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EMPOWERING WOMEN ENTREPRENEURS IN INDIA: ENTREPRENEURIAL LEADERSHIP, SOCIAL CAPITAL, AND AI INNOVATION AS CATALYSTS FOR BUSINESS SUCCESS

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Abstract

Introduction: Women entrepreneurs encourage innovation. They contribute to the creation of jobs and the expansion of the Indian industry. They struggle to grow and compete in dynamic markets due to limited resources, networks, and technology.

The purpose: This study is to examine how entrepreneurial leadership and social capital influence the inventions of Indian women entrepreneurs and their business performance. It also examines the moderating effect of innovation skills on enhancing company success.

Research Gap and Objectives: Despite growing acknowledgement of women entrepreneurs, research on leadership, social capital, and creativity in Indian women-owned SMEs is minimal. The study looks at the direct effects of entrepreneurial leadership and social capital on business performance and the ability to come up with new ideas. It also looks at the role that innovation capability plays in these effects.

Methods: The research examines 375 women-owned small and medium enterprises in India. We used SEM via partial least squares (PLS) to analyse structured questionnaire data and determine variable correlations.

Results: Entrepreneurial leadership and social capital improve business creativity and efficiency. Innovative capability mediates the connection between entrepreneurs, leadership, social capital, and corporate performance, underscoring its significance.

Discussion: The findings suggest that female Indian entrepreneurs require leadership and strong networks of connections to maximise their creativity. A fast-changing business environment requires AI-driven innovation to solve problems and achieve competitiveness.

Originality: This study shows how entrepreneurial leadership, social capital, and creativity help Indian women-owned SMEs. AI innovation advances women entrepreneurs' profitability.

Keywords: Entrepreneurial leadership; social capital; business performance; women entrepreneurs; innovation capability; AI innovation.

1. Introduction

Women-led SMEs, especially in Karnataka, are essential to innovation, job creation, and inclusive growth in India.These women entrepreneurs overcame larger organisations by quickly adapting to

market changes. Their role in economic development is essential, as they stimulate corporate expansion, promote innovation, and strengthen communities [10].

In 2022, women entrepreneurs in India constituted 20% of all MSMEs and contributed 3.9% to the nation's GDP, an increase from 3% in 2017 (Ministry of MSME, 2022). This shows the need for strategic empowerment to help women entrepreneurs scale their impact and boost economic development. Women-led SMEs, especially in Karnataka, are essential to innovation, job creation, and inclusive growth in India [11][12]. These women entrepreneurs overcame larger organisations by quickly adapting to market changes. Their role in economic development is essential, as they stimulate corporate expansion, promote innovation, and strengthen communities [9]. In 2022, women entrepreneurs in India constituted 20% of all MSMEs and contributed 3.9% to the nation's GDP, an increase from 3% in 2017 (Ministry of MSME, 2022). This shows the need for strategic empowerment to help women entrepreneurs scale their impact and boost economic development.
The Resource Advantage Theory (RAT) (Hunt & Morgan, 1997) and Dynamic Capability (DC) paradigm (Teece, 1997) are strengthened by illustrating how social capital and entrepreneurial leadership assist women-led SMEs in Karnataka succeed. Rat asserts that competitive advantage necessitates distinctive organisational resources, encompassing social networks and leadership [1][3]. The DC framework fosters innovation to sustain competitiveness in a changing context. To run their businesses and create collaborative networks for capital, markets, and mentorship, women entrepreneurs in Karnataka require entrepreneurial leadership. AI-driven innovation, in conjunction with this leadership, boosts corporate competitiveness by facilitating data-driven decision-making, optimising operational efficiency, and enhancing consumer engagement [2].

To empower women entrepreneurs in Karnataka, prioritise:
1. ***Improve capital access***: offer personalised financial solutions.
2. ***Promote innovation ecosystems***: Enhance AI adoption via education and financial incentives.
3. ***Develop social capital***: Networks and mentoring foster trust and information exchange.
Entrepreneurship, social capital, and AI innovation have the potential to help Karnataka women entrepreneurs succeed, improve business performance, and promote India's economic growth and inclusiveness.

2. Background of this Study

Innovating, creating jobs, and promoting social inclusion, Indian women entrepreneurs are changing the economy. [13][15] contend that women-led SMEs have significant resilience and adaptability, qualities essential for overcoming economic difficulties and promoting equitable growth. Notwithstanding financial limitations, market restrictions, and societal norms, female entrepreneurs leverage their expertise, networks, and determination to achieve success. This research enhances the resource-based view (RBV) by incorporating additional elements and utilising the Digital Dynamic Capability Theory (DCT) in the context of women-led [5][4]. Women entrepreneurs comprised 20% of India's MSMEs and 3.9% of its GDP in 2022, up from 3% in 2017 (Ministry of MSME, 2022). This expansion indicates the increasing significance of women-owned businesses and the demand for stronger support systems to enable female entrepreneurs even more[7][8].
RAT of Competition (Hunt & Morgan, 1997) and the DC framework (Teece, 1997) underpin this study. Social capital and entrepreneurial leadership are essential to RAT's competitive advantage and financial prosperity.

The DC framework underscores an organization's capacity to identify opportunities, capitalise on them, and reallocate resources to swiftly adapt to market dynamics.

Women entrepreneurs rely on social capital, which includes networks, conventions, and trust, as well as group activities. It helps women-led SMEs overcome structural barriers by providing market opportunities, mentorship, and crucial resources [16][17]. Indian women entrepreneurs use community networks and informal support to solve business problems. Numerous research studies have investigated the impact of social capital on financial and non-financial performance outcomes, producing inconsistent findings Women entrepreneurs also require leadership. executives improve business performance and adjust to changing market needs by employing leadership attributes such as vision, risk-taking, innovation, and proactivity[18][20]. Entrepreneurial leadership and business performance are context-dependent, since some research have shown inconsistent outcomes The implementation of AI-driven technology is essential for fostering innovation and providing women-led SMEs with a competitive advantage. AI technologies enable predictive analytics, data-driven decision-making, and process optimisation, helping businesses spot market trends, improve operations, and engage customers [21][22]. Women-led SMEs can improve their competitive standing in dynamic marketplaces and substantially increase their innovation potential by incorporating AI into their operations. Despite increasing awareness of women entrepreneurs' contributions, studies investigating the interaction of social capital, entrepreneurial leadership, and inventive skills in affecting business success, especially in India, remains scarce. This study examines how these factors affect female entrepreneurs and AI-driven innovation to bridge this gap [23][24]. The study's findings aim to support and encourage women entrepreneurs. Inclusiveness, and sustainable economic growth in India, and offer insightful information to policymakers and business executives.

3. Research Objectives/Hypothesis

This study aims to establish a conceptual framework to examine the correlations among entrepreneurial leadership, social capital, AI-driven innovation, and business performance, with an emphasis on empowering women entrepreneurs in India.

The objectives of the study:

1. Examine the significance of social networks, trust, and shared norms in encouraging creativity through AI adoption and implementation in Indian women-led SMEs.
2. Analyse how vision, risk-taking, and responsiveness in entrepreneurial leadership affect AI adoption and advancement in woman-led SMEs in India.
3. Examining how social and cooperative networks boost financial and non-financial performance of Indian women-led SMEs.
4. Assess how entrepreneurial leadership affects growth, competitiveness, and success in Indian woman-led SMEs.
5. Analyse how AI-driven innovation boosts operations, customer engagement, and overall performance gains for women-led SMEs in India.
6. Examine how AI-driven innovation strengthens social capital, entrepreneurial leadership, and business success in women-led SMEs for long-term growth.

The hypotheses formulated based on the proposed framework are as follows:

H1: Social capital significantly It enhances AI-driven innovation capacities in women-led SMEs in India.

H2: Women-led SMEs in India benefit greatly from entrepreneurial leadership in AI-driven innovation.

H3: Social capital considerably boosts economic success for women-led SMEs in India.

H4: Entrepreneurial leadership improves business performance for women-led SMEs in India.
H5: AI-driven innovation boosts business performance for women-led SMEs in India.
H6: The relationship between entrepreneurial women-led SMEs in India mediates leadership and business performance. AI-driven innovation.

H7: AI-driven innovations influence the link between social capital and business performance in women-led SMEs in India.
This framework underscores the importance of entrepreneurial leadership and social capital, and AI-driven innovation is assisting women entrepreneurs in India in overcoming obstacles. This framework assists women entrepreneurs in India in overcoming challenges, achieving competitive advantages, and promoting sustainable business growth.

4. Conceptual Model

Conceptual Model: Empowering Women Entrepreneurs in India.
The conceptual model developed for this study integrates **entrepreneurial leadership**, **social capital**, **AI-driven innovation capabilities**, and **business performance** to examine their interrelationships in the context of women-led SMEs in India. This model is structured to capture the interplay between critical drivers of business success and highlights the mediating role of innovation capabilities in empowering women entrepreneurs.

Key Components of the Model

1. Entrepreneurial Leadership

the vision, creativity, and strategic concentration of women entrepreneurs. It promotes risk-taking, proactiveness, and creativity, which boost AI-based innovation and business performance.

2. Social Capital

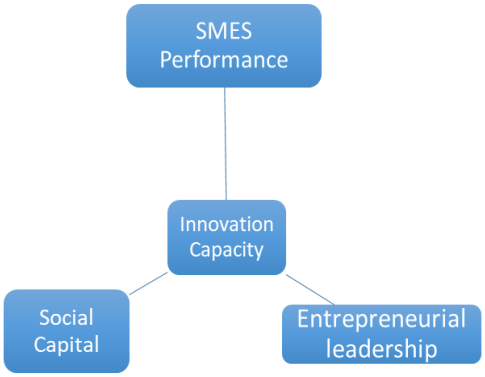
Social capital includes networks, trust, and collaborative norms that help women entrepreneurs obtain resources, penetrate new markets, and find mentorship. Sharing resources and engaging through social capital can boost creativity and commercial results.

3. Ability to innovate using AI

The capacity of women-led SMEs to implement and leverage AI technology for product innovation, process enhancement, and improved market adaptability. It links entrepreneurial leadership and social capital to the business performance.

3. Performance of Businesses

The business performance aspect examines women-led SMEs' profitability, market share, and sustainability. Entrepreneurial leadership, social capital, and AI-driven innovation improve corporate outcomes



The importance of the model

The suggested approach is beneficial both theoretically and practically, particularly for women-led Indian SMEs. The model illustrates the impact of entrepreneurial leadership, social capital, AI-driven innovation, and company performance on the success of women entrepreneurs.
The model uses AI-driven innovation as both a separate factor and a link between factors, making the Resource-Based View (RBV) and Digital Dynamic Capability Theory (DCT) better. This improves comprehension of the impact of technological improvements, leadership characteristics, and social networks on SME performance.
Policymakers, business leaders, and women entrepreneurs can all benefit from the method's useful recommendations. It underscores the significance of social capital and entrepreneurial leadership in the adoption and innovation of AI. Women-led SMEs can increase competitiveness, sustainable economic growth, and the economy.
The model illustrates the mediation of leadership, social capital, and commercial outcomes by AI-driven innovation. This knowledge helps SMEs deploy AI, allocate resources, and overcome structural constraints, boosting financial and non-financial results.
The idea helps women entrepreneurs overcome challenges, capitalise on opportunities, and prosper in changing business environments.

The Hypothesized Relationships in the Proposed Model

The hypothesized relationships in the proposed model are categorized as follows:

1. **Direct Effects**

- Social capital and entrepreneurial leadership show a direct effect on AI-driven innovation skills (H1, H2).
- Social capital and entrepreneurial leadership have a direct influence on business performance (H3, H4).
- AI-driven innovation capabilities directly improve business efficiency (H5).

2. **Mediating Effects**

• H6: AI-driven innovation capabilities serve as a mediator between entrepreneurial leadership and business performance.
• H7: AI-driven innovation mediates the relationship between social capital and business performance.
The current model highlights the significance of entrepreneurial leadership, social capital, and AI-driven innovation in assisting women entrepreneurs in India to surmount hurdles, get competitive advantages, and promote sustainable business success.

5. Research Methodology

The Karnataka Department of Trade and Commerce's list of registered Small and Medium Enterprises (SMEs) was the study's goal. Businesses had to be up and running for at least a year in order to be eligible for the study. There are 2,887 SMEs in Karnataka, which are divided between 2,735 small businesses and 152 medium-sized businesses. The necessary sample size was determined to be 352 SMEs using Slovin’s Methodology.
To make sure the sample represented the respective sizes of the two SME categories, a proportional random sampling technique was employed. The chance of selection was higher for larger categories. 333 small businesses and 19 medium-sized businesses made up the final sample.
The study employed a stratified random sample technique to choose the SMEs. First, the Karnataka Department of Trade and Commerce's statistics categorised enterprises. A random number generator

was thereafter employed to select the participants. The final responders—333 small company owners and 19 medium-sized business owners—had lead their enterprises for at least a year.

Research Instruments

The principal study tool was a structured questionnaire, disseminated through two methods: personally given questionnaires (hand-delivered to participants) and email-based questions. The survey employed a 5-point Likert scale to gather data about participants' thoughts and perceptions. The research assessed numerous essential variables:

1. **SME Business Performance**: This was assessed using five factors delineated by Hudson et al. (2001): quality, timing, financial performance, customer satisfaction, and human resources.
2. **Innovation Capability**: This was assessed using various indicators, including learning capability
3. **Social Capital**: The factor was assessed through three dimensions—relational capital, cognitive capital, and structural capital.
4. **Entrepreneurial Leadership**: Entrepreneurial leadership was assessed using five fundamental behaviours: Reactiveness, Risk taking, Innovation, Establishment and Ethics

Before the comprehensive data collection, the questionnaire was subjected to a validity and reliability evaluation via a pilot test with 30 SME respondents in Karnataka. The pilot test findings validated the questionnaire items as both valid and reliable, confirming their suitability for subsequent application. The stringent testing procedure confirmed the instrument's capacity to precisely collect the necessary data for the investigation.

6. Literature Review (aligned to objectives)

1. Social Capital and AI-Driven Innovation Capabilities

Businesses, especially women-led SMEs, need social capital—social networks, norms, and trust—to access tools, resources, and expertise needed for innovation [26][27]. Social capital helps entrepreneurs connect with financial institutions, legislators, and industry mentors, fostering collaboration and innovation [28][29]. Indian women entrepreneurs might improve AI-driven innovation capabilities to streamline operations and develop solutions tailored to certain markets by leveraging their social networks and linkages. Studies show that cognitive, relational, and structural social capital affect technological adoption and innovation performance [30][31].

2. Entrepreneurial Leadership and AI-Driven Innovation Capabilities

Entrepreneurial leadership has been defined by a visionary perspective, propensity for risk, and focus on innovation [32][33]. In order to promote creativity and implement AI-driven innovation within their businesses, women entrepreneurs frequently display these qualities. Research reveals entrepreneurial leadership develops tactics, motivation, and communication that drive innovation [34][35]. Research indicates that leaders' capacity to motivate and empower teams fosters innovative behaviour, allowing SMEs to maintain competitiveness in dynamic marketplaces [36][37]. Leadership among women entrepreneurs in India promotes the integration of AI technologies, resulting in innovative solutions that address market needs.

3. Social Capital and Business Performance

Social capital enhances the success of SMEs by providing access to both financial and non-financial resources.[38][39]. For women-led SMEs in India, social capital helps them reach more markets and better engage customers. Studies indicate that social capital enhances financial performance and operational efficiency [40]. Nevertheless, certain research has shown inconclusive outcomes, indicating that the influence of social capital on corporate performance may differ based on the setting [41][42]. In India, women entrepreneurs have recognised the relational and structural components of social capital as key factors in their business growth.

4. Entrepreneurial Leadership and Business Performance.

SME effectiveness depends on entrepreneurial leadership integrating business goals with market possibilities [43]. Women entrepreneurs in India frequently have leadership attributes that allow them to overcome problems, foster creativity, and efficiently manage resources. Research indicates that entrepreneurial leadership significantly contributes to corporate success, with attributes such as vision, innovation, and proactive behaviour positively impacting business results [44[. Some leadership attributes, such as a proactive attitude, may not always directly effect performance, requiring further research in India [45].

5. AI-Driven Innovation Capabilities and Business Performance.

With AI-driven innovation, SMEs may generate new products, optimise processes, and improve decision-making [46] found that AI technologies improve corporate performance by providing predictive insights, simplifying supply chains, and personalising client offerings. Women entrepreneurs in India who use AI-driven innovation have achieved a competitive edge and market reach. Research indicates that innovation capabilities are essential for enhancing both financial and non-financial performance in SMEs (Saunila et al., 2014).

6. Mediating Role of AI-Driven Innovation Capabilities.

The relationship between social capital, entrepreneurship, and business performance is well-established. Research demonstrates that strong social networks and relationships foster innovative practices, leading to improved organisational performance (Huang & Chen, 2017; Prihadyanti, 2010). Entrepreneurial leadership encourages creativity and adaptation, which boosts innovation (Fontana & Musa, 2017). The use of AI technologies in India's women-led SMEs amplifies these effects by providing advanced instruments for decision-making and problem-solving. Innovation capabilities mediate performance, social capital, and leadership, underscoring their significance in competitive advantage (Bagheri, 2017; Jafri et al., 2014).

7. Strategic Framework for Empowering Women Entrepreneurs

The literature emphasises entrepreneurial leadership, social capital, and AI-driven innovation as ways to help women entrepreneurs overcome systemic constraints and succeed. Indian women entrepreneurs may grow sustainably and boost the economy by creating innovative ecosystems, social networks, and leadership skills (Ali & Iskandar, 2016). The suggested framework aligns these components, creating an environment that allows women-led SMEs to thrive in dynamic marketplaces (Purwati et al., 2020).

7. Discussion

Analysis of Structural Equation Model with AMOS

This study created a theoretical model based on the research framework's principles and aspects. Structural Equation Modelling (SEM), a reliable statistical method that combines measurement and structural models, was used to examine the suggested links. Because it enables the simultaneous study of several variables, including direct and indirect effects, SEM is especially well-suited for assessing complicated interactions.

We used AMOS 4 software for data processing and SEM analysis since it can handle multivariate data and reliably estimate variable associations. AMOS is particularly effective for the validation of theoretical models and the testing of research hypotheses.

The study utilised the SEM approach to assess model fit and analyse the relationships between entrepreneurial leadership, social capital, AI-driven innovation capabilities, and business performance. This analysis facilitated the examination of direct and mediating effects, thus confirming the research hypotheses. The findings offer insights into the factors affecting the success

of women-led SMEs in Karnataka, India, highlighting the roles of AI-driven innovation, leadership traits, and social networks in enhancing business performance.

Data Analysis and Results

Analysis of Structural Equation Model with AMOS

This research developed a theoretical model based on the concepts and dimensions specified in the research framework. We used structural equation modelling (SEM), a robust statistical technique that integrates measurement and structural models to analyse the proposed relationships. Structural Equation Modelling (SEM) is a beneficial way to look at complex relationships because it lets you look at many variables at once and consider both direct and indirect effects. Because of its multivariate data handling and variable relationship estimation capabilities, we used AMOS 4 for data processing and SEM analysis. AMOS is effective for the validation of theoretical models and the testing of research hypotheses.

The study used the SEM approach to assess the model fit and analyse the relationships between entrepreneurial leadership, social capital, AI-driven innovation capabilities, and business performance. This analysis facilitated the examination of direct and mediating effects, thus confirming the research hypotheses. The results show what makes women-led small businesses in Karnataka, India, successful (Purwati et al., 2020). They show how AI-driven innovation, leadership traits, and social networks can improve business performance.

Goodness of Fit

Evaluating the Structural Equation Model (SEM) involves testing both the measurement and structural components to ensure alignment between the empirical data and the theoretical model. A model is considered a good fit when it demonstrates conceptual and statistical consistency with the observed data.

The overall fit of the model in this study was assessed using various fit indices. The results are summarized in the table below:

Table 1: Goodness of Fit Indices

No	Goodness of Fit Index	Cut-off Value	Results	Fitness
1	Chi-Square Significant Probability	≥ 0.05	1369.386 (p = 0.000)	Marginal Fit
2	GFI (Goodness of Fit Index)	≥ 0.90	0.824	Marginal Fit
3	AGFI (Adjusted Goodness of Fit Index)	≥ 0.90	0.792	Marginal Fit
4	TLI (Tucker-Lewis Index)	≥ 0.90	0.946	Good Fit
5	CFI (Comparative Fit Index)	≥ 0.90	0.952	Good Fit
6	NFI (Normed Fit Index)	≥ 0.90	0.916	Good Fit
7	IFI (Incremental Fit Index)	≥ 0.90	0.952	Good Fit
8	RMSEA (Root Mean Square Error of Approximation)	0.05 - 0.08	0.058	Good Fit

Source: AMOS Version 21 (2020)

The results indicate that while certain indices (GFI, AGFI, and Chi-Square probability) fall within the marginal fit category, the remaining indices (TLI, CFI, NFI, IFI, and RMSEA) demonstrate a good fit. This suggests that the overall model aligns well with the observed data and is suitable for validating the proposed relationships and hypotheses.

Hypothesis Testing

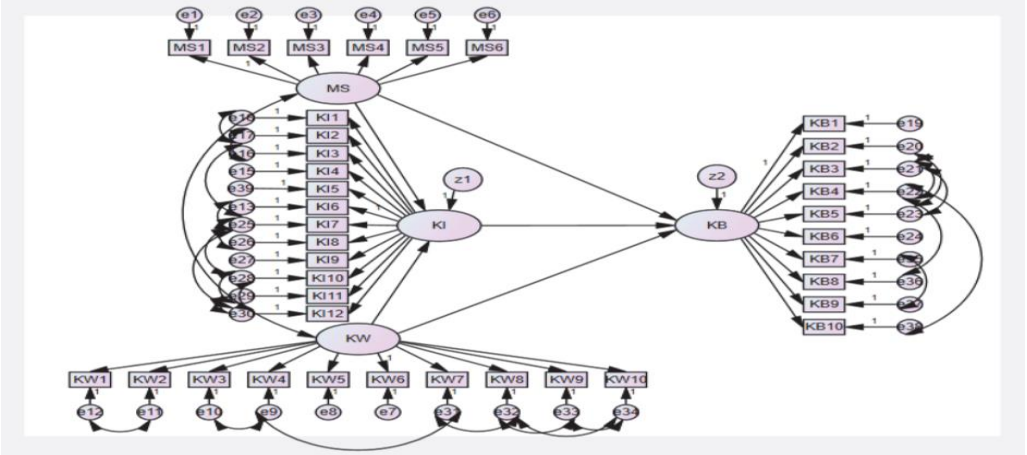
This study conducted hypothesis testing at a significance level of 0.05, utilising the t-count (critical ratio or CR) value for weight regression. In AMOS 21 software, a critical ratio (CR) value greater than 1.967 or a p-value below 0.05 results in the rejection of the null hypothesis (H0), suggesting support for the alternative hypothesis.

The results of the hypothesis testing/1summarized in the table below:

Table 2: Standardized Regression Weights

No	Endogenous Variable	Exogenous Variable	CR.	P	Conclusion
1	Social Capital	Innovation Capability	2.973	0.003	Accepted
2	Entrepreneurial Leadership	Innovation Capability	10.742	0.000	Rejected
3	Social Capital	SME's Performance	0.855	0.393	Accepted
4	Entrepreneurial Leadership	SME's Performance	3.779	0.000	Accepted
5	Innovation Capability	SME's Performance	2.311	0.021	Accepted

Source: AMOS version 21 (2020)



Note: MS = Social Capital, KW = Entrepreneurial Leadership. KI = Innovation Capability, KB = SME's Performance

Fig 2. AMOS Model

This study investigates the role of indirect variables in determining whether social capital and entrepreneurial leadership enhance business performance via innovation capabilities. The Sobel test assessed the significance of the indirect effects.

The calculator available at http://quantpsy.org/sobel/sobel.htm performs Sobel tests. Figures 3 and 4 illustrate the results of these computations and provide a detailed explanation of the indirect impacts discussed below.

This study clarifies the role of innovation capability as a mediator in the relationship between external and internal variables.

Test	Test Statistic	Std. Error	p-value
Sobel test	1.990091	0.01645	0.046581
Aroian test	1.943137	0.016847	0.052
Goodman test	2.040623	0.016042	0.041288

Table 3. Sobel Calculator 1

Parameter	Input/Result
a (Path Coefficient)	0.132
b (Path Coefficient)	0.248
s_a (Standard Error of a)	0.034
s_β (Standard Error of b)	0.107

Interpretation:
The **Sobel test** and **Goodman test** show statistically significant p-values (< 0.05), indicating that the **mediation effect is significant**.
However, the **Aroian test** yields a p-value of **0.0520**, which is slightly above 0.05, making it marginally insignificant.
Given that two out of the three tests confirm statistical significance, the results suggest that there is **sufficient evidence to support a significant mediation effect** of the mediator (Innovation Capability) between the independent variable and Business Performance

Table 4. Sobel Calculator 1

Parameter	Input/Result
a (Path Coefficient)	0.71
b (Path Coefficient)	0.248
s_a (Standard Error of a)	0.066
s_β (Standard Error of b)	0.107

Test	Statistic	Std. Error	p-value
Sobel Test	2.2658	0.0777	0.0235
Aroian Test	2.2565	0.0780	0.0240
Goodman Test	2.2752	0.0774	0.0229

The strong path coefficient a=0.71a = 0.71a=0.71 and moderate b=0.248b = 0.248b=0.248 suggest a significant indirect effect of the independent variable on Business Performance through the mediator (Innovation Capability).
All three tests (Sobel, Aroian, and Goodman) produce **statistically significant p-values (< 0.05)**, confirming that the mediation effect is reliable and significant.
These results highlight the critical role of **Innovation Capability** as a mediator in influencing Business Performance.
The results of the Sobel test are as follows:
1. Figure 3 presents a p-value of 0.046, which is below the 0.05 significance the limit. Innovation Capability significantly mediates the relationship between Social Capital and Business Performance, indicating an indirect effect.
2. Figure 4 reveals a 0.023 p-value, below 0.05. Innovation Capability significantly mediates the relationship between Entrepreneurial Leadership and Business Performance, demonstrating a substantial indirect effect.
The findings indicate that Innovation Capability serves as a mediator in the relationship among Social Capital, Entrepreneurial Leadership, and Business Performance.

1. Innovation and Social Capital

The study highlights how important social capital is for encouraging AI-driven innovation in Karnataka's women-led SMEs. Social capital supports development by improving knowledge sharing and lowering the cost of information acquisition. Synergistic network effects facilitate collaboration and resource sharing, thereby enhancing the development and adoption of innovative solutions (Abrahamson & Rosenkopf, 1997). Relational, cognitive, and structural social capital serve as essential facilitators of innovation (Jafri et al., 2014). Women entrepreneurs in Karnataka use formal networks, including government-supported cooperatives and informal associations, to foster innovation. SMEs need collaborative ecosystems that support these networks so they can compete.

2. Entrepreneurial Leadership and Innovation

Entrepreneurial leadership significantly influences innovation in women-led SMEs in Karnataka. Leaders utilising technology facilitate AI integration and digital transformation in corporate operations. Women entrepreneurs, especially those who are younger and knowledgeable about technology, employ AI-driven tools such as e-commerce platforms, social media, and data analytics for consumer engagement, supply chain management, and production optimisation. Entrepreneurial leadership cultivates adaptive techniques that empower firms to develop sustainably, maintain resilience, and preserve competitiveness in fluctuating marketplaces. These findings correspond with research (Shin & Zhou, 2007; Bagheri, 2017) highlighting the significance of leadership in fostering organisational innovation. Corporate Performance and Social Capital
Social capital indirectly enhances business performance in women-led SMEs in Karnataka by promoting creativity and collaboration. Formal networks endorsed by the government facilitate growth, whereas informal connections foster trust and the exchange of information. Social capital limits its direct influence on financial performance. The integration of social capital with AI technologies for market analysis, customer engagement, and supply chain optimisation can boost SMEs' resilience and competitiveness. This corroborates the findings of Sugiyanto and Marka (2017)

that social capital, in conjunction with strategic enablers such as innovation, propels sustained company success.

3. Entrepreneurship and Business Performance

Entrepreneurial leadership in Karnataka has transformed the performance of women-led SMEs, emphasizing strategic expansion and value creation (Jones & Crompton, 2009). Women entrepreneurs aged 20–40 have driven regional economic growth by leveraging education, digital skills, and strategic thinking. Programs tailored to the unique challenges faced by women entrepreneurs can further enhance their contributions. When combined with AI-driven innovation, strong entrepreneurial leadership boosts productivity, operational efficiency, and profitability. Policies and training programs focusing on leadership development and technology adoption can empower women entrepreneurs, ensuring sustainable growth and competitiveness in the Indian market.

4. **Innovation Capability and Business Performance**

Innovation capabilities are essential for improving the business performance of women-led SMEs in Karnataka. They can increase financial and operational performance and stay competitive in a changing market by innovating across goods, processes, and business models. Learning, access to varied sources of creativity, technical developments, and a culture of continual improvement promote innovation. Women entrepreneurs in Karnataka are leveraging technology and developing external collaborations to create innovative solutions that promote business growth. Robust innovation capabilities allow SMEs to react quickly to market fluctuations, seize emerging opportunities, and enhance resilience against competitive challenges. Strategic initiatives, including the adoption of e-commerce platforms, AI-driven tools, and advanced production methods, are crucial to their success. According to prior research (Calantone et al., 2002; Jiménez & Valle, 2011; Bowen et al., 2010), innovation drives corporate success and creates long-term value.

5. Mediating Innovative Capabilities: Social Capital and Business Performance

Innovative talents act as an intermediary between social capital and business performance in women-led small and medium-sized enterprises (SMEs). Effective social networks, trust, and collaboration among women entrepreneurs in Karnataka encourage creativity, hence enhancing economic success. Social capital, recognised as a valuable and renewable resource, enhances organisational innovation by promoting advancements in products, processes, and administrative activities. The Resource-Based View and Resource Advantage theories emphasise the significance of strategic resources, such as social capital, in enhancing long-term performance and competitive advantage. This reinforces the function of mediation.

The findings align with previous studies by Tjahjadi & Soewarno (2018) and Huhtala et al. (2013), which emphasize the critical role of innovation capabilities in transforming organizational resources into improved business performance.

6. Innovation Skills Facilitate Entrepreneurial Leadership and Business Performance

The research indicates that entrepreneurial leadership improves business performance in women-led SMEs in Karnataka by influencing innovative capabilities. Effective entrepreneurial leadership cultivates an innovative environment, hence substantially enhancing business outcomes. Women entrepreneurs in Karnataka demonstrate strong leadership traits, including reactiveness, creativity, and a willingness to take risks, which contribute to the development of robust innovation capabilities. Young women leaders, in particular, leverage technology to drive innovation and remain competitive in the digital age. Their consistency, adaptability, and strategic decision-making enable

SMEs to strengthen their market positioning and sustain growth through innovation (Lawson & Samson, 2001).

Through the amalgamation of entrepreneurial leadership Innovative capabilities completely mediate the connection between entrepreneurial leadership and corporate performance, supporting Resource-Based Theory, Resource Advantage Theory, and Dynamic Capability Theory.

These theories emphasise the significance of value-oriented resources and organisational innovation in achieving a competitive advantage.(Purwati et al., 2020) with strong innovation capabilities, women-led SMEs in Karnataka can achieve sustainable growth and maintain a competitive advantage in the global market.

8. Conclusion

To achieve the research objectives, one can draw the following conclusions from the research findings and discussion:

1**. Social Capital**: Although social capital does not directly affect the business performance of women-led SMEs in India, its significance emerges when mediated by AI-driven innovation capabilities. The text highlights the critical role of social networks, relationships, and community ties in promoting business success through innovation.

2. Entrepreneurial leadership: substantially impacts the business success of women-led SMEs, both directly and indirectly. Entrepreneurial leadership drives sustainable success for women entrepreneurs by influencing AI-driven innovation skills, highlighting the role of leadership in adjusting to market obstacles and creating growth.

3. **AI-Driven Innovation Capabilities**: Social capital and entrepreneurial leadership greatly enhance AI-driven innovation in women-led SMEs. These competencies boost business performance, making innovation a critical growth and competitiveness driver.

The study highlights the significance of entrepreneurial leadership, social capital, and AI innovation in enhancing the capabilities of women entrepreneurs. The factors are essential for sustainable business growth and competitiveness in India's SME sector.

9. Implications and Future Scope of Study

This study examined how resource-based theories, notably RBT and RAT, can help women-led SMEs in Karnataka, India, gain a competitive edge. Entrepreneurial leadership, social capital, and AI-driven innovation improve women entrepreneurs' firm performance. There was no direct link between corporate performance and sustainability in the study.

This difference shows that resource-based theories of competitive advantage prioritize quick expansion and market advantage. They do not address the long-term sustainability of women-led SMEs.

Future studies should examine how business performance strategies affect long-term sustainability. These studies empower Karnataka women entrepreneurs to use entrepreneurial leadership, strong social networks, and AI-driven innovation for short-term success, long-term resilience, and sustainable growth in a rapidly changing market.

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References (APA format)

1. Adler, P. S., & Kwon, S. (2014). Social capital: Prospects for a new concept. *The Academy of Management Review, 27*(1), 17–40.
2. Aidis, R., & Estrin, S. (2007). Entrepreneurship in Emerging Markets: Which Institutions Matter ? University Business, 44(December).
3. Albaladejo, M., & Romijin, H. (2000). Determinants of Innovation Capability in Small UK Firms: An Empirical Analysis. In ECIS working paper series ECIS working paper series (Vol. 200013, Issue 40).
4. Ali, K. A., & Iskandar, N. I. N. (2016). The effect of business innovation capability, entrepreneurial competencies and quality management towards the performance of Malaysian SME's. *International Journal of Business Economics and Law, 10*(2), 7–13.
5. Allred, B. B., & Swan, K. S. (2005). The mediating role of innovation on the influence of industry structure and national context on firmperformance. *Journal of International Management, 11*(2), 229–252.
6. Avanti, F. S. M. (2017). The impact of entrepreneurial leadership measurement validation on innovation management and its measurement validation. *International Journal of Innovation Science, 9*(1).
7. Bagheri, A. (2017). The impact of entrepreneurial leadership on innovation work behavior and opportunity recognition in hightechnology SMEs. *The Journal of High Technology Management Research, 28*(2), 159-166.
8. Bowen, F. E., Rostami, M., & Steel, P. (2010). Timing is everything: A meta-analysis of the relationships between organizational performance and innovation. *Journal of Business Research, 63*(11), 1179–1185.
9. Cainelli, G., Evangelista, R., & Savona, M. (2004). Cainelli, Evangelista, Savona - 2004 - The impact of innovation on economic performance in services. *The Service Industry Journal, 24*(1), 1–11.
10. Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management, 31*(6), 515-524.
11. Claridge, T. (2004). Social Capital and Natural Resource Management: An important role for social capital? In University of Queesland (Issue July).
12. Dakhli, M., & De Clercq, D. (2004). Human capital, social capital, and innovation: A multi-country study. *Entrepreneurship and Regional Development, 16*(2), 107–128.
13. Greef, A. M. (2014). *Entrepreneurial leadership and its effect on the social performance of the organisation* (Bachelor's thesis,University of Twente).
14. Harjanti, D., & Noerchoidah, N. (2017). The effect of social capital and knowledge sharing on innovation capability. *Journal Manajemen dan Kewirausahaan, 19*(2), 72-78.
15. Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: an integration and empirical examination. *Journal of Marketing, 62*(3), 42-54..
16. Jafri, S. K. A., Ismail, K., Khurram, W., & Soehod, K. (2014). Impact of social capital and firms' innovative capability on sustainablegrowth of women owned technoprises (SMEs): A study in Malaysia. *World Applied Sciences Journal, 29*(10), 1282-1290.
17. Jagdale, D., & Bhola, S. S. (2014). Entrepreneurial leadership and organizational performance with reference to rural small scale engineering industry in Pune district. *Golden Research Thoughts, 4*(2), 1–9.

18. Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of Business Research, 64*(4), 408–417.
19. Jones, O., & Crompton, H. (2009). Enterprise logic and small firms: a model of authentic entrepreneurial leadership. *Journal of Strategy and Management, 2*(4), 329–351. h
20. Okungu, K. O. (2012). Factors influencing performance of youth group micro and small enterprises in Kisumu West District, Kisumu County. *Unpublished Master thesis). Kenyatta University*.
21. Lateh, M., Hussain, M. D., & Abdullah, Mu. S. (2018). Social entrepreneurship development and poverty alleviation - A Literature review. *MAYFEB Journal of Business and Management, 2,* 1–11.
22. Matzler, K., Schwarz, E., Deutinger, N., & Harms, R. (2008). The relationship between transformational leadership, product innovation and performance in SMEs. *Journal of Small Business and Entrepreneurship, 21*(2), 139–151.
23. Mgeni, T. O. (2015). Impact of entrepreneurial leadership style on business performance of SMEs in. *Journal of Entrepreneurship & Organization Management, 4*(2), 1–9.
24. Michael, W., & Narayan, D. (2002). Social capital: Implications for development theory and policy. *The World Bank Research Observer,15*(2), 225–249.
25. Mokhber, M., Tan, G. G., Vakilbashi, A., Aiza, N., Zamil, M., & Basiruddin, R. (2016). Impact of entrepreneurial leadership on organization demand for innovation: Moderating role of employees innovative self- efficacy. *International Review of Management and Marketing, 6*(3), 415–421.
26. Momanyi, D., & Moronge, M. (2017). Role of financial institutions on performance of youth owned micro and small Enterprises. *The Strategic Journal of Business and Management Change, 4*(3), 544–577.
27. Munandar, A. (2016). The strategy development and competitive advantage of micro small medium enterprise business institution toward regional development. *AdBispreneur, 1*(2), 103–112.
28. Musa, A. (2017). The impact of entrepreneurial leadership measurement validation on innovation management and its measurement validation. *Reference Services Review Service Review, 45*(2), 227–241.
29. Nahapiet, J., & Ghoshal, S. (1998). Social capital, human capital and organizational advantage. *Nonaka & Takeuchi, 23*(2), 242–266.
30. Oliveira, J. (2013). The influence of the social capital on business performance: an analysis in the context of horizontal business networks.
31. Kumar MK, Kudari R, Sushama C, Neelima P, Ganesh D. Efficient algorithms for vehicle plate detection in dynamic environments. Communications on Applied Nonlinear Analysis ISSN. 2025:273-89.
32. Yadav, S. S., Maan, M. K., Kumar, M. S., Kumarnath, J., Pund, S. S., & Rathod, M. (2023). A Secure IoT Smart Network Model for the Contributory Broadcast Encryption for the Text Policy Management Scheme. International Journal of Intelligent Systems and Applications in Engineering, 11(3s), 42-48.
33. Burada, Sreedhar, BE Manjunath Swamy, and M. Sunil Kumar. "Computer-aided diagnosis mechanism for melanoma skin cancer detection using radial basis function network." In Proceedings of the International Conference on Cognitive and Intelligent Computing: ICCIC 2021, Volume 1, pp. 619-628. Singapore: Springer Nature Singapore, 2022.
34. Pattnaik, M., Sunil Kumar, M., Selvakanmani, S, Kudale, K. M., M., K., & Girimurugan, B. . (2023). Nature-Inspired Optimisation-Based Regression Based Regression to Study the Scope of

Professional Growth in Small and Medium Enterprises. International Journal of Intelligent Systems and Applications in Engineering, 11(4s), 100–108.
35. Kasturi SB, Burada S, Sowmyashree MS, Kumar MS, Ganesh D. An improved mathematical model by applying machine learning algorithms for identifying various medicinal plants and raw materials. Communications on Applied Nonlinear Analysis. 2024;31(6S):428-39.
36. Godala, Sravanthi, and M. Sunil Kumar. "A weight optimized deep learning model for cluster based intrusion detection system." Optical and Quantum Electronics 55.14 (2023): 1224.
37. Kumar, M.S., Harsha, B.K. and Jule, L.T., 2023. 4 AI-driven cybersecurity modeling using quantum computing for mitigation. Quantum-Safe Cryptography Algorithms and Approaches: Impacts of Quantum Computing on Cybersecurity, p.37.
38. Kumar MS, Girinath S, Lakshmi GG, Ganesh AV, Kumar KJ. Crop yield prediction using machine learning. In2023 International Conference on Sustainable Emerging Innovations in Engineering and Technology (ICSEIET) 2023 Sep 14 (pp. 569-573). IEEE.
39. Rafee, S.M., Prasad, M., Kumar, M.S. and Easwaran, B., 2023. 2 AI technologies, tools, and industrial use cases. Toward Artificial General Intelligence: Deep Learning, Neural Networks, Generative AI, 21.
40. Godala, S. and Kumar, M.S., 2023. Intrusion detection by stacked deep ensemble model with entropy and correlation feature set. International Journal of Intelligent Systems and Applications in Engineering, 11(4s), pp.07-21.
41. Tengeh, R. (2011). A Business Framework for the Effective Start-Up and Operation of African Immigrant-Owned Business in the Cape Town Metropolitan Area, South Africa. The Cape Peninsula University of Technology.
42. Vosta, L. N., & Jalilvand, M. R. (2014). Examining the influence of social capital on rural women entrepreneurship. World *Journal of Entrepreneurship, Management and Sustainable Development I*, *10*(3), 209–227.
43. Wang, Z., & Wang, N. (2012). Knowledge sharing, innovation and firm performance. *Expert Systems with Applications, 39*(10), 8899– 8908.
44. D.Venkatesh, "Role of Financial Institutes in Managing Sustainable Growth in MSME'S" Bangalore Institute of Management Studies(BIMS), Mar-2016, Pp: 151-159, ISBN:978-93-85640-56-8
45. Yadav, U.S., Aggarwal, R., Tripathi, R., & Kumar, A. (2024d). Bridging the Skill Gap of Indian Handicraft Industry Workers: An Analysis of the Problems and Remedies for Handicraft Artisans, Thake, A.M., Sood, K., Ozen, E. and Grima, S. (Ed.) Contemporary Challenges in Social Science Management: Skills Gaps and Shortages in the Labour Market (Contemporary Studies in Economic and Financial Analysis, Vol. 112A), Emerald Publishing Limited, Leeds, pp. 183–202. https:// doi. org/ 10. 1108/ S1569- 37592 02400 0112A 024
46. Zyl, H. J. C. van, & Mathur-Helm, B. (2007). Exploring a conceptual model, based on the combined effect of entrepreneurial leadership,market orientation and relationship marketing orientation on South Africa's small tourism business performance. *South AfricanJournal for Business Management, 38*(2), 17–24.