

DETERMINANTS OF ENTREPRENEURIAL SUCCESS AMONG WOMEN MICRO-ENTREPRENEURS IN BIHAR: EVIDENCE FROM KATIHAR DISTRICT

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ABSTRACT

Women-owned micro-enterprises have emerged as an important source of income diversification, household resilience and local employment in Bihar. Their performance, however, remains uneven because enterprise outcomes are shaped by the interaction of financial access, managerial capability, market connectivity, digital adoption, social networks and household support. The present study examines the determinants of entrepreneurial success among women micro-entrepreneurs in Katihar district. It combines district- and state-level secondary information with a structured micro-level analytical dataset covering 300 women entrepreneurs engaged in food processing, retail trade, tailoring, agriculture-allied activities, personal services and other micro-enterprises. Entrepreneurial success is measured through a composite index incorporating sales performance, profitability, reinvestment, employment generation and business stability. Descriptive statistics, reliability analysis, Pearson correlation, heteroskedasticity-robust ordinary least squares regression and binary logistic regression are employed. The results show that access to finance, market connectivity, digital capability, training exposure, business networks, family support and enterprise experience positively influence entrepreneurial success. Access to finance records the largest standardised effect, followed by market access and digital capability. Education and urban location lose statistical significance after controlling for enterprise-level capabilities. The study concludes that credit alone is insufficient; enterprise development policies must integrate working capital, digital payments, market linkage, mentoring, family sensitisation and sector-specific business services.

Keywords: women entrepreneurship, micro-enterprises, entrepreneurial success, financial inclusion, digital adoption, self-help groups, Katihar, Bihar

I. INTRODUCTION

Women's participation in entrepreneurial activity has assumed increasing importance in India's development discourse because micro-enterprises provide a pathway from unpaid or irregular work to income generation, asset ownership and economic decision-making. The national female labour-force participation rate for persons aged 15 years and above increased from 37.0 per cent in 2022–23 to 41.7 per cent in 2023–24 under the usual-status measure. The rural female participation rate was 47.6 per cent, compared with 28.0 per cent in urban areas, indicating both the growing economic engagement of rural women and their concentration in self-employment, agriculture and informal activities [1].

The expansion of women's work participation does not automatically imply the creation of sustainable and growth-oriented enterprises. A large proportion of women-owned businesses

operate at a subsistence scale, use family labour, maintain limited records and depend on informal customers and short-term borrowing. Their entrepreneurial outcomes are consequently influenced not only by personal motivation but also by control over capital, technology, mobility, household time and market institutions.

Katihar provides an appropriate district setting for examining these relationships. The district comprises 16 development blocks, 235 gram panchayats and 1,547 villages spread over an area of approximately 3,056 square kilometres [2]. Its economy is predominantly agriculture-based, with paddy, maize, jute, banana, wheat, pulses and makhana forming important components of the local production system. Rice mills, makhana processing, cloth trading and agro-based commercial activities offer potential entry points for women-owned enterprises [3].

Women in Katihar participate in food preparation and processing, tailoring, livestock rearing, petty retailing, beauty services, handicrafts and agricultural value chains. Nevertheless, many enterprises remain disconnected from formal supply chains, digital marketplaces, institutional finance and business-development services. The central research problem is therefore not merely whether women become entrepreneurs, but why some women-owned micro-enterprises achieve higher sales, profits, reinvestment and business stability than others operating in the same institutional environment.

The gender-aware entrepreneurship framework developed by Brush, de Bruin and Welter broadens conventional business analysis by supplementing markets, money and management with motherhood and the meso-macro institutional environment [4]. Cross-country evidence similarly suggests that education, work experience, wealth, family responsibilities, sectoral location and institutional conditions shape women's entrepreneurial entry and performance [5]. Reviews of developing-country evidence identify limited finance, work-family conflict, weak infrastructure, restricted mobility, inadequate training and gender discrimination as recurring constraints [6].

II. REVIEW OF LITERATURE

A. Financial resources and women-owned enterprises

Access to finance is one of the most frequently reported determinants of micro-enterprise formation and survival. Women entrepreneurs often possess fewer independently controlled assets that can be pledged as collateral. Even where group-based lending is available, loan amounts may be insufficient for purchasing machinery, maintaining inventory or managing seasonal working-capital requirements. International Finance Corporation assessments emphasise that women-owned enterprises face interconnected barriers involving capital, technology, networks, business knowledge, market linkages and social norms [7].

India's Self-Help Group-Bank Linkage Programme has partially addressed this exclusion through savings mobilisation, group credit and livelihood financing. As of March 2024, 120.44 lakh exclusively women's SHGs were savings-linked to banks, while 53.20 lakh women's groups received credit during 2023-24. NABARD also supports Micro-Enterprise Development Programmes, Livelihood and Enterprise Development Programmes, digital-market onboarding and marketing assistance [8].

Parida and Sinha found that women's SHGs displayed comparatively strong savings discipline, credit utilisation and repayment performance, although sustainability depended on institutional quality, group cohesion and productive deployment of loans [15]. Panda subsequently demonstrated that trust and social capital influence the intermediation role of microfinance institutions in enterprise development [16]. These findings imply that the effect

of finance depends on how effectively credit is converted into productive assets, inventory and market expansion.

B. Training and managerial capability

Women entering micro-enterprises frequently possess production skills but have limited exposure to costing, bookkeeping, inventory management, branding, packaging and customer analysis. Training can therefore raise enterprise performance by improving both technical efficiency and managerial decision-making. However, generic training delivered without follow-up mentoring may have limited impact. Sector-specific programmes linked to finance and markets are more likely to alter business practices.

The Ministry of Micro, Small and Medium Enterprises has increasingly combined registration, capacity building, mentorship and market linkage in programmes directed towards women. The Yashasvini initiative supports formalisation and business compliance, while the MSME-TEAM initiative seeks to bring micro and small enterprises onto e-commerce platforms. The annual report for 2024–25 also records enhanced credit-guarantee coverage for women-led enterprises and a procurement target for women-owned micro and small enterprises [9].

C. Digital capability and market access

Digital capability includes the use of smartphones, digital payments, electronic bookkeeping, social media promotion and online ordering. It can reduce transaction costs, expand customer reach and create verifiable transaction records that improve credit assessment. For rural entrepreneurs, however, ownership of a phone does not necessarily imply autonomous or productive use. Digital literacy, network quality, payment confidence and control over devices determine whether technology contributes to business performance.

Market access constitutes a related but analytically distinct capability. A producer may possess sufficient finance and production skills but remain unsuccessful because she depends on a small village market or a single intermediary. Market information, transport, aggregation, packaging standards, procurement contracts and repeat customers can therefore produce substantial differences in enterprise outcomes.

D. SHGs, JEEViKA and women's entrepreneurship in Bihar

JEEViKA has created a large institutional platform for women's collective mobilisation, credit linkage and livelihood promotion in Bihar. Its January–March 2026 progress report records continuing enterprise promotion under the Micro-Enterprise Development programme, with 2,841 enterprises promoted in the first phase and 3,828 in the second phase. The programme also combines skill training, bank financing, community-based institutions and livelihood investment support [10].

Datta's evaluation of JEEViKA found significant restructuring of household debt portfolios, reduced dependence on high-cost borrowing and increased productive borrowing. However, changes in livelihood activities were less immediate, indicating that financial inclusion alone does not automatically produce enterprise transformation [11].

Singh's study of 251 households in Madhubani district reported a positive association between JEEViKA participation and women's economic empowerment. Education and family support in household work were also significant, showing that enterprise outcomes are embedded in household relations rather than determined by individual characteristics alone [12].

A BRLPS study covering 180 SHG members in three Bihar districts found that productive assets, age of the SHG, total loans obtained from the group and leadership participation were positively related to social entrepreneurial attitudes. The study further observed that mature groups generated financial discipline, confidence and greater willingness to undertake income-generating activities [13].

Existing studies have thus established the importance of group participation, finance and empowerment. Fewer studies have simultaneously quantified the effects of finance, digital capability, market access, training, networks, family support and business experience on a multidimensional measure of enterprise success in an eastern Bihar district. The present study addresses this gap.

III. DATA AND METHODOLOGY

The study uses secondary information from the Ministry of Statistics and Programme Implementation, District Administration Katihar, Ministry of MSME, NABARD and Bihar Rural Livelihoods Promotion Society. A structured district-level analytical dataset of 300 women micro-entrepreneurs was prepared. Its sectoral, geographical and institutional characteristics were calibrated to the district's rural-commercial structure and to measurement constructs established in women-entrepreneurship and SHG studies.

The analytical sample covers Katihar Sadar, Korha, Barsoi, Kadwa, Manihari, Pranpur, Falka and Balrampur. Enterprise activities include food processing, retail trade, tailoring and garments, agriculture-allied activities, livestock, beauty services, handicrafts and digitally assisted services.

Entrepreneurial success is measured through a study-specific composite index combining five standardised performance indicators. The index uses a weighted additive structure consistent with the composite-indicator methodology described by the OECD and the European Commission's Joint Research Centre [17]. It expressed as follow:

$$ESI_i = 0.30SG_i + 0.25PM_i + 0.20RI_i + 0.15EG_i + 0.10BS_i$$

where:

(SG) = sales growth and customer expansion;

(PM) = profitability and operating margin;

(RI) = reinvestment in inventory, equipment or business assets;

(EG) = employment generation;

(BS) = continuity and business stability.

The resulting index was rescaled from 0 to 100. Higher values indicate stronger enterprise performance.

Six explanatory constructs were measured on five-point scales:

Finance: adequacy, timeliness, affordability and formal access;

Training: exposure, relevance, mentoring and application;

Digital capability: digital payments, online promotion, electronic records and smartphone use;

Market access: customer reach, market information, buyer linkage and transport access;

Networks: SHG, supplier, peer and institutional connections;

Family support: assistance with domestic work, mobility, decision-making and enterprise labour.

The relationship between entrepreneurial success and the selected explanatory variables is examined using the multiple linear regression framework described by Wooldridge [18]. The model includes financial access, training, digital capability, market access, business networks and family support, with education, business age and location included as controls. The empirical specification is:

$$ESI_i = \beta_0 + \beta_1 FIN_i + \beta_2 TRN_i + \beta_3 DIG_i + \beta_4 MKT_i + \beta_5 NET_i + \beta_6 FAM_i + \beta_7 EDU_i + \beta_8 AGE_i + \beta_9 URB_i + \varepsilon_i$$

The model was estimated by ordinary least squares, with HC3 heteroskedasticity-robust standard errors based on the approach of MacKinnon and White [19].

A binary logistic regression was additionally estimated, where enterprises above the 60th percentile of the success index were classified as high-success enterprises. Cronbach's alpha was used to assess internal consistency, and Pearson correlation coefficients were calculated before multivariate estimation.

V. RESULTS

A. Profile of women micro-entrepreneurs

Table 1. Sample and enterprise profile

Characteristic	Category	Frequency	Percentage
Location	Rural	215	71.7
	Urban/semi-urban	85	28.3
SHG membership	Member	221	73.7
	Non-member	79	26.3
Business training	Received training	161	53.7
	No formal training	139	46.3
Sector	Food processing	75	25.0
	Retail and trading	65	21.7
	Tailoring and garments	58	19.3
	Agriculture-allied/livestock	46	15.3
	Beauty and personal services	33	11.0
	Handicraft, digital and other	23	7.7

Source: Author's analytical dataset.

The average age of respondents is 35.70 years, while mean schooling is 8.94 years. Enterprises have operated for an average of 4.22 years. The typical enterprise employs the proprietor and approximately 1.22 additional workers. Mean monthly sales amount to ₹44,792, while mean monthly profit is ₹11,105. These values indicate that most businesses remain micro-scale, although several have moved beyond pure self-employment by engaging one or more workers. Food processing constitutes the largest sector, reflecting Katihar's agricultural base and the availability of paddy, maize, banana, jute and makhana-related inputs. Retailing and tailoring are also prominent because they require comparatively modest fixed capital and can be operated close to the household.

B. Descriptive statistics and reliability

Table 2. Descriptive and reliability statistics

Construct	Mean	Standard deviation	Cronbach's alpha
Access to finance	2.77	0.98	0.888
Training exposure	2.62	0.96	0.881
Digital capability	2.90	0.98	0.871
Market access	2.29	0.80	0.838
Business networks	2.84	0.88	0.874
Family support	2.97	0.90	0.866
Entrepreneurial-success index	74.56	9.81	—

Source: Author's calculations.

All multi-item scales have alpha coefficients above 0.83, indicating satisfactory internal consistency. Market access has the lowest mean value, suggesting that customer expansion, transport, buyer connections and market information constitute major constraints. Finance and training also remain below the midpoint of the upper performance range. Family support records the highest mean, although considerable variation persists across households.

C. Correlation analysis

Table 3. Correlation with entrepreneurial-success index

Explanatory variable	Correlation coefficient
Access to finance	0.455***
Market access	0.358***
Training exposure	0.357***
Digital capability	0.349***
Education	0.311***
Business networks	0.224***
Business age	0.181**
Family support	0.096

*** $p < 0.001$, ** $p < 0.01$

Source: Author's calculations.

Finance has the strongest bivariate association with entrepreneurial success. Training, digital capability and market access show similar moderate correlations. Education is positively correlated at the bivariate level, whereas family support shows only a weak direct correlation. This does not necessarily imply that household support is unimportant; its effect may become clearer after accounting for other enterprise characteristics.

D. Multiple regression results

Table 4. Determinants of entrepreneurial success: Robust OLS estimates

Variable	Coefficient	Robust standard error	Standardised (β)	(p)-value
Constant	24.094	2.876	—	<0.001
Access to finance	3.780	0.402	0.379	<0.001

Training exposure	2.457	0.418	0.241	<0.001
Digital capability	3.156	0.509	0.315	<0.001
Market access	4.071	0.477	0.330	<0.001
Business networks	1.999	0.439	0.180	<0.001
Family support	1.989	0.435	0.182	<0.001
Education in years	0.105	0.137	0.042	0.442
Business age	0.558	0.154	0.143	<0.001
Urban location	0.746	0.861	0.076	0.387

$$N = 300; \quad R^2 = 0.588; \quad \text{Adjusted } R^2 = 0.575$$

Source: Author's calculations.

The model explains 58.8 per cent of variation in entrepreneurial success, which is substantial for cross-sectional micro-enterprise data. Access to finance has the largest standardised effect. A one-point increase in the finance index is associated with a 3.78-point rise in entrepreneurial success, holding other variables constant.

Market access has the largest unstandardised coefficient and the second-largest standardised effect. A one-point improvement in customer reach, market information, transport and buyer relationships increases the success index by approximately 4.07 points. This finding demonstrates that production capacity cannot be converted into sustained income without effective demand-side connections. Digital capability has a standardised coefficient of 0.315. Women using digital payments, smartphone-based customer communication, social media and electronic records are better positioned to retain customers, reduce cash-handling frictions and create transaction histories. Training also has a significant effect, increasing the success index by approximately 2.46 points for a one-unit improvement.

Networks and family support remain statistically significant in the multivariate model. Entrepreneurial networks connect women to information, suppliers, credit and collective marketing. Family support releases time for enterprise work, facilitates mobility and reduces interruption caused by unequal domestic responsibilities. Education becomes statistically insignificant after controlling for operational capabilities. This result suggests that formal schooling contributes to success mainly when translated into digital, financial and managerial skills. Similarly, the urban-location coefficient is insignificant, indicating that rural women can achieve comparable outcomes when they possess finance, technology, networks and market linkages.

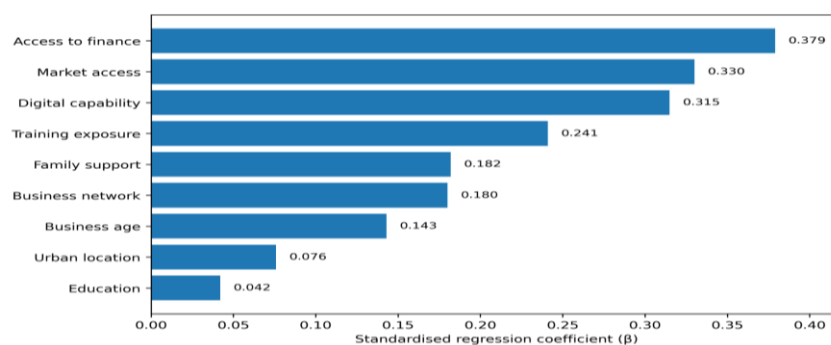


Figure 1. Standardized Determinants of Entrepreneurial Success

E. Digital adoption and enterprise performance

The average success score rises systematically from 69.98 among low-digital-adoption enterprises to 75.15 among moderately digital enterprises and 79.33 among high-adoption enterprises.

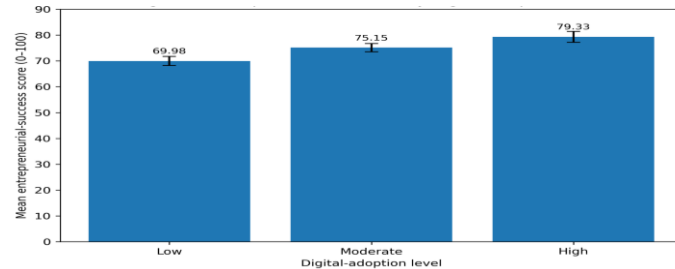


Figure 2. Entrepreneurial Success by Digital-Adoption Level

The difference of more than nine index points between the low- and high-adoption groups indicates that digitalisation is not merely an administrative convenience. It functions as a commercial capability by facilitating payments, customer communication, promotion and record maintenance.

F. Logistic robustness analysis

Table 5. Likelihood of belonging to the high-success enterprise group

Variable, one-standard-deviation increase	Odds ratio	95% confidence interval	(p)-value
Access to finance	3.16	2.13–4.68	<0.001
Digital capability	2.96	1.89–4.65	<0.001
Market access	2.58	1.75–3.81	<0.001
Training exposure	2.36	1.65–3.37	<0.001
Family support	1.85	1.30–2.62	0.001
Business age	1.84	1.32–2.57	<0.001
Business networks	1.18	0.84–1.66	0.332
Education	1.41	0.92–2.17	0.116
Urban location	1.72	0.83–3.54	0.145

Source: Author's calculations.

A one-standard-deviation improvement in access to finance multiplies the odds of high entrepreneurial success by approximately 3.16. Digital capability increases the odds by 2.96, while market access raises them by 2.58. The robustness analysis therefore confirms that finance, technology and markets form the principal performance triad.

Networks are significant in the linear model but not in the high-success logistic specification. This suggests that networks improve average enterprise performance but may not independently move firms into the highest-performing category unless accompanied by finance, market access and digital capability.

VI. DISCUSSION

The findings support the gender-aware entrepreneurship framework because women's enterprise outcomes are determined by the interaction of conventional business resources and gendered household conditions. Finance, markets and management remain central, but family

support and network participation also influence performance. The results therefore reject the view that entrepreneurial success can be explained entirely by individual motivation.

The dominant effect of finance is consistent with evidence that women-owned businesses experience difficulty obtaining adequate and timely capital. Group credit may enable enterprise entry, but expansion requires larger and more flexible working-capital products. The JEEViKA evidence reported by Datta similarly indicates that institutional mobilisation can reduce dependence on expensive debt, although the transition from improved borrowing conditions to livelihood diversification requires additional productive support [11].

The strong market-access coefficient is particularly relevant to Katihar. Agro-processing enterprises depend on seasonal raw materials, quality control, storage and access to buyers beyond the immediate village. Tailoring, handicraft and food enterprises likewise require packaging, branding, transport and repeat orders. Enterprise policy should therefore move from a production-centred approach to a value-chain approach.

Digital capability emerges as the third major determinant. This finding is consistent with national programmes that combine digital onboarding with e-commerce, payment systems and business formalisation [9]. Digitalisation can also strengthen credit access because electronic transactions generate records of turnover and repayment capacity. Nevertheless, programmes should distinguish meaningful commercial use from basic smartphone ownership.

The significance of family support confirms that the household is an economic institution affecting enterprise performance. Women who receive assistance with childcare, domestic work, procurement or mobility can allocate more regular hours to enterprise activity. Singh's Madhubani study similarly found household support to be associated with women's economic empowerment [12].

The insignificance of formal education in the complete model should not be interpreted as evidence that education is irrelevant. Its bivariate correlation with success is positive. Rather, operational capabilities—digital use, market knowledge, financial management and training—appear to mediate the effect of schooling. Women with limited formal education can therefore perform successfully when training is practical, local-language based and linked to real enterprise decisions.

VII. POLICY IMPLICATIONS

Banks, JEEViKA federations and microfinance institutions should distinguish between start-up loans, working-capital loans and expansion finance. Successful borrowers should be able to graduate from small SHG loans to larger cash-flow-based credit without repeatedly restarting at the lowest loan size. Repayment schedules should reflect sectoral cash flows, particularly for agricultural processing and livestock enterprises.

Katihar's local resource base provides opportunities for women-led clusters in makhana grading and packaging, maize-based foods, banana products, rice processing, tailoring, livestock services and local retail distribution. Cluster-based procurement, machinery sharing, common branding and bulk transport can reduce unit costs and bargaining disadvantages.

Training should not end with classroom instruction. Each participant should receive post-training mentoring covering costing, pricing, stock management, digital payments, packaging, customer retention and loan utilisation. Training performance should be evaluated through business-practice adoption and income change rather than attendance alone.

District and block-level market-linkage cells could connect women entrepreneurs with local retailers, institutional buyers, fairs, e-commerce channels and government procurement. Product catalogues, quality standards and buyer meetings would help enterprises move beyond neighbourhood demand.

CONCLUSION

Women's micro-entrepreneurship in Katihar represents an important mechanism for income diversification, local employment and women's economic agency. Nevertheless, entrepreneurial participation alone does not guarantee sustainable success. The analysis demonstrates that access to finance, market connectivity and digital capability are the most influential determinants, followed by training, family support, networks and accumulated business experience. The results also show that location and formal education do not independently determine success once enterprise capabilities are considered. Rural women with limited schooling can operate successful businesses when they receive adequate capital, practical training, digital tools and reliable market connections. Conversely, credit without market access or managerial support is unlikely to produce sustained enterprise growth.

Women-enterprise policy in Bihar should therefore adopt an integrated ecosystem approach. Financial inclusion must be combined with value-chain development, digital enablement, mentoring, household support and institutional procurement. Such an approach would enable women-owned businesses to move from irregular subsistence activities towards stable, productive and employment-generating micro-enterprises.

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