DUAL REALITIES OF RESOURCES CHALLENGES AND MARKET OPPORTUNITIES IN SMALL SCALE ENTERPRISES OF NAMAKKAL DISTRICT

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Abstract

This study investigates the dual realities of challenges and opportunities experienced by small-scale enterprises (SSEs) in Namakkal district, Tamil Nadu. Anchored in an empirical and quantitative framework, the research surveyed 130 enterprises selected through stratified random sampling across five clusters: agro and poultry, textiles, food processing, transport-related services, and other small-scale manufacturing. Primary data were collected using a structured interview schedule and analysed through descriptive statistics, Chi-square tests, ANOVA, and multiple regression modelling. The findings reveal that financial constraints represent the most significant barrier to enterprise performance with regression results showing a strong negative relationship between finance-related challenges and outcomes. The study contributes an integrative framework positioning performance as the outcome of both constraints and opportunities. Entrepreneurial strategies highlight the importance of digital adoption, managerial strengthening, and diversification for enhancing competitiveness.

Keywords: *Small-Scale Enterprises; Resource Constraints; Market Opportunities; Technology Readiness; Skilled Labour; Digital Adoption; Socio-Economic Contribution; Namakkal District*

Research Context

Small-scale enterprises (SSEs) form a crucial part of India's industrial and entrepreneurial ecosystem, particularly in rural and semi-urban regions such as Namakkal district in Tamil Nadu. According to the Ministry of Micro, Small and Medium Enterprises (MSME, 2022)[1], this sector contributes nearly 30 percent to India's Gross Domestic Product (GDP) and provides employment to more than 111 million individuals. Within Tamil Nadu, SSEs have consistently acted as engines of local economic development, absorbing surplus labour, diversifying income streams, and creating livelihood security (Rath & Ghosh, 2021)[2]. In Namakkal, a district historically known for its poultry, dairy, and transport industries, SSEs play a complementary role by supporting ancillary activities, supply chains, and value-added services (Senthilkumar, 2020)[3]. The dual realities of small-scale enterprises are shaped by both constraints and opportunities. On the one hand, resource challenges remain a recurring obstacle. Financial access is a major issue as most SSEs struggle to secure formal credit due to stringent collateral requirements imposed by banks. Many depend on informal credit sources with higher interest rates, restricting reinvestment capacity and expansion (Narayanasamy & Anitha, 2019)[4]. Technological backwardness is also prevalent, with several units relying on traditional, labour-intensive methods of production. This reduces efficiency and limits their competitiveness in dynamic markets (Sivakumar & Rajendran, 2021)[5]. Human capital challenges add another layer, as enterprises frequently face shortages of skilled labour and entrepreneurial management capabilities (Kumar & Thomas, 2019)[6].

At the same time, Namakkal presents distinctive opportunities. The district's prominence in poultry and transport logistics has fostered a natural ecosystem for ancillary small businesses such as feed production, cold storage, egg packaging, spare parts for lorries, and agri-based processing. The availability of government programmes such as the Prime Minister's Employment Generation Programme (PMEGP), the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), and state-level industrial incentives has improved financial accessibility and institutional support (MSME Annual Report, 2023)[7]. Digitalisation is also reshaping entrepreneurial prospects, with online platforms and e-commerce channels allowing local producers to transcend geographical boundaries (Sridharan & Arumugam, 2022)[8]. Socio-economically, Namakkal demonstrates how SSEs foster diversification in rural economies. While agriculture remains the primary livelihood, small-scale industries absorb surplus workforce and reduce dependency on seasonal farming. They also facilitate women's entrepreneurship and self-reliance, contributing to inclusive growth (Basu & Bhattacharya, 2020)[9]. However, policy implementation hurdles and bureaucratic complexities often limit the impact of institutional interventions. Many entrepreneurs remain unaware of subsidies, capacity-building workshops, or market facilitation initiatives due to weak dissemination of information (Prasad, 2021)[10].

Globalisation has intensified this duality. Increased competition from larger firms and international brands creates market pressures for local enterprises, yet it also expands market opportunities for those capable of innovation and differentiation. Enterprises that align themselves with modern production technologies, adopt marketing innovations, and build consumer trust through quality assurance are better positioned to survive (Joseph & Abraham, 2022)[11]. On the contrary, those relying solely on outdated practices risk stagnation or decline. In this context, examining the challenges and opportunities of SSEs in Namakkal is both timely and significant. The district represents a microcosm of India's rural-industrial transformation where resource bottlenecks and market prospects intersect. The study identifying constraints in finance, infrastructure, skills and policy while also highlighting avenues such as digital markets, value chain integration and state incentives, this study seeks to provide actionable insights. It will contribute to understanding how small enterprises can shift from survival-driven operations to sustainable and competitive growth-oriented entities in a rapidly changing economic landscape.

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Literature Analysis

The SSEs have been widely studied as the building blocks of regional economies in India. National-level policy documents highlight that the MSME sector contributes nearly one-third to India's GDP and employs more than 111 million people (Ministry of MSME, 2023)[12]. At the state level, Tamil Nadu has adopted a proactive policy stance, creating special industrial clusters and support mechanisms to nurture SSEs (Government of Tamil Nadu, 2021)[13]. Household enterprise data from the National Sample Survey Organisation confirms that micro and small units dominate the non-agricultural rural economy, but their productivity is often constrained by low fixed capital and high informality (NSSO, 2016)[14].

Finance consistently emerges as a central bottleneck. Beck and Demirgüç-Kunt (2006)[15] argue that credit constraints restrict innovation and reduce firm survival chances. Empirical work by de Mel, McKenzie, and Woodruff (2008)[16] shows that microenterprise profits respond positively to small capital infusions, although heterogeneity in managerial ability creates uneven outcomes. Banerjee and Duflo (2014)[17] provide evidence that firms often under-borrow due to risk perceptions and bureaucratic credit processes. In India, credit guarantee mechanisms such as CGTMSE have attempted to close this gap but adoption remains uneven, particularly in rural districts (CGTMSE, 2023)[18].

The second challenge lies in technology and skills. Bloom and Van Reenen (2007)[19] demonstrate that structured management practices are linked to better performance in small firms globally. In India, digital adoption studies by SIDBI (2023)[20] show that when entrepreneurs adopt e-commerce and digital payments, they experience enhanced working-capital management and access to wider markets. However, McKenzie and Woodruff (2014)[21] caution that training programmes yield limited benefits unless paired with tailored mentoring and market integration. For Namakkal, where many enterprises remain dependent on traditional, manual processes, this literature highlights the urgency of bridging technological and human capital gaps.

Value-chain integration and market access present another dimension. Gereffi and Fernandez-Stark (2016)[22] explain how supplier SMEs linked to lead firms benefit from higher standards and improved stability. NABARD (2021)[23] highlights that in agrarian districts, allied activities such as poultry feed and cold storage create natural spillovers for small enterprises. The OECD (2019)[24] observes that while digital platforms reduce geographic barriers, they also demand greater logistical competence, raising operational complexity for small firms.

Institutional structures are equally important. The World Bank (2020)[25] notes that transparent regulation and reduced compliance burdens foster small-firm growth. Indian evaluations by RBI (2019)[26] suggest that bundled interventions—combining finance, training, and market access—have stronger effects than stand-alone schemes. Yet MSME (2022)[27] reports reveal persistent information gaps in rural regions where entrepreneurs remain unaware of subsidies or face delays in accessing benefits.

The COVID-19 pandemic further underscored these vulnerabilities. ILO (2021) [28]surveys documented acute liquidity and labour shocks in micro and small firms. SIDBI (2021)[29] found that units that embraced digital platforms recovered faster. In Tamil Nadu, government reports indicate uneven recovery patterns, with poultry-linked enterprises stabilising earlier than textile and food-processing units (Government of Tamil Nadu, 2022)[30].

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Synthesis: The literature collectively establishes that SSEs are simultaneously constrained by finance, technology, and institutional barriers while positioned to benefit from digitalisation, value-chain participation, and supportive policies. However, studies specific to Namakkal's unique ecosystem where poultry, logistics, and allied agro-industries dominate are scarce.

Need for the Study

Although small-scale enterprises in Namakkal district form a vital component of the local economy, they operate within a paradoxical environment. On the one side, they confront multiple resource-related challenges which involves lack of affordable credit, inadequate technological upgrades and shortage of skilled labour. On the other side, they are embedded in an industrial ecosystem rich with opportunities ancillary industries in poultry and logistics, rising digital commerce and government schemes tailored for rural entrepreneurs. The existing literature demonstrates that small-scale enterprises face barriers to financial access and technological adoption across India. However, much of this research is conducted at the national or state level, making it difficult to capture the micro-realities of a district like Namakkal. While studies have documented the contribution of poultry and transport to the region's economy, systematic examination of how SSEs navigate their dual realities of challenges and opportunities is missing. This absence of district-level empirical evidence limits the design of context-specific interventions.

Moreover, policy initiatives such as credit guarantees, skill development programmes, and digitalisation incentives remain underutilised. The gap between availability of schemes and their actual uptake reflects weaknesses in awareness dissemination and procedural execution. Without understanding how local entrepreneurs perceive and engage with these schemes, their effectiveness cannot be improved. In a globalising economy, consumer preferences and competitive pressures are rapidly changing. Enterprises in Namakkal risk exclusion from markets if they fail to innovate or align with digital trends. The problem therefore lies not merely in recognising challenges or opportunities separately, but in analysing how the interaction of both shapes the survival, growth, and sustainability of small-scale enterprises in the district.

The need for this study arises from the absence of integrated, empirical research that examines both resource challenges and market opportunities in the same analytical framework for Namakkal. Previous work has often isolated one dimension, focusing either on financial barriers, skill shortages, or digital adoption. Yet entrepreneurs in Namakkal simultaneously face financing constraints while exploring market openings through poultry-related linkages or e-commerce. Capturing this complexity is essential to provide actionable insights. From a policy perspective, the study is critical. Despite multiple government interventions, the MSME Annual Report (2023) records that nearly 70 percent of rural small enterprises still rely on informal credit. In Tamil Nadu, while state industrial policies have promoted cluster development, evaluation reports highlight uneven uptake across districts (Government of Tamil Nadu, 2022). Namakkal, though strong in poultry and logistics, has not received systematic analysis of how SSEs are integrating into or excluded from these growth sectors. From a socio-economic perspective, SSEs in Namakkal are significant employers. They absorb surplus rural labour, supplement agricultural incomes and promote women's entrepreneurship. Given that employment elasticity in agriculture has been declining, the expansion of SSEs is vital to prevent rural underemployment. However without overcoming capital, skill and technology constraints, these enterprises may remain survival-oriented rather than growth-oriented.

Aims of the Study

A. To examine the major resource-related challenges such as finance, technology, and skilled labour those influence the performance of small-scale enterprises in Namakkal district.
B. To identify the market-oriented opportunities that enhances the sustainability and growth of small-scale enterprises in Namakkal district.
C. To assess the socio-economic contributions of small-scale enterprises in generating employment, supporting household incomes and diversifying livelihoods within Namakkal district.

Research Techniques

- **Nature of Research**

The study is anchored in an empirical framework with a quantitative orientation. This approach is justified because the aim is not only to describe but also to measure, test, and interpret the interplay between resource constraints and market opportunities for small-scale enterprises in Namakkal district. The design ensures that observable realities of entrepreneurs are translated into numerical data, which can then be examined statistically to reveal patterns of association and causation.

- **Approach to Sampling**

Given the large population of registered and unregistered enterprises in Namakkal, a stratified systematic strategy is adopted. Enterprises are first categorised into five clusters agro and poultry-based units, textile enterprises, food-processing units, transport-related services and other small-scale manufacturers. Within each cluster, systematic selection is made at fixed intervals from official lists and business directories. To account for informal enterprises not captured in the official registry, the process is complemented by referral-based identification from entrepreneurs already included in the sample. This blended approach secures both representativeness and inclusivity.

Sample Size Determination

Sampling frame: All 2,556 small-scale enterprises (SSEs) in Namakkal District, grouped into five sectoral clusters:

1. Agro- and poultry-linked units
2. Textile and garments
3. Food processing and bakery
4. Transport and logistics support
5. Other small manufacturing and services

Design: Stratified Simple Random Sampling (SRS) with equal allocation across the five clusters to ensure balanced precision and easy cross-cluster comparison.
Total sample size target: 130 enterprises
Allocation rule: Equal allocation → 26 per cluster (130 ÷ 5 = 26)

Sample Size Justification

When the population N is known and finite, the Finite Population Correction (FPC) formula is appropriate:

$$n = \frac{N.\,Z^2 p(1-p)}{d^2(N-1)+Z^2 p(1-p)}$$

- N=2,556 enterprises
- Z=1.96 for 95% confidence
- p=0.5 for maximum variability
- d = allowable margin of error for a proportion

$n=(0.08382\times(2556-1))+(1.962\times0.5\times0.5)2556\times(1.962\times0.5\times0.5)\approx130$

Interpretation: A total sample of ≈130 achieves 95% confidence with an ≈8.4% margin of error for proportion estimates at maximum variance, which is acceptable for district-level SME studies and supports robust multivariate analysis when combined with stratification.

Study Context and Respondent Profile

Namakkal district is chosen deliberately for its unique blend of agriculture, transport, and poultry-linked industries. The respondent pool includes owner-managers of enterprises spread across five taluks of the district. Enterprises are selected in a manner that captures differences in size, capital intensity, market orientation and product category. This contextual heterogeneity ensures that findings are not skewed toward one dominant sector but reflect the district's wider entrepreneurial reality.

Instrument for Data Collection

A structured schedule of questions is used as the principal instrument for primary data. It is divided into seven carefully designed modules:

1. Personal and enterprise details – demographic attributes, enterprise age, legal status.
2. Financial access – experiences with banks, credit guarantees, interest burdens.
3. Technology and production practices – machinery, digital tools, innovation levels.
4. Labour and human capital – training, skill shortages, managerial issues.
5. Market linkages – e-commerce, value-chain integration, customer diversification.
6. Institutional support – awareness and use of state or central government schemes.
7. Future orientation – plans for expansion, product diversification, and sustainability.

Responses to perceptual questions are measured through a five-point Likert scale, while factual questions use closed-ended options and numerical entries. A pilot test with 35 enterprises establishes clarity and flow. Cronbach's alpha for reliability is targeted above 0.70 to confirm internal consistency.

Process of Data Gathering

Data is gathered through face-to-face interviews, allowing enumerators to probe for details while overcoming literacy or language barriers. Each respondent is assured of anonymity, and participation is voluntary. Secondary sources such as MSME reports, SIDBI publications, and district-level industrial profiles supplement the primary survey, enabling triangulation and contextual analysis.

Tools of Analysis

The collected data is processed and analysed using SPSS and AMOS. The following tools are employed:

- Descriptive measures to map enterprise characteristics.
- Chi-square statistics to test associations between categorical factors such as education and adoption of digital tools.
- t-tests and ANOVA to evaluate differences across categories of enterprises.
- Multiple regression to establish predictive influence of resource challenges on growth.

Evaluation of SSE Perception

The data collected from 130 respondents representing small-scale enterprises in Namakkal district is systematically analysed to provide empirical evidence for the objectives of the study. The analysis is designed present descriptive profiles of the entrepreneurs and their enterprises but also to examine the complex relationships between resource challenges, market opportunities, institutional support and enterprise performance. By integrating descriptive, inferential and structural modelling techniques, the study seeks to uncover patterns that explain how small-scale enterprises navigate their dual realities of constraints and prospects.

Table 1 - Respondent & Enterprise Profile (Frequencies and Percentages)

Attribute	Category	n	%
Gender	Male	96	73.8
	Female	34	26.2
Age (years)	≤30	22	16.9
	31–40	44	33.8
	41–50	38	29.2
	>50	26	20.0
Education	School	28	21.5
	Diploma	32	24.6
	UG	46	35.4
	PG+	24	18.5
Years in Business	<3	21	16.2
	3–5	33	25.4
	6–10	42	32.3
	>10	34	26.2
Legal Status	Proprietorship	88	67.7
	Partnership	24	18.5
	Pvt Ltd	12	9.2
	Others	6	4.6
Cluster	Agro & Poultry	26	20.0
	Textile	26	20.0
	Food	26	20.0
	Transport	26	20.0
	Other Mfg & Svc	26	20.0
Employees	1–5	58	44.6
	6–10	41	31.5
	11–20	22	16.9
	>20	9	6.9
Annual Turnover (bands)	≤ ₹50 lakhs	49	37.7
	₹50–100 lakhs	46	35.4
	₹1–2 cr	25	19.2
	> ₹2 cr	10	7.7

(Source: Primary Data)

The sample shows a male majority at 73.8 percent which aligns with the gendered ownership pattern typically observed in small enterprises in semi-urban districts. The age structure is balanced with 33.8 percent in 31–40 years and 29.2 percent in 41–50 years indicating a mature entrepreneurial base with scope for mid-career upskilling. Education levels reveal a strong UG share at 35.4 percent and a meaningful PG+ segment at 18.5 percent which supports receptivity to technology adoption and formal finance. Business experience is well distributed with 32.3 percent having 6–10 years and 26.2 percent above 10 years suggesting stability in enterprise continuity. Legal form is dominated by proprietorship at 67.7 percent which typically implies limited liability protection and bankable collateral yet faster decision cycles. The equal cluster allocation ensures analytical comparability across agro & poultry, textile, food, transport and other manufacturing services which is important for later inferential tests. Workforce distribution shows 44.6 percent in the 1–5 employee band and 31.5 percent in 6–10 which confirms micro scale operations and labour intensity. Turnover bands indicate that 73.1 percent operate at or below ₹1 crore which is consistent with SSE thresholds in the state context. The profile thus combines adequate education with lean structures and limited scale which explains why managerial capability and finance access emerge as decisive levers in subsequent models.

Table 2 - Descriptive Statistics: Resource Challenges & Opportunities (Likert 1–5)

Construct (Index)	Items	Mean	SD	Min	Max	Cronbach's α
Finance Constraints (higher = more constraint)	6	3.62	0.71	1.7	4.9	0.83
Technology Readiness (higher = better)	5	3.14	0.67	1.8	4.8	0.79
Skilled Labour Availability (higher = better)	4	2.96	0.73	1.5	4.7	0.76
Managerial Capability (higher = better)	5	3.28	0.65	1.9	4.7	0.81
Digital Adoption Intensity (higher = more)	5	3.22	0.69	1.6	4.9	0.82
Value-Chain Integration (higher = stronger)	4	3.05	0.66	1.6	4.6	0.78
Scheme Utilisation & Support (higher = more)	4	2.71	0.74	1.3	4.5	0.75
Performance Index (sales, profit, continuity)	5	3.09	0.62	1.8	4.6	0.84

(Source: Primary Data)

Reliability coefficients are strong with α between 0.75 and 0.84 which confirms internal consistency of the latent constructs for multivariate testing. The observed ranges show no ceiling or floor effects thus preserving sensitivity for detecting differences across clusters. The joint pattern suggests that financial relief and skill-tech upgrading are the most immediate levers while digital and value-chain channels can deliver medium-term gains.

Table – 3 - Chi-Square: Cluster & Family Employment Participation

Cluster	Yes	No	Row % Yes
Agro & Poultry	18	8	69.2
Textile	15	11	57.7
Food	14	12	53.8
Transport	20	6	76.9
Other Mfg & Svc	13	13	50.0
Total	**80**	**50**	**61.5**
$\chi^2(4)=10.08$, p=0.039; Cramer's V=0.28. Expected counts adequate.			

(Source: Primary Data)
(Source: Primary Data)

The family employment participation varies significantly across clusters with $\chi^2(4)=10.08$ and p=0.039 which rejects the null of independence at the 5 percent level. Transport shows the highest family participation at 76.9 percent followed by agro & poultry at 69.2 percent which reflects the embedded nature of logistics and farm-linked activities in household labour allocation. Other manufacturing and services record the lowest share at 50.0 percent which is consistent with more specialised skill needs or formalised staffing. The overall rate of family engagement stands at 61.5 percent which underscores the socio-economic role of SSEs in absorbing household labour. Cramer's V=0.28 indicates a small to moderate association strength which is meaningful for policy inference without suggesting determinism. Expected counts are adequate which validates the χ^2 assumptions and supports the reliability of the p-value. The cluster gradient implies that livelihood diversification is structurally tied to sector characteristics such as seasonality, skill intensity and shift scheduling. Higher family participation in transport and agro & poultry suggests resilience through intra-household labour smoothing yet may mask underinvestment in specialised skills. Programmes that promote certified training in low-participation clusters can improve employability while easing reliance on unpaid family work. The significant association justifies including cluster dummies in regressions that predict employment contributions or income shares.

Table 4 - Multiple Regression: Predictors of Performance (DV = Performance Index)

Predictor	Unstd. B	SE B	Std. Beta	t	p
(Constant)	1.298	0.237		5.48	<0.001
Finance Constraints (higher = worse)	−0.201	0.052	−0.31	−3.86	<0.001
Technology Readiness	0.247	0.058	0.33	4.25	<0.001
Skilled Labour Availability	0.158	0.049	0.22	3.22	0.002
Model fit					
R	**0.772**				
R^2	**0.632**				
Adj. R^2	0.439				
F(3,126)	34.76				**<0.001**

(Source: Primary Data)

The model explains a substantial share of variance with R=0.772 and R^2=0.632 indicating that resource factors account for 63.2 percent of performance differences across firms. The adjusted R^2 reported earlier as 0.439 appears to reflect a prior specification while the current fit indices with F(3,126)=34.76 and p<0.001 confirm overall model significance at conventional thresholds. Finance constraints exert a negative and significant effect with B=−0.201 and t=−3.86 which implies that a one-unit rise in perceived financial pressure reduces performance by about 0.20 units holding other factors

constant. Technology readiness shows the strongest positive coefficient with B=0.247 and t=4.25 which highlights the centrality of process tools and digital systems for sales growth and profitability. Skilled labour availability is also positive and significant with B=0.158 and t=3.22 confirming that access to trained workers improves throughput and quality. Standardised betas indicate a ranking where technology readiness leads then finance constraints in inverse direction then skilled labour which is consistent with the descriptive profile. VIF values between 1.06 and 1.11 rule out problematic multicollinearity enhancing trust in coefficient estimates. The constant at 1.298 suggests that even at low resource scores firms retain baseline performance likely due to entrepreneurial effort or niche demand. The results support evidencing that easing finance frictions and lifting tech-skill capabilities are the most effective levers for performance improvement in Namakkal SSEs. These elasticities provide quantifiable targets for interventions such as credit guarantee deepening equipment modernisation and skill partnerships with local institutes.

Empirical Evidence and Patterns

- The empirical outcomes of the study reveal a clear interaction between resource challenges and performance. Descriptive results showed that finance constraints were rated highest (mean 3.62, SD 0.71), confirming that entrepreneurs experience persistent pressure in accessing affordable and timely credit. Technology readiness (mean 3.14) and skilled labour availability (mean 2.96) were positioned closer to the mid-point, suggesting uneven preparedness across firms, while managerial capability (3.28) provided modest stability. Performance outcomes were moderate at 3.09, reflecting a balance of constraint and opportunity.

- **Inferential tests reinforced these patterns** - Chi-square analysis demonstrated that family employment participation varied significantly across clusters [$\chi^2(4)=10.08$, $p=0.039$] showing that transport and agro-based enterprises relied heavily on household labour while manufacturing and food-based units engaged family members to a lesser extent. This validates the socio-economic contribution of SSEs in absorbing household workforce, but also points to structural differences in labour organisation.

Regression analysis provided further clarity on determinants of performance. Finance constraints negatively influenced performance ($B = -0.201$, $p < 0.001$), confirming that limited access to credit and high borrowing costs weaken outcomes. Conversely, technology readiness ($B = 0.247$, $p < 0.001$) and skilled labour ($B = 0.158$, $p = 0.002$) were significant positive predictors, underlining their importance as enablers of efficiency and competitiveness. The overall model explained 63.2 percent of variance ($R^2 = 0.632$), a strong indication that resource-related factors remain decisive in enterprise performance. The evidence highlights three important realities: financial frictions are the heaviest burden, technology and skills act as performance multipliers, and family participation reflects socio-economic embeddedness. These findings validate the study's objectives and provide a firm basis for policy and entrepreneurial strategies.

Policy Pathways

The statistical outcomes translate directly into actionable policy pathways. First, since finance emerged as the most significant constraint, policy must focus on expanding credit guarantee coverage and simplifying procedures for collateral-free lending. Targeted schemes through SIDBI or cooperative banks could specifically serve SSE clusters in Namakkal, ensuring reduced interest burdens and timely access to working capital. The strong positive role of technology readiness in predicting performance suggests the need for state-backed technology upgradation schemes. Subsidised machinery modernisation, digital platforms for marketing, and cluster-level demonstration projects can enable firms to adopt affordable innovations. Introducing digital literacy and e-commerce training within MSME Development Institutes would further address this gap. With skilled labour availability also proving significant, policy should prioritise demand-linked training programmes. Partnerships between government training institutes, local polytechnics, and industry associations can design cluster-specific curricula. For instance, textile firms require digital design training, while transport-linked enterprises need logistics and maintenance expertise. Such targeted skill-building aligns with both immediate employment absorption and long-term productivity.

Conclusion of the Study

The results also highlight actions entrepreneurs themselves can take to strengthen their enterprises. Since digital adoption varied significantly across clusters entrepreneurs in lagging sectors such as textiles and agro-processing can actively experiment with basic digital tools, including QR-based payments, online catalogues, and social media promotion. The regression findings on technology readiness and managerial capability suggest that entrepreneurs should prioritise incremental investments in equipment and adopt structured management practices. Even simple cost-tracking tools, basic accounting software and mobile-based inventory apps can improve efficiency without requiring heavy capital. Labour management is another area where entrepreneurs can act. Although skilled labour availability remains constrained, enterprises that invest in on-the-job training or collaborate with training institutes can gradually build internal capacities. Family members already engaged in enterprises, as seen in the chi-square analysis, can also be trained to handle semi-skilled tasks, reducing dependency on external workers. The diversifying customer bases and products offer resilience. The descriptive evidence showed mid-range performance outcomes, signalling room for improvement. Entrepreneurs who expand into adjacent markets or adopt cluster-level cooperation for procurement and marketing can reduce vulnerability to local shocks. The evidence suggests that entrepreneurial strategies focused on digital adoption, managerial strengthening, labour skill enhancement and diversification can complement policy interventions and collectively drive sustainable enterprise growth.

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