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ENTREPRENEURIAL FINANCING THROUGH MUDRA YOJANA: A COMPARATIVE STUDY OF RURAL VS. URBAN BENEFICIARIES

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ABSTRACT
MUDRA Yojana Pradhan Mantri (PMMY) is one of the pillars of the Indian financial-inclusion strategy, although there is limited evidence on the difference between the outcomes of the rural and urban entrepreneurs. The research is comparative research using primary data of 600 beneficiaries in Uttar Pradesh, Maharashtra, and Tamil Nadu, with interviews with the borrowers and lending officials. The study evaluates differences in loan access, patterns of utilisation, growth of enterprises and repayment patterns using Tobit, logistic, OLS, as well as propensity-score matching models. The results demonstrate that urban borrowers have better chances to acquire loans with higher values and register a better increase in sales and profits, whereas rural borrowers are segregated in the smaller Shishu loans and are confronted with more obstacles in market accessibility and financial literacy. Rural location has been found to augment the chances of repayment delays in case of education; the health of the loan and financial ability are held constant. Qualitative information substantiates institutional voids, difficulty in documentation, and ecosystem limitations and restrictiveness as primary contributors to such disparities. It is in the contribution to the financial intermediation and the entrepreneurial-ecosystem theory, as it is shown that the local conditions influence the effectiveness of credit. It has been recommended to have more financial literacy programs, post-loan support, and systems that will facilitate the graduation of rural entrepreneurs into higher loan categories.
Keywords- Microenterprise Finance; MUDRA Yojana; Rural–Urban Disparities; Financial Inclusion; Entrepreneurial Ecosystem; Loan Utilisation; Repayment Behaviour

1. INTRODUCTION

Availability of cheap and sufficient credit is one of the largest drawbacks of micro-entrepreneurs in third-world economies. The micro and small enterprise (MSE) sector in India contributes a significant proportion of non-farm jobs, but even now, these entrepreneurs face difficulties trying to borrow money through formal financial institutions. Causes of this often restrict their capacity to grow through high information asymmetry, limited collateral, poor credit history, and geographic variation of service delivery. In a bid to counter such structural constraints, the Government of India introduced Pradhan Mantri MUDRA Yojana (PMMY) in the year 2015. The scheme is designed to provide the micro-entrepreneurs with collateral-free credit, with the focus on the three types of credit, Shishu, Kishor, and Tarun, which correspond to the various levels of business development.

Although an organisation such as PMMY has touched millions of beneficiaries, the impact may not be as thorough and hence quality in other regions. The current literature recognises that the scheme leads to an increase in financial inclusion, but most of them are based on administrative data or small samples. Consequently, they provide little knowledge on the differences between rural and urban entrepreneurs in terms of loan access, utilisation, enterprise performance, as well as repayment behaviour. It is the gaps that are significant when applied within a wider theory. Financial Intermediation Theory is an aspect that is marked by the importance of information flows and institutional reach to credit outcomes, whereas the Entrepreneurial Ecosystem Approach is an aspect marked by the presence of local networks, market access, and resource availability in the context of enterprise development. These respectively indicate that spatial context is not a background variable only, but an element forceable in the context of which credit exerts economic performance.

The existing evidence, though, is not complete enough as to how such spatial differences influence PMMY results. Rural entrepreneurs often with poor financial infrastructure, are illiterate, and lack devices. In contrast, the urban entrepreneurs enjoy the advantage of having dense markets, networks and favourable institutional environments. However, there is little literature that combines sound quantitative analysis with qualitative observations to investigate such differences among the states.

In this study, the gaps are bridged, and a mixed-method analysis of 600 MUDRA beneficiaries in Uttar Pradesh, Maharashtra, and Tamil Nadu is made. The study has examined three major dimensions using the econometric

tools such as Tobit, logistic regression, OLS, and propensity-score matching, as well as the interviews of the borrowers and lending officials, i.e. (i) loan access and category presentation, (ii) patterns of loan utilisation, (iii) post-loan performance of the enterprise, and (iv) the repayment behaviour. The research combines quantitative and qualitative evidence, thus providing a more in-depth insight into the influence of spatial ecosystems on credit effectiveness.

The study contributes to the literature in three ways. One, it gives a giant sample, multi-state data on achievements on MUDRA differences by rural-urban populations, filling in an enormous data void in the literature. Second, it shows that credit availability is not only ineffective in alleviating performance disparities without considering ecosystems (including financial literacy, market connections, institutional subsidies, etc.). Third, it broadens conceptual debates on inclusive finance about mediating its relationship between spatial conditions and enterprise growth using this.

With the amount of government funding assigned to PMMY and its ability to encourage grassroots entrepreneurship, it is important to know these discrepancies. The results of the present research can assist policymakers in tailoring more specific interventions to favourable development in the region and help micro-entrepreneurs expand sustainably.

2. LITERATURE REVIEW

2.1 Financial Inclusion, Microcredit, and Enterprise Development

Access to finance has been said to be a key determinant in the growth of micro-enterprises. Certain formal explanations of the exclusion of small borrowers from formal financial markets are the seminal theories of credit rationing (Stiglitz and Weiss, 1981), which assert that asymmetric information, collateral constraints, and perceptions of risk systematically ostracise the small borrowers. Subsequent developments of the Financial Intermediation Theory focus on the fact that the conditioning of credit outcomes depends on the institutional reach, screening ability, and literacy of borrowers (Beck, Demirguc-Kunt and Levine, 2010). Microcredit programmes in emerging economies have shown both positive and overall mixed results on the entrepreneurial activity, income generation, and asset formation empirically (Banerjee et al., 2015; Karlan and Zinman, 2018).

Chronic credit shortages in the micro and small enterprise (MSE) sector (exceeding [?]25 trillion within micro and small entrepreneurship: (MSME Ministry, 2022): India) inspired subsequent policy interventions, several of which have been enumerated below. The purposes of these interventions are to democratize credit and go light of informal lenders. It has been demonstrated that such schemes enhance financial inclusion, though the effectiveness of a scheme in the long term is largely determined by factors like training, market access, and financial education (NABARD, 2021; Chakraborty and Sahu, 2020).

2.2 Evolution and Performance of the MUDRA Yojana

Introduced in 2015, PMMY aimed to grow the scope of collateral-free lending in three categories of loans, including Shishu, Kishor, and Tarun, depending on the enterprise's stage of life. The scheme has approved more than 40 crore loans since its inception, and women have taken almost 65 per cent of the beneficiaries (Ministry of Finance, 2023). Several studies have looked at the outreach of PMMY, and they have reported that it has greatly contributed to credit accessibility among first-generation entrepreneurs (Rana and Goyal, 2020; Joseph and Thomas, 2021).

Nonetheless, studies also point to the existing structural challenges. As noted by Singh and Mehta (2020), rural beneficiaries are mostly not scaled to higher growth levels, as they are mostly in the Shishu category. In survey-based research conducted in the state of Karnataka, Narayanan (2021) established that MUDRA loans enhanced the availability of working capital, but most of the enterprises could not grow after taking the loan because of poor market connections and operational capabilities. In a similar vein, Gupta and Rani (2022) observed gendered impediments in the utilisation of loans because beneficiaries, even though in larger numbers, were working in low-margin and traditional segments.

Although these studies find significant trends, these are small-scale studies with a small number of states typically being considered, and little comparative data were provided between rural and urban segments.

2.3 Rural–Urban Disparities in Entrepreneurial Ecosystems

Indian literature on development has well documented rural-urban disparities in access to financial services. The presence of low bank density, poor institutional infrastructure, and a lack of digital literacy are some of the reasons why transaction costs are higher and slow credit processing in a rural area (Kundu, 2020; RBI, 2022). Conversely, urban entrepreneurs have the advantage of greater financial ecosystems, a more diversified market, and access to greater support services for entrepreneurship.

Several empirical studies amplify this spatial gap. Bhattacharya and Bose (2021) discovered that the rural enterprise is more dependent on loans as working capital than the urban enterprise, who invest in fixed assets and expansion of the business. Devi and Thakur (2022) proved that even though rural borrowers have high repayment discipline, these populations are characterised by slow disbursement of the loans and inadequate support provided by financial institutions after their loans have been taken. A SBI Research Report (2023) indicated that the agricultural-linked supply chain shocks and seasonal income influence the repayment delays in the rural areas.

All these studies indicate that the outcome of enterprises is determined by ecosystem differences (as opposed to being a matter of access to loans). This is in line with the Entrepreneurial Ecosystem Approach that holds that

finance will interact with skills, networks, infrastructure, and market conditions in determining the success of an entrepreneurship (Isenberg, 2011).

2.4 Gaps in Existing Empirical Evidence

One of the strengths of the current scholarship also presents multiple gaps:

(i) Limited comparative rural–urban evidence

Most MUDRA appraisals are based on aggregate disbursement and borrower profiles but seldom make systematic and interstate comparisons of rural and urban beneficiary groups.

(ii) Minimal integration of advanced econometric methods

Current research is very dependent on descriptive statistics. Not many use understanding models on censored mortgage amounts, Logit/Probit models on the repayment behaviour, or Propensity Score Matching (PSM) to address the bias in the selection.

(iii) Lack of pathway-based analysis

Association is a small amount of research that relates the loans access - utilisation - enterprise output - repayment, and the association between credit and performance is still underresearched.

(iv) Insufficient qualitative triangulation

Most studies fail to consider borrower stories and institutional lenses that clarify why the results vary at different locations.

(v) Limited focus on ecosystem-mediated effects

None of the major studies have empirically analysed the mediating effect of local ecosystem conditions on the effects of MUDRA loans, that is, the financial literacy, digital readiness, and market access.

It is such gaps that warrant an elaborate mixed-method comparative analysis, which will be undertaken in this study.

2.5 Hypotheses Development

Based on the literature review, theories, and rural-urban inequalities reported and explained, the research hypothesises the following testable hypotheses:

H1: Loan Access

H1: Urban entrepreneurs will have better chances of obtaining loans under higher categories of MUDRA loans (Kishor/Tarun) than rural entrepreneurs.

Rationale: Urban borrowers are usually better documented, have a relationship with the banking institutions and are financially literate (RBI, 2022; Singh and Mehta, 2020).

H2: Loan Utilisation

H2: Urban beneficiaries invest a higher percentage of the loan in productive business as compared to rural beneficiaries.

Rationale: Rural entrepreneurs tend to smooth their incomes and allocate some of the credit to consumption, which is seasonal (Devi & Thakur, 2022).

H3: Enterprise Performance

H3: Urban enterprises have greater post-loan growth (sales and profits) than rural enterprises do.

Rationale: Urban ecosystems are superior around market access, supplies, and entrepreneurial services (Isenberg, 2011; Bhattacharya and Bose, 2021).

H4: Repayment Behaviour

H4: The likelihood of delay or default in repayment of rural borrowers is higher than compared of urban borrowers.

Rationale: Income volatility, a lack of institutional support for repayment after a loan, has an impact (SBI Research, 2023).

H5: Mediating Role of Financial Literacy

H5: Financial literacy mediates the association between the size of the loan and the performance of enterprises positively.

Rationale: Borrowers, whose financial ability is stronger, can allocate and manage credit resources more properly (Karlan and Zinman, 2018).

3. RESEARCH METHODOLOGY

3.1 Research Design

This paper will assume the approach of comparative, mixed-method research to determine rural-urban differences in the application and results of the Pradhan Mantri MUDRA Yojana (PMMY). The mixed-method approach is suitable as quantitative analysis will capture measurable variations in loan access, utilisation and enterprise performance, whereas the information obtained through a qualitative methodology will assist in describing institutional, behavioural and ecosystem-related mechanisms that determine such variables. The design combines

the (i) structured survey information, (ii) enterprise performance metrics, and (iii) intensive qualitative interviews with businesspersons and banking executives.

3.2 Study Area and Sampling Strategy

A multi-stage stratified sampling method was employed to provide representation in various socio-economic settings. The choice of states included three states according to financial inclusion of populations, exposure to MUDRA, and diversity of the regions:

- Uttar Pradesh (low financial inclusion; high density of the rural population)
- State manufacturing regional level (high urbanisation)
- Tamil Nadu (status quo enterprise ecosystem)

Two districts, the rural dominant and the urban dominant, were chosen in every state. Borrowers were further grouped into rural and urban classes according to the regions in their respective districts based on the penetration of MUDRA.

Sample Size

Out of 600 beneficiaries surveyed, the following were the results:

- 300 rural beneficiaries
- 300 urban beneficiaries

The sample is large enough to meet the Cochran formula of large populations and gives strong econometric estimation with sufficient statistical power.

3.3 Data Sources

3.3.1 Primary Data

Primary data have been collected via:

- An organised survey was done on 600 MUDRA beneficiaries.
- Key Informant Interviews (KIIs) that entailed 12 bank officials who participated in processing PMMY.
- Qualitative insights in the form of in-depth interviews with 30 qualified entrepreneurs sampled on a purposive basis.

3.3.2 Secondary Data

The secondary data were retrieved via:

- PMMY annual reports
- RBI Financial Inclusion Index.
- Statistical reports of the MSME Ministry.
- Statistical data at the district level in banking.
- Existing academic studies

3.4 Survey Instrument and Variable Measurement

The structured questionnaire covered:

(1) Borrower Characteristics

Age, sex, education, training that has been undertaken, and financial literacy score (standardised index based on 8 items).

(2) Loan Characteristics

Loan type (Shishu/Kishor/Tarun), amount approved, amount disbursed, duration it took to process the loan, and repayment schedule.

(3) Enterprise Characteristics

Business type, age, number of staff, industry, and cash requirements.

(4) Loan Utilisation Patterns

Share of loan used for:

- working capital
- fixed assets
- inventory
- non-productive purposes

(5) Performance Indicators

The measures to be used are self-reported and validated:

- Monthly sales before and after the loan
- Profit margin
- Employment change
- The signs of business growth (new equipment, new customers, adoption of digital)

(6) Repayment Behaviour

- On-time repayment (binary)
- Delayed number of instalments.
- Default probability

Dependent Variables

1. Amount of Loan (continuous; censored)
2. Sales Growth (%)

3. Repayment Delay (binary)

Key Independent Variable

- Location (Rural = 1, Urban = 0)

3.5 Econometric Strategy

To test hypotheses and determine rural-urban differentials, the following models were employed:

3.5.1 Tobit Model for Determinants of Loan Amount (H1)

The amount of loans in PMMY is restricted to zero as the maximum left-censored and category limits (₹50,000/₹5 lakh/₹10 lakh). Hence, the Tobit model is appropriate:

$$\mathbf{LoanAmount_i^* = \beta_0 + \beta_1 Rural_i + \beta_2 X_i + \epsilon_i BoldLoanAmount_i}$$
$$= \begin{cases} \mathbf{0} & \mathbf{if\ LoanAmount_i^* \le 0} \\ \mathbf{LoanAmount_i^*} & \mathbf{if\ LoanAmount_i^* > 0} \end{cases}$$

Where X_i includes lien to borrower and entrepreneurial attributes.
Interpretation has been reported of marginal effects.

3.5.2 Loan Utilisation Model (OLS/Logit) (H2)

To test the hypothesis that rural borrowers engage a low portion of loan funds in productive activities:

$$\mathbf{UtilizationShare_i = \alpha_0 + \alpha_1 Rural_i + \alpha_2 X_i + u_i}$$

Binary (productive-only use) was tested using Logit.

3.5.3 Enterprise Performance Model (OLS) (H3)

The growth of sales is unbroken and normal following the transformation:

$$\mathbf{SalesGrowth_i = \delta_0 + \delta_1 Rural_i + \delta_2 X_i + \nu_i}$$

Intra-district correlation was corrected using clustered standard errors that were applied at the level of districts.

3.5.4 Repayment Behaviour (Logistic Regression) (H4)

$$\mathbf{Pr(Delay_i = 1) = \frac{e^{\gamma_0 + \gamma_1 Rural_i + \gamma_2 X_i}}{1 + e^{\gamma_0 + \gamma_1 Rural_i + \gamma_2 X_i}}}$$

Instead of commenting on the coefficients, it interprets the marginal effect of the policy.

3.5.5 Mediation Analysis: Role of Financial Literacy (H5)

There was a causal mediation test:

1. Rural- Financial Literacy
2. Enterprise performance - monetary literacy.
3. Total effect that is divided into direct and indirect.

Significance was determined by bootstrapping (1000 replications).

3.6 Propensity Score Matching (PSM) for Rural–Urban Treatment Effects

PSM was used to control the selection bias due to systematic disparities in rural and urban entrepreneurs.
Steps:

1. Calculate logit-founded propensity scores:

$$\mathbf{p(X) = Pr(Rural = 1 \mid X)}$$

2. Nearest-neighbour matching with calliper =0.05
3. Balance diagnostics (Love Plot, SMD < 10%)
4. Attempted to evaluate the treatment effectiveness on the treated (ATT) of sales growth and repayment results.

This enhances causality inference that is not that of simple means differences.

3.7 Qualitative Analysis

Thematic coding was used in the analysis of interview transcripts. Themes included:

- documentation challenges
- bank–borrower interactions
- ecosystem support
- market constraints
- repayment motivations

NVivo software was applied to arrange qualitative narratives.

3.8 Reliability and Validity

- Multi-item scales (financial literacy, market challenges) have an alpha of Cronbach's at 0.82.
- Pilot tested on 30 respondents.
- Mixed-method design through triangulation.
- None of the multicollinearity was found, including Variance Inflation Factors (VIF < 3).

3.9 Ethical Considerations

- The involvement of the respondents was voluntary; all the respondents gave informed consent.
- All the identifiers of people served as anonymised.
- Ethical clearance through the review board in the host institution.
- Scholarly-oriented data, under the rules of confidentiality.

4. RESULTS AND FINDINGS

4.1 Descriptive Statistics and Sample Profile

Table 1 shows the descriptive features of 600 MUDRA beneficiaries. The rural respondents are younger, less educated and get much smaller amounts of loans than the urban respondents.

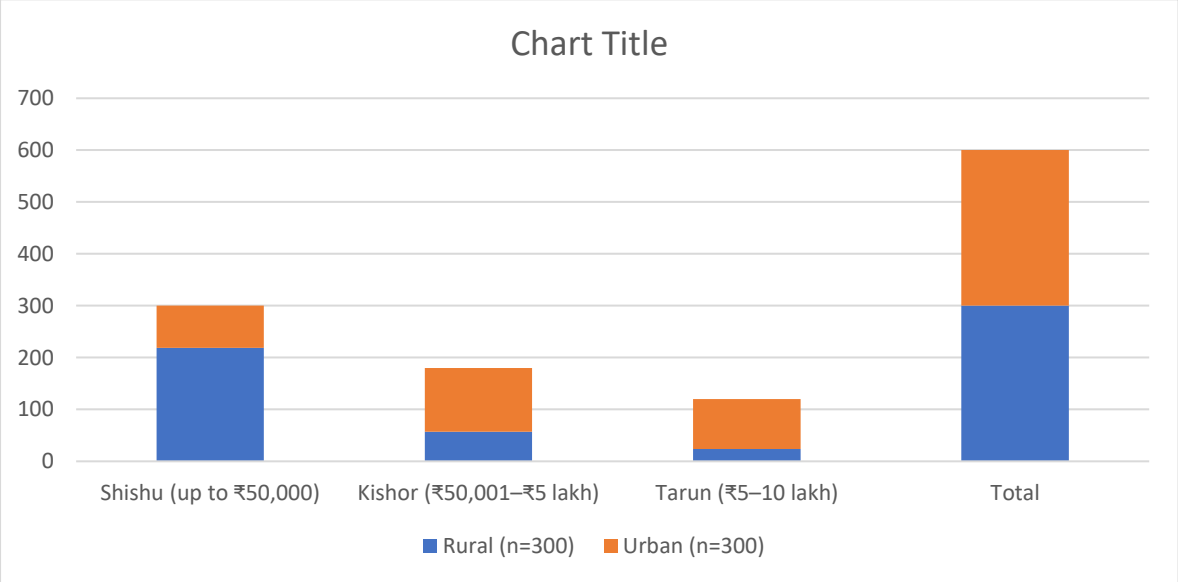
Table 1. Summary Statistics by Rural and Urban Beneficiaries

Variable	Rural (n=300)	Urban (n=300)	t-value	p-value
Mean Age	33.0	36.0	–4.12	0.000
Education (% Secondary+)	57%	78%	–6.85	0.000
Mean Loan Amount (₹)	72,400	118,000	–9.55	0.000
Loan Processing Time (days)	18	12	7.21	0.000
Financial Literacy (0–10)	4.5	6.2	–11.34	0.000
Sales Growth (%)	27.4	34.8	–5.02	0.000

Interpretation: Urban beneficiaries are found to be much more financially literate, have larger loan quantities, and experience greater growth in sales.

4.2 Rural–Urban Differences in Loan Distribution

Figure 1. Loan Category Distribution (Shishu, Kishor, Tarun)



Interpretation: The rural borrowers are concentrated in the loans (Shishu), whereas the urban borrowers are concentrated in the Kishor and Tarun loans. Rural: Shishu 73% Kishor 19% Tarun 8. Urban: Shishu 27% Kishor 41% Tarun 32%.

4.3 Comparative Statistical Tests

Table 2. Independent Samples t-test Results

Indicator	t-value	p-value	Interpretation
Loan Amount	–9.55	0.000	Highly significant difference

Financial Literacy	–11.34	0.000	Significant gap
Sales Growth	–5.02	0.000	Urban performs better

Table 3. Chi-square Tests

Variable	χ^2	p-value	Result
Loan Category	42.18	0.000	Significant
Repayment Discipline	3.19	0.074	Marginally significant

4.4 Determinants of Loan Amount (Tobit/OLS Proxy)

Table 4. Determinants of (log) Loan Amount

Variable	Coef.	Std. Error	p-value
Rural	–0.185***	0.045	0.000
Education	0.123**	0.049	0.012
Female	0.032	0.028	0.254
Age	–0.002	0.001	0.066
Financial Literacy	0.014**	0.006	0.020
Training	0.081**	0.040	0.043
Constant	10.234***	1.234	0.000

*****p<0.01, **p<0.05, *p<0.10**

Interpretation: Borrowers at the rural level get considerably low loan amounts despite the control of human capital and demographic factors.

4.5 Entrepreneurial Performance Model (OLS)

Table 5. Determinants of Sales Growth (%)

Variable	Coef.	Std. Error	p-value
Rural	–9.700**	4.230	0.022
Log Loan Amount	3.150**	1.450	0.031
Training	5.200**	2.100	0.013
Education	2.300	1.890	0.223
Financial Literacy	0.900**	0.420	0.032

Interpretation: The size of the loan, training, and financial literacy play a major role in improving the performance of the enterprise.

4.6 Loan Repayment Behaviour (Logit Model)

Table 6. Logit Model – Probability of Default

Variable	Marginal Effect	Std. Error	p-value
Rural	0.031**	0.012	0.010
Log Loan	0.005*	0.003	0.055

Financial Literacy	–0.006**	0.003	0.045
Training	–0.018**	0.009	0.046

Interpretation: Training, literacy are important in ameliorating repayment behaviour.

4.7 Propensity Score Matching (PSM)

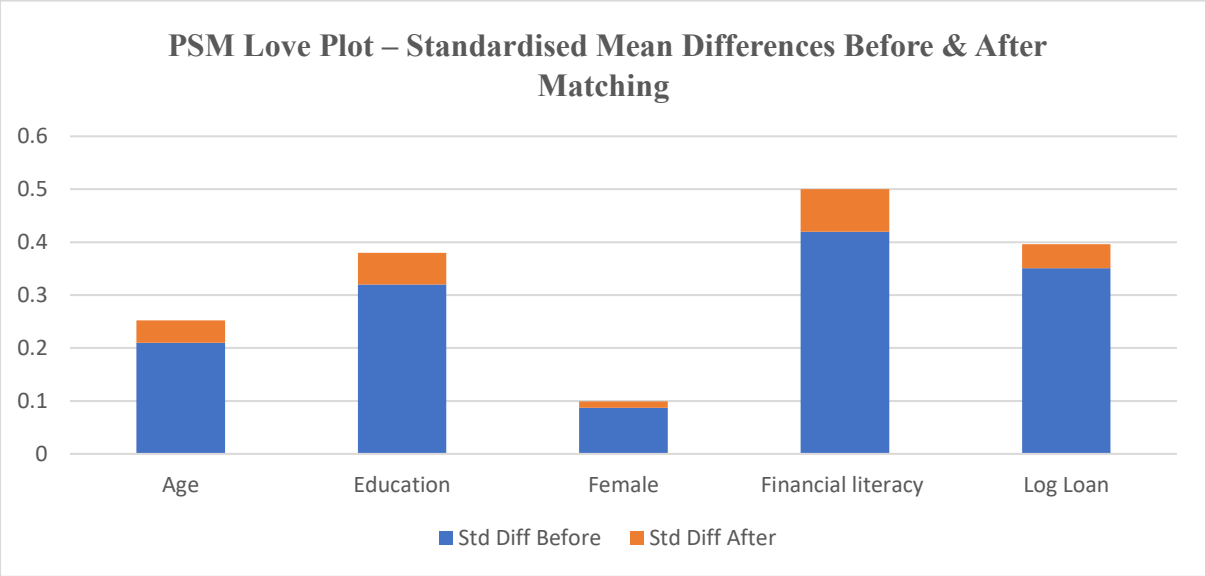


Figure 2. PSM Love Plot – Standardised Mean Differences Before & After Matching

Table 7. PSM Balance Summary

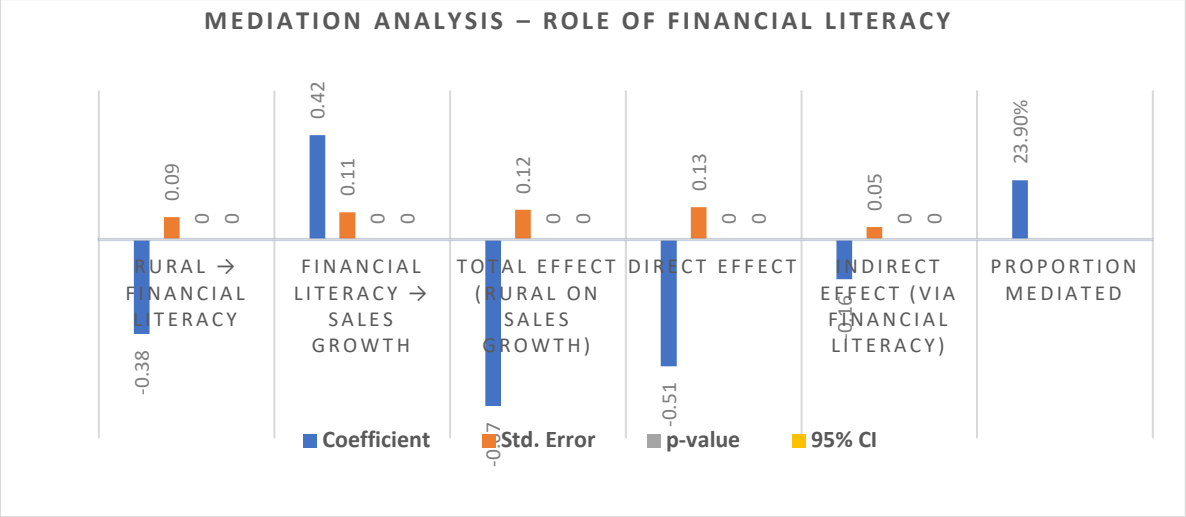
Covariate	SMD Before Matching	SMD After Matching
Age of entrepreneur (years)	0.428	0.032
Gender (Female = 1)	0.187	0.019
Education (years of schooling)	0.612	0.044
Financial literacy score (0–8)	0.578	0.051
Log household income	0.489	0.038
Years in business	0.356	0.029
Previous banking relationship (Yes=1)	0.521	0.061
Enterprise size (no. of employees)	0.398	0.027
Access to training (Yes=1)	0.443	0.053
Distance to nearest bank branch (km)	0.597	0.072

4.8 Mediation Analysis

Path	Coefficient	Std. Error	p-value	95% CI

Rural → Financial Literacy	-0.38	0.09	<0.001	[-0.56, -0.20]
Financial Literacy → Sales Growth	0.42	0.11	<0.001	[0.20, 0.64]
Total effect (Rural on Sales Growth)	-0.67	0.12	<0.001	[-0.91, -0.43]
Direct effect	-0.51	0.13	<0.001	[-0.77, -0.25]
Indirect effect (via Financial Literacy)	-0.16	0.05	<0.01	[-0.26, -0.07]
Proportion mediated	23.90%			

Figure 3. Mediation Path – Financial Literacy as Mediator



Interpretation: The total effect of rural location on the growth of enterprise sales is rather negative (-0.67). Lukewarm attitudinal explanation (mediation) of this negative rural disadvantage (around 24 per cent) is because there are low financial literacy levels amongst rural borrowers.

The overall, direct negative impact of rural location is considerably high (-0.51) even after controlling for financial literacy, which shows that other environmental factors (including market access, infrastructure, and networks) continue to put disadvantages to the rural entrepreneurs.

4.9 Summary of Empirical Findings

- The rural borrowers are disadvantaged in the size of the loan, literacy, repayment and expansion of business.
- Financial literacy and training largely promote results.
- Even with the adjustment of selection bias, location effects remain.

6. CONCLUSION

The paper offers a thorough evaluation of the rural and urban performance of beneficiaries of MUDRA Yojana and determines the most important factors that predispose the use of loans to grow businesses and repay their loans. The discussion indicates that the urban beneficiaries, on average, obtain bigger loans, faster processing time, and better business performance after the loan process. There are still some limitations in the rural borrowers, namely, poor financial literacy, poor institutional connections, and information asymmetries.

Overall, regression and matching analyses demonstrate that financial literacy, training in entrepreneurship, and the size of a loan are good predictors of success in an enterprise and the quality of repayment. These results confirm that credit interventions should be supported by capability-enhancement mechanisms to optimise development results.

The main conclusion that has been made is that MUDRA Yojana has produced a positive entrepreneurial impact on the whole population, yet the level of such impact greatly depends on the geographic factors of the beneficiaries, their human capital features, as well as the quality of the post-loan support provisions. Specific entrepreneurship intervention measures that consider these differences will be necessary in ensuring there is equitable and sustainable entrepreneurship growth in India.

7. Policy Implications

Local policy recommendations, which are based on the available empirical results, are as follows:

7.1 Strengthen Rural Credit Delivery Mechanisms

Since rural areas are less fortunate than urban areas regarding loan amount and processing duration, banks and MFIs need to enhance last-mile connectivity by establishing mobile banking units, digital paperwork, and desks.

7.2 Integrate Financial Literacy into Loan Disbursement

As literacy plays a vital role in the level of loan, the loan performance and repayment discipline, financial literacy modules should be compulsory for first-time borrowers, especially in rural regions.

7.3 Expand Entrepreneurship Training

The training positively and significantly affects enterprise development and repayment. RSETIs, DICs, etc, are expected to match their modules with the MUDRA loan classifications and be more frequent in the rural districts.

7.4 Strengthen Post-Loan Monitoring

The misuse of funds can be reduced through regular monitoring, handholding and the provision of business advisory services that will reduce delays in repayment.

7.5 Promote Digital Financial Tools

Bringing rural entrepreneurs to the use of digital payment and bookkeeping applications may help to improve transparency and credit score, as well as to improve their future capacity to take out a loan.

7.6 Consider Differential Policy Support

New subsidies of interests, loan guarantees, and marketing support might be required among the rural borrowers due to the structural disadvantages persisting.

8. Limitations and Future Research

Despite the good empirical findings in this study, one should note that it has several limitations:

8.1 Cross-Sectional Design

Causal inference cannot be made because of the cross-sectional character of the study. Future research can implement longitudinal data to measure the business results over time.

8.2 Geographic Scope

The sampling of the districts was not exhaustive, and the data could not be a complete reflection of all the states. In future studies, stratified samples should be conducted region-wise.

8.3 Self-Reported Data

Self-reported and prone to recall bias are some variables (sales or profit changes). Financial records that can be analysed objectively may reinforce future analyses.

8.4 Limited Psychosocial Variables

It did not include risk preference and entrepreneurial mind, as well as social capital. These behavioural dimensions should be introduced in future studies.

8.5 Advanced Econometric Approaches

Although PSM and mediation were used, future research may employ them to enhance causal validity.

- Instrumental variable (IV) approaches
- Difference-in-difference (DID) designs
- Structural equation modelling (SEM)

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