and Duties of Vigilance Officer:

To have effective implementation of the Act of 2013, it has included the provision for the Vigilance Officer giving him certain duties under section 05. The State Government appoints the person who is not the below rank of Police Inspector as a Vigilance Officer and he is deemed to be a public servant as per the definition given under the Bharatiya Nyaya Sanhita 2023. The Vigilance Officer has to perform various duties like he has to prevent and detect act of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic' in his jurisdictional area and if he found anything then he has to report it to nearest police station. Thereafter, the victim or any other family member of victim would file the complaint in the police station. It is the duty of Vigilance Officer, to have effective prosecution, collect the evidence and report the same to the concerned area police station. If any person obstruct the Vigilance Officer while performing his duties then such person is liable for the punishment up to 03 months or fine up to Rs 5000/- or both.

Apart from the duties, the Vigilance Officer has given power which he exercises with the assistance of local police officials. The power like, to enter and search at the places where he has reason to believe about offence

under the Act of 2013 has taken place or likely to take place. And if he found such offence then he has power to seize any material, advertisement etc. which might have been used for the offence of 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic'. He can examine any documents record etc. relating to said offence. After seizing of anything he should inform to the Magistrate, to take the custody of it. He has given protection in case acted in good faith while discharging his duties and exercising powers.

Other Similar Laws:

With the passage of time, after the enactment of special law in Maharashtra i.e. the Maharashtra Prevention and Eradication of Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic Act, 2013 some of the states have also introduced such law in their home state. The Karnataka State has enacted the 'Karnataka Prevention and Eradication of Inhuman Evil Practices and Black Magic Act 2017', which came into force from January 2020. Thereafter, the Gujarat Government also introduced such law in their State which is, the 'Gujarat Prevention and Eradication of Human Sacrifice and other Inhuman, Evil and Aghori Practices and Black Magic Act, 2024'.

CONCLUSION

The present Act of 2013 has covered adequately the act of Human Sacrifice and other Inhuman, Evil and Aghori Practices and Black Magic by providing very wider definition thereof. It has provided the same stringent punishment from six months to seven years of imprisonment for the offender as well as to the abettor or a person who attempt to commits such offence. And if person get convicted, then the concerned court order to police to publicize said information in local newspaper by police. Furthermore, it has made the provision of vigilance officer by giving him required duties and power. From the duties and powers of Vigilance Officer it seems that, he has given very crucial role under this Act of 2013 to prevent and eradicate from the society a 'Human Sacrifice, Other Inhuman, Evil and Aghori Practices and Black Magic'. By realizing the importance of this Act of 2013, some of neighboring States like Karnataka, Gujarat have also enacted such law for their States.

Although, the Act of 2013 seems to be effective tools, still it appears that, there is lack of awareness about it, among the peoples of society and this has resulted in not to control fully, the incidence of human sacrifice, other aghori practices, black magic etc. from the State of Maharashtra. Hence there is need to have extensive awareness programme about this Act. Moreover there is also need to have effective implementation of this law, by the vigilance officer and other stakeholders by performing their duties in true spirit of law to stop the exploitation of peoples by fully eradicating such offences from the society.

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TRADE SECRET PROTECTION IN INDIA: THE NEED FOR SPECIFIC LEGISLATION

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ABSTRACT

The Intellectual property rights is an intangible right over tangible work. Intellectual property rights protect the rights of an individual by providing them with rights such as Patent, trademark, copyright, Design, Geographical Indication. In India, for all of these there are specific laws which govern them. However, there is one such creativity where there is no law prescribed by the government. The creativity is called Trade Secret. No doubt, that there is law which indirectly protects the infringement of trade secret but such law is not completely effective to stop such violation. Hence, The researcher would like to reach up to the goal as to why there is requirement of direct law for trade secret and why there is a need to protect the trade secret important and needful at today's time.

Keywords: Copyright, Intellectual Property Rights, Legislation, Patent, Trade Secret

INTRODUCTION

Patent is grant from government which gives right to the grantee for the invention which he has created. For example, if there is a company which has made a medicine, that company is eligible for patent. Same way, if there is a company dealing in food items, if they are having specific machine to make the product, they are eligible to get patent on such process. However, such company cannot have any protection on their recipes. For recipe, there is an indirect protection in the form of contract and IT Laws. For example, if a certain person is working in any company which deals with food items, there is a contract entered between the person and the company not to disclose the important secret after leaving the job otherwise the said person will face legal consequences. The main idea behind this is the taste of the product should remain secret. But, the protection through Indirect law is not effective enough to stop the infringement of trade secret and some or other way it can be easily be revealed. There is definitely a need of proper legislation in order to stop the infringement of trade secrets.

Legal Analysis

The researcher through legal analysis will prove the importance of trade secrets and the need for a proper legislation to protect the trade secret.

The following questions will help the researcher to analyse in detail:

1. What is a trade secret, and is it different from patents, trademarks, and copyright?
2. Is there any legal mechanisms currently being used to protect trade secrets in India?
3. Is the existing Indian legal framework sufficient to provide effective protection for trade secrets?
4. How do businesses in industries such as food and beverages rely on trade secrets for protecting confidential information?
5. Is India compliant with its international obligations under Article 39 of the TRIPS Agreement?
6. Are there any limitations of relying on contract law and judicial principles for trade secret protection in India?
7. Does the absence of a specific trade secret law affect innovation, competition, and foreign investment in India?
8. How do other jurisdictions, such as the United States and the European Union, protect trade secrets?
9. Should India enact a separate and comprehensive trade secret legislation?¹

1. What is a trade secret, and how is it different from patents, trademarks, and copyright?

A trade secret refers to confidential business information that provides an economic advantage to a company because it is not known to the public. This includes formulas, recipes, manufacturing methods, and business strategies. A trade secret remains protected only as long as secrecy is maintained.

¹ <https://www.cnlu.ac.in/wp-content/uploads/2025/04/Trade-Secret-Laws-in-India-A-Critical-Analysis-by-Vartika-Tickoo.pdf>

It is different from patents, trademarks, and copyright. A patent protects inventions for a limited period after disclosure. A trademark protects brand names and symbols. Copyright protects creative and literary works. Trade secrets do not require registration or disclosure and can exist for an unlimited period.

2. Is there any legal mechanism currently being used to protect trade secrets in India?

India does not have a specific statute for trade secret protection. Trade secrets are protected indirectly through non-disclosure agreements, employment contracts, and confidentiality clauses. Courts also recognize the principle of breach of confidence to prevent misuse of confidential information.

In some cases, provisions of the Information Technology Act may apply. However, these mechanisms are scattered and do not provide a uniform legal framework.

3. Is the existing Indian legal framework sufficient to provide effective protection for trade secrets?

The existing legal framework is not sufficient. Since there is no statutory law, protection depends largely on contracts and judicial discretion. Contractual protection applies only between the parties and does not bind third parties.

There is also uncertainty regarding remedies and enforcement, which makes trade secret protection weak and unreliable.

4. How do businesses in industries such as food and beverages rely on trade secrets for protecting confidential information?

Businesses in the food and beverage industry rely on trade secrets to protect recipes, formulas, and taste. These elements are generally not patentable, so secrecy becomes the primary method of protection.

Companies may patent machines or manufacturing processes and protect brand identity through trademarks, while trade secrets safeguard the core confidential information.

5. Is India compliant with its international obligations under Article 39 of the TRIPS Agreement?

India is formally compliant with Article 39 of the TRIPS Agreement, which requires protection of undisclosed information against unfair commercial practices.

However, the protection is indirect and weak because it is provided through contract law and judicial principles rather than a specific legislation. Therefore, effective compliance is limited.

6. Are there any limitations of relying on contract law and judicial principles for trade secret protection in India?

Yes, there are several limitations. Contract law protects trade secrets only between contracting parties and does not apply to outsiders. Litigation is expensive and time-consuming.

Judicial decisions vary from case to case, leading to inconsistency. Important issues such as employee mobility and accidental disclosure are not clearly regulated.

7. Does the absence of a specific trade secret law affect innovation, competition, and foreign investment in India?

Yes, the absence of a specific law creates uncertainty for businesses. Companies may hesitate to invest in research and development due to fear of misuse of confidential information.

Foreign investors prefer countries with clear and strong trade secret laws. The lack of such protection may reduce innovation and investment.

8. How do other jurisdictions, such as the United States and the European Union, protect trade secrets?

The United States has enacted the Defend Trade Secrets Act, which provides clear definitions, remedies, and federal-level protection. The European Union follows the Trade Secrets Directive, which ensures uniform protection across member states.

These jurisdictions offer stronger and clearer protection compared to India.

9. Should India enact a separate and comprehensive trade secret legislation?

Yes, India should enact a dedicated trade secret law. Such legislation would provide clarity, uniformity, and effective remedies for misappropriation.

It would strengthen enforcement, promote innovation, and improve investor confidence.

CONCLUSION

Trade secrets are an essential form of intellectual property in the present business environment. Many industries depend on confidential information such as recipes, formulas, and business methods to maintain their competitive advantage. Despite their importance, India does not have a specific legislation to protect trade secrets. The existing system relies mainly on contract law and judicial principles, which provide limited and indirect protection.

This research has shown that the current legal framework in India is fragmented and uncertain. While India is formally compliant with its international obligations under the TRIPS Agreement, the absence of a dedicated trade secret law weakens effective enforcement. The reliance on contracts does not adequately protect against third-party misuse, and judicial remedies remain inconsistent. The absence of a comprehensive trade secret law negatively affects innovation, competition, and foreign investment. Businesses require legal certainty to safeguard their confidential information and to invest in research and development without fear of misappropriation. Therefore, it is concluded that India must enact a separate and comprehensive trade secret legislation. Such a law would provide clear definitions, uniform remedies, and stronger enforcement mechanisms. Introducing a specific trade secret law would strengthen India's intellectual property regime and support economic growth in a knowledge-based economy.

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WHY BUSINESSES CHOOSE ARBITRATION OVER COURTS IN INTERNATIONAL CONTRACTS

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ABSTRACT

In the era of globalization, International Commercial transactions have increased exponentially, giving rise to complex cross border Disputes. Businesses entering into International contracts must decide in advance how such disputes will be resolved. Over the past few decades, Arbitration has emerged as the preferred mechanism over traditional court Litigation. This article examines the key reasons why businesses consistently choose Arbitration over Courts in International Contracts.

1. INTRODUCTION

International commerce thrives on certainty, predictability, and efficiency. However, Disputes are an inevitable consequence of cross border business relationships. When such Disputes arise, parties must resolve not only the substantive issues but also procedural questions where to litigate, under which law, and before which Authority.

National courts, though essential to the rule of law, often present challenges in International disputes: Jurisdictional conflicts, delays and enforcement hurdles. To overcome these concerns, commercial parties increasingly rely on **International Arbitration** as their Dispute Resolution Mechanism of choice.

Arbitration clauses have become standard features in International Contracts across sectors such as construction, energy, shipping, finance, technology, and Infrastructure. The preference for Arbitration is not accidental, it is the result of decades of institutional development, judicial recognition, and International cooperation.

2. THE NEUTRALITY ADVANTAGE

One of the foremost reasons businesses prefer Arbitration over Courts in International Contracts is the assurance of neutrality. In cross border Disputes, parties are often hesitant to submit themselves to the Jurisdiction of the other party's Domestic courts due to apprehensions regarding home court advantage, unfamiliar legal systems, language barriers, and potential Institutional bias. Arbitration addresses these concerns by allowing parties to select a neutral seat, appoint neutral Arbitrators, and adopt neutral procedural rules. This removes the perception of imbalance and creates a level playing field where Disputes are resolved on merit rather than geography. The confidence that neither party enjoys an undue advantage significantly enhances trust in the Dispute Resolution Mechanism and strengthens Commercial relationships.

3. GLOBAL ENFORCEABILITY OF ARBITRAL AWARDS

Another decisive factor that makes Arbitration the preferred forum is the global enforceability of Arbitral Awards. While Court judgments often face substantial challenges in foreign enforcement due to the absence of reciprocal treaties or differences in domestic legal systems, Arbitral Awards benefit from a robust International framework. The New York Convention of 1958 provides a uniform and predictable regime for the recognition and enforcement of foreign Arbitral Awards in more than 170 jurisdictions. This ensures that an Award obtained in one country can be executed efficiently in another, offering businesses the commercial certainty they require. In international trade, where assets and operations are spread across multiple Jurisdictions, the ability to enforce outcomes seamlessly is often more important than the forum in which the Dispute is heard.

4. PROCEDURAL FLEXIBILITY AND PARTY AUTONOMY

A defining feature that distinguishes Arbitration from Court Litigation is the principle of **party Autonomy**, which lies at the heart of International Arbitration. Party Autonomy means that the Disputing Parties themselves have the freedom to design the framework of their Dispute Resolution Process. Unlike Court Proceedings, where procedure is imposed by statute and judicial hierarchy, Arbitration empowers parties to make critical choices that shape how their Dispute will be resolved. This includes the freedom to select the Arbitrator or Arbitrators, choose the seat of Arbitration, determine the applicable substantive and procedural law, decide the language of the proceedings, and opt for an Arbitral Institution or an Ad hoc mechanism. Such Autonomy ensures that the process reflects the commercial expectations of the parties rather than the procedural constraints of a particular legal system.

This freedom translates into exceptional **procedural flexibility**, allowing Arbitration to adapt to the unique demands of International Commercial Disputes. Parties may agree on expedited timelines for urgent matters, adopt technology driven procedures for cross border efficiency, or structure hearings in a manner that minimizes disruption to business operations. For complex technical disputes, they may design procedures that allow for focused expert evidence, while for straightforward contractual disputes, they may prefer streamlined

processes that reduce time and cost. This ability to customize procedure makes Arbitration not only more efficient but also more responsive to the realities of modern commerce. In International Contracts, where parties operate under different legal traditions and Commercial cultures, such flexibility ensures that Dispute Resolution becomes a collaborative process grounded in Mutual Consent rather than an imposed Judicial framework.

5. EXPERTISE OF DECISION MAKERS

The opportunity to appoint decision makers with specialized expertise is another compelling reason why Arbitration is favored in International Contracts. Judges in national Courts, though highly competent, are generally required to handle a wide variety of cases and may not possess in depth knowledge of highly technical commercial sectors. Arbitration enables parties to appoint Arbitrators who are experienced in specific Industries such as infrastructure, shipping, energy, finance, or intellectual property. This not only improves the quality of decision making but also enhances the credibility of the process. When Disputes are resolved by professionals who understand the Commercial context, outcomes tend to be more pragmatic, efficient, and aligned with business realities.

6. CONFIDENTIALITY AND PROTECTION OF BUSINESS INTERESTS

Confidentiality is a critical concern for businesses engaged in International transactions. Court proceedings are usually conducted in public, and sensitive commercial information often becomes part of the public record. This exposure can harm a company's reputation, disclose trade secrets, and weaken its competitive position. Arbitration, by contrast, offers a significantly higher degree of privacy. Although the extent of confidentiality may vary depending on the applicable rules and jurisdiction, Arbitration proceedings are generally conducted away from public scrutiny. This allows parties to resolve disputes without risking reputational damage or the disclosure of proprietary information.

7. EFFICIENCY AND FINALITY OF PROCEEDINGS

Efficiency and finality are fundamental considerations for commercial entities. Prolonged litigation can disrupt business operations, increase legal costs, and create prolonged uncertainty. Arbitration offers a more streamlined process, with limited scope for Adjournments and Appeals. In most jurisdictions, Arbitral Awards can only be challenged on narrow procedural grounds, ensuring that Disputes reach a conclusive end within a reasonable time frame. Modern Arbitral Institutions have further enhanced efficiency through expedited procedures, emergency Arbitration, and fast track rules. These developments reflect the growing demand among businesses for Dispute Resolution mechanisms that are not only fair but also time effective.

8. INSTITUTIONAL SUPPORT AND PROCEDURAL CERTAINTY

The evolution of International Arbitration has been supported by strong Institutional frameworks that enhance its reliability and predictability. Leading Arbitral Institutions provide structured procedural rules, Administrative assistance, and mechanisms for the scrutiny of awards. This Institutional backing minimizes uncertainty and reduces the risks associated with poorly managed proceedings. For businesses, the availability of established Institutions ensures that disputes are handled professionally, timelines are monitored, and ethical standards are maintained. Such predictability is often lacking in cross border litigation, where procedural variations between jurisdictions can lead to inconsistency and confusion.

9. MINIMIZATION OF JURISDICTIONAL CONFLICTS

Cross border litigation frequently becomes entangled in preliminary disputes over jurisdiction, service of process, applicable law, and forum selection. These procedural battles can consume significant time and resources before the substantive dispute is even addressed. Arbitration clauses effectively eliminate many of these uncertainties by providing a predetermined forum for dispute resolution. Once parties agree to Arbitrate, courts are generally obliged to respect that Agreement and refrain from interfering. This ensures that Disputes move swiftly to substantive Adjudication rather than being stalled by procedural wrangles, thereby saving both time and cost.

10. PRESERVATION OF COMMERCIAL RELATIONSHIPS

Another advantage of Arbitration lies in its potential to preserve long term commercial relationships. Court litigation is inherently adversarial and often deepens conflict between parties, making future cooperation difficult. Arbitration, while still adjudicatory, tends to foster a more professional and less confrontational environment. The procedural flexibility of Arbitration allows room for negotiated settlements, Mediation windows, and Amicable Resolutions even after proceedings have commenced.

11. THE INDIAN PERSPECTIVE ON INTERNATIONAL ARBITRATION

India's approach to Arbitration has undergone a significant transformation in recent years. Legislative reforms and progressive judicial interpretations have strengthened the Arbitration framework by limiting court interference and promoting Institutional Arbitration. The establishment of modern Arbitral Institutions and the growing recognition of International best practices demonstrate India's aspiration to position itself as a credible global Arbitration hub. Indian businesses, increasingly involved in cross border transactions, now view Arbitration not merely as an Alternative to litigation but as a strategic commercial safeguard. The shift reflects a broader understanding that efficient Dispute Resolution is an integral component of economic growth and international trade.

12. TECHNOLOGY AND THE DIGITAL TRANSFORMATION OF ARBITRATION

Online hearings, virtual case conferences, and electronic filings have become integral to modern arbitral practice. Digital case management systems now enable seamless exchange of pleadings, evidence, and procedural orders across jurisdictions, reducing both time and cost. The use of secure virtual platforms has enhanced accessibility for parties, counsel, and Arbitrators, particularly in complex cross border Disputes where physical hearings may be impractical. This digital shift has not only ensured continuity of proceedings but has also strengthened efficiency, transparency, and environmental sustainability in International Arbitration. As technology continues to evolve, it is reshaping Arbitration into a faster, more responsive, and globally connected Dispute Resolution Mechanism.

13. CONCLUSION

The preference for Arbitration in International contracts reflects a deliberate and pragmatic choice by businesses seeking neutrality, enforceability, efficiency, confidentiality, and procedural certainty. Arbitration addresses the inherent complexities of cross border disputes more effectively than traditional court litigation, offering a Dispute Resolution mechanism that aligns with commercial realities. As International trade becomes increasingly interconnected, Arbitration will continue to play a central role in safeguarding business interests and ensuring that Disputes are resolved in a manner that is fair, predictable, and globally effective. Far from being merely an Alternative to courts, International Arbitration has firmly established itself as the principal forum for resolving International Commercial Disputes.

METAL-ORGANIC FRAMEWORKS (MOFs): DRIVING SUSTAINABLE DEVELOPMENT FOR A BETTER TOMORROW

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ABSTRACT

Metal-Organic Frameworks (MOFs) are emerging as pivotal contributors to a sustainable global future. These hybrid materials, comprising metal ions and organic linkers, boast exceptional porosity (cavity) and structural flexibility. This unique combination makes MOFs ideal for diverse applications, including energy storage, environmental monitoring, water treatment, biomedical innovations and more.

Notably, the 2025 Nobel Prize in Chemistry recognized the groundbreaking work of Susumu Kitagawa, Richard Robson, and Omar M. Yaghi, who pioneered the development of MOFs, unlocking new possibilities for addressing global challenges.

Keywords: *MOFs, tunable porosity, catalysis, gas storage, sensor, water harvesting, supercapacitors, water purification*

INTRODUCTION

Metal-Organic Frameworks (MOFs) exhibit fascinating chemical structures, leveraging the synergy of inorganic and organic chemistry. By carefully manipulating the organic and inorganic components, diverse MOFs with tailored properties are designed. These crystalline materials boast ultrahigh porosity and large internal surface areas, making them ideal for various applications.

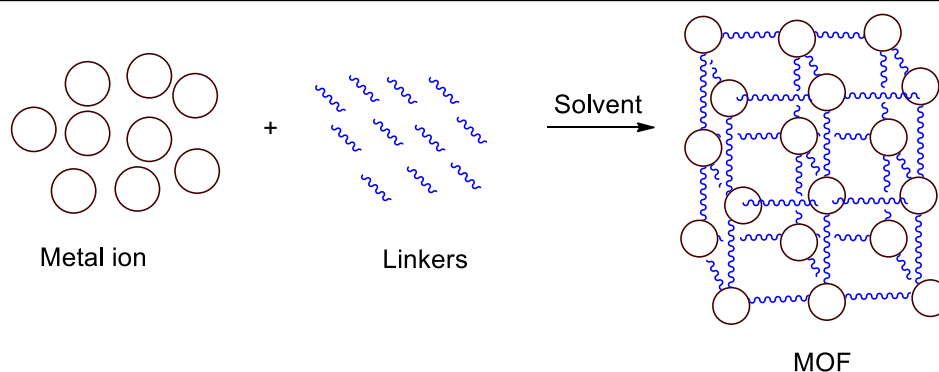
The 2025 Nobel Prize in Chemistry was awarded to Susumu Kitagawa, Richard Robson, and Omar M. Yaghi for their innovative development of Metal-Organic Frameworks (MOFs). These innovative materials are like molecular sponges, trapping gases such as CO₂ and hydrogen, and have potential applications in water purification, energy storage, and more. Their work has opened up new possibilities for custom-made materials, tackling global challenges like climate change and water scarcity. MOFs can harvest water from desert air, capture carbon dioxide, and even store toxic gases [1].

This article provides an overview of Metal-Organic Frameworks (MOFs), highlighting their extraordinary potential and versatility. We'll explore the unique properties and diverse applications of MOFs, showcasing their promise as a transformative technology for the future.

METHODS TO SYNTHESIZE MOFs

The work on MOFs started in the year 1989 when Nobel Laureate Richard Robson tried combining copper ions with a specially designed four-armed organic molecule, creating the first porous crystalline structure with vast internal cavities which was originally termed "coordination polymers". [2]. The term "Metal-Organic Frameworks" was coined by Nobel Laureate Omar M. Yaghi in 1995 while reporting new cobalt and carboxylate linkers MOF used to selectively bind pyridine molecules [3]. A typical MOF structure consists of metal ions (transition metals, rare earth metals, or non-metals) connected by organic linkers having functional groups like amine, imine, hydroxy, and carboxy. The choice of metal and linker dictates the pore size and shape.

Porous MOF materials with regular crystal structures can be prepared via hydrothermal/solvothermal synthesis [5,6], microwave heating [7], electrochemical synthesis [8], and mechanochemical synthesis methods[9]. All these synthetic methods aim towards controlled crystal growth, particle size and morphology for specific applications.



Scheme 1: A simple method to generate MOFs.

Alternative approaches like slow diffusion, ionothermal and chemical vapour deposition [10] offer advantages for large crystal growing or thin film. Post-synthetic methods involve chemically altering MOFs after initial synthesis to introduce new functionalities or replacing linkers in an existing MOF with new ones to create new MOF structures [11].

Properties of MOFs

The extraordinary features of MOFs underpin many of its key applications [12]. MOFs boast exceptional porosity and surface area, with their vast internal spaces enabling high guest loading capacities. In fact, a single gram of MOF can have an internal surface area equivalent to roughly two American football fields, surpassing other porous materials like zeolites and mesoporous silica. Their structure is highly tunable, allowing customized pore size, shape, and chemical functionality for specific tasks. Versatile functionality can be incorporated as active sites for catalysis or specific binding sites for sensing. Newer generations of MOFs, such as Zr-based MOFs, offer robust stability in water and heat, expanding their potential uses [13].

Applications of MOFs for Sustainable Global Future

Metal-Organic Frameworks (MOFs) are used in varied fields like gas storage/separation (H_2 , CO_2), catalysis, drug delivery, sensing, and environmental remediation. Thanks to their high surface area and tunable structures of MOFs.

- 1. Gas Storage and Separation:** In recent years much attention is directed towards the progress and potential of MOFs in gas storage (e.g., H_2 , CH_4 , C_2H_2 , CO_2) and separation (such as industrially important light hydrocarbons e.g., C_2H_2/CO_2 , C_2H_2/C_2H_4 , C_2H_4/C_2H_6 , C_3H_6/C_3H_8 , $C_2H_2/C_2H_6/C_2H_4$). The adjustable pore structure and modifiable functional sites of MOF improves the binding affinity of gas adsorbate with the framework, thereby achieving high-capacity gas storage [14]. MOF is used for capturing CO_2 from flue gas and storing gases like hydrogen. It is also effective for removing hazardous volatile organic vapors called volatile organic components (VOCs) present as pollutant in air. Gas separation is the most critical processes in the current energy and petrochemical industries. Compared with traditional separation technologies, MOFs adsorbents have low energy consumption and a smaller carbon footprint [15, 16].
- 2. Catalysis:** MOFs are highly attractive solid supports for heterogeneous catalysis due to their tailorable structures and crystalline nature, allowing detailed investigation of active sites. Unlike zeolites, MOFs can be decorated with catalytic sites, bridging the gap between micro- and mesoporous materials. MOF catalyst can make many organic reactions to happen which are otherwise difficult. For example, enabling reactions like $C(sp^3)-H$ functionalization using porphyrin-based MOF [17].
- 3. Biomedicine:** MOFs are widely used in biomedicine [18, 19], especially in biosensing, bioimaging, and drug delivery (e.g., anticancer drugs), due to their high porosity and tunability. They can be made biocompatible and biodegradable. Nanoscale MOFs (NMOFs) have been heavily investigated for biomedical applications, offering improved colloidal stability, cellular uptake, and reduced cytotoxicity through linker functionalization and surface modification, making them a promising option compared to other nanocarriers. [20]
- 4. Sensor:** Trace pollutants in aquatic environments pose significant public health concerns to human and aquatic life. Detecting these toxic, non-biodegradable pollutants at ppm and ppb levels is crucial for monitoring water purity. MOF-based fluorescent, electrochemical and photoelectrochemical sensors, with customizable structures and binding sites, are being designed for this purpose [21]. These sensors detect hazardous substances like inorganic anions, metal ions, and organic matter in water. MOF-based electrochemical sensors are developed to detect phenolic contaminants, which are highly toxic and originate

from industrial and agricultural sources [22]. Zhou et. al. in the review explained the role of MOF based luminescence and electrochemical sensor for detection of food contamination [23].

5. **Environmental Remediation:** Metal-Organic Frameworks (MOFs) excel at adsorbing heavy metals, dyes, and other water/air contaminants offering superior performance than traditional materials (viz. activated carbon). MOF possess large internal space which allows contaminant to diffuse in and get trapped. Its pore size and functionalities is adjusted to selectively target specific pollutants e.g. heavy metals like lead, cadmium, chromium, mercury etc. or specific dye (Methylene Blue, Congo Red) molecules. The metal nodes and the organic linkers can strongly bind with pollutant (pharmaceutical waste, pesticides, phenols and nutrients) resulting in water purification [24].
6. **Electronic and Energy:** Metal–organic frameworks (MOFs) hold promise for advanced electronics due to their tunable structural and electronic properties. MOFs can be engineered to exhibit semiconducting behavior, application in LEDs, solar cells, batteries and supercapacitors [25].
7. **Moisture and Thermal Management:** Metal-Organic Frameworks (MOFs) are being explored for moisture and thermal management due to their unique properties. MOFs can capture and release water vapor, making them suitable for atmospheric water harvesting and dehumidification. MOFs' high surface area and tunable pore structures enable efficient heat transfer and storage. This robust characteristic finds useful applications in air conditioning and moisture-sensitive electronics. Other notable examples include water harvesting from desert air, efficient dehumidification, MOF for thermal management in electronics [26, 27].

CONCLUSION

Metal-Organic Frameworks (MOFs) have emerged as a revolutionary class of materials with vast potential in addressing pressing global challenges. Their unparalleled tunable porosity, high surface areas, and versatile functionality make them ideal for applications in energy storage, catalysis, water purification, and thermal management. As research continues to advance, MOFs are poised to play a pivotal role in shaping a more sustainable future. With ongoing efforts to improve their stability, scalability, and performance, MOFs are likely to transform industries and improve lives worldwide.

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INNOVATION AND APPLICATION ARE EMERGING TRENDS IN MATHEMATICAL RESEARCH

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ABSTRACT

*Mathematics, long regarded as the foundation of logical reasoning and scientific progress, is undergoing a dynamic transformation in the contemporary era. The dual forces of **innovation** and **application** have emerged as defining trends, reshaping both the scope and methodology of mathematical research.*

This Paper explores how innovative approaches, ranging from computational techniques, interdisciplinary integration, and data-driven modeling, are expanding the boundaries of traditional mathematics.

Furthermore, in this paper the importance of the increasing emphasis on applications which highlights the relevance of mathematics in addressing real-world challenges, from artificial intelligence and cryptography to climate modeling, finance, and social sciences have been discussed.

By examining current paradigms, this paper emphasizes the symbiotic relationship between theoretical advancement and practical utility, illustrating how mathematics is not only evolving as an abstract discipline but also serving as a catalyst for innovation across diverse domains. This paper also explores the correlation of changing trends of research with NEP 2020 implementation on higher education.

Keywords: *Mathematics Innovation, Computational Techniques, Interdisciplinary Applications, Data-Driven Modeling, Real-World Impact*

1. INTRODUCTION

It's an astonishing fact that Mathematics is a part of Philosophy. But because of its frequent usage in Science, lately, it has been regarded as the language of science, a discipline that provides the foundation for logical reasoning, abstraction, and problem-solving. In the contemporary era, however, mathematics is undergoing a profound transformation, driven by the dual forces of innovation and application. Emerging trends such as computational modeling, interdisciplinary integration, and data-driven approaches are expanding the boundaries of traditional mathematical inquiry, enabling researchers to address increasingly complex problems across diverse domains.

The integration of mathematics with technology has become one of the most significant developments, with advanced computational tools such as MATLAB, Mathematica, and Python libraries allowing mathematicians to tackle problems of unprecedented scale and complexity. At the same time, innovations in statistical research and applied mathematics are reshaping the way knowledge is generated and disseminated, highlighting the relevance of mathematics in fields as varied as artificial intelligence, cryptography, climate science, finance, and the social sciences.

Equally important is the growing emphasis on application-oriented research, which situates mathematics not merely as an abstract pursuit but as a catalyst for innovation across disciplines. This trend underscores the symbiotic relationship between theoretical advancement and practical utility, ensuring that mathematics continues to evolve as both a rigorous intellectual discipline and a tool for addressing real-world challenges.

In the Indian context, these global shifts resonate strongly with the vision of the National Education Policy (NEP) 2020, which emphasizes conceptual understanding, experiential learning, and interdisciplinary approaches in higher education. NEP 2020 advocates for moving beyond routine memorization to develop critical thinking, logical reasoning, and problem-solving skills in mathematics, thereby preparing students to engage meaningfully with contemporary research paradigms. By aligning mathematical education with innovation and application, NEP 2020 seeks to empower learners to contribute to cutting-edge research while addressing societal needs.

This paper, therefore, situates mathematical research within the broader framework of educational reform and global innovation. It explores how the convergence of innovation, application, and policy transformation is shaping the future of mathematics, ensuring its continued vitality and impact in the 21st century.

2. RATIONALE OF THE STUDY

Mathematics has traditionally been viewed as a discipline of abstraction and logical reasoning. However, in the 21st century, the **dual trends of innovation and application** have redefined its role, making it central to technological progress and interdisciplinary problem-solving. The rationale for this paper lies in:

Bridging Theory and Practice: Demonstrating how mathematics is no longer confined to theoretical constructs but is actively driving innovation in applied fields.

Responding to Global Challenges: Showcasing mathematics as a critical instrument in addressing pressing issues such as climate change, cybersecurity, and financial modeling.

Aligning with Educational Reform: Connecting contemporary research trends with the **National Education Policy (NEP) 2020**, which emphasizes conceptual understanding, experiential learning, and interdisciplinary approaches in higher education.

Guiding Future Research: Providing insights into how mathematics can evolve as a catalyst for creativity, innovation, and sustainable development in academia and industry.

Empowering Learners and Institutions: Offering a framework for educators, researchers, and policymakers to integrate modern mathematical paradigms into curricula and research agendas.

3. OBJECTIVES

- **To analyze** how innovative approaches such as computational techniques, interdisciplinary integration, and data-driven modeling are reshaping mathematical research.
- **To examine** the growing emphasis on applications of mathematics in solving real-world challenges, including artificial intelligence, cryptography, climate modeling, finance, and social sciences.
- **To highlight** the symbiotic relationship between theoretical advancements and practical utility in contemporary mathematical inquiry.
- **To explore** the impact of NEP 2020 on higher education and its alignment with evolving trends in mathematical research.

4. RESEARCH DESIGN/METHODOLOGY

Type: Descriptive and exploratory research.

Approach: Mixed-method (quantitative and qualitative) since Google Forms can capture both numerical ratings and open-ended responses.

Purpose: To identify perceptions, practices, and applications of innovation in mathematical research among students, faculty, or researchers.

5. PERSPECTIVE OF STAKEHOLDERS

A survey form was distributed among the teachers and Responses were collected

<https://docs.google.com/forms/d/1D0zKCdUfhOpwJqMb4QRqGt8902WbZqsV0Cvb36yQo4/edit#responses>

- The survey responses indicate that computational techniques (Python, MATLAB, R, Mathematica) are increasingly recognized as essential tools for modern mathematical inquiry.
- Respondents highlighted the importance of data-driven modeling and simulation methods, which are reshaping traditional problem-solving approaches.
- The discussion can emphasize that while classical mathematics remains foundational, innovation now lies in integrating computational power and interdisciplinary methods.
- A majority of participants acknowledged mathematics as a **problem-solving discipline** with direct applications in **AI, cryptography, climate modeling, finance, and social sciences**.
- The survey results suggest strong awareness of how mathematics contributes to **cybersecurity, sustainable development, and economic forecasting**.
- This supports the objective of examining the growing emphasis on applied mathematics, showing that respondents view mathematics as a bridge between theory and pressing global challenges.

- Responses revealed consensus that **theoretical advancements must be linked to practical utility**. For example, breakthroughs in number theory and algebra are seen as critical for cryptography, while statistical modeling underpins climate science and social research. This highlights that **mutual reinforcement** theory inspires applications, and applications drive new theoretical questions.
- Respondents agreed that **NEP 2020's emphasis on interdisciplinary learning and conceptual clarity** aligns with evolving mathematical trends. The policy's focus on **flexibility, skill enhancement, and vocational integration** resonates with the survey findings, which stress the need for computational literacy and applied problem-solving.

6. CONCLUSION

The study reveals that innovation and application are not merely emerging trends but defining features of contemporary mathematical inquiry. To sustain this momentum, higher education must continue to embrace computational methods, interdisciplinary collaboration, and policy-driven reforms, ensuring that mathematics remains both theoretically robust and practically indispensable in addressing global challenges.

A central insight from the survey is the growing familiarity and reliance on computational techniques such as MATLAB, Python, and Mathematica. These tools are no longer supplementary but have become integral to modern mathematical inquiry. Respondents indicated that data-driven modeling is frequently employed in both research and coursework, underscoring the shift toward empirical validation and simulation-based exploration. This trend reflects the broader movement in global academia, where mathematics is increasingly intertwined with computer science, artificial intelligence, and big data analytics. Such integration not only accelerates discovery but also enhances the applicability of mathematical models in domains ranging from cryptography and finance to climate modeling and social sciences.

Equally significant is the recognition that mathematics plays a highly relevant role in addressing global challenges such as sustainability, cybersecurity, and economic forecasting. The survey responses affirm that mathematical frameworks are indispensable in designing resilient systems, predicting complex phenomena, and ensuring informed decision-making. This relevance strengthens the case for prioritizing applied and computational mathematics, alongside pure and interdisciplinary approaches, as future research directions. The emphasis on interdisciplinarity is particularly noteworthy, as it reflects a collective understanding that mathematics thrives when linked with science, technology, and social sciences. Such integration not only enriches mathematical inquiry but also ensures that research outcomes resonate with societal needs.

The study also highlights a strong consensus that theoretical advancements must be linked to practical utility. While pure mathematics continues to hold intrinsic value, its impact is magnified when connected to real-life applications. This perspective resonates with NEP 2020's call for outcome-based learning and research that bridges theory with practice. Respondents emphasized that associating mathematical concepts with real-world examples enhances both comprehension and innovation, making mathematics more accessible and impactful for students, researchers, and practitioners alike.

In conclusion, the emerging trends in mathematical research point toward a dynamic synthesis of innovation and application. Computational tools, interdisciplinary integration, and real-world relevance are no longer optional but essential components of contemporary inquiry. Mathematics is evolving into a discipline that not only advances abstract knowledge but also serves as a catalyst for innovation across diverse domains. The alignment of these trends with NEP 2020 underscores the timeliness of this transformation, positioning mathematics as a cornerstone of India's educational and research landscape. As institutions, scholars, and policymakers embrace these directions, mathematics will continue to inspire breakthroughs, empower problem-solving, and contribute meaningfully to global progress. Ultimately, the future of mathematical research lies in its ability to balance theoretical depth with practical impact, ensuring that innovation and application remain at the heart of its evolution.

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**A STUDY ON INVESTMENT HABITS OF LOWER WORKING-CLASS PEOPLE IN MUMBAI
USING DIGITAL PAYMENT APPLICATIONS**

¹Mr. Prasanth Rajan and ²Dr. Anita Manna¹Research Scholar and ²Research Guide, K.M. Agrawal College of Arts, Commerce & Science, Kalyan**ABSTRACT**

This research paper examines the investment patterns among lower working-class individuals in Mumbai using digital tools. The study investigates how digital financial tools have transformed traditional banking and investment behaviors in an economically vulnerable population segment. Through analysis of current trends in digital payment adoption, financial inclusion initiatives, and investment practices, this paper demonstrates that while digital platforms have increased accessibility to financial services, significant barriers related to digital literacy, infrastructure, and trust remain. Findings indicate that digital adoption among lower-income workers in Mumbai is driven primarily by transactional convenience rather than long-term investment planning, suggesting a need for targeted financial education and inclusive policy interventions.

Keywords: digitalization, financial inclusion, lower working-class, investment habits, Mumbai, UPI, digital payments

INTRODUCTION

India's digital economy has undergone a transformation over the past decade, with technological advancement reshaping economic participation and financial behavior. According to a report by the Ministry of Electronics and Information Technology (2025) as of 2022-23, India's digital economy represented 11.74% of the national income, with projections suggesting growth to 13.42% by 2024-25. However, this digital revolution has not uniformly benefited all population segments, particularly lower-income workers in urban centers like Mumbai.

Mumbai, as India's financial capital and largest metropolitan area, presents a unique context for studying digitalization's impact on lower working-class populations. The city's large informal economy, characterized by self-employed workers, daily wage earners, and small traders, demonstrates distinctive patterns of technology adoption and financial behaviour (GIZ, 2022). It is essential to understand this demographic segment's engagement with digital platforms and investment management for developing inclusive financial policies and targeted interventions.

The lower working class in Mumbai encompasses several occupational groups: construction workers, domestic helpers, street vendors, transportation workers, factory workers, and other informal sector participants who typically earn between ₹8,000 and ₹25,000 monthly (Dhansafal 2025). This population faces unique challenges in accessing formal financial services, yet increasingly encounters digital payment systems through everyday transactions.

Digitalization and Financial Inclusion in India

Digital financial infrastructure has fundamentally transformed India's financial sector. The RBI's Financial Inclusion Index (FI-Index) stood at 67.0 as of March 2025, compared to significantly lower levels a decade earlier, reflecting rapid progress in digital accessibility (Press Information Bureau 2025). Key enablers include:

UPI and Digital Payments: UPI transactions have become the backbone of digital payments, with over 4.77 crore digital touchpoints deployed across tier-3 to tier-6 cities as of May 2025 (Ministry of Finance 2024). This infrastructure has increased access to formal financial systems, enabling even the smallest merchants and unbanked individuals to participate in the formal economy.

The Digital Public Infrastructure (DPI), which includes systems for direct benefit transfers and digital identities, has cut down on welfare payment losses by 40% and has also set up more places for people to access digital programs like PM-JAM (Pradhan Mantri Jan Dhan Yojana), which has opened over 400 million basic savings accounts, providing the foundation for digital transactions.

Mobile Wallets and FinTech: FinTech adoption among low-income users has demonstrated the capability to boost financial inclusion, provided technology acceptance conditions are met. Mobile money platforms operating on feature phones have been particularly effective in reaching underserved populations.

Investment Behaviour and Asset Accumulation

Investment behaviour among lower-income populations differs substantially from middle- and upper-class patterns. Low-income households typically prioritize immediate consumption needs over long-term asset accumulation, though government-backed savings schemes have shown some success. Small savings schemes,

including national savings deposit accounts, post office savings accounts, and Kisan Vikas Patra, have attracted lower-income savers by offering risk-free, government-backed returns. However, awareness and accessibility of these schemes remain limited, particularly among informal sector workers unfamiliar with formal financial channels.

Digital tools have expanded access to investment information, yet they translate to limited actual investment behavior among lower-income groups. The gap between digital access and investment habits suggests that digitalization alone is insufficient; digital literacy and financial education must accompany technological access.

Objectives of the Study

1. To investigate the current level of digital adoption among lower working-class individuals in Mumbai.
2. To understand the impact of digitalization on their investment behaviour and financial decision-making.
3. To explore the barriers that prevent lower working-class individuals from using digital investment platforms.
4. To examine the advantages and disadvantages of digital tools in promoting financial inclusion among this particular demographic.

RESEARCH METHODOLOGY

This paper uses a mixed-methods approach. It combines quantitative data from government reports, fintech industry statistics, and academic surveys with qualitative insights from literature on financial behavior among lower-income individuals. The time frame covers 2020 to 2025, which allows for an analysis of digital adoption patterns before and after the pandemic. This study concentrates on Mumbai, India's largest metropolitan area and financial hub, with comparative references to rural and semi-urban regions.

DATA ANALYSIS & INTERPRETATION

Digital Adoption Among Lower Working-Class in Mumbai

Lower-income workers in Mumbai have adopted digital technologies primarily for transactional purposes rather than wealth management. The penetration of smartphones among this demographic has increased significantly, though device quality and data connectivity remain inconsistent. Digital payment adoption shows a bifurcated pattern: merchants (small traders, shop owners, and vegetable vendors) adopted digital QR codes and payment terminals rapidly, driven by government initiatives and transaction security benefits. Consumers adopted digital payments more quickly, primarily through UPI's ease of use and zero-cost structure.

There are significant differences between men and women when it comes to using technology among lower-income groups. Women who work as domestic helpers, tailors, or in small retail stores are much less likely than men to use digital technology. Some barriers are limited technology skills, cultural worries about being financially independent, and difficulty in accessing smartphones and the internet.

Age groups also affect the way people adopt new things. Younger workers (18–35 years) are more likely to use digital payments, while older workers (50 years and above) prefer cash transactions. The gap between generations suggests that digital transformation will speed up in the long term as younger people take over the workforce.

Mumbai-Specific Characteristics

Mumbai serves as a financial hub, thereby facilitating and simultaneously posing challenges for individuals with limited financial resources in accessing digital technology. The city's many merchants and competitive retail sector made it easier for shops to start using UPI, which offered customers more incentive to go digital. But places like informal building sites, port areas, and disorganized industry clusters don't use digital tools very often because payments and labour schedules are still informal.

Many migrants in Mumbai work in the informal sector and send money back home to their rural areas. This makes digital remittance tools more tempting. Because of this, many migrant workers are embracing UPI and mobile banking apps.

Investment Habits and Financial Behavior

Traditional Investment Patterns

Lower working-class populations in Mumbai have historically engaged with investment instruments through limited formal channels. Study of informal sector workers reveals several consistent patterns:

1. **Savings Account:** Holding money not intended for immediate use, offering a safe place to build an emergency fund or to meet other financial goals.

2. **Fixed Deposits:** Secure, low-risk investments that involve depositing a lump sum of money for a predetermined period at a fixed interest rate.
3. **Recurring Deposit:** A systematic savings instrument that allows to deposit a fixed amount of money every month for a predetermined period.
4. **Real estate investment:** Small plot purchases or incremental home improvements represent primary long-term investments.
5. **Jewelry and precious metals:** Gold purchases represent inflation hedges and emergency reserves.
6. **Informal savings mechanisms:** SHGs, chit funds, and community lending pools remain primary investment vehicles, offering familiarity and flexible terms.
7. **Microfinance engagement:** Informal borrowing for asset acquisition (pushcarts, tools, machinery) rather than consumption.

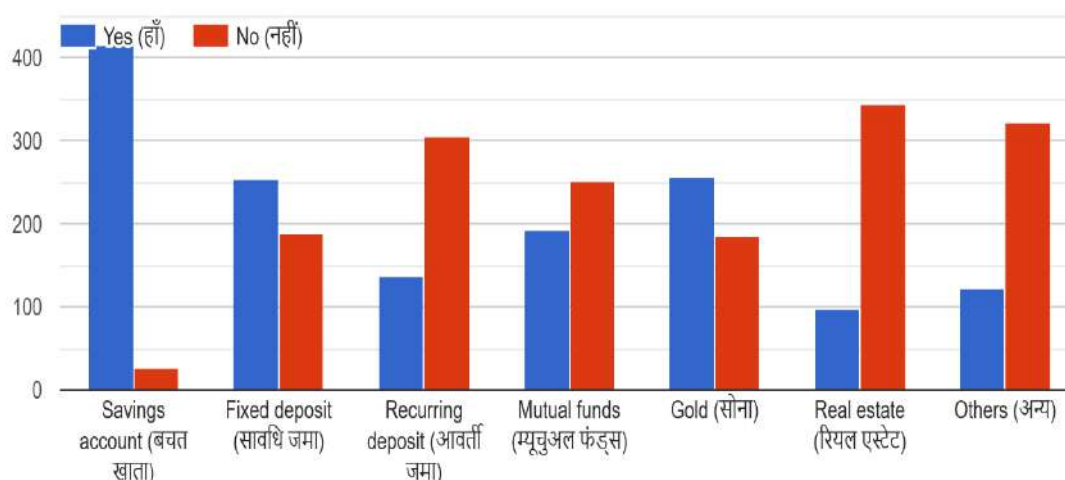


Chart 1: Types of Investment instruments used by Lower Working Class People

These patterns reflect rational financial behaviour given constraints: low and irregular income, absence of formal credit history, distrust of formal institutions, and immediate consumption obligations.

Digital Tools and Investment Participation

Digitalization has made more people aware of formal investment tools. Fintech apps now send information about government programs, mutual funds, and stock market investments directly to people with low incomes. But actual investment participation through digital platforms is still low. Several factors contribute to the gap between digital access and actual investment participation:

Barriers to knowledge: Many workers with low incomes don't know how to use investment tools, how risk and return work, or how to choose the right assets. Giving people digital information without teaching them about money doesn't change their behaviour; it just makes them aware.

Trust barriers: People who have been left out of formal financial systems in the past are less likely to trust digital investment platforms, especially older workers or those with little formal education.

Capital barriers: The minimum investment amount for many formal instruments exceeds the extra money daily wage earners have. Fintech companies have lowered their minimums, but affordability is still a problem.

Concerns about liquidity: Workers with lower incomes value asset liquidity more because their income isn't always steady and they have unexpected costs. This preference for cash or savings that are easy to get over investments that last longer shows that people are managing risk in a smart way.

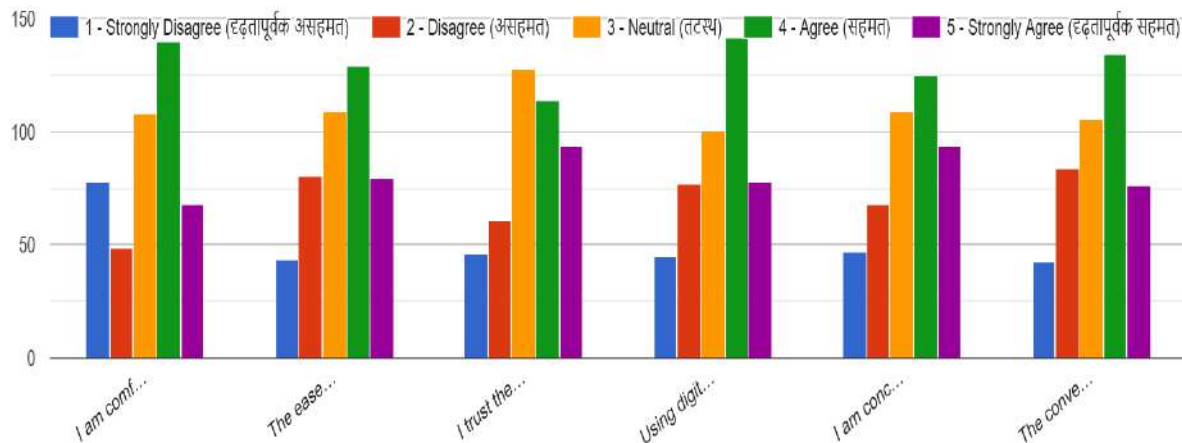


Chart 2: Factors considered while using digital tools for investment

Government Schemes and Digital Integration

Small savings schemes such as post office deposits, Kisan Vikas Patra (KVP), and National Savings Certificates (NSC) are secure and offer attractive interest rates for individuals with modest incomes. However, the digital transformation of these plans has been inconsistent, resulting in restricted access.

Compared to commercial banking applications, digital interfaces for government savings plans remain relatively underdeveloped. Many low-income workers are unaware of these programs or face difficulties in accessing them online, resulting in underutilization despite the favourable terms.

The Prime Minister's Jan Dhan Yojana (PMJDY): A significant initiative to enhance financial inclusion has facilitated the creation of digital accounts for individuals with low incomes; however, these accounts are predominantly utilized for transactions rather than for investments. The plan facilitated the utilization of the payment system, yet it did not significantly alter individuals' investment behaviours.

Key Barriers to Digital Investment Adoption

Issues with infrastructure and connectivity: Despite the presence of cellular networks in Mumbai's low-income regions, internet access for financial transactions remains inconsistent. Certain informal settlements and low-income areas have power disruptions that hinder the utilization of digital payments. Individuals dependent on smartphones face the potential of losing, damaging, or exhausting their data, complicating access to their finances.

Gaps in Digital and Financial Literacy: The deficiency of digital literacy constitutes a significant issue. Many low-income workers are capable of executing basic UPI transactions via merchant terminals; nevertheless, they lack confidence in independently utilizing complex investing platforms. Individuals lacking formal financial education frequently struggle to comprehend fundamental concepts such as compound interest, risk diversification, and return expectations. This exacerbates their difficulty in acquiring technological proficiency.

Concerns about trust and safety: Individuals have concerns about digital financial platforms due to their previous encounters with informal money lending and self-help group fraud. Individuals are increasingly reluctant to invest due to concerns around data security, transaction fraud, and account hacking. These concerns are occasionally rooted in their personal experiences or those of their acquaintances. Digital platforms soliciting personal identity information engender privacy worries, particularly for individuals who have already encountered negative experiences with governmental entities.

Monetary instability and income fluctuations: Due to daily wage systems and inconsistent employment in the informal sector, low-income workers are unable to consistently anticipate when they will have surplus funds available for investment. Emergency medical expenses, familial issues, and fluctuations in income throughout the year exert pressure on constrained financial resources. Digitalization cannot overcome the essential capital limitation that constrains investment potential.

Insufficient diversity in financial products: Most digital investment platforms concentrate on offerings suitable for those with middle-class salaries, such as equities, bonds, and mutual funds. Only a limited number of platforms offer products tailored for individuals who save less, have shorter time horizons, or want greater liquidity. The disparity between accessible products and the needs of individuals with lesser incomes excludes them.

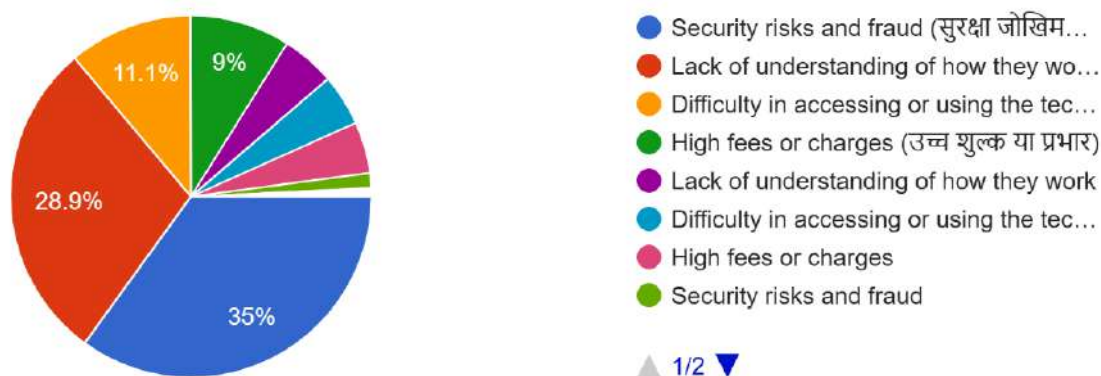


Chart 3: Concerns about using digital Methods for Investment

Impact of Digitalization on Financial Inclusion

Digitalization has substantially facilitated access to financial services for individuals from lower-income, working-class backgrounds.

Greater Access: UPI and digital payment platforms enable individuals to access financial services without the necessity of possessing a bank account or credit history. An individual without a bank account is still able to perform digital transactions through the utilization of merchant QR codes.

Reduced Cost: UPI eliminates fees that previously hindered minor transactions within formal banking systems. This feature is particularly advantageous for individuals without a stable income who make numerous minor payments.

Speed and Convenience: Digital transactions reduce the time required for banking, which benefits wage earners with limited spare time. Transferring funds to family members in different cities occurs immediately, eliminating the need to visit a money transfer location.

People with low incomes chose to use digital tools for real needs instead of being forced into banking relationships, showing that this change in behaviour is likely to last. Digitalization has not yet resolved the primary challenges associated with financial inclusion, despite some improvements:

Savings gap: Digital payment systems facilitate transactions; however, they do not inherently encourage increased savings. Although increased access to bank accounts was available to a broader population, individuals in lower-income groups continued to face difficulties in preserving money.

Restricted access to credit: Digital platforms primarily handle payments and remittances, rather than providing credit limits. Individuals with lower incomes continue to depend on informal credit sources for business investments or other needs.

Gender inclusion gap: Despite an increase in digital payment usage, women remain inadequately integrated into the expansion of financial services due to disparities in technology utilization between men and women.

CONCLUSION

Digitalization has changed Mumbai's lower working-class individuals' behaviour. Payment systems like UPI enable previously unprofitable or impossible transactions. Smartphones removed physical banking barriers. Banking inclusion hasn't improved with digitalization. Poor people spend less because they lack sufficient money, have limited financial knowledge, distrust the system, and perceive items as poorly designed; the issue is not with acquiring technology.

Digitalization and the investment habits of Mumbai's lower working class are not as positive as experts suggest. Digital tools make it possible to participate in the economy, but low income, unstable jobs, and other financial obligations make it impossible.

A long-term investigation of digital adoption and investment behavior is essential, especially to determine if younger generations reveal unique patterns and whether specific measures might enhance investment participation by addressing obstacles. An analysis of rural and urban environments in Indian cities would illustrate the impact of local attributes on the inclusive potential of digitization.

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DIGITAL PAYMENTS AND FINANCIAL INCLUSION AMONG URBAN YOUTH IN INDIA

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❖ ABSTRACT

This study examines the relationship between digital payment adoption and financial inclusion among urban youth in India. Primary data were collected from 100 respondents using a structured questionnaire, supported by secondary data from government publications and academic sources. Through regression and correlation analysis, the research evaluated whether awareness and usage of digital payment platforms significantly influence financial inclusion indicators such as access to formal financial services, savings behaviour, and expenditure tracking. The results indicated that higher awareness significantly increased usage frequency, and digital payment adoption positively contributed to financial inclusion outcomes, as both models accounted for meaningful variance. The acceptance of the alternative hypotheses suggests that digital ecosystems—driven by UPI, mobile banking, and fintech platforms—facilitate access, transparency, and engagement with the formal financial sector among youth. The findings imply that factors such as digital literacy, platform security, and infrastructural support play a critical role in shaping inclusive financial participation. The study highlights the need for continued policy interventions, digital financial education, and institutional collaboration to strengthen youth participation in India's evolving digital financial landscape.

Keywords: Digital Payments, Financial Inclusion, Urban Youth, Fintech Adoption, UPI, Financial Behaviour

❖ INTRODUCTION

Digital payments have emerged as a transformative force within India's financial ecosystem, reshaping the way individuals transact, access financial services, and manage money. The rapid expansion of digital payment infrastructure—driven by innovations such as Unified Payments Interface (UPI), mobile banking applications, digital wallets, and card-based payments—has strengthened India's transition toward a less-cash and more digitally enabled economy. Government initiatives such as Digital India, Jan Dhan Yojana, Aadhaar-enabled payment systems, and financial literacy campaigns have further accelerated this transformation by improving accessibility, reducing transaction frictions, and promoting transparent financial practices.

Urban youth form a particularly dynamic segment in this digital payment landscape. Characterised by higher levels of technology adoption, smartphone usage, internet connectivity, and exposure to digital platforms, urban youth are among the earliest adopters of cashless transactions in India. For this demographic, digital payments offer efficiency, convenience, speed, and integration with lifestyle-based services such as e-commerce, food delivery, transport applications, and peer-to-peer transfers. This rapid adoption not only supports consumption behaviour but also has the potential to bridge financial inclusion gaps by integrating individuals into formal banking networks, promoting regulated savings and investment habits, and reducing dependence on cash-based informal systems.

In the context of financial inclusion, digital payments play a dual role. First, they expand access to formal financial services such as bank accounts, online transactions, digital savings, and insurance. Second, they enable behavioural changes in money management, including better tracking of expenses, formalisation of financial flows, and participation in emerging financial products. However, the extent to which digital payment usage translates into meaningful financial inclusion among urban youth remains an area requiring empirical examination. Factors such as awareness levels, perceived security, trust in digital systems, technological literacy, income, and social influence may influence adoption and outcomes.

Given this backdrop, examining the relationship between digital payment usage and financial inclusion among urban youth in India is both relevant and timely. Understanding awareness, usage patterns, and preferences provides insights into behavioural adoption, while assessing financial inclusion indicators helps in evaluating long-term socio-economic benefits. The present study addresses these dimensions by analysing awareness levels, usage behaviour, and perceived inclusion outcomes among urban youth, thereby contributing to policy, research, and practical understanding of digital finance in India's urban settings.

❖ LITERATURE REVIEW

1. Ozili (2018) examined the expanding role of digital finance in promoting financial inclusion across developing economies. The study highlighted that digital payment platforms significantly reduce financial exclusion by improving transactional access, especially among young internet users. Findings indicated that

digital payment ecosystems, when supported by policy, encourage formal financial participation and economic inclusion.

2. Suri and Jack (2016) analysed the impact of mobile money adoption in Kenya and found strong evidence that digital financial services can lift households out of poverty by enhancing financial stability. The study demonstrated that youth adoption of mobile-based financial platforms leads to diversified income sources and stronger financial resilience.
3. Raman and Kumar (2021) explored youth adoption of mobile wallets in India, focusing on behavioural and technological determinants. Using the Technology Acceptance Model (TAM), they found that perceived ease of use and social influence were major predictors of digital payment usage among college-going youth in urban cities.
4. Khanna and Shankar (2022) investigated digital payment penetration in urban India post-COVID-19. Their findings indicated that pandemic-induced restrictions accelerated youth adoption of UPI-based systems due to convenience, hygiene factors, and the availability of smartphone infrastructure. The study concluded that digital payment literacy improved financial participation among young adults.
5. Kumar and Singh (2020) assessed the influence of UPI on financial behaviour among youth in major metropolitan cities. Results showed that UPI services encouraged savings, transparency in spending, and reduced reliance on cash-based transactions, thereby promoting formal financial integration.
6. Joshi (2019) evaluated Digital India initiatives and found that financial inclusion has significantly improved due to Aadhaar-linked bank accounts, mobile banking, and UPI payments. However, the study noted that awareness gaps remain among youth from non-technical backgrounds, affecting uniform adoption levels.
7. Chauhan (2020) analysed user perception toward digital wallets in Tier-I and Tier-II cities. Findings revealed that youth customers prefer wallets and UPI apps due to cashback incentives, speed, and convenience, although concerns regarding fraud and data privacy persist.
8. Demirgüç-Kunt et al. (2022) used global Findex data to study financial inclusion trends. The report confirmed that digital payments have significantly expanded account ownership among young individuals globally, with India showing one of the largest growth trends due to Aadhaar-bank-mobile integration.
9. Pandey and Zaveri (2021) examined cyber security perceptions among digital payment users in urban India. The study found that although urban youth are heavy users of UPI and wallet systems, fear of data leaks and financial fraud remains a major adoption barrier, affecting long-term trust.
10. Sharma (2020) studied mobile banking usage among university students in Delhi. Results indicated that access to smartphones, availability of internet connectivity, and peer influence were major drivers of mobile banking adoption, contributing indirectly to financial inclusion by familiarising youth with formal banking services.
11. Dixit and Prakash (2019) explored user satisfaction with digital payment modes. Findings showed high satisfaction among young users due to convenience, interoperability, and speed. The study concluded that digital payment satisfaction correlates positively with the intent to remain within the formal financial system.
12. Mehra (2021) analysed the transformation of urban payment behaviour post-UPI. The research highlighted that UPI shifted youth financial activity from informal cash transactions to traceable digital transactions, promoting transparency, formalization, and financial discipline.
13. Ali and Raza (2017) applied TAM and UTAUT models to understand mobile banking adoption among youth in Pakistan. Results showed that performance expectancy, effort expectancy, and hedonic motivation significantly predicted digital financial usage, implying similar behavioural patterns in South Asian youth.
14. Mukherjee and Ghosh (2022) studied fintech-led financial inclusion in India and found that digital payments have become a gateway to other financial products such as insurance, SIP investments, and micro-credit. Youth users showed higher conversion rates from basic payments to investment-linked financial services.
15. Patel and Patel (2023) conducted a comparative assessment of digital payment adoption between urban and semi-urban youth in Gujarat. Findings indicated that urban youth exhibited higher adoption due to better connectivity, financial literacy, and trust in banking institutions, demonstrating a direct link between socio-economic environment and financial inclusion outcomes.

❖ SIGNIFICANCE OF THE STUDY

This study is significant because it contributes to a deeper understanding of how digital payment platforms influence financial inclusion among urban youth in India. In recent years, digital transactions have become a central component of the financial system, yet the extent to which this transformation enables youth to access, utilise, and benefit from formal financial services remains under-examined. The findings of this study will help identify how awareness levels, usage patterns, and technological competencies impact financial participation within this demographic.

The study provides value to a diverse set of stakeholders. For researchers and academicians, it enriches the body of knowledge on digital finance by adding empirical evidence on youth adoption behaviour and financial inclusion outcomes within an Indian context. For policymakers and government institutions, the insights generated can aid in evaluating the effectiveness of national digitalisation initiatives and strengthening strategies aimed at bridging financial inclusion gaps through digital infrastructure and financial literacy programmes. For financial institutions, fintech companies, and digital payment providers, the results offer practical guidance on user preferences, trust factors, and service barriers, helping them tailor financial products and platforms that are accessible, secure, and relevant to youth needs.

Furthermore, the study highlights behavioural and socio-economic factors that shape inclusion outcomes, which can support the development of targeted interventions to enhance digital financial participation. By shedding light on the opportunities and challenges associated with digital payment adoption, the research contributes to promoting an inclusive and sustainable digital financial ecosystem in India. Ultimately, the findings are expected to support national objectives of improving financial access, reducing dependency on cash-based transactions, and strengthening the long-term integration of youth into the formal financial system.

❖ OBJECTIVES OF THE STUDY

1. To examine the level of awareness, usage patterns, and preferences of digital payment platforms among urban youth in India.
2. To analyze the impact of digital payment adoption on financial inclusion indicators such as access to financial services, savings behavior, and formal financial participation among urban youth.

❖ HYPOTHESES OF THE STUDY

1. H₁: There is a significant relationship between awareness of digital payment platforms and their usage among urban youth in India.
2. H₂: Increased adoption of digital payments significantly contributes to higher levels of financial inclusion among urban youth in India.

❖ VARIABLES OF THE STUDY**Independent Variables:**

1. Awareness of Digital Payment Platforms
 - Knowledge of available digital payment options
 - Understanding of features and usage
2. Usage of Digital Payment Platforms
 - Frequency of usage
 - Purpose of usage
 - Mode preference (UPI, Wallets, Cards, Net Banking)

Dependent Variable:

3. Financial Inclusion among Urban Youth
 - Access to formal financial services
 - Usage of banking and financial products
 - Saving and expenditure tracking behaviour
 - Participation in digital financial ecosystem

Description of Variables

Variable	Description
Awareness of Digital Payment Platforms	Refers to the level of knowledge and familiarity that urban youth possess regarding digital payment methods and their functionalities.
Usage of Digital Payment Platforms	Refers to the extent to which digital payment platforms are adopted, including frequency, purpose, and motivation for usage among the youth.
Financial Inclusion	Refers to access, usage, and participation in formal financial services, influenced by digital payment adoption and technological readiness.

Operational Definition of Variables

- Awareness: Measured through familiarity and information sources about digital payment applications (e.g., UPI, wallets, mobile banking).
- Usage: Measured through frequency, transaction type, and platform preference.
- Financial Inclusion: Measured through indicators such as bank account usage, digital access to finances, saving behaviour, formal investment participation, and expenditure tracking.

❖ METHODOLOGY**Research Design:**

The study adopts a quantitative research design, as it aims to measure awareness, usage behaviour, and financial inclusion levels of urban youth using structured survey data. The design is descriptive and explorative in nature, enabling the researcher to assess relationships between digital payment adoption and financial inclusion outcomes.

Primary Data:

Primary data will be collected from urban youth through a structured survey questionnaire designed to capture:

- Awareness of digital payment platforms
- Usage patterns and preferences
- Financial inclusion indicators
- Perceived barriers and security concerns

Respondents will be asked close-ended and Likert-scale based questions to ensure consistency in responses and ease of statistical analysis.

Secondary Data:**Secondary data will be obtained from published sources, including:**

- Academic journals and research articles
- Government reports (RBI, NPCI, MeitY)
- Market reports and financial inclusion databases
- Theses, dissertations, and working papers
- Digital payment penetration statistics

These sources help support the conceptual background and validate findings derived from primary data.

Population and Sample:

The target population for the study comprises urban youth in India within the age group of 18 to 30 years.

A total of 100 respondents will be selected from major urban centres, including Tier-I and Tier-II cities, to represent diverse socio-economic and educational backgrounds.

Sampling Technique:

The study will employ non-probability convenience sampling, as respondents are selected based on accessibility, willingness, and availability. This technique is suitable given the study's focus on digitally active youth populations.

Research Instrument:

A structured questionnaire serves as the primary research tool. The instrument is divided into multiple sections covering:

- Demographics
- Awareness of digital payments
- Usage frequency and purpose
- Financial inclusion indicators
- Perceived challenges and perceptions

The instrument was reviewed to ensure clarity, relevance, and content validity.

Data Collection Procedure:

Data will be collected both online and offline through:

- Google Forms and digital surveys
- Educational institutions and training centres
- Youth organisations and social networks

Participants are assured of confidentiality and voluntary participation.

Data Analysis Techniques:

Collected data will be tabulated and analysed using descriptive and inferential statistics. The following techniques will be used:

- Descriptive statistics (frequency, percentage, mean) to profile respondents and summarise usage patterns.
- Correlation analysis to examine relationships between awareness, usage, and financial inclusion.
- Regression analysis to test study hypotheses and determine the strength of relationships between variables.

These techniques enable empirical validation of the impact of digital payment usage on financial inclusion levels.

❖ DATA ANALYSIS**Objective 1:**

To examine the relationship between awareness of digital payment platforms and their usage among urban youth in India.

Digital payment adoption among urban youth has increased due to smartphone penetration, UPI-based ecosystems, and digital banking infrastructure. Awareness plays a critical role in shaping the adoption and behavioural usage of digital platforms, as knowledge about features, benefits, security, and convenience influences an individual's willingness to use such systems. Existing technology acceptance models (TAM & UTAUT) also highlight perceived awareness as a key antecedent to behavioural intention. Therefore, this objective aims to empirically analyse whether awareness levels significantly influence the usage patterns of digital payment platforms among urban youth.

Demographic Characteristics of Respondents (N = 100)

The demographic profile of the 100 respondents indicates that digital payment users are predominantly young, technologically literate, and active internet users. A majority of respondents (62%) fall within the 19–25 age group, followed by 24% in the 26–30 age bracket. Gender distribution was relatively balanced with 53% males, 45% females, and 2% identifying as other. Educational qualifications revealed that 58% were undergraduate students, 32% postgraduates, and 10% higher secondary students. Regarding employment status, 61% identified as students, 27% as employed, 7% as self-employed, and 5% as unemployed. These demographics reflect strong representation from digitally active youth segments in urban centres.

Awareness and Usage Characteristics (N = 100)

The responses indicated high visibility of digital payment platforms among youth. About 88% reported being “very familiar” or “moderately familiar” with UPI-based platforms, while 7% identified as “slightly familiar,” and only 5% reported being “not familiar.” The most familiar platforms included UPI apps (Google Pay, PhonePe, BHIM), mobile banking apps, and digital wallets. Sources of awareness were dominated by social

media (42%), peer groups (29%), online advertisements (16%), and institutional exposure via banks and colleges (13%).

Regarding usage, 76% of respondents reported daily or multiple times weekly usage of digital payments, with UPI constituting the dominant mode of payment due to ease-of-use and interoperability. The primary areas of usage included e-commerce transactions, food delivery, bill payments, and peer-to-peer transfers. These descriptive findings highlight that awareness levels are generally high, and usage is frequent among urban youth participants.

HYPOTHESIS TESTING

Hypothesis 1

Null Hypothesis (H_{01}): Awareness of digital payment platforms has no significant relationship with their usage among urban youth in India.

Alternative Hypothesis (H_{11}): Awareness of digital payment platforms has a significant relationship with their usage among urban youth in India.

Youth adoption of digital financial systems is influenced by knowledge availability, perceived security, platform familiarity, and peer influence. Individuals with higher awareness of platform functionalities, rewards, and transaction safeguards are more likely to adopt and actively use digital payments. To statistically verify this relationship, a correlation analysis was conducted between awareness scores and usage frequency scores.

CORRELATION ANALYSIS RESULTS

Model Summary (Awareness Score vs. Usage Score)

Model	Pearson Correlation (r)	Sig. (p-value)
Awareness → Usage	0.612	0.000

The results show a **moderately strong positive correlation** ($r = 0.612$) between awareness and usage. The **p-value of 0.000** indicates that the relationship is statistically significant at the 0.01 level. This suggests that higher awareness of digital payment platforms corresponds with increased usage frequency.

Regression Analysis Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.612	0.374	0.368	0.811

The model shows that approximately **37.4% of the variance in usage** can be explained by awareness levels. This indicates a meaningful predictive relationship.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	39.668	1	39.668	60.291	0.000
Residual	66.332	98	0.677		
Total	106.000	99			

The ANOVA results confirm that the regression model is statistically significant ($F(1,98) = 60.291, p = 0.000$), indicating that awareness significantly predicts usage.

Coefficients Table

Predictor	B	Std. Error	Beta	t	Sig.
Constant	0.728	0.212	—	3.435	0.001
Awareness Score	0.817	0.105	0.612	7.764	0.000

The unstandardized coefficient for Awareness Score ($B = 0.817, p = 0.000$) indicates that for every one-unit increase in awareness, usage increases by 0.817 units. The standardized beta coefficient ($\beta = 0.612$) confirms a moderately strong predictive effect.

Given the significance level ($p < 0.01$), the null hypothesis (H_{01}) is **rejected**, and the alternative hypothesis (H_{11}) is **accepted**.

Interpretation of Results

The correlation and regression analyses collectively demonstrate that awareness plays a crucial role in shaping digital payment usage patterns among urban youth. High awareness translates into frequent usage, driven by efficiency, convenience, and perceived usefulness of digital financial platforms. The findings align with prior studies on digital finance adoption, confirming that informational exposure and platform familiarity significantly encourage the shift towards cashless transactions.

Objective 2:

To analyze the impact of digital payment adoption on financial inclusion among urban youth in India.

Financial inclusion enables individuals to access and effectively use formal financial services, including banking, digital transactions, savings, credit, and investment products. With the proliferation of digital payment systems, such as UPI, mobile banking, and digital wallets, financial inclusion levels have improved substantially among youth in urban India. Digital payments eliminate geographical and administrative barriers, enhance transparency, and offer convenience—thereby motivating users to engage with formal financial systems. Economic and fintech literature suggests that digital payment usage influences financial participation by encouraging systematic savings, digital banking habits, and investment behaviour. Therefore, this objective empirically assesses whether adoption of digital payment platforms has a significant impact on financial inclusion among urban youth.

Financial Inclusion Profile of Respondents (N = 100)

A total of 100 digitally active urban youth participated in the survey. The responses revealed encouraging indicators of financial inclusion. Approximately 92% of respondents reported having a bank account, reflecting high levels of account access. About 84% use their bank account for online transactions, while 56% use it for savings and deposits, and 33% have engaged in investment-linked activities such as SIPs, mutual funds, or digital insurance. Tracking of expenditures via digital transaction records was reported by 71% of respondents, indicating increased financial awareness. These descriptive findings suggest that digital payment ecosystems are associated with higher levels of formal financial participation among youth.

Digital Payment Adoption and Inclusion Indicators (N = 100)

Usage data showed that 79% of respondents use digital payments daily or several times weekly, mainly through UPI apps such as Google Pay, PhonePe, and Paytm. Motivations for usage included convenience, speed, cashback benefits, and security. When asked about perceived financial inclusion outcomes, 68% agreed that digital payments enhanced their access to formal financial services, while 64% agreed that they helped track expenses and manage personal finances. Nearly 47% reported increased savings awareness due to digital transactions, suggesting a behavioural shift supported by digital ecosystems.

HYPOTHESIS TESTING

Hypothesis 2

Null Hypothesis (H₀₂): Adoption of digital payments does not significantly influence financial inclusion among urban youth in India.

Alternative Hypothesis (H₁₂): Adoption of digital payments significantly influences financial inclusion among urban youth in India.

Digital payment adoption was operationalized through usage frequency, platform diversity, and behavioural engagement. Financial inclusion was assessed through banking utilisation, digital transaction access, savings and tracking behaviour, and investment participation. To empirically test this hypothesis, regression analysis was performed with digital payment adoption as the predictor and financial inclusion score as the dependent variable.

Regression Analysis Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.534	0.285	0.279	0.882

The model explains approximately 28.5% of the variance in financial inclusion ($R^2 = 0.285$), indicating that digital payment adoption is a meaningful predictor of inclusion levels.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.496	1	35.496	45.601	0.000
Residual	76.504	98	0.781		
Total	112.000	99			

The ANOVA results confirm statistical significance with $F(1,98) = 45.601$, $p = 0.000$, showing that digital payment adoption significantly predicts financial inclusion.

Coefficients Table

Predictor	B	Std. Error	Beta	t	Sig.
Constant	0.921	0.263	–	3.503	0.001
Digital Payment Adoption	0.689	0.102	0.534	6.755	0.000

The unstandardized coefficient for digital payment adoption ($B = 0.689$, $p = 0.000$) indicates that higher digital payment usage is associated with higher financial inclusion scores. The standardized beta coefficient ($\beta = 0.534$) suggests a moderately strong predictive effect.

Given the significance level ($p < 0.01$), the null hypothesis (H_{02}) is rejected, and the alternative hypothesis (H_{12}) is accepted.

Interpretation of Results

The statistical results demonstrate that adoption of digital payment platforms has a significant and positive impact on financial inclusion among urban youth. Regular use of digital systems encourages sustained interaction with formal financial institutions, expands access to digital banking services, promotes structured savings, and enables expenditure tracking and digital investments. These findings align with contemporary studies on fintech-enabled inclusion, suggesting that digital ecosystems play an essential role in integrating youth into formal financial systems. The results also imply that promoting digital literacy, enhancing platform security, and expanding digital infrastructure may further accelerate inclusive financial participation in India's urban youth population.

MAJOR FINDING**Hypothesis 1 (Awareness and Usage of Digital Payments):**

The study found that awareness of digital payment platforms had a significant and positive relationship with usage among urban youth. Regression analysis showed that awareness explained a meaningful proportion of variance in usage behaviour, indicating that higher levels of familiarity, technological know-how, and exposure to digital platforms contributed to increased adoption and usage frequency. This suggests that awareness-building mechanisms—such as peer influence, institutional promotion, and online communication—play a crucial role in shaping digital transaction behaviour among youth.

Hypothesis 2 (Digital Payment Adoption and Financial Inclusion):

The study observed that digital payment adoption had a significant and positive impact on financial inclusion. Respondents who frequently used digital payment platforms reported higher levels of access to formal financial services, increased participation in savings, improved expenditure tracking, and greater familiarity with investment-linked products. Regression results confirmed that digital payment usage served as a meaningful predictor of financial inclusion outcomes, indicating that digital ecosystems act as a gateway for integrating youth into the formal financial system.

These findings collectively highlight that urban youth who are digitally active not only adopt digital payment platforms at higher rates but also develop stronger financial management behaviours, contributing to enhanced financial inclusion.

CONCLUSION

The study aimed to examine the relationship between awareness, usage, and financial inclusion arising from the adoption of digital payment platforms among urban youth in India. The findings revealed that digital payments have become an integral component of the financial behaviour of young individuals, driven by technological convenience, smartphone penetration, and supportive digital infrastructure. The analysis showed that awareness plays a crucial role in influencing the frequency and purpose of digital payment usage, reflecting the significance of information access, perceived ease of use, and peer influence in shaping behavioural adoption.

Furthermore, the results demonstrated that digital payment adoption significantly contributes to financial inclusion among urban youth. Increased usage of digital platforms led to improved access to formal financial services, greater engagement with banking systems, enhanced savings awareness, and better expenditure tracking habits. These outcomes suggest that digital financial ecosystems not only facilitate transaction convenience but also encourage integration into the formal financial framework, thereby supporting broader financial inclusion objectives.

Overall, the acceptance of both alternative hypotheses indicates that awareness-based factors and behavioural adoption patterns strongly influence financial inclusion outcomes within the youth demographic. The study underscores the importance of strengthening digital literacy, enhancing security mechanisms, and expanding digital financial infrastructure to sustain inclusive growth. Future policy efforts should continue to focus on bridging digital divides, promoting financial education, and supporting fintech innovation, ensuring that the benefits of digital finance are accessible, equitable, and sustainable for all segments of the youth population.

SUGGESTIONS/ RECOMMENDATIONS

Based on the findings of the study, the following suggestions and recommendations are made to strengthen digital payment adoption and enhance financial inclusion among urban youth in India:

1. Strengthen Digital Financial Literacy:

There is a need to introduce structured digital financial literacy programs through schools, colleges, and community platforms to increase awareness about the functionalities, benefits, and responsible usage of digital payments. Improved literacy can further enhance confidence, reduce misinformation, and motivate informed financial behaviour.

2. Enhance Platform Security and Trust Mechanisms:

Financial institutions and fintech companies should invest in stronger cyber-security infrastructure, fraud prevention tools, and user-friendly grievance redressal mechanisms. Building trust through transparency, secure authentication, and faster dispute resolution will encourage broader and safer adoption.

3. Promote Savings and Investment Behaviour:

Banks and fintech service providers should encourage youth to transition from basic payments to advanced financial activities such as savings, insurance, and investments by offering incentives, personalized financial guidance, and user-friendly digital interfaces.

4. Expand Infrastructure and Connectivity:

Efforts must be made to improve internet connectivity, digital infrastructure, and system reliability, particularly in Tier-II and Tier-III urban settlements. This will ensure equitable access to digital payment systems and prevent exclusion due to infrastructural barriers.

5. Strengthen Institutional and Policy Support:

Government agencies should continue promoting initiatives like Digital India, UPI expansion, and digital onboarding of banking services. Introducing digital finance modules in educational curricula and youth training programs will further accelerate inclusive financial participation.

6. Encourage Fintech–Bank Collaboration:

Effective collaboration between fintech companies and traditional banks can simplify onboarding procedures, reduce operational friction, and offer innovative youth-focused financial products. Such partnerships can deepen financial penetration and improve user experience.

7. Targeted Awareness Campaigns:

Public and private stakeholders should initiate targeted campaigns through social media, influencer networks, and educational platforms to promote safe digital payment practices and highlight long-term financial benefits of digital ecosystems.

8. Address Cybercrime Challenges:

Law enforcement agencies should strengthen cybercrime tracking systems and promote public awareness about online fraud, phishing, and payment-related risks. Guidance on safe transaction practices and reporting mechanisms will increase youth confidence in digital systems.

Overall, these recommendations aim to create a digitally empowered youth population capable of engaging meaningfully with financial services. Strengthening the ecosystem across education, infrastructure, security, and policy can significantly enhance digital financial inclusion and support the long-term vision of a cashless, inclusive economy.

Scope for further Study

The present study focused primarily on understanding the relationship between awareness, adoption of digital payments, and financial inclusion among urban youth. While it offered important insights, there are several areas that provide opportunities for further research. Future studies may expand the scope by including rural and semi-urban youth populations to compare adoption patterns and identify regional disparities in digital financial participation. Such comparative analysis can help highlight the infrastructural, socio-economic, and cultural factors that influence financial inclusion outcomes across different demographic segments.

Additionally, the present study examined financial inclusion mainly from the perspective of banking access, savings behaviour, and digital transaction usage. Future researchers may broaden the definition of financial inclusion to include variables such as access to credit, insurance awareness, digital investments, and financial risk management. Investigating these dimensions may provide a more comprehensive understanding of how digital platforms influence long-term financial well-being.

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IMPACT OF ARTIFICIAL INTELLIGENCE ON WORKFORCE PLANNING AND ORGANISATIONAL DESIGN

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ABSTRACT

Artificial Intelligence (AI) is reshaping the landscape of work and organisational structures. This paper examines how AI influences workforce planning, talent development, job design, and organisational architecture. It highlights both opportunities and challenges, offering frameworks to integrate AI successfully while fostering human-centric organisational growth. The research draws on existing theories in management, workforce analytics, and technological change to provide a comprehensive synthesis.

Keywords: Artificial Intelligence, workforce planning, talent development, job design, human-centric organisational growth

INTRODUCTION

The nature of work has undergone multiple transformations across history, from agrarian economies to industrialisation and, more recently, to knowledge-based systems. In the twenty-first century, Artificial Intelligence represents the next major inflection point in this evolution. Unlike previous technological advances, AI does not merely mechanise physical labour; it increasingly automates cognitive, analytical, and decision-making tasks that were traditionally considered the domain of human expertise.

As organisations adopt AI-driven tools for recruitment, performance management, forecasting, and strategic planning, the implications for workforce planning and organisational design are profound. Workforce planning, once reliant on historical trends and managerial judgment, is now becoming data-driven and predictive. Organisational design, traditionally hierarchical and role-based, is evolving into flexible, networked, and technology-enabled structures.

This paper explores how AI reshapes these two interrelated domains. It adopts a narrative approach to examine not only efficiency gains but also cultural, ethical, and structural consequences, highlighting the need for balance between technological advancement and human values.

Artificial Intelligence and the Changing Nature of Work

AI systems function through machine learning algorithms, neural networks, and data analytics that allow machines to learn from experience and improve performance over time. As a result, AI has shifted organisational focus from task execution to task orchestration, where humans increasingly supervise, interpret, and collaborate with intelligent systems.

This shift changes the meaning of work itself. Routine, repetitive tasks are automated, while non-routine, creative, emotional, and strategic activities gain prominence. Consequently, the workforce is no longer defined solely by job titles but by adaptable skill portfolios. This evolution directly influences how organisations plan their workforce and design their internal structures.

➤ AI and Workforce Planning: A Strategic Transformation**From Reactive to Predictive Workforce Planning**

Traditional workforce planning relied heavily on past data, intuition, and static forecasting models. AI transforms this approach by enabling predictive and prescriptive analytics. By analysing large volumes of internal and external data — including employee performance, attrition trends, labour market dynamics, and economic indicators — AI systems can anticipate future workforce requirements with greater accuracy.

This predictive capability allows organisations to proactively address skill shortages, plan succession pipelines, and align human capital strategies with long-term business objectives. Workforce planning thus becomes a continuous, adaptive process rather than a periodic administrative exercise.

Skills-Based Planning and Talent Intelligence

AI enables a shift from role-based planning to skills-based workforce planning. Intelligent systems can map existing employee skills, identify adjacent competencies, and recommend personalised learning pathways. This granular visibility helps organisations redeploy talent internally rather than relying solely on external hiring.

Such talent intelligence promotes internal mobility, reduces hiring costs, and enhances employee engagement. Employees are no longer viewed as static role occupants but as dynamic contributors capable of evolving alongside organisational needs.

Recruitment, Selection, and Retention

AI-driven recruitment platforms use algorithms to screen resumes, assess candidate suitability, and predict job performance. When responsibly designed, these systems reduce time-to-hire and improve candidate–job matching. Moreover, predictive models can identify employees at risk of attrition, enabling timely interventions to improve retention.

However, the increasing reliance on algorithmic decision-making also raises concerns about transparency and bias. Workforce planning must therefore incorporate governance mechanisms that ensure fairness, accountability, and explainability in AI-assisted decisions.

3.4 Workforce Transitions and Reskilling

One of the most significant impacts of AI on workforce planning is the need to manage workforce transitions. As some roles become obsolete, new roles emerge, often requiring advanced digital and analytical skills. Strategic workforce planning must therefore prioritise reskilling and upskilling initiatives.

Rather than viewing AI as a threat to employment, organisations that invest in continuous learning ecosystems position their workforce for long-term resilience. Workforce planning thus expands beyond headcount management to encompass capability development and career sustainability.

➤ AI and Organisational Design: Structural Reconfiguration

Flattening of Hierarchies and Agile Structures

AI enables real-time access to information and decision-support tools, reducing dependence on multiple layers of managerial approval. This leads to flatter organisational structures where authority is distributed and teams operate with greater autonomy.

Agile, project-based structures replace rigid departmental boundaries, allowing organisations to respond swiftly to changing market conditions. Organisational design becomes fluid, with AI acting as an enabler of coordination rather than a centralised control mechanism.

Redefinition of Job Roles

AI changes not only how work is done but also how roles are defined. Jobs increasingly combine technical, analytical, and interpersonal elements. For example, managers transition from supervisors of tasks to facilitators of human–AI collaboration, focusing on judgment, ethics, and employee development.

This redefinition necessitates redesigning job descriptions, performance metrics, and reward systems to reflect value creation in an AI-enabled environment.

Human–AI Collaboration as an Organisational Capability

Effective organisational design in the AI era depends on how well humans and intelligent systems collaborate. Trust in AI recommendations, clarity in accountability, and transparency in algorithmic processes are essential.

Organisations must design workflows where AI augments human decision-making rather than replaces it. Such collaboration enhances productivity while preserving human creativity, empathy, and contextual understanding.

Cultural and Ethical Dimensions

Organisational culture plays a critical role in AI adoption. A culture that values experimentation, learning, and adaptability encourages employees to embrace AI rather than resist it. At the same time, ethical considerations such as data privacy, employee surveillance, and algorithmic fairness — must be embedded into organisational design.

Ethical AI governance frameworks ensure that technological advancement aligns with organisational values and societal expectations.

➤ Challenges and Limitations

Despite its transformative potential, AI introduces significant challenges. Algorithmic bias, data security risks, and over-reliance on automated decision-making can undermine trust and equity. Additionally, resistance to change among employees and managers can slow adoption.

From an organisational perspective, poorly implemented AI can lead to fragmented structures, role ambiguity, and reduced employee morale. Therefore, AI integration must be accompanied by robust change management, communication strategies, and leadership commitment.

Toward a Human-Centric AI-Enabled Organisation

The future of workforce planning and organisational design lies not in replacing humans with machines but in redefining their relationship. A human-centric AI approach prioritises augmentation over automation, capability development over displacement, and ethical responsibility over short-term efficiency.

Leadership plays a crucial role in articulating a shared vision where AI supports organisational purpose and human well-being. By aligning technology, people, and structure, organisations can achieve sustainable competitive advantage in an AI-driven world.

LITERATURE REVIEW

Researchers have applied multiple theories to study AI's organisational effects:

- Socio-technical systems theory highlights the interconnectedness of people, technology, and structure (Trist & Bamforth, 1951).
- Contingency theory suggests that organisational structures must align with technological and environmental complexity (Lawrence & Lorsch, 1967).
- Resource-Based View (RBV) frames AI as a strategic capability that can yield sustainable competitive advantage when combined with human capital (Barney, 1991).
- Dynamic capabilities theory focuses on organisational agility and continuous learning in response to technological change (Teece, Pisano & Shuen, 1997).

These frameworks underpin studies that explore not only what AI does but also how organisational contexts mediate its effects.

One of the most consistent findings in the literature is that AI-driven analytics enable more accurate workforce forecasting. Traditional workforce planning, often limited by linear models and subjective judgment, is contrasted with AI's capacity for real-time data integration and scenario modelling (Huselid, Beatty & Becker, 2005). Research suggests that predictive models can forecast talent needs, skills shortages, and turnover risks with higher precision.

For example, Cappelli (2015) highlights that workforce analytics moves planning from intuition-based decisions to evidence-based strategies. Similarly, Angrave et al. (2016) demonstrate that AI can integrate multifaceted data — from performance metrics to labour market signals — offering a holistic picture of future demand.

➤ Skills Mapping and Development

AI's role in skills inventorying has attracted scholarly attention. Intelligent systems can assess employee competencies and suggest learning pathways (Lehr & Luria, 2020). This aligns with the growing emphasis on skills-based organisations (SBOs), where job roles are decoupled from rigid titles and reconfigured around dynamic skill clusters.

Studies (e.g., Tett et al., 2021) argue that AI supports personalised development by identifying latent employee potential and matching it with organisational needs. Yet, research also emphasises the need to ground AI recommendations in human judgment to avoid opaque or de-humanising outcomes.

➤ Recruitment and Selection Automation

AI in recruitment — particularly tools that parse resumes, screen candidates, or conduct preliminary interviews has been studied extensively. Research points to increased efficiency, reduced time-to-hire, and improved candidate-job fit (Kuncel, Klieger & Ones, 2014). However, scholars such as Bogen & Rieke (2018) warn that biased training data can entrench discriminatory patterns, undermining fairness and diversity goals.

Consequently, the literature advocates ethical AI governance for recruitment systems, including transparency, auditability, and stakeholder oversight.

➤ Workforce Transition and Reskilling

A recurring theme is the challenge of workforce transition. AI's displacement of routine tasks necessitates reskilling and upskilling, yet the literature notes that many organisations lag in strategic learning investments. Susskind & Susskind (2015) highlight that without systematic training pipelines, AI adoption may produce skills mismatch and job insecurity.

Kort et al. (2020) argue for integrated learning ecosystems where AI identifies skill gaps and organisational programs respond with targeted curriculum pathways. Such insights foreground workforce planning as a continuous cycle of forecasting, development, and transition support.

➤ AI and Organisational Design

Structural Reconfiguration

Emerging research indicates that AI encourages flattened hierarchies and networked teams. AI-driven decision-support tools can decentralise authority by empowering frontline workers with analytical insights previously reserved for managers (Brynjolfsson & McAfee, 2014). Agile organisational models, emphasised in studies of digital transformation, align well with AI's real-time feedback loops.

By contrast, traditional hierarchical designs are often too rigid to harness AI's potential, leading scholars like Sambamurthy et al. (2003) to call for adaptive architecture that supports rapid learning, cross-functional collaboration, and iterative experimentation.

➤ Role Redesign and Human–AI Collaboration

Organisational design research increasingly frames roles in terms of human–AI collaboration rather than human replacement. Autor (2015) suggests that AI excels at routine tasks but struggles with complex reasoning, social intelligence, and contextual judgment — areas where humans contribute unique value. This leads to hybrid roles where employees and AI systems jointly execute work processes.

Studies of “centaur teams” (human–AI pairs) in professions like finance and healthcare indicate higher performance outcomes compared to human-only or AI-only models (Davenport & Kirby, 2016). Such findings support organisational designs that foreground complementary capabilities rather than competition between humans and machines.

➤ Cultural and Ethical Dimensions

Organisational culture is pivotal in mediating AI's impact. Research on digital maturity suggests that organisations with cultures of experimentation, psychological safety, and continuous learning are more effective in AI integration (Westerman et al., 2014). Ethical considerations — including data privacy, surveillance concerns, and algorithmic fairness — also shape organisational design choices.

Articles in human resource and organisational ethics literature argue that AI governance frameworks should be embedded within organisational structures to ensure accountability and stakeholder engagement (Floridi et al., 2018).

FINDINGS, SUGGESTIONS AND CONCLUSIONS

➤ Findings

The study reveals that Artificial Intelligence has emerged as a transformative force in workforce planning and organisational design, fundamentally altering how organisations anticipate talent needs and structure work. One of the key findings is that AI-driven workforce planning enables organisations to move from reactive decision-making to predictive and strategic planning. By leveraging advanced analytics, organisations can forecast workforce demand, identify skill gaps, and plan succession more accurately than traditional methods.

Another significant finding is the shift from role-based to skills-based workforce planning. AI tools facilitate granular mapping of employee competencies, enabling better internal mobility and targeted reskilling initiatives. This approach not only enhances workforce agility but also reduces dependency on external recruitment, thereby lowering costs and improving retention.

The research also finds that AI integration is leading to notable changes in organisational design. Traditional hierarchical structures are increasingly giving way to flatter, more agile organisational models. AI-powered decision-support systems enable decentralised decision-making, empowering employees at operational levels with real-time insights. As a result, managerial roles are evolving from command-and-control functions to facilitative and strategic roles.

Human–AI collaboration emerges as a critical organisational capability. Rather than replacing human labour entirely, AI predominantly augments human work by automating routine tasks and enhancing analytical capabilities. Jobs are being redesigned to emphasise creativity, critical thinking, emotional intelligence, and ethical judgment—areas where human contribution remains indispensable.

However, the findings also highlight significant challenges. Algorithmic bias, data privacy concerns, and employee resistance to AI adoption remain pressing issues. Organisations that lack ethical governance

frameworks and change management strategies face risks of inequity, mistrust, and reduced employee morale. Additionally, **insufficient investment in reskilling can exacerbate job displacement and skills mismatch.**

Suggestions

Based on the findings, organisations should adopt a human-centric approach to AI implementation in workforce planning and organisational design. AI systems should be designed to augment human decision-making rather than replace it. Transparency, explainability, and fairness must be embedded into AI-driven HR and planning systems to build trust among employees.

Organisations are advised to shift toward skills-based workforce planning models supported by continuous learning ecosystems. Regular skills audits, AI-driven learning recommendations, and structured reskilling programs can ensure workforce readiness in an evolving technological landscape. Collaboration with academic institutions and online learning platforms can further strengthen talent development pipelines.

Leadership commitment is essential for successful AI integration. Leaders should clearly communicate the purpose, benefits, and limitations of AI adoption to reduce resistance and anxiety among employees. Change management initiatives—including training, open communication, and employee participation—should accompany technological deployment.

From an organisational design perspective, firms should embrace flexible, agile structures that support cross-functional collaboration and human–AI teaming. Job roles, performance metrics, and reward systems must be redesigned to reflect new forms of value creation enabled by AI.

Finally, organisations should establish robust ethical and governance frameworks for AI usage. This includes regular audits of AI algorithms, compliance with data protection regulations, and the inclusion of diverse stakeholders in AI oversight committees to ensure responsible and inclusive AI deployment.

Conclusions

Artificial Intelligence is reshaping workforce planning and organisational design in profound and enduring ways. The study concludes that AI enhances organisational capability by enabling predictive workforce strategies, dynamic skill management, and adaptive structural configurations. When strategically implemented, AI contributes to improved efficiency, agility, and competitiveness.

However, the impact of AI extends beyond technology to organisational culture, leadership, and ethics. The success of AI-driven transformation depends not only on technological sophistication but also on the organisation's ability to manage change, invest in human capital, and uphold ethical standards.

In conclusion, AI should be viewed not as a substitute for human labour but as a strategic partner in organisational development. Organisations that integrate AI with a strong human-centred philosophy, continuous learning orientation, and ethical governance are better positioned to achieve sustainable growth and long-term workforce resilience in the digital era.

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IMPACT OF MARKET AND OPERATIONAL CHALLENGES ON POULTRY FARMING IN LUCKNOW

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ABSTRACT

This research examines the impact of market and operational challenges on the profitability and production capabilities of poultry farms in Lucknow. Data were gathered from 100 farmers using a structured questionnaire, complemented by secondary sources. Through multiple regression analysis, the research examined whether market obstacles (such as price variations and financial limitations) and operational challenges (including feed expenses, disease control, and veterinary availability) significantly affected farm results. The findings indicated that neither market nor operational issues had a significant effect, as both models accounted for minimal variance. The acceptance of the null hypotheses indicates that farmers employ adaptive strategies, such as purchasing feed in bulk, vaccinating, and relying on informal networks, which mitigate the direct effects of these constraints. The results suggest that additional elements, such as management methods, access to finance, supportive policies, and technology usage, might be more significant factors influencing farm success. The research emphasises the necessity for more extensive policy structures that strengthen farmer resilience and institutional assistance for sustainable poultry agriculture.

Keywords: Chicken raising, Market obstacles, Production and Operational hurdles, Profit margins,

❖ INTRODUCTION**▪ Poultry Farming in Lucknow:**

Poultry farming has established itself as a key driver of the rural economy in Lucknow, significantly contributing to local food security and providing new avenues for income generation among farming households. The district supports a blend of intensive poultry operations, including broiler, layer, and breeder farms, alongside widespread backyard poultry systems that cater to household consumption and small-scale marketing. The Chak Ganjaria Poultry Complex stands out as a government-run, multifunctional institution that delivers essential services, including hatchery support, disease diagnostics, and farmer training programs. Under the Department of Animal Husbandry, this centre promotes scientific poultry management and facilitates rural entrepreneurship. The **Uttar Pradesh Poultry Development Policy-2022** has further catalysed the growth of the sector by offering capital subsidies, interest rebates, and exemptions on electricity and stamp duty. Backyard poultry practices remain prevalent in peri-urban and rural belts, offering low-investment pathways for women and smallholder farmers to enhance dietary diversity and household income (Sharma & Khan, 2021). This coexistence of traditional systems and organised poultry farming ensures resilience and stability in the region's poultry economy.

Lucknow's geographic advantage, with access to both production zones and urban consumer markets, has accelerated the establishment of efficient poultry infrastructure. Critical support services—such as mobile veterinary units, cold chain facilities, and disease monitoring laboratories—contribute to improved flock health and lower mortality rates. The Poultry Training Centre also plays a vital role in nurturing entrepreneurship by providing practical knowledge and business guidance to aspiring poultry farmers. Growing urban demand for poultry products has prompted more structured supply chains and improved access to inputs, such as high-quality feed and day-old chicks. Institutional credit and cooperative financing mechanisms have made it easier for new entrepreneurs to enter the sector.

Meanwhile, collaborations with academic and research institutions have encouraged the adoption of sustainable practices such as eco-friendly waste disposal, climate-resilient housing designs, and rigorous biosecurity standards. Despite periodic challenges, including disease outbreaks and cost volatility, consistent policy and institutional support have sustained the sector's momentum (Verma & Singh, 2023). Lucknow's poultry model thus stands as a promising example for replicable, inclusive, and sustainable development in the Indian poultry industry.

▪ Market and operational challenges faced by poultry farming

Despite its lucrative prospects, poultry farming in India confronts a range of market constraints that affect profitability and sectoral resilience. One of the key impediments is the **high volatility of market prices** for poultry meat and eggs, which often fluctuate due to seasonal trends, supply-demand imbalances, and limited storage capacities. This price unpredictability is particularly detrimental to small and medium-scale producers

who lack access to regulated markets or long-term purchasing contracts. The **intervention of intermediaries** in the marketing chain further reduces farmer earnings by limiting their share of the final retail price (Kumar & Yadav, 2020). Additionally, the **absence of organised cold chain infrastructure** and inefficient transportation systems—especially in semi-urban and rural districts such as Lucknow—results in increased spoilage and product loss. Religious practices and cultural factors, such as the avoidance of meat during festivals, also lead to sudden drops in demand, causing revenue inconsistencies and inventory wastage for producers.

Operationally, poultry enterprises are challenged by **rising input costs**, particularly for feed, which typically constitutes 65–70% of total production expenditure. Feed prices are subject to frequent fluctuations in the cost of raw materials, such as maize and soybeans, while quality inconsistencies and adulteration further compromise poultry performance. Disease outbreaks such as avian influenza and Newcastle disease pose serious threats to bird health, particularly in farms lacking strong **biosecurity protocols and veterinary services**. The limited availability of trained farm labour and inadequate technical skills, especially in rural areas, hinder operational efficiency. While women play a crucial role in backyard poultry management, they often face limited access to training and financial resources. Other infrastructure-related issues, such as **unreliable electricity supply** and poor water systems, hinder the effectiveness of climate-controlled sheds. Moreover, **insufficient credit facilities and a lack of poultry-specific insurance** options expose farmers to greater financial risk, impeding reinvestment and business expansion. Addressing these market and operational challenges will require a **comprehensive policy framework**, enhanced infrastructure, and robust institutional support mechanisms to ensure the long-term growth and sustainability of the poultry sector.

❖ LITERATURE REVIEWS:

1. **Noy and Sklan (1997)** examined post-hatch development in poultry, focusing on gastrointestinal growth and the transition of energy from yolk lipids to feed-based carbohydrates. Using microscopic analysis, they studied chicks and poults during the first 14 days post-hatch. Findings revealed rapid growth of the small intestine, proventriculus, and gizzard within 3-8 days, enhancing feed utilisation efficiency.
2. **Mottet and Tempio (2017)** analysed global poultry production trends, focusing on food security, poverty alleviation, animal and human health, and environmental sustainability. Using secondary data and policy reviews, they highlighted that poultry makes a significant contribution to nutrition and rural incomes. However, challenges such as disease risks, market inequalities, and environmental impacts require strategic interventions.
3. **Gloanec et al. (2025)** reviewed the application of reverse vaccinology in the development of poultry vaccines. The study aimed to identify potential vaccine antigens using genome-based bioinformatics tools and in silico analyses. By screening the genomes of multiple poultry pathogens, they identified several promising antigen candidates. The findings highlight the efficiency of reverse vaccinology in designing next-generation poultry vaccines.
4. **Fanatico et al. (2025)** examined sustainable poultry education for undergraduate students, aiming to enhance their knowledge about the environmental, social, and economic aspects of poultry production. The study, funded by the USDA's Sustainable Agriculture Systems, employed experiential learning, curriculum development, and international collaborations. Findings indicate that integrating sustainability-focused education prepares a skilled workforce and promotes global engagement.
5. **Sha et al. (2025)** investigated electrochemical detection of fructose in poultry feed to optimise nutritional formulations. Using Ag-Ago-ZnO nanoparticles synthesised via the sol-gel method, cyclic voltammetry and electrochemical impedance techniques were applied. No sample size was specified. Findings showed high sensitivity (LOD 0.008 mM), demonstrating the method's reliability for efficient fructose quantification and improved poultry health.
6. **Muloi et al. (2025)** examined antibiotic use and access among poultry farmers in Kenya using a cross-sectional survey of 766 farms across 15 countries and 321 veterinary drug stores. Employing random forest modelling and geospatial analysis, they found that 54.7% of farms used antibiotics, largely self-administered, which highlights the risks of multidrug resistance and the need for stewardship strategies.
7. **Smulders et al. (2025)** explored sustainable transformation in the Dutch Poultry Industry using a qualitative approach. Through 13 expert interviews, content analysis, creative synthesis and visualisation, the study developed six future images highlighting alternative socio-technical contexts. Findings revealed diverse innovation pathways, emphasising environmental policies, entrepreneurial farmers, collaborative ecosystems, and technological integration for systematic sustainability.

8. **Zamani et al. (2025)** analysed policy coherence in Ghana's Poultry sector, aiming to assess the effectiveness of interventions on domestic production and food security. Using panel simultaneous equation models and the synthetic control method on data from 1999 to 2019, the findings revealed a 215% increase in production; however, rising poultry imports persist, highlighting the need for balanced policy strategies.
9. **Cruz et al. (2025)** developed the Automated Counting and Monitoring System for Poultry Tracking (ACMSPT) to enhance flock management through the use of AI and IoT. Using 1,300 annotated images from broiler farms, the YOLOv10 model was trained and deployed on an Orange Pi 5 B. The system achieved 93.1% precision and 93.0% recall, enabling real-time poultry monitoring and the detection of anomalies.
10. **Sequino et al. (2025)** investigated microbial dynamics in the poultry processing chain, focusing on microbiome composition, antibiotic resistance, and virulence factors. Using shotgun metagenomics on 41 samples from carcasses, surfaces, and products, they found *Brochothrix thermosphacta* and *Pseudomonas fragi* to be dominant. Packaging and storage conditions significantly influenced spoilage microbiota, while industrial surfaces contributed heavily to contamination risks.
11. **Tasdelen and Arslan (2025)** examined early detection of high-risk poultry diseases using transfer learning on faecal images. The study aimed to classify Coccidiosis, Salmonellosis, and Newcastle disease using six deep learning models on 9,068 images. MobileNetV2 achieved the highest accuracy (97.1 %), demonstrating its efficiency and suitability for real-time poultry disease monitoring.
12. **Ataei et al. (2025)** investigated rural women's behavioural intentions toward adopting green poultry farming using the Health Belief Model (HBM). The study aimed to identify psychological and social factors influencing adoption. A sample of 420 women from Iran was surveyed using structured interviews. Findings revealed that perceived benefits, susceptibility, cues to action, and conformity significantly influenced intentions.
13. **Khodadadi and Masoumi (2025)** conducted a comprehensive review of drying technologies for poultry litter to mitigate bacterial growth, ammonia emissions, and environmental pollution. The study analysed multiple methods, including freeze, hot air, microwave, rotary, solar, oven and belt drying. Using existing literature and expert surveys, the findings highlighted microwave and solar drying as efficient, while recommending combined dryers for optimal results.
14. **Jobarteh and Neethirajan (2025)** investigated greenhouse gas (GHG) emissions from Canadian poultry farms using satellite data and machine learning. The study analysed data from 1,300 poultry farms and processors (2019-2023), applying ARIMA, XGboost and LSTM models. Findings revealed significant regional and seasonal variations in emissions, with LSTM achieving the highest predictive accuracy for methane and CO₂ emissions.
15. **Zhou et al. (2025)** explored the application of omics-based technologies in poultry meat research, focusing on improving meat quality traits and understanding muscle myopathies, such as wooden breast and spaghetti meat. Using multiomics approaches, including genomics, proteomics, metabolomics, and lipidomics, the study integrated diverse datasets to identify critical biomarkers and regulatory mechanisms that impact poultry meat quality and production efficiency.

❖ SIGNIFICANCE OF THE STUDY:

This study is significant because it helps in understanding the factors that shape the success of poultry farming, with its perceived challenges. The study insights are valuable for researchers, policymakers, and practitioners because they shift attention, helping to create a supportive institutional framework that strengthens farmers and enhances capacity building among them. The results help inform the development of appropriate policies and improve the sustainability and competitiveness of poultry farming.

❖ OBJECTIVES OF THE STUDY:

1. To examine whether market challenges significantly affect the profitability of poultry farms.
2. To assess whether operational challenges significantly impact the production capacity of poultry farmers.

❖ HYPOTHESES OF THE STUDY:**Hypothesis 01****• Null Hypothesis (H_{01}):**

- Market challenges have no significant effect on the profitability of poultry farms.

• Alternative Hypothesis (H_{11}):

- Market challenges have a significant effect on the profitability of poultry farms

Hypothesis 02**• Null Hypothesis (H_{02}):**

- Operational challenges have no significant impact on the production capacity of poultry farms.

• Alternative Hypothesis (H_{12}):

- Operational challenges have a significant impact on the production capacity of poultry farms.

❖ VARIABLES OF THE STUDY:**▪ Market challenges:**

Fluctuating prices and market access

▪ Operational challenges

High feed cost and disease outbreaks

❖ Methodology**▪ Research Design:**

The study adopted a quantitative research design. The study is explorative in nature.

▪ Primary Data:

First-hand data is collected from 100 poultry farmers through a structured survey questionnaire to capture their perception of market challenges.

▪ Secondary data:

Secondary data are obtained from published sources, including journals, research papers, theses, and reports.

▪ Sampling Technique:

Data is collected from 100 poultry farming units in Lucknow by using non-probability convenience sampling.

❖ DATA ANALYSIS:**Objective 1:**

To examine whether market challenges significantly affect the profitability of poultry farms.

Profitability is crucial for the sustainability of poultry farming; however, farmers face market challenges, including price volatility, fluctuating demand, competition, and inadequate distribution systems, which threaten their financial stability. Economic theory suggests that these constraints can significantly impact revenues through pricing and market access. Therefore, this study aims to empirically analyse the impact of market-related challenges on poultry farm profitability using regression analysis, to assess their role in shaping financial performance.

Demographic Characteristics of Respondents (N = 100)

Demographic characteristics of the poultry farmers (N = 100). The results show that most respondents were aged 36–45 years (24%), followed by 46–55 years (22%) and 18–25 years (21%), indicating participation from both young and middle-aged farmers. Education levels were varied, with 21% holding diplomas, 19% with no formal education, and 17% graduates. The majority had 7–10 years of experience in poultry farming (32%), while 25% reported 1–3 years of experience. Regarding financial inputs, 27% had invested less than ₹50,000, whereas 15% reported investing over ₹500,000. The annual revenue distribution followed a similar pattern, with 23% earning less than ₹50,000 and 17% reporting more than ₹500,000.

❖ Perceived impact of challenges on poultry farming performance (N = 100)

The table above shows farmers' perceptions of the impact of operational and market-related challenges on their poultry business. The responses indicate that financial constraints (51% agreeing or strongly agreeing) and disease management (49% agreeing or strongly agreeing) were perceived as the most pressing issues. High feed

costs were also seen as a significant challenge, with 39% of respondents agreeing or strongly agreeing to their negative impact. Labour availability and fluctuating market prices exhibited a more balanced distribution of agreement and disagreement, whereas environmental/legal challenges elicited a split response, with 43% disagreeing and 43% agreeing or strongly agreeing. Overall, the descriptive results highlight that although different challenges exist, disease management, financial constraints, and feed costs are the most consistently acknowledged operational barriers.

Hypothesis 01

Null Hypothesis (H_{01}):

Market challenges have no significant effect on the profitability of poultry farms.

Alternative Hypothesis (H_{11}):

Market challenges have a significant effect on the profitability of poultry farms.

Profitability serves as the ultimate measure of business success in poultry farming, determining not only the sustainability of farms but also their capacity to expand and compete in dynamic agricultural markets. Poultry farmers often face market-related barriers, including fluctuating product prices, unstable demand, limited access to formal markets, and financial constraints. These challenges can undermine revenue streams by reducing price stability and limiting sales opportunities. Prior research in agribusiness suggests that market volatility has the potential to weaken profit margins, particularly for small and medium-scale farmers who lack the resources to hedge against external shocks. Testing Hypothesis 1 is therefore essential to establish whether such market constraints significantly predict farm profitability, or whether farmers are resilient enough to adapt to external fluctuations without substantial financial losses.

Regression Analysis Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	.015	.000	-.010	1.419

The model explained virtually no variance in profitability, as indicated by an R^2 of 0.000 and an Adjusted R^2 of -0.010 , showing that the predictor (Market Challenge Score) does not contribute to explaining the variation in profitability.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.044	1	0.044	0.022	.883
Residual	197.196	98	2.012		
Total	197.240	99			

The regression model was not statistically significant ($F(1,98) = 0.022$, $p = .883$), indicating that market challenges do not significantly predict profitability.

Coefficients Table

Predictor	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	2.656	0.586	–	4.533	.000	–	–
Market Challenge Score	0.028	0.191	0.015	0.148	.883	1.000	1.000

The unstandardised coefficient ($B = 0.028$, $p = .883$) for Market Challenge Score was not significant. This suggests that changes in market challenges are not associated with any meaningful change in poultry farm profitability. Collinearity statistics (Tolerance = 1.000, VIF = 1.000) confirm no multicollinearity issues.

Collinearity Diagnostics

Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions (Market Challenge Score)
1	1.970	1.000	.01	.01
2	0.030	8.139	.99	.99

The condition index (<10) indicates that there are no collinearity problems.

The regression analysis showed that market challenges do not significantly affect poultry farm profitability. The model explained virtually none of the variation in profitability ($R^2 = .000$), and the Market Challenge Score was statistically insignificant ($p = .883$). Thus, the null hypothesis (H_{01} : no effect) is accepted. This suggests that profitability is more likely influenced by other factors, such as operational efficiency, input costs, disease management, or technology adoption, rather than market fluctuations alone. Farmers may also mitigate market shocks through adaptive practices, such as diversifying sales channels, leveraging local demand, or utilising informal credit systems. The results underscore the importance of considering additional factors, including production costs, biosecurity measures, and government support, to provide a more comprehensive explanation of profitability in poultry farming.

Objective 2:

To assess whether operational challenges significantly impact the production capacity of poultry farms.

Production capacity is a key measure of efficiency and growth in poultry farming; however, operational challenges, including high feed costs, labour shortages, disease outbreaks, and limited veterinary access, often hinder it. These constraints reduce flock size and yields, limiting farmers' competitiveness. Theoretical perspectives in resource-based and production economics suggest that such bottlenecks directly affect a farm's ability to scale, as efficient input-to-output conversion depends on managing operational risks. Therefore, this study aims to empirically assess whether operational challenges significantly influence production capacity, providing insights into the sustainability of poultry enterprises.

Hypothesis 02

Null Hypothesis (H_{02}):

Operational challenges have no significant impact on the production capacity of poultry farms.

Alternative Hypothesis (H_{12}):

Operational challenges have a significant impact on the production capacity of poultry farms.

The scale of production capacity reflects a farm's operational strength and is heavily influenced by how effectively resources and risks are managed. Poultry farmers contend with operational issues such as high feed costs, recurring disease outbreaks, limited veterinary care, and shortages of skilled labour. These constraints, if left unmanaged, are expected to reduce flock size, lower output, and limit the ability to expand production. From a production economics perspective, operational efficiency directly shapes capacity, since farms must optimise input use to achieve desired levels of output. Hypothesis 2 was formulated to empirically test whether such operational challenges serve as a significant barrier to production capacity, or whether poultry farmers employ strategies that allow them to maintain output despite these constraints.

Regression Analysis Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	.068	.005	-.006	1.415

The model explained only 0.5% of the variance in production capacity, as indicated by $R^2 = .005$. The adjusted R^2 was slightly negative ($-.006$), confirming that the predictor (Operational Challenge Score) did not contribute meaningfully to explaining variance in the dependent variable.

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.911	1	0.911	0.455	.502
Residual	196.329	98	2.003		
Total	197.240	99			

The regression model was **not statistically significant**, $F(1, 98) = 0.455$, $p = .502$. This indicates that operational challenges did not significantly predict production capacity.

Coefficients

Predictor	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
Constant	3.135	0.603	—	5.203	.000	—	—
Operational Challenge Score	-.0127	0.189	-.068	-0.674	.502	1.000	1.000

The regression coefficient for Operational Challenge Score was **negative but non-significant** ($B = -0.127$, $p = .502$). This indicates that higher operational challenges were **not significantly associated** with lower production capacity.

Collinearity Diagnostics

Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions (Operational Challenge Score)
1	1.972	1.000	.01	.01
2	0.028	8.395	.99	.99

All diagnostics confirm that multicollinearity was **not a concern** ($VIF = 1.000$; condition index < 10).

The regression analysis revealed that operational challenges did not have a significant impact on poultry farm production capacity. The model explained almost none of the variance ($R^2 = .005$), with the Operational Challenge Score proving statistically insignificant ($p = .502$). Thus, the null hypothesis (H_{02}) is accepted. These findings suggest that reported challenges—such as high feed costs, disease outbreaks, labour shortages, and limited veterinary access—were not directly linked to production scale as measured by initial investment levels. Instead, other factors such as access to finance, managerial skills, market opportunities, or policy support may exert a more substantial influence. Farmers may also mitigate operational constraints through coping strategies like bulk feed purchasing, vaccination programs, or community labour sharing. While operational issues remain important for daily farm management, they may not be the primary determinant of production capacity. Future studies should therefore expand the scope to include financial, institutional, and technological variables in explaining the growth potential of poultry farms.

❖ MAJOR FINDINGS:

Hypothesis 1 (Market challenges and profitability):

- Market-related constraints, such as price fluctuations and financial barriers, did not significantly impact profitability.
- This suggests that other factors—such as management practices, access to networks, or resilience strategies—may play a more significant role in financial performance.

Hypothesis 2 (Operational challenges and production capacity):

- Operational difficulties such as high feed costs, disease, and limited veterinary services were not significantly associated with production capacity.
- This indicates that farmers may rely on adaptive mechanisms (e.g., preventive disease control, bulk purchasing, labour sharing) that buffer production levels against these constraints.

❖ CONCLUSION

The study found that neither market challenges nor operational challenges had a statistically significant effect on poultry farm profitability or production capacity. For Hypothesis 1, factors such as price fluctuations and financial constraints did not predict profitability, suggesting that internal management practices or informal support networks may play a more significant role in determining profitability. For Hypothesis 2, operational issues, including feed costs, disease, and veterinary access, were not significantly related to production capacity, suggesting that farmers may be mitigating these constraints through adaptive strategies. Overall, the acceptance of both null hypotheses indicates that unmeasured factors—such as credit access, government support, technology adoption, and managerial expertise—may be more decisive in determining farm performance. These findings underscore the importance of future research that integrates a broader set of variables and the need for policies that not only address challenges but also strengthen farmer resilience, capacity, and access to enabling infrastructure.

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A STUDY ON SIGNIFICANCE OF FINANCIAL INCLUSION IN DEVELOPMENT OF ECONOMY

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ABSTRACT

India is the fastest growing economies of the world, and finance is the primary requirement of development of an economy. This study is focus on understanding the effect of financial inclusive in the growth of Indian economy and the steps taken by government and RBI in India to full fill the inclusive growth

It was observed from the study period the bank focused more on rural and semi-urban area. Bank introduce the inclusive banking initiatives in the country like corporative movement, nationalization of banks, creation of regional rural banks etc.

The research has been done by using secondary data, from this it can been concluded that the financial inclusive contribute to the development of Indian economy.

Keywords: Financial Inclusion, Indian Economy and Banking Sector

INTRODUCTION

Financial inclusive means making the financial services available to everyone at affordable costs. Under this the services should be available for low income groups. Financial inclusive help to bridge the gap between poor and rich people. It is done by getting the excess money form and serving it to the poor. The main role in financial inclusion is played by the RBI it also access the businesses for useful and affordable financial product & services that meet their needs that are delivered in a responsible and sustainable way. Financial inclusion is defined as the availability and equality of opportunities to access financial services. Financial services is the key in order to grow as a society. Financial inclusion bringing more and more customer to the bank it potentially increase the business of the bank. It also helps to improve the standard of living of the majority of people.

Objectives:

- To study the concept of financial inclusion
- To understand the government and RBI approach towards Financial Inclusion in development of Indian Economy.

This descriptive study is grounded in secondary sources. It aims to uncover insights about the concept and examine the present situation of financial inclusion in India. The secondary data originates from research publications, news articles, books, thesis, and RBI reports.

Scope of the Study:

The study is focused on secondary data based on financial inclusion, its impact, various schemes under financial inclusion and its growth till date.

Why Financial Inclusion is Important? (Securities, 2025)

Financial inclusion means making sure that every person has access to basic financial services like savings accounts, loans, insurance, and pensions. It helps families save safely, borrow at fair rates, and plan for emergencies. The impact of financial inclusion is especially big in villages, where many people still depend on cash or local moneylenders.

Major RBI Initiatives for Financial Inclusion: (Securities, 2025)**1. Financial Inclusion Index**

The RBI created an index to check how well India is doing in spreading banking services. It looks at and assesses these three things:

- **Access** - Can people reach financial services?
- **Usage** - Are they actually using them?
- **Quality** - Are the services reliable and helpful?

2. Antardrishti Dashboard

It is a digital tool that shows which areas of the country still lack proper banking access. With this, the RBI and banks know exactly where to improve.

3. Business Correspondent (BC) Model

In many villages, there are no bank branches. To solve this, the RBI allowed trained agents, called BCs, to provide banking services at people's doorsteps. Villagers can now deposit money, withdraw cash, and send money without travelling long distances.

4. Digital Options for Feature Phones

Not everyone has a smartphone or internet. That's why the RBI pushed for simple mobile banking through USSD codes and basic UPI services. This way, even a basic phone can be used for payments.

5. Easy Access to Credit

Through technology platforms, RBI is helping farmers, small shopkeepers, and small businesses get loans more quickly and at fairer rates. It reduces their dependence on informal moneylenders.

6. Financial Literacy and KYC Simplification

RBI also runs awareness programs to teach people how to use banking safely and avoid fraud. It has also made the KYC (Know Your Customer) process easier, so people don't face much paperwork.

Role of the Government (Securities, 2025)

Along with RBI, there are also government initiatives for financial inclusion, like Jan Dhan Yojana, which opened crores of bank accounts, and Direct Benefit Transfers, where subsidies and pensions are sent directly to people's accounts. Together, these make financial access stronger.

The Impact of RBI Initiatives in Villages (Securities, 2025)**The RBI initiatives for financial inclusion have already brought positive changes:**

- Villagers can save safely and take loans from banks instead of moneylenders.
- Women are opening more bank accounts and learning to manage money.
- Even small shopkeepers now use UPI or digital wallets.
- Insurance and pension schemes are reaching more rural households.

It shows that financial inclusion in rural India is improving steadily.

Challenges That Remain (Securities, 2025)**While progress is strong, challenges still exist:**

- Some areas have poor internet or no ATMs.
- Many people are still not confident in using digital tools.
- Awareness about insurance, pensions, and credit is still low.

RBI continues to improve these areas to make financial access truly equal. RBI initiatives for financial inclusion are about opening bank accounts, they also aim to give people in rural and small towns the same opportunities as those in cities. By using digital tools, local agents, and easy credit systems, the RBI is making finance simpler and safer for everyone.

Review of Literature:

Radhika dixit & Munmum Ghosh are started under the “financial inclusion for inclusive growth of India. A study of Indian states (2013) they focus on inclusive growth Hainment depends a great deal on equitable distribution of growth opportunities and benefits. It is been uneven in the sense that there has been no uniformity in its growth benefits to certain sectors of economy. And thus the need for inclusive growth comes in the picture of Indian economic development. However for attaining the objective of inclusive growth there is need for resources and for resources generation and mobilization financial inclusive is required it plays a very crucial role in the process of economic growth.

Prof. A Sudhakar or T. Sudha Singh are stated under the financial inclusion the role of RBI & Government argued that the development in the real sense is possible only when all the sections of the society are provided with all the basic services. The basic services in the country will be available to the people when they are provided with financial services which is possible through financial inclusion. Financial inclusion is delivery of financial services at on affordable costs to the vast sections of the society. The RBI & Govt. has been making various efforts to provide financial inclusion in the length and breadth of the country.

Joseph Massey (2010) said that, role of financial institutions in a developing country is vital in promoting financial inclusion. The efforts of the 'government to promote financial inclusion and deepening can be further

enhanced by the pro-activeness on the part of capital market players including financial institutions. Financial institutions have a very crucial and a wider role to play in fostering financial inclusion. National and international forum have recognized this and efforts are seen on domestic and global levels to encourage the financial institutions to take up larger responsibilities in including the financially excluded lot.

Bihari (2011) analysed financial inclusion plans in the light of global practices, eleventh five year Indian plan and banks performance as well as no frill account. This study suggested financial literacy and quality improvement in no frill account can achieve financial inclusion plans growthy

Pinar Aridic et al (2011) explained that using the financial access database by CGAP and the World Bank group, this paper counts the number of unbanked adults around the world, analyses the state of access to deposit and loan services as well as the extent of retail networks, and discusses the state of financial inclusion mandates around the world. The findings indicate that there is yet much to be done in the financial inclusion arena. Fifty-six percent of adults in the world do not have access to formal financial services.

Government & RBI approach towards financial inclusion:

In India the government and the reserve bank of India have been making effects to promote financial inclusion as one of the important for objective of the country. The various steps taken by the RBI and government towards the financial inclusion are as follows:

1. No frills accounts:

This is a basic banking account where you keep a minimum balance of zero or a very low balance. This was issued by RBI in 2012. It is to ensure that banks accounts is accessible to vast sections of the population banks have been advised to provide small overdraft in such accounts.

2. Basic saving bank deposit account:

This account does not have the facility of minimum balance account. In this account there are many services availed by the banks like deposit and withdrawals of cash at the bank. This is also be done through respective ATM'S of the bank.

3. Lead banking scheme:

This scheme for see the lead role for an individual bank. This includes private bank as well as public banks. So, it is with respect to the districts allocated to them. Here the lead banks act as a point of contact. It is for coordinating with the credit institutions which perform towards districts. This is done to increase the flow of small scale industries, agriculture and various other economic services.

4. PMJOY: (Pradhan Mantri Jan Dhan Yojana)

This is main slogan of this scheme is 'mere khata – Bhagya vidhata'. This means that my account is my god. This scheme is provided for the 50,000 plus overdraft facilities for accounts that are linked with Aadhar card.

5. Business correspondent system:

These are the bank representative that individually go to areas that are allowed to them. Here are they have to carry out villagers to open their bank account and perform regular transaction.

6. Bank Mitras (Banking Correspondents): A vast network of agents to bring banking services to remote areas.

7. Digital Banking Units (DBUs): Physical units offering digital banking services like account opening, fund transfers, and loan applications.

8. Financial Inclusion Index (FI-Index): A comprehensive measure developed by RBI to track progress across access, usage, and quality of services.

9. Centres for Financial Literacy (CFLs): RBI-supported centers using community-led approaches for financial awareness.

Impact of Financial Inclusion towards development of Indian Economy:

The financial system serves as a catalyst to economic development. The formal financial channel collect savings and idle funds and distribute such funds to entrepreneurs, Business, household and government for investment projects and other purposes with a view of a return. This forms the basis for economies development in modern economic theory.

The financial system plays the role of inter-mediation and acts as a buffer in the mobilization and allocation of savings for productive activities in an economy. Managing the financial liquidity to avoid inflationary pressures and to flush out enough liquidity to sustain the growth are the functions of financial systems.

It also assist in managing the risks faced by firms and business, improvement of portfolio diversification. Availability of variety of financial instrument to suit to varied needs of the businesses. People and shock absorbing capacity from external economic changes. Additionally, the system provides linkages for the different sectors of the economy and economies of scale.

Banks credit (loan) growth increased to 18% for the fortnight ended September 6, 2013, which deposits grew by 13.37% showed the data by RBI.

India's foreign exchange reserves increased to US \$ 277.73 billion as of October 4 , 2013.

Secondary Data on Overview of Financial Inclusion Schemes is as mentioned below:

A. Pradhan Mantri Jan Dhan Yojana (PMJDY)

Pradhan Mantri Jan Dhan Yojana (PMJDY) was launched as the National Mission for Financial Inclusion on 28.8.2014. It aims to ensure comprehensive financial inclusion of all households in the country by providing universal access to banking facilities with at least one basic bank account to every household, financial literacy, and social security cover. With a view to further deepening the Financial Inclusion interventions in the country, PMJDY has been extended beyond 14.8.2018 with the focus on opening of accounts shifting from "every household" to "every unbanked adult".

The Scheme offers:

- To unbanked persons a basic bank account without any minimum balance requirement, called a Basic Savings Bank Deposit (BSBD) account.
- Free RuPay debit card, with in-built accident insurance cover of Rs. 2 lakhs.
- Access to overdraft facility of upto Rs. 10,000, subject to eligibility conditions.
- Easy access to banking services in rural areas, through Bank Mitras.
- Awareness about financial products through financial literacy programs.

Progress under PMJDY (as on 28.02.2025):

PMJDY accounts: 54.97 crore

Deposit in accounts: Rs. 2,52,750 crore

Women accounts: 30.60 crore (55.7%)

Accounts in Rural/Semi urban: 36.59 crore (66.6%)

RuPay cards issued: 37.60 crore

From Jan Dhan to Jan Suraksha

For creating a universal social security system for all Indians, especially the poor and the under-privileged, three Social Security Schemes in the Insurance and Pension sectors were launched on 9th of May, 2015 by the Hon'ble Prime Minister.

B. Pradhan Mantri Suraksha Bima Yojana (PMSBY)

The Pradhan Mantri Suraksha Bima Yojana (PMSBY) is a one-year personal accident insurance Scheme, renewable from year to year. It offers coverage for death/disability due to an accident and is available to people in the age group of 18 to 70 years having a bank account and who give their consent to join and enable auto-debit.

- Annual premium is Rs 20 per year;
- Risk Cover period: 1st June to 31st May;
- Benefit of Rs. 2 Lakh payable on death or permanent total disability and Rs. 1 Lakh on partial disability. Simple claim settlement procedure / process involving minimum documentation has been put in place;
- It involves convenient bank account linked enrolment with implementation in IT mode and premium payment through auto-debit from the bank account of the subscriber.

The Scheme is being offered by Public Sector General Insurance Companies or any other General Insurance Company willing to offer the product on similar terms with necessary approvals and tie up with Banks for this purpose.

Progress under PMSBY (as on 28.02.2025). Cumulative enrolment is 0.15 crore.

C. Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):

The Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) is a one-year life insurance Scheme renewable from year to year. It offers coverage of Rs. Two lacs for death due to any reason and is available to people in the age group of 18 to 50 years having a bank account.

- Annual premium is Rs.436 per year.
- Risk Cover period: 1st June to 31st May.
- It involves convenient bank account linked enrolment and premium payment through auto-debit from the bank account of the subscriber.
- The scheme is being offered by the Life Insurance Corporation and all other life insurers willing to offer the product on similar terms with necessary approvals and tie up with Banks for this purpose.
- Progress under PMJJBY (as on 28.02.2025):
- Cumulative enrolment: 23.12 crore

D. Atal Pension Yojana (APY)

The Government launched the Atal Pension Yojana (APY) to encourage the workers in unorganized sector to voluntarily save for their retirement. The Scheme provides a defined pension, depending on the contribution and its period. Under APY, the subscribers would receive the fixed minimum pension of Rs. 1000 per month, Rs. 2000 per month, Rs. 3000 per month, Rs. 4000 per month and Rs. 5000 per month at the age of 60 years depending on their contributions, which itself would be based on the age of joining APY. The minimum age of joining APY is 18 years and maximum age is 40 years. Therefore, minimum period of contribution by any subscriber under APY would be 20 years or more.

The minimum pension would be guaranteed by the Government, i.e., if the accumulated corpus based on contributions earns a lower than estimated return on investment and is inadequate to provide the minimum guaranteed pension, the Central Government would fund such inadequacy. Alternatively, if the returns on investment are higher, the subscribers would get enhanced pensionary benefits.

Subscribers can make contributions to APY on monthly/ quarterly / half-yearly basis. Subscribers can also voluntarily exit from APY subject to certain conditions, on deduction of Government co-contribution and return/interest thereon.

Progress under Atal Pension Yojana (as on 28.02.2025)

Total subscribers: 7.47 crore

E. Pradhan Mantri MUDRA Yojana (PMMY)

Pradhan Mantri MUDRA Yojana (PMMY) was launched on 08.04.2015 with the objective of providing access to institutional collateral free credit to micro enterprises.

Features:

- **Purposes:** Non-agricultural, including activities allied to agriculture such as poultry, dairy, beekeeping etc.

Term loan and working capital requirements can both be met;

Categories:

- a. Shishu – upto Rs.50,000;
- b. Kishore– Above Rs.50,000 and upto Rs.5 lakh;
- c. Tarun- Above Rs.5 lakh and upto Rs.10 lakh; and
- d. Tarun Plus- Above Rs.10 lakh and upto Rs.20 lakh (for those entrepreneurs who have availed and successfully repaid previous loans under the ‘Tarun’ Category w.e.f 24.10.2024).

- Member Lending Institutions (MLIs): Public Sector Banks (PSBs), Private Sector Banks, Foreign Banks, Regional Rural Banks, Small Finance Banks, Non-Banking Financial Companies (NBFCs), Micro Finance Institutions (MFIs) and NBFC- MFIs;
- Collateral not required.

Progress under MUDRA (as on 28.02.2025 since launch of scheme)

Total accounts sanctioned : 52.07 crore

Total Sanctioned Amount : Rs. 33.19 lakh crore

Total Disbursed Amount : Rs. 32.40 lakh crore

F. Stand Up India Scheme (SUPI)

The Stand-up India Scheme was launched on 5th April, 2016 to promote entrepreneurship among the Scheduled Castes/ Scheduled Tribes and Women.

Features:

Composite Loan between Rs.10 lakh and Rs.1 crore to entrepreneurs above 18 years of age, through Scheduled Commercial Banks (SCBs);

Loan between Rs.10 lakh and Rs.1 crore through Scheduled Commercial Banks (SCBs);

For setting up greenfield projects in manufacturing, services or trading sector and activities allied to agriculture.

Repayment of the loan in a span of upto seven years including moratorium period of 18 months.

Margin money 'upto 15%' which can be provided in convergence with eligible central/state government schemes. In any case, the borrower must bring in minimum of 10 % of the project cost as his/her own contribution.

Online portal www.standupmitra.in is providing guidance to prospective entrepreneurs in their endeavor to set up business enterprises, starting from training to filling up loan applications, as per bank requirements. In addition, one can also apply for loan over www.jansamarth.in portal.

Progress under Stand-Up India (as on 28.02.2025 since launch of Scheme)

Accounts sanctioned : 2.67 lakh

Amount Sanctioned : Rs. 60,504 crore

Amount Disbursed : Rs. 34,450 crore

Women accounts : 1.99 Lakh

(Finance, 2025)

A STUDY ON CHALLENGES AND OPPORTUNITIES OF TECH-BASED STARTUPS IN INDIA

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ABSTRACT

The rapid growth of the digital knowledge economy has positioned tech-based startups as key drivers of innovation, employment generation, and economic development in India. With increasing digital penetration, supportive government initiatives, and growing investor interest, India has emerged as one of the world's largest startup ecosystems. However, despite this growth, tech-based startups face several challenges such as funding constraints, regulatory complexities, talent shortages, intense competition, and cybersecurity risks. This research paper aims to analyze the major challenges and opportunities faced by tech-based startups in India. The study is descriptive in nature and is based on secondary data collected from government reports, research journals, startup databases, and published articles. The findings indicate that while challenges persist, opportunities arising from digital infrastructure, emerging technologies, government support, and access to global markets provide strong growth potential. The paper concludes with suggestions to strengthen the startup ecosystem and ensure sustainable development of tech-based startups in India.

Keywords: Tech-Based Startups, Digital Economy, Innovation, Entrepreneurship, Startup Ecosystem, India

INTRODUCTION

In recent years, startups have emerged as a crucial component of India's economic growth strategy. Among them, tech-based startups have gained significant importance due to their reliance on digital technologies, innovation-driven business models, and scalability. Tech-based startups are enterprises that primarily use technology such as information technology, artificial intelligence, data analytics, cloud computing, and digital platforms to deliver products or services.

India has witnessed remarkable growth in its startup ecosystem, supported by factors such as increased internet penetration, availability of digital infrastructure, a young and skilled workforce, and favourable government policies. Tech-based startups operate across diverse sectors including FinTech, EdTech, HealthTech, E-commerce, Software-as-a-Service (SaaS), and Artificial Intelligence.

Despite the promising growth, tech-based startups in India face several operational, financial, and regulatory challenges that affect their survival and scalability. Understanding these challenges and identifying the opportunities available is essential for policymakers, entrepreneurs, investors, and researchers. This study attempts to analyze the challenges and opportunities of tech-based startups in India in the context of the digital knowledge economy.

REVIEW OF LITERATURE

Several researchers have examined the growth and challenges of startups in India.

1. Sharma (2021)

Sharma examined the role of innovation in the growth of Indian startups and highlighted that technology adoption significantly enhances operational efficiency and market reach. The study emphasized that tech-based startups contribute to employment generation and economic development. However, it also identified inadequate early-stage funding and limited managerial experience as major constraints affecting startup sustainability.

2. Gupta and Mehta (2022)

Gupta and Mehta focused on regulatory and financial challenges faced by technology-driven startups in India. Their findings revealed that complex compliance procedures, taxation issues, and legal formalities increase operational costs for startups. The study suggested that simplified regulations and better access to institutional finance could improve startup survival rates.

3. Patel (2022)

Patel analyzed funding patterns of Indian startups and observed a sharp rise in venture capital and angel investment in technology-based ventures. Despite increased funding availability, the study found that seed-stage startups continue to face difficulties in accessing capital. The author concluded that government-backed funding mechanisms play a crucial role in bridging this financing gap.

4. Kumar (2023)

Kumar studied the impact of the digital economy on entrepreneurial growth in India. The research highlighted that digital platforms, cloud computing, and data analytics have enabled startups to scale rapidly and access global markets. However, the study also noted that intense competition and rapid technological changes pose significant risks to long-term growth.

5. Verma and Rao (2023)

Verma and Rao examined the growth dynamics of tech-based startups in India with reference to digital infrastructure development. The study found that improved internet connectivity and digital payment systems have created new opportunities for startups, particularly in FinTech and e-commerce sectors. Regulatory uncertainty and skill shortages were identified as major challenges affecting startup performance.

6. Chatterjee (2024)

Chatterjee analyzed the post-pandemic performance of tech startups in India and observed that digital adoption accelerated business opportunities across sectors such as EdTech, HealthTech, and remote working solutions. The study concluded that startups focusing on innovation, cost efficiency, and customer-centric digital solutions were better positioned to sustain growth in the competitive digital environment.

RESEARCH GAP

Most existing studies focus either on challenges or opportunities independently. There is a need for a comprehensive study that examines both challenges and opportunities of tech-based startups in India in an integrated manner.

OBJECTIVES OF THE STUDY**The main objectives of the study are:**

- To understand the concept and growth of tech-based startups in India.
- To identify the major challenges faced by tech-based startups in India.
- To analyze the opportunities available for tech-based startups in the digital economy.
- To suggest measures for strengthening the tech startup ecosystem in India.

RESEARCH METHODOLOGY**Research Methodology**

Research methodology refers to the systematic approach adopted to collect, analyze, and interpret data in order to achieve the objectives of the study. The present research examines the challenges and opportunities of tech-based startups in India using a structured and descriptive approach.

Research Design

The study follows a descriptive research design, which is suitable for analyzing the current status and growth patterns of tech-based startups in India. This design helps in understanding existing challenges and emerging opportunities without manipulating variables.

Nature of the Study

The research is analytical and descriptive in nature, focusing on the interpretation of existing information related to the startup ecosystem within the digital knowledge economy.

Sources of Data**The study is based on secondary data collected from:**

- Government reports and publications
- Research journals and academic articles
- Books on entrepreneurship and innovation
- Industry and startup ecosystem reports
- Reputed business websites and publications

Secondary data was chosen due to its reliability, wide coverage, and relevance to the research objectives.

Period of the Study

The study covers a period of five years from 2019 to 2024, capturing recent developments and post-pandemic changes in India's startup ecosystem.

Tools of Analysis**The data was analyzed using:**

- Content analysis
- Comparative and interpretative analysis

Simple tables and descriptive explanations were used wherever required.

Scope of the Study

The scope of the study is limited to tech-based startups operating in India, with specific focus on funding, regulation, digital infrastructure, talent, and technology-driven opportunities.

Limitations of the Study

The study relies solely on secondary data

Rapid technological changes may affect long-term relevance

Findings are dependent on the availability and accuracy of published sources

GROWTH OF TECH-BASED STARTUPS IN INDIA

India has emerged as one of the fastest-growing startup ecosystems in the world. Tech-based startups have played a transformative role by introducing innovative solutions and digital business models. The expansion of internet connectivity, growth of digital payment systems, and increasing adoption of cloud technologies have created a favourable environment for technology-driven ventures.

The COVID-19 pandemic further accelerated digital adoption, leading to rapid growth in sectors such as FinTech, EdTech, and HealthTech. The rise in the number of unicorn startups reflects the increasing maturity and global competitiveness of India's tech startup ecosystem.

CHALLENGES FACED BY TECH-BASED STARTUPS IN INDIA

Despite favourable growth conditions, tech-based startups encounter several challenges:

Limited Access to Finance

Securing adequate funding remains a major concern, particularly for startups in their initial stages. While venture capital investment has increased, many startups struggle to obtain seed funding and affordable credit.

Regulatory and Compliance Barriers

Startups often face difficulties in complying with complex legal, taxation, and regulatory requirements. Multiple approvals and procedural delays increase operational costs and administrative burden.

Shortage of Skilled Workforce

The demand for skilled professionals in technology-related fields exceeds supply. Startups find it challenging to attract and retain talent due to competition from established firms and multinational corporations.

Market Competition

The digital space is highly competitive, with low entry barriers encouraging new entrants. Startups frequently compete with well-established domestic and international firms.

Cybersecurity and Data Protection Issues

Dependence on digital platforms exposes startups to risks related to data breaches and cyberattacks. Implementing robust cybersecurity measures requires significant financial and technical resources.

Rapid Technological Changes

Technological advancements occur at a fast pace, increasing the risk of existing technologies becoming obsolete. Continuous innovation is essential but resource-intensive.

OPPORTUNITIES FOR TECH-BASED STARTUPS IN INDIA

Alongside challenges, several growth opportunities are available:

Supportive Government Policies

Government initiatives promoting entrepreneurship, digitalization, and innovation have improved the overall startup environment.

Expanding Domestic Market

India's large population and growing digital adoption provide a substantial customer base for technology-driven products and services.

Strengthening Digital Infrastructure

Improved internet connectivity, cloud services, and digital payment systems enable startups to scale operations efficiently.

Emerging Technologies

Advancements in artificial intelligence, blockchain, big data, and the Internet of Things present new avenues for innovation and business development.

Global Market Access

Digital platforms allow startups to reach international markets without significant physical expansion.

Growing Investor Ecosystem

Increasing participation by venture capitalists and angel investors offers financial support as well as strategic guidance.

GOVERNMENT INITIATIVES FOR STARTUPS IN INDIA

- The Government of India launched the Startup India Initiative in January 2016 to promote innovation, entrepreneurship, and job creation by building a supportive startup ecosystem.
- Under Startup India, startups are recognized by the Department for Promotion of Industry and Internal Trade (DPIIT), enabling them to access various fiscal, regulatory, and funding benefits.
- As of June 2024, more than 1.40 lakh startups were officially recognized under Startup India, contributing to the creation of over 15.5 lakh direct jobs across India.
- To address funding gaps, the government introduced the Fund of Funds for Startups (FFS) with a corpus of ₹10,000 crore, managed through SIDBI, to provide capital support indirectly via SEBI-registered Alternative Investment Funds.
- The Startup India Seed Fund Scheme (SISFS) was launched in 2021 with an allocation of ₹945 crore to support early-stage startups for proof of concept, prototype development, product trials, and market entry.
- DPIIT-recognized startups are eligible for income tax exemption for three consecutive years within the first ten years of incorporation, subject to prescribed conditions.
- The government has introduced simplified compliance norms, including self-certification under selected labour and environmental laws, to reduce regulatory burden on startups.
- Credit access has been improved through schemes such as the Credit Guarantee Scheme for Startups (CGSS), which enables startups to obtain collateral-free loans by sharing lending risk with financial institutions.
- The Atal Innovation Mission (AIM), implemented by NITI Aayog, promotes innovation through Atal Tinkering Labs and Atal Incubation Centres, supporting both early-stage innovation and startup incubation.
- Inclusive entrepreneurship is encouraged through the Stand-Up India Scheme, which provides bank loans ranging from ₹10 lakh to ₹1 crore to women and SC/ST entrepreneurs for greenfield ventures.
- Digital platforms such as Startup India Investor Connect facilitate interaction between startups, investors, incubators, and mentors, improving access to funding and ecosystem support.

FINDINGS OF THE STUDY

- Tech-based startups are critical drivers of innovation and economic growth in India.
- Financial constraints and regulatory complexities remain the most significant challenges.
- Government initiatives and digital infrastructure create favorable growth conditions.
- Emerging technologies offer long-term opportunities for entrepreneurial expansion.

SUGGESTIONS

- Simplify regulatory and compliance procedures for startups.
- Enhance access to early-stage funding and credit support.
- Promote skill development in emerging technologies.
- Strengthen cybersecurity awareness and infrastructure.

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- Encourage collaboration between startups, academic institutions, and industry.

CONCLUSION

Tech-based startups occupy a central position in India's digital knowledge economy. Although they face challenges related to finance, regulation, talent, and technology, the opportunities created by digital transformation and supportive policies are substantial. By addressing structural challenges and fostering an innovation-friendly ecosystem, India can ensure the sustainable growth of its tech-based startups and strengthen its position in the global digital economy.

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HARMONIZING DIVERSITY: EXPLORING THE PROSPECTS AND CHALLENGES OF IMPLEMENTING UNIFORM CIVIL CODE

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ABSTRACT:

India is a land of various culture, religion and belief system where we can find no uniformity in the way people carry out their day to day affairs. Even in the matters of marriage, adoption and divorce the citizens of India are governed by their separate personal law. The Preamble in The Constitution of India also provides for a secular nation where the country will not have any religion of its own and the citizens are allowed to practice, profess and propagate their own religion. (Article 28-30). But such kind of diversions in the religion creates a chaos and even abridges the fundamental rights of the individual in certain cases. This also brings about inequality between gender as well as inequality in the citizens of the different religion. The idea of having a Uniform Civil Code was brewing in the minds of the Constituent Assembly back then, but after months of discussion it was articulated in the DPSP empowering the State to make laws which brings Uniformity in the citizens of India. Unfortunately even after 7 decades this has not been possible. In this research paper we would be learning about the relevance of uniform civil code in India in accordance with the personal laws and suggestions how the dream of uniform civil code to be attained.

Keywords: Personal laws, UCC, Fundamental Rights, Religions, Gender equality rights etc.

INTRODUCTION

It is both fundamental and old to divide laws into their well-known categories of criminal and civil law. Criminal and civil laws each have their own substantive and procedural components.

The Directive Principles of State Policy are found in Part IV of the Indian Constitution, Articles 36 through 51. Article 37 explicitly stated that no court would be allowed to enforce any of the aforementioned clauses, which means that no court will review any of these Articles in response to a complaint. The State has also already taken action and put some of these directives into practice, albeit belatedly. For instance, several states (i) have established village panchayats (Article 40) in their respective states over time; the first was established by the State of Rajasthan in 1959, despite the fact that the 73rd Constitution Amendment Act of 1992 was the first to fully enact constitutional provisions requiring the states to establish panchayats at various levels. (ii) To offer free legal aid to those deemed "deserving" by the Act, the center passed The Legal Services Authorities Act, 1987 (Article 39A). Certain other clauses under Part IV of the Constitution have also given the

Overall, the debate surrounding the Uniform Civil Code reflects broader discussions about the balance between individual rights, cultural diversity, and the role of the state in regulating personal matters. The issue remains a complex and sensitive one, requiring careful consideration of legal, social, and cultural factors.

Uniform Civil Code with Human Rights

Implementing a Uniform Civil Code (UCC) in the context of human rights involves a multifaceted examination of how such a code could impact various aspects of human rights, including gender equality, freedom of religion, and the right to non-discrimination. Here's an elaboration on how human rights intersect with the UCC:

- 1. Gender Equality and Women's Rights:** One of the primary arguments in favor of a UCC is its potential to advance gender equality and women's rights. Currently, personal laws in India often discriminate against women, particularly in matters of marriage, divorce, inheritance, and guardianship. By enacting uniform civil laws that guarantee equal rights and protections to all individuals, regardless of gender, a UCC could help dismantle discriminatory practices and promote gender justice. For example, provisions within a UCC could address issues like triple talaq (instant divorce), polygamy, and unequal property rights, ensuring that women are afforded the same legal rights and opportunities as men. One of the primary areas where a UCC could have a transformative impact is in addressing discriminatory practices within personal laws. For instance, certain religious laws allow for practices like triple talaq (instant divorce), polygamy, and unequal property rights, which disproportionately affect women's rights and autonomy. By enacting uniform civil laws that prohibit such discriminatory practices and guarantee equal rights to women, a UCC can help dismantle gender-based inequalities and promote women's empowerment.
- 2. Freedom of Religion:** Critics of a UCC often argue that it could infringe upon individuals' freedom of religion by imposing uniform legal norms that may contradict religious beliefs and practices. For example, a UCC could include provisions allowing individuals to follow their religious customs and traditions in

matters of personal belief and worship, while ensuring that basic human rights standards are upheld in areas where personal laws intersect with broader legal principles.

Freedom of religion is a fundamental human right enshrined in international law and is also a key consideration in the debate surrounding the implementation of a Uniform Civil Code (UCC) in India. However, critics argue that implementing a UCC could infringe upon individuals' freedom of religion by imposing uniform legal norms that may contradict religious beliefs and practices.

3. Right to Non-discrimination: The implementation of a UCC presents an opportunity to uphold the right to non-discrimination enshrined in international human rights law. By abolishing discriminatory provisions within personal laws and establishing a uniform legal framework based on principles of equality and non-discrimination, a UCC can contribute to the realization of this fundamental human right. This includes ensuring that individuals are not discriminated against on the basis of their religion, caste, gender, or other protected characteristics, and that all citizens are treated equally under the law.

This right asserts that all individuals are entitled to equal treatment and protection under the law, without discrimination based on factors such as race, religion, caste, gender, or any other status. In the context of a UCC, ensuring non-discrimination entails enacting uniform civil laws that guarantee equal rights and protections for all citizens, regardless of their religious affiliations or cultural backgrounds.

The right to non-discrimination is a foundational principle that underpins the debate surrounding the implementation of a Uniform Civil Code in India. By enacting uniform civil laws that uphold the principles of equality, justice, and non-discrimination, India can advance the cause of human rights and create a more inclusive and equitable society for all its citizens. As the country continues to grapple with these complex issues, the pursuit of non-discrimination remains a central and critical aspect of its socio-legal landscape.

4. Access to Justice and Legal Protections: A UCC has the potential to enhance access to justice and legal protections for all individuals, particularly marginalized and vulnerable groups. By simplifying legal procedures, standardizing legal norms, and ensuring consistency in legal outcomes, a UCC can make the legal system more accessible and responsive to the needs of all citizens.

Ensuring access to justice means that all individuals, regardless of their social or economic status, have the ability to seek legal recourse and have their rights vindicated through a fair and impartial legal system. Similarly, legal protections encompass the safeguards and rights afforded to individuals under the law, including the right to due process, equal treatment before the law, and protection from discrimination and injustice.

UNIFORM CIVIL CODE AND ITS IMPLICATIONS ON THE INDIAN LEGAL SYSTEM

Introduction:

Implementing a Uniform Civil Code (UCC) in India has long been a topic of intense debate and deliberation. The concept of a UCC seeks to establish a unified set of personal laws applicable to all citizens, irrespective of their religious affiliations. In a country as diverse as India, where religious and cultural identities hold significant importance, the application of a UCC requires careful consideration and nuanced approach. The implementation of such a code has the potential to address longstanding issues of inequality, discrimination, and complexity within the legal system, while also upholding the principles of secularism, justice, and social cohesion enshrined in the Constitution.

The Uniform Civil Code (UCC) has been a subject of considerable debate and controversy in India, touching upon various aspects of the legal, social, and political landscape. This comprehensive analysis delves into the historical evolution, constitutional foundations, legal intricacies, socio-political implications, and contemporary relevance of the UCC within the framework of the Indian legal system. Through an exhaustive examination, this study seeks to elucidate the complex interplay between the UCC and the multifaceted facets of India's legal architecture.

1. Constitutional Foundations:

The constitutional foundations of the Uniform Civil Code (UCC) in India lie within the ambit of Article 44 of the Indian Constitution, which is enshrined in Part IV under the Directive Principles of State Policy. Article 44 states, "The State shall endeavor to secure for the citizens a Uniform Civil Code throughout the territory of India." This directive principle embodies the aspirations of the framers of the Constitution towards creating a more unified, equitable, and just society.

The inclusion of Article 44 reflects the constitutional vision for a Uniform Civil Code that transcends religious boundaries and establishes a uniform legal framework governing personal matters such as marriage, divorce, inheritance, and adoption. This vision is rooted in the principles of secularism, equality, and social justice enshrined in the Indian Constitution. Secularism, as articulated in the Preamble of the Constitution, emphasizes the principle of religious neutrality and the separation of religion from the state, laying the foundation for a secular legal framework that treats all citizens equally regardless of their religious affiliations.

In conclusion, the constitutional foundations of the Uniform Civil Code in India are rooted in Article 44 of the Indian Constitution, which embodies the aspirations of the framers towards creating a more unified, equitable, and just society. Situated within the broader context of secularism, equality, and social justice, Article 44 provides a constitutional mandate for the state to strive towards enacting a Uniform Civil Code that transcends religious boundaries and upholds the principles of equality, justice, and human dignity for all citizens.

a. Analysis of Article 44 and its significance.

Article 44 of the Indian Constitution, as enshrined in Part IV under the Directive Principles of State Policy, states that "The State shall endeavor to secure for the citizens a Uniform Civil Code throughout the territory of India." This article holds significant importance in the Indian legal and constitutional framework, reflecting the aspirations of the framers of the Constitution towards creating a more unified and egalitarian society.

The significance of Article 44 lies in its vision for a Uniform Civil Code that transcends religious boundaries and establishes a uniform legal framework governing personal matters such as marriage, divorce, inheritance, and adoption. By calling upon the State to "endeavor to secure" a UCC, the article recognizes the complexity and challenges involved in implementing such a code, while also affirming the State's commitment to promoting social justice, equality, and national integration.

b. Constitutional Debates and framing

The constitutional debates and framings surrounding the Uniform Civil Code (UCC) in India are reflective of the complex socio-political landscape and the divergent perspectives on issues of personal laws, secularism, and social justice. The Constituent Assembly, tasked with drafting the Indian Constitution, grappled with various considerations and ideologies while deliberating on the inclusion of Article 44, which calls for the State to endeavor to secure a UCC throughout the territory of India.

Moreover, the constitutional debates on the UCC reflected broader ideological divides within the Constituent Assembly, including debates between proponents of uniformity and proponents of diversity. While some members emphasized the need for a uniform legal framework to promote national integration and social justice, others championed the importance of preserving religious and cultural diversity as a foundational aspect of Indian identity. These ideological divides underscored the complexities of reconciling competing interests and values within the constitutional framework.

c. Role of directive principles of state policy

The Directive Principles of State Policy (DPSPs) play a crucial role in shaping the socio-economic and legal framework of India, including the discourse surrounding the Uniform Civil Code (UCC). Enshrined in Part IV of the Indian Constitution, the DPSPs embody the aspirations and ideals of a just and equitable society, guiding the state in its policy-making and governance. While not enforceable by courts, the DPSPs serve as moral imperatives for the government to strive towards in its decision-making process, providing a roadmap for social reform and development.

2. Legal Frameworks Governing Personal Laws:

Personal laws in India are a complex web of legal norms that govern matters such as marriage, divorce, inheritance, and guardianship within different religious communities. These laws are derived from religious texts, customary practices, and judicial interpretations, and they vary significantly across different religious groups. In India, personal laws governing matters such as marriage, divorce, inheritance, and succession vary across different religious communities, reflecting the country's diverse cultural and religious landscape. These laws are deeply rooted in religious texts, customary practices, and judicial interpretations, and they play a significant role in shaping the social and legal fabric of Indian society.

Here's an overview of personal laws across major religious communities in India:

a. Hindu Personal Laws:

Hindu personal laws are predominantly governed by two major legislations: the Hindu Marriage Act, 1955, and the Hindu Succession Act, 1956. The Hindu Succession Act governs matters of inheritance and succession among Hindus, including rules related to property rights, succession, and partition etc.

b. Muslim Personal Laws:

Muslim personal laws are primarily based on Islamic principles as derived from the Quran, Hadith (sayings of Prophet Muhammad), and Sharia (Islamic jurisprudence). Matters such as marriage, divorce, inheritance, and maintenance are governed by Muslim personal laws, which vary across different schools of Islamic jurisprudence (Madhhab). The Muslim Personal Law (Shariat) Application Act, 1937, provides for the application of Muslim personal laws in matters of marriage, divorce, and succession.

c. Christian Personal Laws:

Christian personal laws are governed by various statutes, including the Indian Christian Marriage Act, 1872, and the Indian Succession Act, 1925. The Indian Christian Marriage Act regulates the solemnization and dissolution of Christian marriages, while the Indian Succession Act governs matters of inheritance and succession among Christians.

d. Parsi Personal Laws:

Parsi personal laws are governed by the Parsi Marriage and Divorce Act, 1936, and the Parsi Succession Act, 1865. These laws regulate Parsi marriages, divorces, and inheritance, incorporating principles of Zoroastrian religion and customary practices.

e. Other Minority Personal Laws:

Various other religious communities in India, such as Buddhists, Sikhs, Jains, and tribal communities, have their own customary laws and practices governing personal matters. These laws may vary based on religious beliefs, regional customs, and community traditions, contributing to the diversity of personal laws in India.

Overall, the plurality of personal laws across religious communities reflects the diversity and complexity of Indian society. While these laws provide for the autonomy and identity of different religious groups, they have also been subject to criticism for perpetuating gender inequalities and discriminatory practices. The debate over the Uniform Civil Code in India revolves around the question of whether to harmonize these diverse legal traditions into a unified legal framework that ensures equality and justice for all citizens, regardless of their religious affiliations.

INTERNATIONAL APPROACH ON UCC**Introduction:**

The concept of a Uniform Civil Code (UCC) has garnered attention not only in India but also in various other countries around the world. There are some international examples and approaches that can provide insights into the concept:

- 1. European Union (EU):** The EU has made efforts to harmonize laws across member states, including in areas related to family law and civil matters.
- 2. Islamic countries:** Several predominantly Muslim countries have implemented elements of a uniform civil code based on Islamic law (Sharia).
- 3. Nordic countries:** Nordic countries such as Sweden, Norway, and Denmark have implemented comprehensive family law codes that apply uniformly to all citizens, regardless of religion or ethnicity.
- 4. South Africa:** South Africa's post-apartheid Constitution includes provisions for a uniform legal framework that upholds equality, dignity, and human rights for all citizens.
- 5. United States:** While the United States does not have a national civil code, it has federal laws governing certain aspects of family law, such as marriage, divorce, and child custody.

CASE STUDIES UNDER INDIAN CONTEXT**1. Kesavananda Bharati Vs State of Kerala (1973)**

The "basic structure" of the Constitution was the subject of this directive. Despite the fact that a Hindu seer brought the case, the court focused extensively on the question of whether the Parliament can suspend fundamental rights in order to implement certain of the directive principles and Article 44. Even while it would be ideal, the government has not been able to move forward with this goal in a meaningful way. In the historic ruling, the Supreme Court stated, "Clearly, no court can compel the government to lay down a uniform civil code even though it is essentially desirable in the interest of the integrity and unity of the country."

2. Mohammad Ahmed Khan v. Shah Bano Begum (1985)

The Supreme Court ruled in the Shah Bano Begum Case that a Muslim woman who has been divorced and is unable to provide for her children cannot be denied the ability to support herself and her children because of

Triple Talaq if she was unable to do so at the time of her husband's disapproval or divorce. There was a lot of backlash against the Supreme Court's ruling in the Shah Bano Case.

3. Sarla Mudgal vs Union Of India (Sarla Mudgal & Ors. v UOI, 1995)

Bigamy is the practice of one person getting married to someone other while continuing to be their official spouse. A Hindu marriage act-performed marriage cannot be dissolved other than for the reasons listed in Section 13 of the same act. Any subsequent marriage that violates this clause will be unlawful and a violation of justice, equity, and good conscience.

CONCLUSION AND SUGGESTIONS

Implementing a Uniform Civil Code (UCC) is a multifaceted endeavor that requires careful consideration, collaboration, and sensitivity to diverse perspectives. Here are some suggestions for effectively implementing a UCC:

1. **Consultation and Consensus-Building:** Engage in extensive consultation with stakeholders, including religious and cultural communities, legal experts, civil society organizations, and the general public. Seek consensus and build broad-based support for the UCC by addressing concerns, accommodating diverse viewpoints, and fostering dialogue and collaboration.
2. **Gradual Implementation:** Adopt a phased approach to implementing the UCC to allow stakeholders time to adapt to the changes and address challenges as they arise. Gradual implementation can mitigate resistance, promote understanding, and facilitate the smooth transition to the new legal framework.
3. **Awareness and Education:** Launch comprehensive awareness and education campaigns to inform the public about the objectives, provisions, and implications of the UCC. Provide accessible and accurate information through various channels, including media, workshops, community outreach programs, and digital platforms. Promote legal literacy and empower citizens to understand their rights and obligations under the uniform code.
4. **Safeguarding Minority Rights:** Incorporate provisions in the UCC to safeguard the rights and interests of minority communities. Ensure that the uniform code respects cultural and religious diversity while upholding principles of justice, equality, and human rights. Establish mechanisms for resolving disputes within minority communities and provide avenues for meaningful participation and representation in the implementation process.
5. **Monitoring and Review:** Establish robust monitoring and review mechanisms to assess the effectiveness, impact, and compliance with the UCC. Collect data, conduct evaluations, and solicit feedback from stakeholders to identify challenges, gaps, and areas for improvement. Use evidence-based findings to inform policy adjustments and refine the implementation of the uniform code over time.
6. **Legal Reforms and Capacity Building:** Undertake legal reforms to harmonize existing laws and align them with the provisions of the UCC. Provide training and capacity-building initiatives for legal professionals, judicial officials, and law enforcement agencies to ensure effective implementation and enforcement of the uniform code. Strengthen institutions responsible for administering justice and upholding the rule of law.
7. **International Best Practices:** Learn from international best practices and experiences in implementing legal reforms, including UCCs or similar initiatives, in other countries. Draw insights and lessons from diverse legal systems and contexts to inform decision-making and policy development in the local context.
8. **Flexibility and Adaptability:** Design the UCC with flexibility and adaptability to accommodate evolving social norms, values, and needs. Incorporate mechanisms for periodic review and revision to ensure that the uniform code remains relevant, responsive, and inclusive in the face of changing circumstances.

By incorporating these suggestions into the implementation process, policymakers can promote transparency, inclusivity, and effectiveness in realizing the objectives of a Uniform Civil Code. Ultimately, the successful implementation of a UCC requires a balanced approach that respects diversity, upholds fundamental rights, and fosters social cohesion and justice for all citizens.

STEPS TAKEN AT CENTRAL LEVEL:

1. Special Marriage Act, 1954.

It was passed in order to give married couples a secular option. It establishes guidelines for civil marriage for all Indian citizens living abroad as well as those living in India, regardless of the party's chosen religion or level of faith.

2. Hindu Code Bills

Considered a first step toward the UCC, the Hindu Code Bills were approved by the Parliament in the 1950s. It was used to pass the following 4 Acts, which aim to standardize and codify personal laws among Hindus Note: Regarding these regulations, Sikhs, Jains, and Buddhists are also considered to be part of the Hindu community.

STEPS TAKEN AT STATE LEVEL:**1. Goa**

Goa's UCC is a "Shining Example," according to the Supreme Court of India, because of the qualities it possesses. In Goa, the Uniform Civil Code (UCC) includes elements such as mandatory marriage registration, proscription of bigamy or polygamy, equal marriage age for men and women, permission of men and women to consummate marriage, consent of men and women to obtain lawful separation, etc. These characteristics can provide as justification for introducing UCC on a nationwide scale.

2. Uttarakhand

As the first state in India to enact a Uniform Civil Code (UCC), Uttarakhand enacted the Uttarakhand Uniform Civil Code Bill 2024. More information related to the act is discussed below at length.

3. Assam

Assam repeals a Muslim marriage law from the British era on February 23, 2024.

The Assam government of India announced that it intended to do away with the antiquated Assam Muslim Marriages & Divorces Registration Act of 1935. This ordinance, which allowed marriage registration for those under the legal marriage age—girls as young as 18 and guys as young as 21—was passed during the British colonial rule. The Assam administration, led by Chief Minister Hemant Biswa Sarma, made this decision in keeping with its pledge to enact a Uniform Civil Code.

LAW COMMISSIONS'S VIEW ON UCC

The Law Commission of India has looked into the Uniform Civil Code (UCC) and its effects on Indian society on a regular basis. The Law Commission made the following noteworthy observations:

1. 21st Law Commission of India (headed by Justice Balbir Singh Chauhan)

This commission stated that it might not be necessary or desirable to create a UCC at this time. Rather, it proposed a number of changes to different personal laws that apply to distinct communities. Rather than recommending a single, unified legislation, it instead suggested amending and changing current family laws to ensure justice and equality among all religions.

2. 22nd Law Commission of India (headed by Justice Rituraj Awasthi)

This commission is looking for public input on the UCC and has released a consultation paper on the subject. A wide range of people, including lawmakers, religious institutions, legal professionals, and civil society organizations, have been contacted to share their opinions on the viability, ramifications, and possible structure of a UCC.

UNIFORM CIVIL CODE CHALLENGES

The Uniform Civil Code united individuals by maintaining a unified set of laws, but many believed that it violated their fundamental rights since it deviated from what was acknowledged to be an essential part of such rights.

Constitutional Challenges:

There is conflict between the freedom of religion and the equality right. Article 25 establishes the basic right to exercise one's faith. Article 26 protects the ability of each religious group or division to "conduct its own business in religious matters" (b). The right to protect different cultures is outlined in Article 29.

Articles 14 and 15 guarantee equality before the law, and these rights cannot be compromised. Furthermore, a person's freedom to profess their faith is limited by "public order, health, and morals," as stated in Article 25. India's Law Commission published a study in 2018 that stated that the Uniform Civil Code is not necessary nor desirable at this time. Secularism and the diversity of the country, according to the Commission, cannot be mutually exclusive.

Social-Political Challenges:

Minorities fear that they will be forced to adopt the dominant culture in the sake of homogeneity. Considering how diverse India's cultures are, it will be very challenging to bring these people together. The patriarchal mindset of Indian society makes the Uniform Civil Code difficult to accept. This is evident in the fact that, even

though the Hindu Code Bill has been in effect since the middle of the 1950s, Hindu women only inherit a part of the land to which they are entitled.

Access to Justice and Legal Empowerment: Comparative legal frameworks can inform efforts to enhance access to justice and legal empowerment, particularly for marginalized and vulnerable populations.

CONCLUSION

Individuals' fundamental rights are violated by the Uniform Civil Code of Uttarakhand Bill, 2024, which mandates the registration of live-in relationships and may even make them illegal. The Bill disregards the distinctive characteristics of cohabitation by eliminating the differentiation between it and marriage. Couples are not only made to feel less confident by this action, but their right to privacy and autonomy is also infringed. A democratic society must prioritize the values of equality, privacy, and autonomy over the imposition of arbitrary boundaries on interpersonal connections.

Implementing a Uniform Civil Code (UCC) presents both challenges and opportunities, as evidenced by discussions and debates in various countries, including India. The concept of a UCC aims to create a single set of laws governing personal matters for all citizens, irrespective of their religion, caste, or community. Proponents argue that a UCC promotes equality, secularism, and gender justice by eliminating discriminatory practices embedded in existing personal laws. However, the implementation of a UCC also raises concerns about respecting religious and cultural diversity, protecting minority rights, and ensuring social harmony.

The Uniform Commercial Code (UCC) stands as a cornerstone of modern commercial law, harmonizing transactional practices across the United States. Its adoption by states has facilitated interstate commerce by providing a consistent set of rules governing sales, leases, negotiable instruments, and other commercial activities. However, as commerce evolves, so too must the UCC and its implementation within individual states.

Firstly, it's imperative for states to regularly review and update their adoption of the UCC to ensure its relevance in contemporary commercial landscapes. This involves not only aligning with national standards but also considering local needs and circumstances. States should maintain flexibility to tailor specific provisions of the UCC to address unique industry dynamics, market trends, and legal traditions, thereby promoting efficiency and adaptability in commercial transactions.

Secondly, collaboration among states and other stakeholders is crucial to promote uniformity in the interpretation and application of the UCC. By participating in initiatives aimed at harmonizing practices and resolving discrepancies, states can enhance legal certainty for businesses and consumers engaging in interstate commerce. Moreover, investing in public awareness and education initiatives is essential to ensure widespread understanding of UCC provisions, thereby reducing the likelihood of disputes and enhancing compliance.

However, the implementation of a Uniform Civil Code is not without its challenges and complexities. India's diverse and pluralistic society encompasses a multitude of religious, cultural, and social identities, each with its own distinct traditions, beliefs, and practices. Any attempt to impose a single uniform code on such a diverse landscape is bound to encounter resistance and opposition from various quarters. Concerns regarding the preservation of cultural identity, religious freedom, and minority rights must be carefully addressed through dialogue, consultation, and consensus-building processes.

In conclusion, while the idea of a Uniform Civil Code holds immense promise in promoting equality, justice, and social cohesion in India, its realization requires careful deliberation, consultation, and consensus-building. By embracing the principles of inclusivity, dialogue, and respect for diversity, India can navigate the complexities of implementing a UCC while upholding the values of democracy, secularism, and pluralism. As we chart the course towards a more equitable and harmonious society, the UCC stands as a beacon of hope, guiding us towards a future where the rights and dignity of all citizens are respected and protected under a common framework of civil laws.

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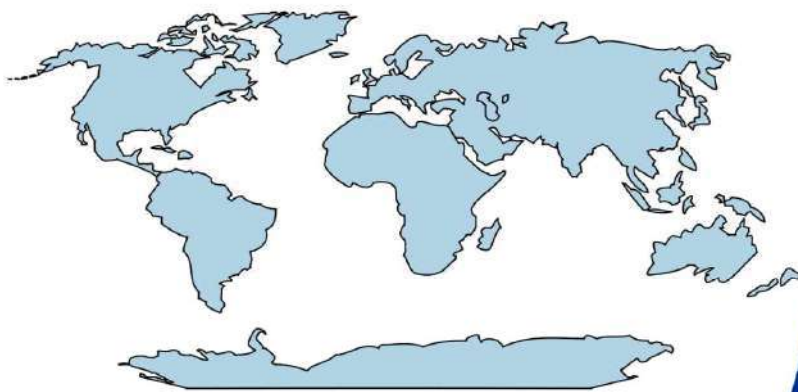
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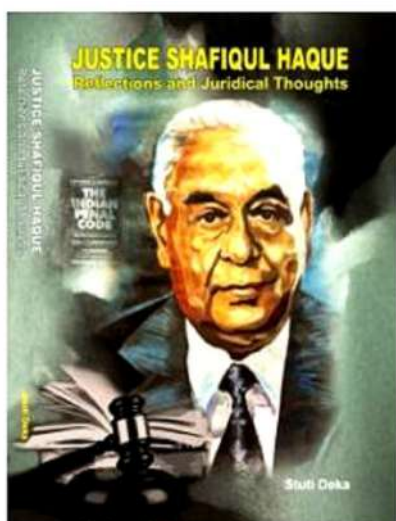


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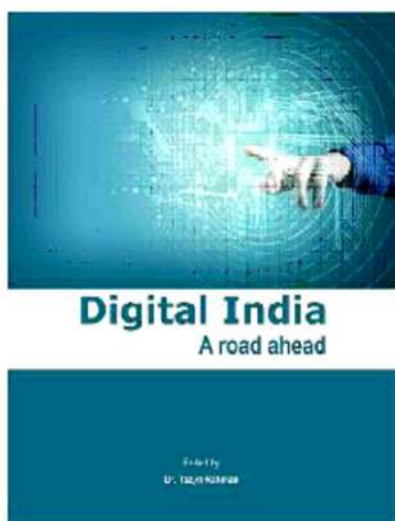
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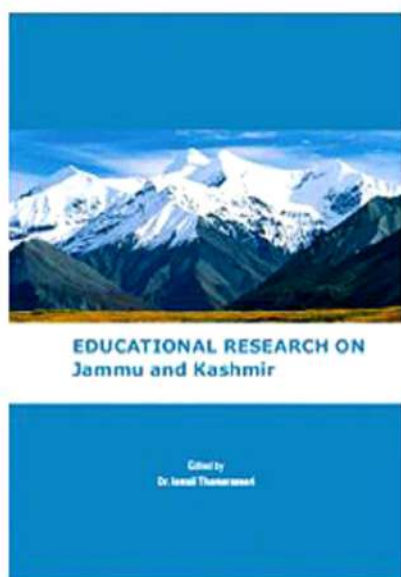
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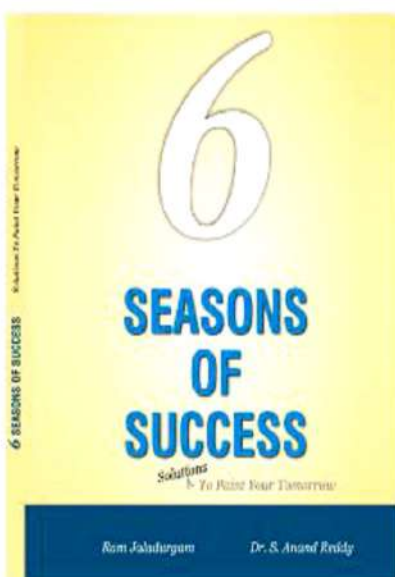
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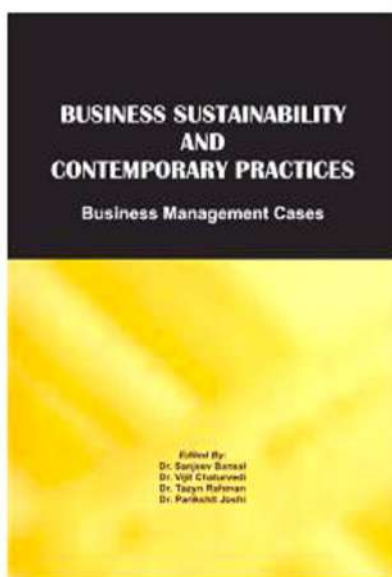
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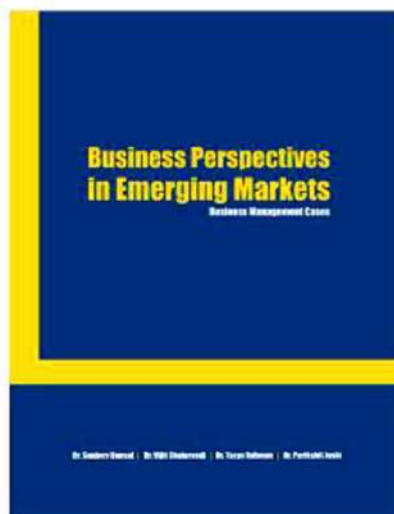
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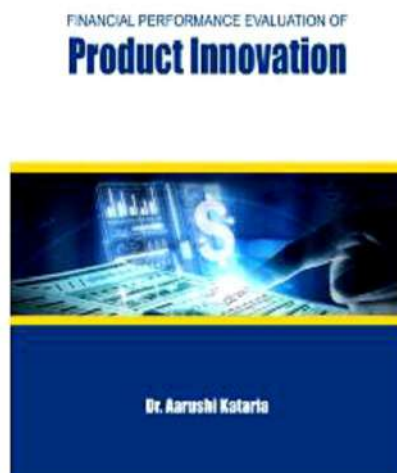
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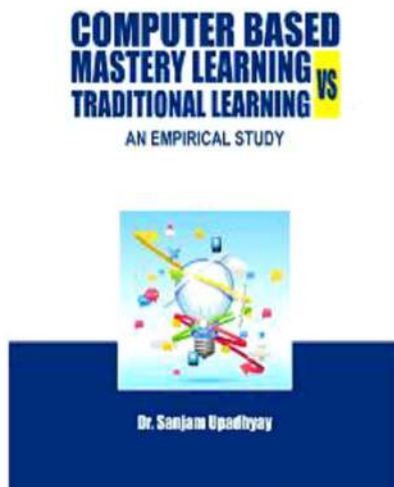
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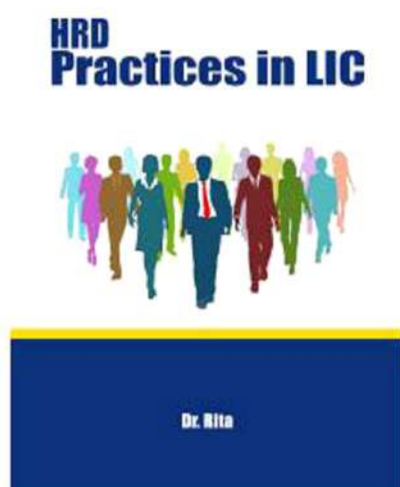
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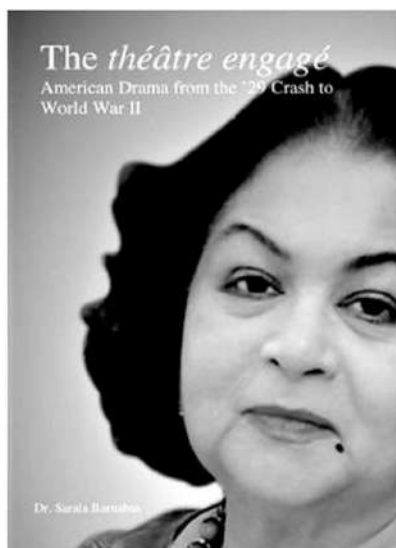
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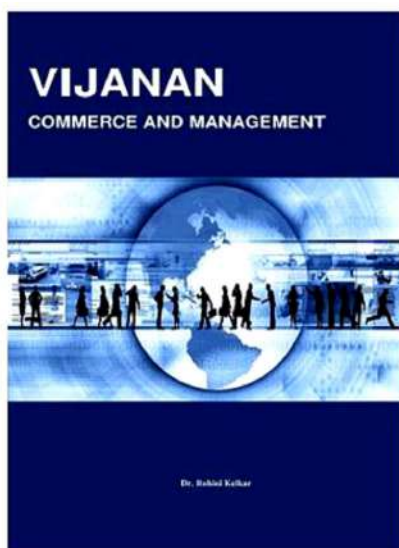


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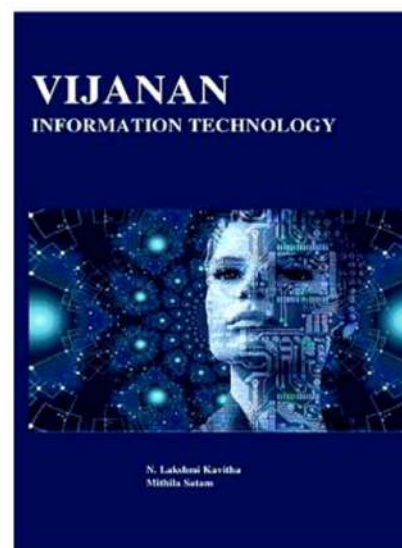
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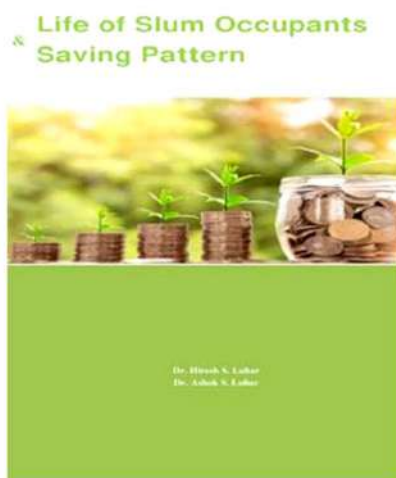
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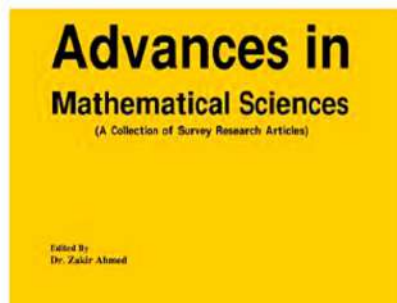
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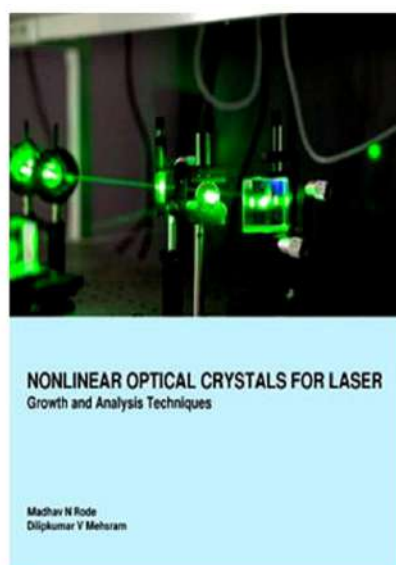


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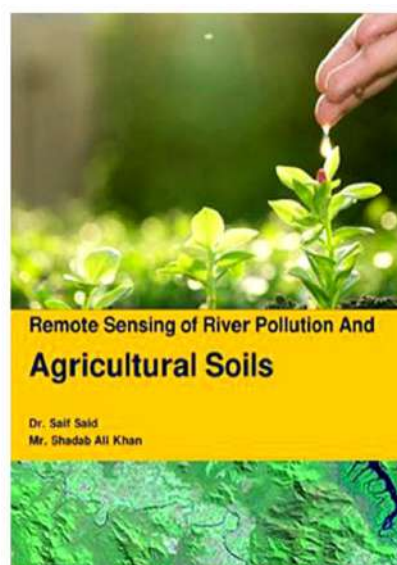
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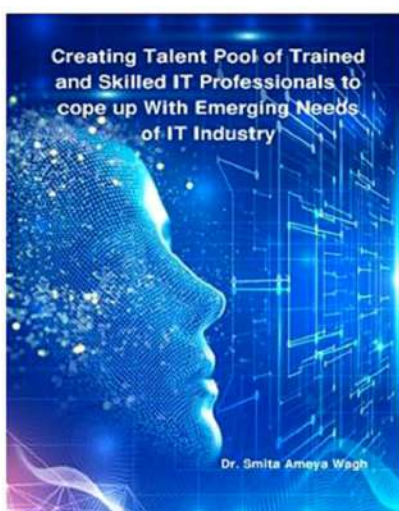
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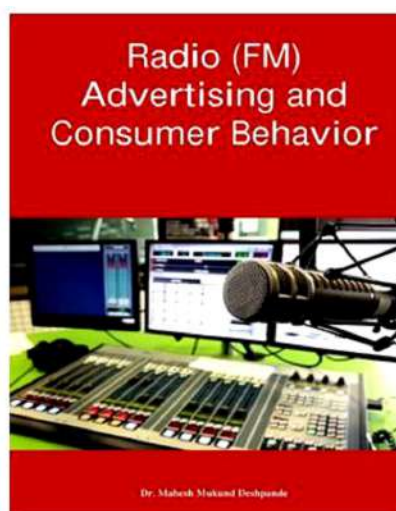
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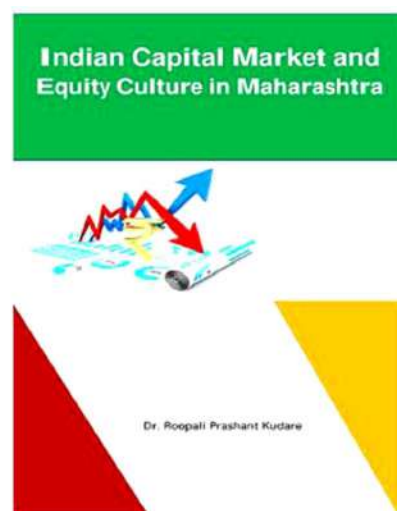
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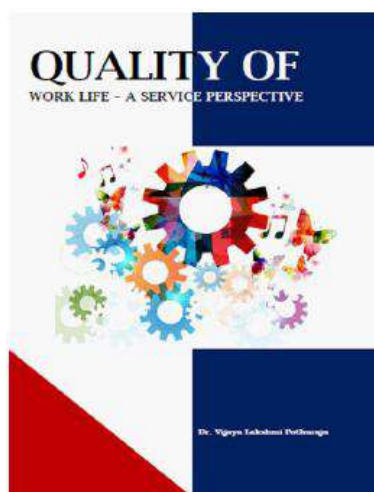


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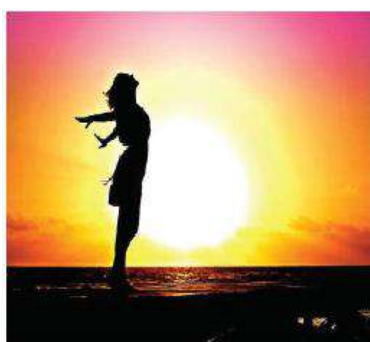
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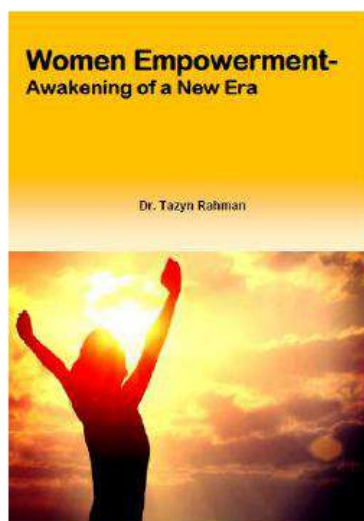


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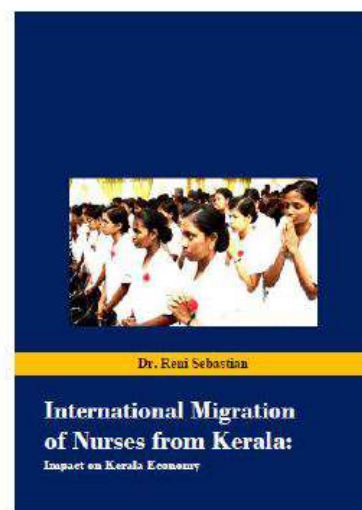


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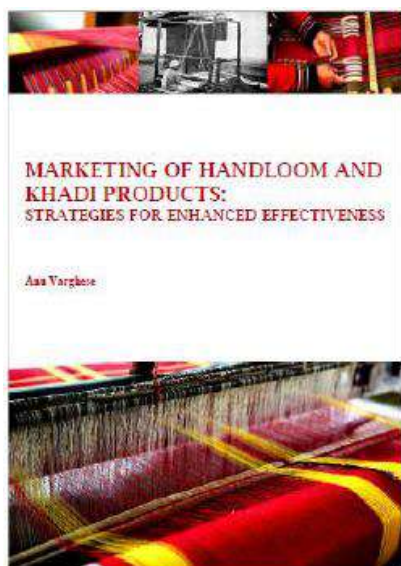
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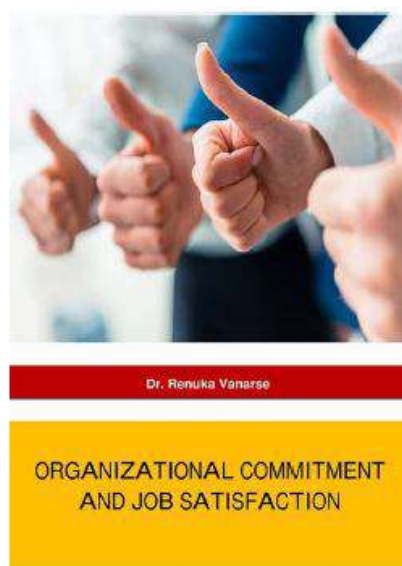
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