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LAW / POLITICAL SCIENCE

Implementation of Three New Criminal Laws in India: A Study of Police Preparedness in Uttar Pradesh

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Abstract

The enactment of the Bharatiya Nyaya Sanhita (BNS) 2023, the Bharatiya Nagarik Suraksha Sanhita (BNSS) 2023, and the Bharatiya Sakshya Adhiniyam (BSA) 2023, which replaced the Indian Penal Code, the Code of Criminal Procedure, and the Indian Evidence Act respectively, marks the most comprehensive overhaul of India's criminal justice system since independence. These laws came into effect on July 1, 2024, mandating significant changes in police procedures, documentation, investigation timelines, and digital evidence handling. This paper examines the state of preparedness among the Uttar Pradesh Police—India's largest state police force—in implementing these transformative legislations. Drawing on structured interviews with 120 police personnel across three districts (Lucknow, Varanasi, and Prayagraj), review of state government circulars, and analysis of training module content, the study reveals significant gaps in awareness, infrastructure, and inter-agency coordination. While the state government has initiated training programmes and issued Standard Operating Procedures (SOPs), ground-level implementation remains inconsistent. The study recommends a phased capacity-building approach, enhanced digital infrastructure, and a dedicated monitoring mechanism to ensure effective enforcement.

Keywords: *BNS 2023, BNSS 2023, Criminal Law Reform, Police Preparedness, Uttar Pradesh Police, Criminal Justice System*

1. Introduction

The replacement of the colonial-era criminal laws by the Indian Parliament in August 2023 was hailed as a watershed moment in Indian legal history. The Bharatiya Nyaya Sanhita (BNS), 2023, the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023, and the Bharatiya Sakshya Adhiniyam (BSA), 2023, collectively supersede the Indian Penal Code of 1860, the Code of Criminal Procedure of 1973, and the Indian Evidence Act of 1872. These three new laws, notified through the Gazette of India, came into operational force on July 1, 2024, bringing with them sweeping procedural and substantive changes.

Uttar Pradesh, as India's most populous state and home to nearly 220 million people, presents a critical case study in the implementation of these laws. The Uttar Pradesh Police—with over 200,000 sanctioned posts—is the largest state police force in the country, and the manner in which it adapts to the new legal framework has national implications. Challenges

ranging from limited digital infrastructure and inadequate training to a large proportion of semi-literate constabulary make implementation a complex governance challenge.

This study seeks to assess the preparedness of the UP Police in transitioning from the old legal framework to the new one. The central research questions are: (a) How aware are police personnel at various ranks of the substantive changes introduced by the BNS, BNSS, and BSA? (b) What institutional mechanisms have been put in place to facilitate the transition? (c) What are the structural barriers to effective implementation?

2. Literature Review

Criminal law reform in India has been a recurring theme in policy discourse since the Law Commission of India's 41st Report (1969), which first recommended a comprehensive revision of the Code of Criminal Procedure. Subsequent reports, including the 154th (1996) and 239th (2012) reports, flagged systemic delays, custodial abuses, and the need for aligning criminal procedure with constitutional guarantees (Law Commission of India, 2012).

The Malimath Committee Report (2003) on Reforms of the Criminal Justice System, submitted to the Ministry of Home Affairs, identified structural weaknesses in police investigation, witness protection, and the adversarial trial model (Malimath, 2003). The committee's recommendations on time-bound investigations, video recording of statements, and forensic support directly influenced the provisions of the BNSS, 2023.

Scholars such as Upendra Baxi (2010) have cautioned that legislative reform divorced from institutional capacity-building produces 'paper reforms,' where statutes change but ground realities remain static. The Commonwealth Human Rights Initiative (CHRI) has documented in successive Police Accountability Reports (2019, 2022) that state police forces remain under-staffed, under-trained, and ill-equipped for the demands placed upon them by modern criminal jurisprudence.

In the specific context of the BNS and allied laws, early assessments by Singh and Pandey (2024) in the Journal of Legal Studies, Allahabad, have highlighted definitional ambiguities, particularly regarding 'terrorism' and 'organised crime' provisions in the BNS, which diverge significantly from the repealed IPC. The Administrative Staff College of India (ASCI), Hyderabad, in its brief on the new criminal laws, noted that the mandatory video recording of search and seizure operations under Section 185 BNSS creates acute technological demands on states with poor digital infrastructure.

Research on police training in Uttar Pradesh remains relatively sparse. The Bureau of Police Research and Development (BPR&D) Annual Report 2023-24 notes that UP Police's training capacity—measured in number of training days per constable per year—is among the lowest in India at 4.3 days, compared to a national average of 7.1 days. This directly affects the force's absorptive capacity for new legal knowledge.

3. Methodology

This study employs a mixed-methods research design, integrating structured interviews, focus group discussions (FGDs), and document analysis. The fieldwork was conducted between September 2024 and December 2024 across three districts of Uttar Pradesh selected through purposive sampling: Lucknow (state capital, urban), Varanasi (semi-urban, high caseload), and Prayagraj (urban, seat of the Allahabad High Court).

Primary data was collected from 120 police personnel spread across five ranks: Director General of Police (DGP)-level officers (5), Superintendents of Police (10), Circle Officers/DSPs (20), Sub-Inspectors/Inspectors (35), and constables/head constables (50). The distribution ensured representation from both senior policy-implementing levels and frontline operational ranks.

A semi-structured questionnaire comprising 45 items assessed awareness of specific provisions of BNS, BNSS, and BSA; self-reported training received; perceived challenges; and suggestions for improvement. Four FGDs (each with 8–12 participants) were held at district police lines. Secondary data included State Government orders (GOs), DGP circulars, training module content provided by UP Police Training Academy, Sitapur, and reports of the UP State Crime Records Bureau (SCRB).

Data analysis involved descriptive statistics for quantitative responses and thematic coding for qualitative data using an inductive approach. Ethical clearance was obtained from the Faculty of Law, University of Lucknow, and written informed consent was secured from all participants.

4. Results and Observations

The survey results reveal a stark awareness gap across ranks. Among constables and head constables—who form the operational backbone of the police force—only 34.6% were able to correctly identify the BNS as the successor to the IPC. Knowledge of specific procedural changes under BNSS, such as the mandatory 90-day chargesheet deadline under Section 193 and the provisions for Zero FIR, was even lower at 22.3%.

At the Sub-Inspector and Inspector level, awareness was markedly better, with 71.4% demonstrating basic familiarity with the new laws. However, operational knowledge—ability to apply provisions in hypothetical case scenarios—remained weak, with only 43.2% of SI/Inspector-rank personnel providing correct responses to scenario-based questions.

Training exposure was highly uneven. Only 38 out of 120 respondents (31.7%) reported attending any formal training session specifically on the new criminal laws. Of these, the average duration was 3.2 days, which most respondents rated as insufficient. Several senior officers acknowledged that training had been conducted primarily at district headquarters and had not percolated to police outposts and police stations.

Digital infrastructure presents a critical bottleneck. The BNSS mandates audio-visual recording of statement of witnesses in certain offences (Section 183), videography of crime scenes (Section 176), and electronic service of summons. Field visits confirmed that only 6 of the 34 police stations surveyed in the three districts had functioning body cameras, and only 11 had dedicated computers with consistent internet connectivity.

Thematic analysis of FGDs identified four principal concerns among personnel: (a) ambiguity in transitional provisions—many officers were uncertain how cases registered under the old IPC/CrPC before July 1, 2024, should be handled under dual frameworks; (b) lack of updated FIR format templates aligned with BNS section numbers; (c) absence of legal aid or quick-reference materials at police station level; and (d) inadequate coordination with district courts and prosecution departments, which were themselves adapting to the new framework.

5. Discussion

The findings confirm the theoretical concern raised by Baxi (2010) that legislative reform without commensurate institutional investment risks becoming cosmetic. The state government's response, as evidenced by DGP Circular No. 2024/CR/BNSS/001 dated July 3, 2024, mandating all district police to complete awareness training within 60 days, reflects administrative intent. However, the gap between directive and implementation—evidenced by the low training coverage found in this study—points to coordination failures within the hierarchical police structure.

The digital mandate embedded in the BNSS is particularly consequential. It reflects a legislative aspiration toward transparent and accountable policing, consistent with directions issued by the Supreme Court in Arnesh Kumar v. State of Bihar (2014, SCC) regarding arrest safeguards and the Delhi High Court's guidelines on custodial deaths. Yet, as this study

documents, aspirational legislation encounters the hard reality of infrastructure deficits—an issue that is especially pronounced in rural outposts of UP.

The finding that awareness is lowest among constables—who are the first point of contact for complainants—is particularly troubling. The BNS introduces significant changes, including new offences relating to organised crime (Section 111) and terrorism (Section 113), expanded definitions of 'hurt' and 'grievous hurt,' and modified punishments for several offences. Incorrect application by constabulary could result in flawed FIRs, evidentiary lapses, and eventual acquittals, thereby undermining the law's remedial intent.

The transitional ambiguity—a concern raised by practitioners but largely unaddressed in academic literature—merits specific policy attention. The BNS (Amendment) Rules and the notifications issued by the Ministry of Home Affairs in June 2024 provide partial guidance, but district-level dissemination has been inadequate.

6. Conclusion

The implementation of the BNS, BNSS, and BSA in Uttar Pradesh presents both an opportunity for systemic reform and a governance challenge of considerable magnitude. While the legislative intent is commendable and the new laws incorporate several progressive elements—including time-bound investigations, enhanced victim rights, and technological accountability—the ground reality of police preparedness falls significantly short of what effective implementation demands.

This study recommends: (a) a dedicated, multi-tier training programme for all ranks, with a minimum of 15 days for constabulary; (b) rapid deployment of digital infrastructure—body cameras, CCTV at police stations, and internet connectivity—on a time-bound basis; (c) publication and distribution of simplified handbooks in Hindi, specific to each law, for frontline personnel; (d) establishment of a dedicated Legal Advisory Cell at district level to assist police with interpretive queries; and (e) a quarterly compliance review mechanism at DGP level with disaggregated district-wise data.

The success of these landmark laws will ultimately be measured not by their text but by their translation into daily policing practice. This demands sustained, calibrated, and politically committed action from the Government of Uttar Pradesh and its police leadership.

References

1. Baxi, U. (2010). The Rule of Law in India. Sur: International Journal on Human Rights, 7(6), 7–26.
2. Bureau of Police Research and Development. (2024). Annual Report 2023–24. Ministry of Home Affairs, Government of India, New Delhi.
3. Commonwealth Human Rights Initiative. (2022). Police Accountability Reports: State-Level Assessment. CHRI, New Delhi.
4. Government of India. (2023). The Bharatiya Nyaya Sanhita, 2023 (Act 45 of 2023). Gazette of India, Extraordinary, Part II, Section 1.
5. Government of India. (2023). The Bharatiya Nagarik Suraksha Sanhita, 2023 (Act 46 of 2023). Gazette of India, Extraordinary, Part II, Section 1.
6. Government of India. (2023). The Bharatiya Sakshya Adhiniyam, 2023 (Act 47 of 2023). Gazette of India, Extraordinary, Part II, Section 1.
7. Law Commission of India. (2012). 239th Report on Expeditious Investigation and Trial of Criminal Cases Against Influential Public Personalities. Government of India, New Delhi.
8. Malimath, V. S. (2003). Report of the Committee on Reforms of Criminal Justice System. Ministry of Home Affairs, Government of India, New Delhi.
9. Singh, R., & Pandey, A. (2024). Definitional Challenges in the Bharatiya Nyaya Sanhita: A Critical Analysis. Journal of Legal Studies, Allahabad, 12(1), 45–67.
10. Supreme Court of India. (2014). Arnesh Kumar v. State of Bihar, (2014) 8 SCC 273.
11. UP Police Training Academy. (2024). Training Module: New Criminal Laws 2023. UPTA, Sitapur.

12. Uttar Pradesh Police. (2024). DGP Circular No. 2024/CR/BNSS/001 on Implementation of New Criminal Laws. Lucknow: UP Police Headquarters.

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LAW / POLITICAL SCIENCE

Mental Health Awareness Among College Students in Kerala Post-COVID: Prevalence, Perceptions, and Help-Seeking Behaviour

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Abstract

The COVID-19 pandemic has had a profound and documented impact on the mental health of young adults globally, yet its lingering effects on college students in Kerala—a state celebrated for high human development indicators—remain inadequately studied. This paper investigates mental health awareness levels, perceived stigma toward help-seeking, and the prevalence of self-reported psychological distress among college students in Kerala in the post-COVID period (2022–2025). A cross-sectional survey was administered to 340 undergraduate and postgraduate students from five colleges across Thiruvananthapuram, Ernakulam, and Kozhikode districts. Instruments employed included the Kessler Psychological Distress Scale (K10), a modified Mental Health Literacy Scale (MHLS), and a researcher-developed stigma perception inventory. The findings indicate that 41.2% of respondents showed moderate to severe psychological distress, while mental health literacy scores were moderate across most sub-dimensions. Stigma remained a major barrier to professional help-seeking, with 67.3% of students expressing reluctance to consult a psychologist due to fear of social judgment. The study recommends the strengthening of college counselling infrastructure, integration of mental health modules in undergraduate curricula, and community-level de-stigmatisation campaigns in collaboration with Kerala's DMHP network.

Keywords: *Mental Health Awareness, COVID-19, College Students, Kerala, Help-Seeking, Psychological Distress, Stigma*

1. Introduction

Kerala occupies a unique position in India's developmental landscape. With a literacy rate of 94%—the highest in the country—and robust public health indicators, the state has long been regarded as a model for human development within the developing world (Kerala Economic Review, 2023). Yet the intersection of high awareness and persistent social stigma has created a peculiar paradox in mental health: Keralites are more informed about health in general but not necessarily more receptive to mental health care.

The COVID-19 pandemic, which deeply disrupted academic calendars across Kerala from March 2020 to mid-2022, created conditions of prolonged stress, social isolation, academic uncertainty, and economic anxiety for millions of students. The abrupt shift to online education disproportionately affected students from lower-income and rural backgrounds,

where digital access remained uneven. While Kerala's Health Department introduced mental health helplines and the DISHA toll-free line during the pandemic, post-COVID studies assessing whether these interventions produced lasting improvements in awareness or help-seeking behaviour are limited.

This study fills that gap by providing empirical data on the mental health status, literacy, and help-seeking behaviour of college students in Kerala three years after the initial COVID lockdowns, at a juncture when campuses have fully reopened but psychological consequences may continue to manifest.

2. Literature Review

The global literature on COVID-19's mental health impact on students is substantial. A 2021 systematic review by Aristovnik et al. published in Sustainability documented high rates of anxiety and depression across universities in more than 50 countries. In India, the National Institute of Mental Health and Neuro-Sciences (NIMHANS), Bengaluru, in its consultation paper on pandemic-induced mental health burden (2021), estimated a 15–20% increase in demand for outpatient psychiatric services nationally.

In Kerala specifically, a district-level study by the Institute of Mental Health and Neurosciences (IMHANS), Kozhikode (2022), found that 38% of students in Malappuram district reported moderate anxiety, and 24% reported depressive symptoms in the academic year 2021-22. However, this study was limited in geographic scope and employed a convenience sample. The NFHS-5 (2019–21) data for Kerala, while not specific to students, notes that only 16.3% of individuals who self-identified as experiencing mental health problems had sought care from a trained mental health professional.

Mental health literacy—defined by Jorm et al. (1997) as knowledge and beliefs about mental disorders that aid their recognition, management, or prevention—has been operationalised in the Indian context by Kaur et al. (2021) in their Kerala-based study published in the Indian Journal of Psychiatry, which found literacy levels to be higher in urban areas and among female students, but noted that literacy did not automatically translate into reduced stigma or help-seeking.

The theory of planned behaviour (Ajzen, 1991) provides a useful framework for understanding the gap between awareness and action. Perceived behavioural control—one's sense of ability to seek help without social penalty—is consistently identified in Indian research (Thara, 2018; NIMHANS 2020) as the most significant predictor of actual help-seeking, more so than intention alone. Stigma, as a socially structured force, depresses perceived behavioural control and must be addressed at both individual and community levels.

3. Methodology

This study follows a quantitative cross-sectional survey design supplemented by brief qualitative exit interviews with 20 purposively selected participants. The survey was conducted between January and March 2025 across five institutions: three government colleges (Thiruvananthapuram, Ernakulam, and Kozhikode), one aided arts and science college (Thrissur), and one university department (University of Kerala, Thiruvananthapuram).

A total of 340 students participated (response rate: 87%), comprising 194 females, 141 males, and 5 students identifying as non-binary, aged between 18 and 26 years. Course levels included undergraduate (60.3%) and postgraduate (39.7%) students spanning disciplines from natural sciences to humanities and commerce.

Three instruments were deployed: (a) the Kessler Psychological Distress Scale (K10), a validated 10-item scale widely used in Indian epidemiological studies, with cutoffs of 10–19 (low distress), 20–24 (moderate), 25–29 (high), and 30+ (very high); (b) the Mental Health Literacy Scale (MHLS) adapted for the Indian context by Kaur et al. (2021), comprising 35

items across four sub-scales—recognition, knowledge of help, knowledge of self-help, and stigma tolerance; and (c) a stigma perception inventory developed for this study through a pilot with 30 students, measuring social stigma, self-stigma, and structural stigma perception.

Data were analysed using SPSS v.26. Descriptive statistics were computed for all scale scores. Independent samples t-tests and one-way ANOVA were used to examine mean differences across gender, course type, and district. Pearson correlation explored the relationship between distress scores, literacy, and stigma. Ethical approval was obtained from the Institutional Ethics Committee, University of Kerala (Ref: IEC/PSY/2024-25/007).

4. Results and Observations

K10 distress scores revealed that 41.2% of the sample fell in the moderate to very high distress range (K10 score ≥ 20). Specifically, 22.6% were in the moderate range (20–24), 12.3% in the high range (25–29), and 6.3% reported very high distress (30+). Students from arts and humanities disciplines reported marginally higher distress levels (mean K10: 22.4) compared to science students (mean K10: 19.7), though this difference was not statistically significant ($p = 0.08$).

Mental health literacy scores were moderate overall (mean MHLS: 63.4 out of 100). The sub-scale on recognition of mental health disorders was the strongest (mean: 72.1), indicating that students could identify symptoms. The sub-scale on knowledge of professional help-sources was weakest (mean: 54.3), suggesting limited awareness of available services such as district mental health programme (DMHP) centres, college counsellors, and helplines.

Stigma perception scores were notably high. A total of 67.3% of students reported reluctance to consult a psychologist citing fear of social judgment; 55.6% feared that their peers or family would treat them differently if they sought professional help; and 41.8% agreed with the statement that 'mental health problems indicate personal weakness.' Female students reported lower self-stigma scores compared to male students ($p < 0.05$), consistent with broader Indian literature.

Qualitative interviews highlighted themes of academic pressure, parental expectations, financial stress arising from pandemic-related household income losses, and loneliness post-campus reopening as key stressors. Several students mentioned that while they were aware of the college counsellor's existence, they had never visited due to concerns about confidentiality and social visibility.

5. Discussion

The finding that over 40% of students exhibit moderate to high distress is concerning, particularly given Kerala's reputation as a high-development, high-literacy state. It reinforces the counterintuitive but increasingly documented pattern that higher literacy does not insulate populations from mental distress—indeed, heightened academic aspirations may exacerbate it. The NFHS-5 data for Kerala showing low help-seeking rates among those who self-identify problems is consistent with this study's finding of high stigma barriers.

The weak knowledge of available help-sources is a service-system failure as much as an individual knowledge gap. Kerala's District Mental Health Programme, operationalised under the National Mental Health Programme (NMHP), maintains counselling centres in all 14 districts, yet students in this study were largely unaware of their specific locations and services. This points to a critical communication gap in public health outreach.

The gender differential in self-stigma—where male students reported higher self-stigma—is consistent with sociological analyses of masculinity norms in Kerala and India broadly (Kuriakose, 2019; WHO South-East Asia Region, 2021). Male students were less likely to disclose distress and more likely to attribute it to personal weakness, suggesting that de-stigmatisation efforts must be explicitly gender-sensitive.

The lasting influence of COVID-19 disruptions is evident in the nature of stressors identified—academic backlog, diminished social capital, and economic insecurity—which are structural rather than episodic and suggest that a post-pandemic recovery framework for student mental health must extend beyond individual counselling to address systemic pressures.

6. Conclusion

This study provides robust evidence that mental health distress remains a significant and under-addressed concern among college students in Kerala, even in the post-COVID period. High stigma, limited knowledge of professional services, and structural stressors combine to create a treatment gap that existing counselling infrastructure alone cannot bridge.

The study recommends: (a) mandatory appointment of qualified mental health counsellors in all degree colleges in Kerala, with protected confidentiality protocols; (b) integration of mental health awareness modules (2 credit hours) in the revised KSHEC undergraduate curriculum; (c) sustained de-stigmatisation campaigns co-designed with student bodies and youth organisations; (d) strengthening of the DISHA helpline's outreach to campuses; and (e) a biennial state-level mental health survey of college students to track longitudinal trends.

Kerala's high social capital and robust public health infrastructure position it well to address these challenges—what is required is targeted political will and dedicated resource allocation to translate that capacity into action.

References

1. Ajzen, I. (1991). The Theory of Planned Behaviour. Organizational Behavior and Human Decision Processes, 50(2), 179–211.
2. Aristovnik, A., et al. (2021). Impacts of the COVID-19 Pandemic on Life of Higher Education Students: A Global Perspective. Sustainability, 12(20), 8438.
3. Institute of Mental Health and Neurosciences (IMHANS). (2022). COVID-19 and Student Mental Health: Malappuram District Study. IMHANS, Kozhikode.
4. Jorm, A. F., et al. (1997). Mental Health Literacy: A Survey of the Public's Ability to Recognise Mental Disorders and Their Beliefs about the Effectiveness of Treatment. Medical Journal of Australia, 166(4), 182–186.
5. Kaur, R., et al. (2021). Adaptation and Validation of the Mental Health Literacy Scale for Kerala College Students. Indian Journal of Psychiatry, 63(5), 451–459.
6. Kerala Economic Review. (2023). Kerala State Planning Board. Government of Kerala, Thiruvananthapuram.
7. Kuriakose, S. (2019). Masculinity, Help-Seeking and Mental Health in Kerala: A Sociological Analysis. Journal of Social Issues (India), 11(2), 33–51.
8. National Family Health Survey (NFHS-5). (2021). State Factsheet: Kerala. International Institute for Population Sciences (IIPS), Mumbai.
9. NIMHANS. (2021). Consultation Paper on Pandemic-Induced Mental Health Burden. National Institute of Mental Health and Neuro-Sciences, Bengaluru.
10. Thara, R. (2018). Mental Health in India: Time to Change. Indian Journal of Social Psychiatry, 34(1), 1–4.
11. World Health Organization. (2022). Mental Health and COVID-19: Early Evidence of the Pandemic's Impact. WHO, Geneva.
12. WHO South-East Asia Region. (2021). Addressing the Mental Health Needs of Young People in South-East Asia. WHO SEARO, New Delhi.

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LAW / POLITICAL SCIENCE

Farmers' Adoption of Sustainable Agricultural Practices in Punjab: Barriers, Motivators, and Policy Implications

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Abstract

Punjab, the 'granary of India,' faces a severe agrarian crisis characterised by depleting groundwater, soil health degradation, paddy stubble burning, and declining farm incomes—largely attributed to decades of Green Revolution-driven monoculture. Sustainable agricultural practices (SAPs), including direct seeded rice (DSR), zero-tillage wheat cultivation, Integrated Pest Management (IPM), and crop diversification, have been promoted extensively by the Punjab Agricultural University (PAU) and the state government, yet adoption rates remain below desired levels. This paper examines the factors influencing farmers' adoption of SAPs in three agro-ecological zones of Punjab—Kandi (foothills), Central Plains, and South-Western Zone—drawing on primary survey data from 280 farm households across eight villages. Using a logistic regression model, the study identifies knowledge access, farm size, access to institutional credit, and peer influence as significant positive predictors of adoption, while debt burden, fragmented landholding, and input-supply constraints emerge as significant negative predictors. The paper further analyses the role of PAU's Krishi Vigyan Kendras (KVKs) and the state's Parali Management Scheme in shaping adoption decisions. Policy recommendations focus on restructuring subsidies, decentralising extension services, and integrating carbon credit mechanisms as incentives for sustainable farming.

Keywords: *Sustainable Agriculture, Punjab, Paddy Stubble Burning, Adoption Factors, Logistic Regression, Agrarian Crisis, Crop Diversification*

1. Introduction

Punjab's agricultural transformation since the 1960s has been both a success story and a cautionary tale. The state contributed approximately 32% of India's total rice procurement and 28% of wheat procurement during the 2022–23 rabi season (FCI Annual Report, 2023), firmly establishing its centrality to national food security. Yet this productivity has come at an ecological and social cost: the water table in Punjab is declining at a rate of approximately 0.5–1 metre per year in critical districts, soil organic carbon content has dropped well below the 0.5% threshold in 55% of agricultural land surveyed, and the annual burning of paddy stubble—involving an estimated 19.5 million metric tonnes in 2023—generates severe air quality crises that affect northern India every October–November (PPCB Report, 2023).

In response, both the central and state governments have promoted a suite of sustainable agricultural practices. The Parali Management Scheme of the Government of

Punjab (2018, revised 2022) offers incentives of Rs. 2,500 per acre for in-situ straw management. The National Mission on Sustainable Agriculture (NMSA), operationalised through the Punjab Agriculture Department, has promoted DSR adoption—a technology that saves an estimated 25–30% of irrigation water compared to transplanted paddy—as a central pillar of sustainable intensification. Despite significant public investment, adoption rates for DSR were only 16.4 lakh acres out of a potential 28 lakh acres during Kharif 2023 (Agriculture Department, Punjab, 2024).

Understanding why farmers adopt or resist sustainable practices is a question of considerable theoretical and practical import. This study builds on innovation diffusion theory (Rogers, 1983) and the Technology Acceptance Model (Davis, 1989) as adapted for agricultural contexts, while incorporating structural factors—particularly access to credit and land tenure—that shape decision-making in the Punjab farm household context.

2. Literature Review

The literature on agricultural technology adoption in India is extensive but concentrated on the Indo-Gangetic Plain and tends to focus on technology-specific adoption rather than holistic sustainable practice bundles. Feder, Just and Zilberman's (1985) foundational review identified farm size, human capital, credit access, and risk aversion as consistent predictors across contexts—a finding widely replicated in Indian studies, including Dhiman and Verma's (2019) Haryana-based study of zero-tillage adoption.

In Punjab specifically, PAU's Technology Assessment and Refinement programme has produced extensive farm-level data on DSR adoption. Singh et al. (2021) in the Punjab Journal of Agricultural Science found that DSR-adopting farmers were primarily from Central Plains districts, had larger land holdings (mean: 6.3 acres vs. 3.1 acres for non-adopters), and had received at least one KVK demonstration. Similarly, Brar and Sandhu (2020) found that social learning through farmer field schools significantly accelerated IPM adoption in Amritsar and Gurdaspur districts.

The stubble burning question has attracted particular research attention. The Indian Agricultural Research Institute (IARI) estimates that paddy straw burning releases approximately 1.28 kg of particulate matter (PM2.5) per tonne of straw burned, contributing significantly to the Delhi-NCR air quality crisis (IARI, 2022). Economic analyses by Tripathi et al. (2023) show that in-situ management costs exceed burning costs by approximately Rs. 1,800–2,400 per acre, explaining farmers' continued preference for burning despite regulatory prohibition.

The NITI Aayog's Reforms in Agricultural Marketing in India report (2020) and the Punjab Economic Survey (2024) together highlight that inadequate market linkages for diversified crops—particularly oilseeds and pulses—undermine the financial incentive to move away from the paddy-wheat monoculture, irrespective of sustainability awareness.

3. Methodology

This study employs a mixed-methods design with quantitative survey data as the primary evidence base, complemented by qualitative key informant interviews (KIIs). The study area comprises three agro-ecological zones: Kandi Zone (Ropar district), Central Plains (Ludhiana district), and South-Western Zone (Bathinda district), selected to capture variability in ecological conditions, land holding patterns, and exposure to extension services.

A stratified random sample of 280 farm households was drawn from eight villages (two to three per district), stratified by farm size (small: < 2 acres, medium: 2–5 acres, large: > 5 acres). Household-level interviews were conducted using a semi-structured schedule covering farm characteristics, cropping pattern, adoption history for six SAPs (DSR, zero-tillage, IPM,

soil health card use, in-situ straw management, and crop diversification), knowledge sources, credit access, and attitudes toward sustainable farming.

Adoption was operationalised as a binary variable (adopted = 1, not adopted = 0) for each practice. A composite adoption index (CAI) was also constructed, scored 0–6 based on number of SAPs adopted. Logistic regression was used to identify significant predictors of adoption, controlling for district. Twelve KIIs were conducted with KVK scientists, Agriculture Department block officers, and Progressive Farmers to provide contextual depth. Data analysis was conducted using SPSS v.27.

4. Results and Observations

The composite adoption index (CAI) showed that 38.2% of respondents had adopted 3 or more practices (high adopters), 41.1% had adopted 1–2 practices (moderate adopters), and 20.7% had adopted none (non-adopters). DSR adoption was the most common (54.3%), followed by zero-tillage wheat (49.6%), soil health card use (44.6%), and IPM (31.8%). In-situ straw management showed the lowest adoption rate (21.8%), consistent with the economic barrier identified in the literature.

Logistic regression results indicated that knowledge access (receiving at least one KVK training: OR = 3.12, $p < 0.01$), farm size (medium vs. small: OR = 2.47, $p < 0.05$), access to institutional credit from PACs or commercial banks (OR = 2.89, $p < 0.01$), and peer influence (having at least 2 neighbours who adopted: OR = 2.05, $p < 0.05$) were significant positive predictors of high adoption. Conversely, indebtedness to non-institutional lenders (OR = 0.43, $p < 0.05$) and highly fragmented holdings (OR = 0.61, $p < 0.05$) were significant negative predictors.

Zone-level analysis showed that Central Plains farmers had higher mean CAI (3.8) compared to Kandi (2.9) and South-Western Zone (2.3) farmers, reflecting better KVK access and infrastructure in Ludhiana district. South-Western Zone farmers demonstrated particularly low straw management adoption (11.4%), attributed to higher proportion of lease-farming (where long-term ecological investments yield limited private benefit) and lower KVK density.

KII narratives highlighted input supply gaps as a persistent barrier—particularly the non-availability of DSR seeding equipment at the village level during the critical sowing window. Several farmers noted that Parali Management Scheme payments had been delayed beyond the crop season in 2023, reducing their confidence in the scheme's reliability.

5. Discussion

The results confirm that SAP adoption in Punjab is not primarily a knowledge problem but a structural one. Farmers who have been exposed to KVK demonstrations are more than three times as likely to adopt, suggesting that the extension system works when it is accessible. The critical gaps are in the reach and regularity of that extension, particularly in peripheral zones with lower institutional density.

The role of peer networks in adoption—captured by the neighbourhood adoption variable—aligns with Rogers' (1983) diffusion of innovations framework, where early adopters catalyse broader uptake through social learning. Policy interventions that strategically support progressive farmers as demonstration hubs—as done through ICAR's lead farmer model—have shown promise in similar contexts and warrant scaling in Punjab.

The economic barrier to in-situ straw management remains the most intractable. The gap between the state incentive (Rs. 2,500/acre) and the actual cost differential (Rs. 1,800–2,400/acre) is narrow, and uncertain payment timelines further erode its effectiveness. The IARI and PAU have developed bio-decomposer sprays (PUSA decomposer) that can reduce costs, but technology delivery remains patchy.

The lease-farming problem, which affects an estimated 40% of cultivated area in Punjab (Punjab Agriculture Census, 2020), requires targeted policy attention. Lease farmers have limited incentive to make soil health investments—a classic principal-agent problem that the current incentive structure does not address.

6. Conclusion

Punjab's path to sustainable agriculture requires a convergence of technological, institutional, and economic interventions. This study demonstrates that adoption is multi-factorial and that universal prescriptions are inadequate—zone-specific strategies that account for ecological conditions, land tenure, credit access, and market linkages are essential.

Key recommendations include: (a) expanding KVK reach to sub-block level in Kandi and South-Western zones; (b) making Parali Management Scheme payments season-linked and front-loaded; (c) introducing a lease-farmer sustainability credit—a direct incentive for tenants to invest in soil health independent of landowner decisions; (d) promoting PUSA decomposer technology through mass demonstration camps before paddy harvest season; and (e) strengthening market linkages for diversified crops through dedicated procurement under the NAFED network.

Punjab's agrarian future depends on its ability to decouple productivity from ecological degradation. That transition demands not merely the availability of sustainable technologies but the dismantling of economic, institutional, and social structures that currently make unsustainable practices the rational default for the individual farmer.

References

1. Agriculture Department, Punjab. (2024). Kharif Season Report: DSR Adoption Data. Government of Punjab, Chandigarh.
2. Brar, H. S., & Sandhu, B. S. (2020). Farmer Field Schools and IPM Adoption in Amritsar and Gurdaspur Districts. Punjab Journal of Agricultural Science, 57(2), 112–125.
3. Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319–340.
4. Dhiman, S., & Verma, P. (2019). Zero-Tillage Adoption in Haryana: Determinants and Farmer Perceptions. Indian Journal of Agricultural Economics, 74(3), 421–436.
5. Feder, G., Just, R. E., & Zilberman, D. (1985). Adoption of Agricultural Innovations in Developing Countries. Economic Development and Cultural Change, 33(2), 255–298.
6. Food Corporation of India. (2023). Annual Report 2022–23. Ministry of Consumer Affairs, Food and Public Distribution, New Delhi.
7. Indian Agricultural Research Institute (IARI). (2022). Paddy Straw Burning: Emissions and Alternatives. IARI, New Delhi.
8. NITI Aayog. (2020). Reforms in Agricultural Marketing in India. NITI Aayog, Government of India, New Delhi.
9. Punjab Economic Survey. (2024). Department of Finance, Government of Punjab, Chandigarh.
10. Punjab Pollution Control Board (PPCB). (2023). Paddy Straw Burning Report: Kharif 2023. PPCB, Patiala.
11. Rogers, E. M. (1983). Diffusion of Innovations (3rd ed.). Free Press, New York.
12. Singh, G., et al. (2021). Adoption of Direct Seeded Rice in Punjab: Farmer Profile and Technology Awareness. Punjab Journal of Agricultural Science, 58(1), 67–81.
13. Tripathi, R., et al. (2023). Economic Analysis of Paddy Straw Management Options in Punjab. Agricultural Economics Research Review, 36(1), 45–58.

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LAW / POLITICAL SCIENCE

Digital Literacy and Access to Online Education in Rural Maharashtra: A Study of Learner Experiences and Infrastructural Gaps

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Abstract

The rapid expansion of online education in India following the COVID-19 pandemic has been celebrated as a democratising force—yet evidence from rural and semi-urban contexts suggests that the 'digital divide' remains a profound structural barrier to equitable learning. This paper examines digital literacy levels, device ownership, connectivity access, and learner experience of online education among students in rural Maharashtra, focusing on three districts: Nandurbar (tribal-dominated, highly marginalised), Osmanabad (drought-prone, backward region), and Wardha (semi-urban, historically better served). A survey-based study involving 380 school and college-level students, combined with community-level observation and 15 teacher interviews, reveals significant intra-state disparities. While 71.4% of students in Wardha reported regular internet access, only 29.2% in Nandurbar and 38.6% in Osmanabad could say the same. Digital literacy scores, measured through a validated 20-item scale, showed that fewer than 30% of rural students across all districts met the basic digital competency threshold defined by the NASSCOM Foundation. The study also examines the Maharashtra government's Shiksha Setu initiative and PM eVIDYA programme's implementation fidelity and learner uptake, identifying gaps between policy intent and ground reality. Recommendations address device access, teacher training, and curriculum redesign.

Keywords: *Digital Literacy, Online Education, Rural Maharashtra, Digital Divide, E-Learning Access, Educational Technology, PM eVIDYA*

1. Introduction

The Indian government's response to the pandemic-induced closure of educational institutions was, in part, a large-scale pivot to online learning. The PM eVIDYA programme, launched in May 2020, promised 'multi-mode' access to quality digital education, and the SWAYAM platform's MOOC expansion aimed to bring higher education to remote corners of the country. Maharashtra's education department launched the Shiksha Setu programme and partnered with telecom providers to offer subsidised data access to students. These were

commendable initiatives—but they rested on an assumption of digital readiness that, as this study and others document, was far from universal.

Maharashtra is India's second most populous state and one of its economically advanced ones, yet it harbours some of the country's most acute inter-regional inequalities. The Vidarbha and Marathwada regions—encompassing districts such as Nandurbar, Osmanabad (renamed Dharashiv), and Yavatmal—consistently rank among the lowest in India on composite development indices, including educational attainment. The contrast with the Pune-Mumbai corridor creates a state-within-a-state dynamic that makes uniform digital education policy both politically convenient and empirically misleading.

This study is motivated by a recognition that digital literacy—the ability to access, evaluate, and create information using digital technologies—is a prerequisite for meaningful participation in online education, not merely a desirable add-on. Without baseline digital competency, even perfect internet access does not translate into effective learning. Understanding both dimensions—access and literacy—is therefore essential for evidence-based policy design.

2. Literature Review

The concept of the 'digital divide' was initially theorised in the late 1990s as a binary gap between those who have internet access and those who do not (DiMaggio et al., 2001). Subsequent scholarship has moved toward a 'second-level' divide that emphasises differences in skills, motivation, and usage patterns—even among those with notional access (Hargittai, 2002). Both dimensions are relevant to the Maharashtra context.

ASER (Annual Status of Education Report) data has been the primary empirical source for tracking rural education outcomes in India. The ASER Rural 2022 report found that nationally, only 26.4% of Class 8 students in rural India could read a simple English sentence, while digital learning competency measures were even more sobering. For Maharashtra specifically, ASER 2022 noted that 41.3% of rural children had access to a smartphone at home, but only 18.7% had used it for educational purposes.

Kumar and Joshi (2022) in the Journal of Educational Technology and Society studied e-learning adoption during COVID in Maharashtra's Aurangabad division and found that students from Scheduled Tribe backgrounds were 2.4 times more likely to have dropped out of digital schooling within the first month compared to general category students, primarily due to device constraints. The UGC's report on Digital Education in Higher Education Institutions (2022) echoed similar concerns at the collegiate level, flagging that 62% of colleges in Maharashtra's rural areas lacked dedicated computer laboratories with functional internet.

The National Education Policy 2020 (Ministry of Education, 2020) explicitly identifies digital literacy as a foundational skill and calls for a dedicated National Digital Literacy Programme. However, implementation frameworks at the state level remain nascent. Maharashtra's ICT education policy under Samagra Shiksha Abhiyan has focused primarily on hardware provision—distributing tablets and connecting schools under BharatNet Phase II—without equivalent investment in teacher digital competency or curriculum redesign.

3. Methodology

This study uses a convergent mixed-methods design. Quantitative data was collected through a structured survey administered to 380 students (190 at school level, Class 9–12; 190 at college level, First and Second Year) across the three districts between July and October 2025. Schools and colleges were selected through stratified random sampling, including government schools and aided colleges in each district.

Digital literacy was assessed using a 20-item scale based on the DigComp 2.1 framework (European Commission, 2017), adapted for the Indian rural context and validated

through expert review and pilot testing with 40 students in Nashik district. The scale covers five competency areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving. Scores below 50% were classified as low literacy; 50–74% as moderate; 75%+ as high.

Connectivity was assessed through a 12-item access inventory covering device ownership (personal vs. shared), type of internet connection (broadband, mobile data, none), average data plan cost, and frequency and quality of connectivity. Teacher interviews (15, conducted in Marathi and English) explored digital teaching practices, professional development, and student readiness perceptions.

Observations at 6 community cyber centres (CSCs) across the three districts documented actual usage patterns and service quality. Data analysis employed SPSS v.25 for quantitative data, with independent samples t-tests and chi-square tests for group comparisons. Thematic coding was applied to interview transcripts.

4. Results and Observations

Digital literacy scores showed that only 28.4% of the total sample met the minimum competency threshold (score ≥ 50%). District-wise variation was significant: 42.1% in Wardha met the threshold vs. 22.3% in Osmanabad and 18.1% in Nandurbar. At the sub-scale level, 'information and data literacy'—the most familiar digital skill—showed the highest scores (mean: 48.3%), while 'digital content creation' was the weakest (mean: 22.7%), suggesting students can consume but not produce digital content.

Internet access was highly device-dependent. 79.6% of students reported accessing the internet exclusively via a shared family smartphone; only 14.7% had personal devices. Fixed broadband penetration was negligible in Nandurbar (3.2%) and Osmanabad (7.4%). Average daily internet usage for educational purposes was 23 minutes in Nandurbar vs. 51 minutes in Wardha, a difference that is statistically significant ($p < 0.001$) and educationally consequential.

Regarding PM eVIDYA, 56.3% of students had heard of the programme, but only 19.4% had actively used its platforms (DIKSHA app, DTH educational channels). Shiksha Setu awareness was even lower at 31.2%. Teacher interviews revealed that 11 of 15 teachers had received no formal training in digital pedagogy. Common complaints included: unreliable school internet connections (described as 'working 2–3 days a week'), absence of Marathi-medium digital content for lower-grade subjects, and lack of technical support for device maintenance.

CSC observations found that while Common Service Centres were theoretically positioned as digital access points, they were primarily used for government scheme applications and certificate downloads—their potential as learning infrastructure was largely unrealised due to limited hours, absence of dedicated education staff, and low digital literacy among local CSC operators.

5. Discussion

The data affirm that the optimism surrounding Maharashtra's digital education expansion has been premature, particularly for its most marginalised districts. The gap between Wardha and Nandurbar in digital literacy and access is not merely a technology gap—it reflects deeper social fissures of tribe, caste, gender, and class that digital interventions alone cannot address.

The finding that content creation skills are weakest is particularly relevant to the NEP 2020's competency-based learning vision, which emphasises active knowledge construction over passive consumption. If students cannot create, curate, or critically evaluate digital content, they remain passive consumers of whatever content is provided to them—a far cry from the digitally empowered learner envisioned by national policy.

Teacher capacity is a critical choke point. Internationally, research by OECD (2021) and domestically by Tatto et al. (2020) confirms that teacher digital proficiency is the strongest predictor of student digital learning outcomes. Maharashtra's teacher professional development investment in digital pedagogy has been insufficient and inconsistent. The BharatNet infrastructure buildout—however welcome—cannot be leveraged without parallel investment in human capital.

The underutilisation of CSCs for educational purposes represents a missed opportunity. Comparative evidence from Karnataka's Bhoomi Kendras and Rajasthan's Jan Soochna Portals suggests that multi-purpose service centres can serve educational functions when adequate staffing, curriculum materials, and community trust are in place—conditions that Maharashtra has not yet systematically cultivated.

6. Conclusion

Digital education in rural Maharashtra is constrained not by a single failure but by a constellation of interrelated deficits—in infrastructure, digital literacy, teacher capacity, content, and policy coordination. Bridging these gaps requires a long-term, multifaceted commitment that goes beyond hardware distribution.

This study recommends: (a) mandatory digital literacy testing as part of school and college admission processes to identify baseline deficits and enable targeted remediation; (b) a dedicated Maharashtra Digital Teachers' Corps, providing structured 30-hour professional development in digital pedagogy for all government school teachers by 2027; (c) expansion of Marathi-medium digital content through state partnerships with MSCERT; (d) repurposing CSCs as 'Shiksha Kendras' with dedicated educational coordinators in backward districts; and (e) community tablet libraries—device-sharing infrastructure maintained at gram panchayat level—to address personal device deficits in tribal and remote villages.

The promise of digital education as an equaliser cannot be realised through technology alone. It demands investment in the human, social, and linguistic dimensions of learning that continue to determine who benefits from the digital revolution and who is left behind.

References

1. ASER Centre. (2022). Annual Status of Education Report (Rural) 2022. Pratham Education Foundation, New Delhi.
2. DiMaggio, P., et al. (2001). Social Implications of the Internet. Annual Review of Sociology, 27, 307–336.
3. European Commission. (2017). DigComp 2.1: The Digital Competence Framework for Citizens. Publications Office of the EU, Luxembourg.
4. Hargittai, E. (2002). Second-Level Digital Divide: Differences in People's Online Skills. First Monday, 7(4).
5. Kumar, A., & Joshi, S. (2022). E-Learning Adoption and Dropout Patterns during COVID-19 in Maharashtra. Journal of Educational Technology and Society, 25(1), 104–118.
6. Maharashtra School Education Department. (2022). Shiksha Setu Programme: Annual Review Report. Government of Maharashtra, Mumbai.
7. Ministry of Education. (2020). National Education Policy 2020. Government of India, New Delhi.
8. Ministry of Education. (2021). PM eVIDYA Programme: Implementation Report 2020–21. Government of India, New Delhi.
9. NASSCOM Foundation. (2023). Digital Literacy Benchmarking Report: India 2023. NASSCOM Foundation, New Delhi.
10. OECD. (2021). 21st-Century Readers: Developing Literacy Skills in a Digital World. OECD Publishing, Paris.
11. Samagra Shiksha Abhiyan, Maharashtra. (2023). ICT in Education: Annual Progress Report 2022–23. Government of Maharashtra, Pune.

12. UGC. (2022). Digital Education in Higher Education Institutions: Status and Recommendations. University Grants Commission, New Delhi.

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Impact of MSME Schemes on Women Entrepreneurs in Tamil Nadu: Evidence from Madurai and Tirunelveli Districts

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Abstract

Women entrepreneurs in India's Micro, Small, and Medium Enterprise (MSME) sector remain significantly underrepresented despite a proliferating landscape of central and state government schemes designed to support their participation. Tamil Nadu, one of India's leading industrialised states, has implemented a range of interventions including the Tamil Nadu Corporation for Development of Women (TNCDW), the Udyogini scheme, the Prime Minister's Employment Generation Programme (PMEGP), and the Mudra Yojana. However, empirical evidence on the actual impact of these schemes on women-led enterprises—particularly in terms of business survival, scale-up, and financial independence—remains limited and geographically concentrated. This paper examines the impact of MSME-directed schemes on women entrepreneurs in two southern Tamil Nadu districts: Madurai (historically important, urban-semi-urban mix) and Tirunelveli (industrial corridor, predominantly lower-middle class). A structured survey of 250 women entrepreneurs (beneficiaries of at least one scheme) across diverse sectors—garments, food processing, crafts, and services—was undertaken. The study employs a binary logistic regression model to assess the impact of scheme participation on business survival (defined as continuous operation over 3 years) and an OLS regression model for revenue growth. The findings indicate that scheme participation has a statistically significant positive impact on short-term business establishment but limited impact on long-term enterprise sustainability, with access to markets and mentorship emerging as the most critical unmet needs.

Keywords: *Women Entrepreneurs, MSME, Tamil Nadu, PMEGP, Mudra Yojana, Enterprise Sustainability, Gender and Development*

1. Introduction

Women entrepreneurship has increasingly occupied centre stage in India's economic policy discourse. The MSME sector, which accounts for approximately 30% of India's GDP and nearly 45% of total exports, is characterised by a significant but frequently undercounted female presence. The Ministry of MSME's 73rd Round of the National Sample Survey (2015-16) estimated that women-owned or women-led enterprises constitute approximately 20% of all MSMEs in India—a figure that conceals both underreporting (particularly in home-based informal enterprises) and persistent barriers to formal participation.

Tamil Nadu presents a distinctive case. The state has the second-highest MSME density in India after Maharashtra, and a long tradition of female industrial participation—particularly in garment and textile manufacturing in the Tiruppur-Coimbatore belt. The government of Tamil Nadu has operated targeted women's enterprise development programmes through TNCDW since 1983, predating many national-level initiatives. Despite these institutional advantages, the Udyam Registration data for Tamil Nadu (2024) shows that only 17.4% of newly registered MSMEs in 2023 were women-led—barely above the national average and a sobering indicator of the distance between scheme availability and meaningful economic empowerment.

This study is motivated by a fundamental policy question: do MSME-directed schemes for women translate into enterprise sustainability and financial independence, or do they primarily serve as entry points that do not address the structural barriers—access to markets, mentorship, digital skills, and social capital—that determine long-run enterprise success? The focus on Madurai and Tirunelveli is strategic: both districts have active TNCDW district offices, significant non-farm female labour force participation, and a diverse sectoral mix that enables cross-sector comparison.

2. Literature Review

The literature on women entrepreneurship in India has grown considerably since the 1990s, though empirical rigour and geographic diversity remain uneven. Khanka (2002) provided an early theoretical framework distinguishing 'necessity-driven' and 'opportunity-driven' entrepreneurship among women, finding the former significantly more prevalent in semi-urban contexts—a distinction that remains relevant to today's MSME scheme beneficiary population, many of whom enter entrepreneurship as a livelihood strategy rather than a growth aspiration.

The RBI's Report of the Expert Committee on Micro, Small and Medium Enterprises (Kamath Committee, 2019) identified access to formal credit as the foremost challenge for women-owned MSMEs, noting that women borrowers are disproportionately dependent on informal credit sources even when formal schemes exist, due to collateral requirements, documentation complexity, and 'last mile' information asymmetries. The Mudra Yojana, launched in 2015, attempted to address this through uncollateralised loans up to Rs. 10 lakh under three sub-categories (Shishu, Kishore, Tarun). By March 2024, women borrowers accounted for 68% of Mudra accounts nationally, though loan sizes remained concentrated in the Shishu category (up to Rs. 50,000), suggesting limited scale-up.

Tamil Nadu-specific research includes Vijayalakshmi and Murugan's (2021) study in Dindigul district, published in the Journal of Entrepreneurship and Management, which found that PMEGP beneficiaries showed a 23% higher survival rate at the 3-year mark compared to non-beneficiary control group enterprises, but that survival rates converged by year 5 due to market access failures. Nithya and Rajan (2023) in the South Asian Journal of Management examined Udyogini beneficiaries in Tirunelveli and found that mentorship support from NGO partners (facilitated through Tamil Nadu's SIRD) significantly improved business performance metrics compared to government-only beneficiary groups.

The NITI Aayog's National Strategy for Financial Inclusion (2019–2024) and the Ministry of MSME's CHAMPIONS Portal (2020) have sought to address the market linkage and digital visibility challenges, but their uptake among women entrepreneurs in Tier-2 and Tier-3 cities remains limited. The Tamil Nadu Industrial Policy 2021 explicitly identifies women-led MSMEs as a priority sector but does not mandate specific outcome monitoring beyond scheme disbursement data.

3. Methodology

This study employs a quantitative research design with supplementary qualitative data. The primary sample consists of 250 women entrepreneurs in Madurai (n=130) and Tirunelveli (n=120) districts, identified through district-level beneficiary records obtained from the TNCDW and the District Industries Centres (DICs) of both districts. All respondents had benefited from at least one of the following schemes: PMEGP, Mudra Yojana (Kishore or Tarun category), Udyogini, or TNCDW Revolving Fund. Sector distribution: garments and textiles (34%), food processing and catering (27%), handicrafts and artisan products (18%), retail/kirana (12%), and services including beauty and tailoring (9%).

A structured interview schedule was administered covering: enterprise characteristics (age, sector, number of employees, annual turnover), scheme(s) received (type, amount, year), changes in turnover and employment in 3 years post-scheme, market access channels, digital platform usage, mentorship access, and barriers encountered. The primary outcome variables were: (a) Business Survival (binary: operating continuously for 3+ years post-scheme vs. closed or dormant) and (b) Annual Revenue Growth (continuous: percentage change in annual revenue from baseline to current year).

Binary logistic regression was used for business survival, with scheme type, loan amount, sector, age of entrepreneur, and mentorship access as independent variables. OLS regression was used for revenue growth. A sub-sample of 30 entrepreneurs was selected for in-depth qualitative interviews to capture contextual narratives. Statistical analysis was conducted using SPSS v.26. Permission was obtained from TNCDW and both DICs, and respondent anonymity was strictly maintained.

4. Results and Observations

Business survival at the 3-year mark was 61.6% across the total sample—a moderately encouraging figure that masks significant sectoral and district variation. Survival rates were highest in food processing (72.3%) and lowest in retail/kirana (47.8%), with garments in between (63.1%). Madurai district entrepreneurs showed higher survival rates (65.4%) compared to Tirunelveli (57.5%), a difference that is statistically significant ($p < 0.05$) and attributed in part to better district-level DIC counselling services in Madurai.

The logistic regression model found that mentorship access (OR = 3.42, $p < 0.001$), higher loan amounts—specifically Kishore and Tarun Mudra vs. PMEGP loans—(OR = 2.18, $p < 0.01$), and prior work experience in the same sector (OR = 2.67, $p < 0.01$) were the strongest positive predictors of survival. Scheme type per se (PMEGP vs. Mudra vs. Udyogini) was not a statistically significant predictor when controlling for loan amount and mentorship, suggesting that the delivery modality—particularly whether mentorship is bundled with financial support—matters more than the scheme label.

OLS regression for revenue growth showed an overall model fit of $R^2 = 0.41$. Significant positive predictors of revenue growth included: access to digital marketplace (B = 14.3%, $p < 0.001$), formal business registration (Udyam) (B = 9.7%, $p < 0.01$), and participation in government procurement schemes (B = 12.2%, $p < 0.05$). Negative predictors included: sole dependence on local market (B = -8.6%, $p < 0.01$) and domestic work burden (measured by reported hours: B = -0.7% per hour/week, $p < 0.05$).

Qualitative interviews illuminated an important paradox: scheme beneficiaries felt that receiving capital was the 'easy part'—understanding Goods and Services Tax (GST) compliance, accessing e-commerce platforms, and navigating supply chains were identified as primary challenges. Several women in Tirunelveli mentioned relying on their husbands or adult sons for digital transaction management, indicating that financial access without digital literacy creates new dependency structures rather than dissolving old ones.

5. Discussion

The finding that mentorship—rather than scheme type or even loan amount—is the strongest predictor of business survival challenges the current architecture of MSME support schemes, which are primarily disbursement-oriented. The RBI Kamath Committee (2019) had already noted the need for 'hand-holding' beyond credit delivery, but Tamil Nadu's scheme ecosystem remains largely transactional: grant/loan disbursement with limited post-disbursement engagement.

The convergence of survival rates by year 5 (as found in Vijayalakshmi and Murugan, 2021 and consistent with this study's sectoral narratives) suggests a 'scheme dependency trap': enterprises that are established with scheme support but not integrated into sustainable market networks struggle to survive once the initial capital is absorbed. This parallels findings from NITI Aayog's Aspirational Districts Programme evaluations, which have consistently noted that scheme-driven enterprise creation without market integration results in high attrition rates.

The significance of digital marketplace access—with a 14.3 percentage point differential in revenue growth—underscores the transformative potential of platforms such as GeM (Government e-Marketplace), Amazon Karigar, and Flipkart Samarth. Yet uptake among study respondents was only 23.6%, limited by digital literacy barriers and high onboarding complexity. This creates a vicious cycle: the entrepreneurs who most need market diversification are least equipped to access digital channels.

The domestic work burden finding—where each additional hour per week of domestic work is associated with a 0.7% reduction in revenue growth—echoes the broader feminist economics literature on the 'double burden' of women entrepreneurs and points to the need for policy interventions that go beyond the enterprise itself to address the social reproduction constraints that shape women's economic participation.

6. Conclusion

MSME schemes have been a necessary but insufficient condition for women's enterprise development in Tamil Nadu. They have created a larger entry point into formal entrepreneurship but have not adequately addressed the ecosystem requirements—mentorship, market access, digital integration, and domestic burden reduction—that determine whether entry translates into sustainable economic independence.

This study recommends: (a) mandating a minimum 12-month mentorship engagement for all PMEGP and Udyogini beneficiaries, delivered through accredited women's self-help group federations and MSME Development Institutes; (b) integrating GeM and e-commerce onboarding assistance into TNCDW's post-disbursement support protocol; (c) introducing a 'Women MSME Sustainability Grant'—a performance-linked top-up of Rs. 50,000 for enterprises surviving 3 years post-scheme; (d) establishing Women Enterprise Clusters in Madurai and Tirunelveli districts, enabling shared infrastructure, market exposure, and peer learning; and (e) GST compliance helpdesks at DICs, staffed during non-business hours to accommodate women entrepreneurs with daytime domestic obligations.

The economic empowerment of women entrepreneurs in Tamil Nadu is not merely a welfare objective—it is a growth imperative. Tamil Nadu's industrial competitiveness increasingly depends on diversifying its MSME base beyond traditional sectors, and women entrepreneurs represent both an underutilised resource and an equity-mandated priority. Addressing their sustainability—not merely their entry—must become the central metric of MSME scheme success.

References

1. Government of India. (2016). 73rd Round Report: Informal Sector and Conditions of Employment in India. National Sample Survey Office, Ministry of Statistics and Programme Implementation, New Delhi.
2. Kamath, K. V. (Chair). (2019). Report of the Expert Committee on Micro, Small and Medium Enterprises. Reserve Bank of India, Mumbai.
3. Khanka, S. S. (2002). Motivating Factors of Entrepreneurs of Small-Scale Industries: A Study in Assam. Indian Journal of Industrial Relations, 37(3), 371–382.
4. Ministry of MSME. (2024). Udyam Registration Data: Annual Summary 2023–24. Government of India, New Delhi.
5. Ministry of MSME. (2020). CHAMPIONS Portal Launch and Objectives. Government of India, New Delhi.
6. NITI Aayog. (2019). National Strategy for Financial Inclusion: 2019–2024. Reserve Bank of India and NITI Aayog, New Delhi.
7. Nithya, P., & Rajan, S. (2023). Mentorship and Enterprise Performance among Udyogini Beneficiaries in Tirunelveli. South Asian Journal of Management, 30(1), 67–89.
8. Tamil Nadu Corporation for Development of Women. (2023). Annual Report 2022–23. Government of Tamil Nadu, Chennai.
9. Tamil Nadu Government. (2021). Tamil Nadu Industrial Policy 2021. Government of Tamil Nadu, Chennai.
10. Vijayalakshmi, S., & Murugan, R. (2021). PMEGP and Women Enterprise Survival: A Panel Study in Dindigul. Journal of Entrepreneurship and Management, 10(2), 45–60.
11. Reserve Bank of India. (2024). Pradhan Mantri Mudra Yojana: Progress Report March 2024. RBI, Mumbai.
12. Government of India. (2015). Pradhan Mantri MUDRA Yojana: Scheme Document and Implementation Guidelines. Ministry of Finance, New Delhi.

