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# South Asian Journal of Management Research (SAJMR)

## Special Issue

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South Asian Journal of Management Research (SAJMR), is a scholarly journal that publishes scientific research on the theory and practice of management. All management, computer science, environmental science related issues relating to strategy, entrepreneurship, innovation, technology, and organizations are covered by the journal, along with all business-related functional areas like accounting, finance, information systems, marketing, and operations. The research presented in these articles contributes to our understanding of critical issues and offers valuable insights for policymakers, practitioners, and researchers. Authors are invited to publish novel, original, empirical, and high quality research work pertaining to the recent developments & practices in all areas and disciplined.

Cross-functional, multidisciplinary research that reflects the diversity of the management science professions is also encouraged, the articles are generally based on the core disciplines of computer science, economics, environmental science, mathematics, psychology, sociology, and statistics. The journal's focus includes managerial issues in a variety of organizational contexts, including for profit and nonprofit businesses, organizations from the public and private sectors, and formal and informal networks of people. Theoretical, experimental (in the field or the lab), and empirical contributions are all welcome. The journal will continue to disseminate knowledge and publish high-quality research so that we may all benefit from it.

**Dr. Pooja M. Patil**
Editor

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# Decoding Financial Access and Performance in Women-Led MSMEs: A Structural Equation Modeling Approach

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**Abstract**

This study examines the evolving role of women entrepreneurs in Micro, Small, and Medium Enterprises (MSMEs), analyzing their contributions, challenges, and opportunities in the contemporary business landscape. Through a mixed-methods approach involving 250 women entrepreneurs, the research investigates the interplay between financial access, socio-cultural barriers, digital transformation, and policy support. The findings reveal that while women-owned enterprises constitute 20% of the 58.5 million MSMEs in India, they face persistent challenges in accessing financial resources, with sources of finance having the highest impact (β=0.673) on access to finance, followed by business lifecycle (β=0.352) and firm attributes (β=0.296). The structural equation modeling analysis demonstrates that financial obstacles negatively influence access to finance (β=-0.231), while access to finance positively affects MSME performance (β=0.378). Despite government initiatives and digital advancement opportunities, socio-cultural barriers and limited access to formal credit continue to constrain women entrepreneurs' growth potential. The study concludes that addressing these structural challenges through targeted policy interventions, enhanced financial inclusion, and capacity-building programs is crucial for fostering a more inclusive entrepreneurial ecosystem. These findings contribute to the growing body of literature on women entrepreneurship and provide practical implications for policymakers and stakeholders in the MSME sector.

**Keywords:** Women Entrepreneurship, MSMEs, Financial Access, Digital Transformation, Socio-cultural Barriers, Business Performance, Policy Support, Gender Equality, Economic Development, Financial Inclusion

## Introduction

Entrepreneurship has become a powerful tool for economic development, innovation, and job creation, with Micro, Small, and Medium Enterprises (MSMEs) forming the backbone of many economies worldwide. Women entrepreneurs, in particular, play a crucial role in driving growth, fostering innovation, and enhancing inclusivity in the business landscape (Ayyagari, Demirguc-Kunt & Maksimovic, 2011). Their increasing participation in MSMEs has been facilitated by factors such as digitalization, supportive government policies, and social empowerment initiatives. However, despite their significant contributions, women entrepreneurs continue to face multiple barriers, including financial limitations, gender biases, and restricted access to business resources (Brush, de Bruin, & Welter, 2009). Understanding their evolving role within the MSME sector is essential to identify both the opportunities and challenges that shape their entrepreneurial journey.

Women-led MSMEs have demonstrated resilience and adaptability in diverse industries, from manufacturing and retail to technology-driven enterprises. Their ability to innovate and leverage digital platforms has enabled them to expand their businesses beyond local markets, contributing to regional and global economic growth (Goyal & Yadav, 2014). Several governments and financial institutions have recognized the importance of women entrepreneurs by introducing specialized funding schemes, skill development programs, and mentorship networks. However, access to financial capital remains a persistent challenge, as women often struggle to secure loans due to a lack of collateral, lower risk appetite, and biases within the financial system (Marlow & Patton, 2005). These financial constraints hinder their ability to scale their businesses, invest in technology, and compete in larger markets.

In addition to financial barriers, socio-cultural factors also play a significant role in shaping the entrepreneurial experience of women in MSMEs. Traditional gender roles, limited mobility, and work-life balance challenges often restrict women's ability to fully engage in business activities (Jamali, 2009). Many women entrepreneurs operate in informal or home-based businesses, limiting their access to networking opportunities, business collaborations, and market linkages. Furthermore, systemic challenges such as discriminatory legal frameworks, lack of property rights, and gender wage gaps create additional obstacles for women seeking to establish and sustain their ventures (Minniti & Naudé, 2010). Despite these challenges, successful women entrepreneurs have showcased remarkable perseverance by utilizing alternative business strategies such as e-commerce, microfinance, and community-driven enterprises.

The evolving role of women entrepreneurs in MSMEs underscores the need for a holistic approach to addressing the structural barriers they face. This study aims to explore the key factors influencing the success and sustainability of women-led MSMEs, focusing on financial inclusion, policy support, technological advancements, and gender-based challenges. By analyzing these elements, policymakers, financial institutions, and stakeholders can develop targeted strategies to foster an inclusive and supportive ecosystem for women entrepreneurs. Strengthening women's participation in MSMEs is not just a step toward gender equality but a crucial driver of economic resilience and sustainable development.

**Role Women Entrepreneurs**

According to the Government of India, a women-owned and controlled business is one in which at least 51% of the capital is owned and controlled by women, and at least 51% of the jobs created by the business are held by women (Ministry of MSME, 2024). In recent years, the participation of women in Micro, Small, and Medium Enterprises (MSMEs) has significantly increased, with over 22 million women-owned enterprises registered on the Udyam Registration Portal and Udyam Assist Platform as of November 2024 (Global SME News, 2024). Despite this progress, women entrepreneurs still account for only 14% of the total entrepreneurs in India, managing around 20% of the 58.5 million MSMEs (Economic Times, 2024). These statistics highlight the persistent gender gap in the sector despite positive growth trends.

To enhance women's entrepreneurial capabilities, the Ministry of Micro, Small, and Medium Enterprises (MSME) has introduced various training and skill development programs to equip women with business knowledge and skills. Several government schemes, including the Startup India Seed Fund Scheme (SISFS) and the Credit Guarantee Scheme for Startups (CGSS), have been launched to provide financial support. Since its launch in April 2021, the SISFS has approved ₹227.12 crore in funding for 1,278 women-led startups, while the CGSS, operational since April 2023, has guaranteed ₹24.6 crore in loans for women-led ventures (Press Information Bureau, 2024). These initiatives aim to reduce financial barriers and foster a more inclusive entrepreneurial ecosystem.

Apart from financial challenges, socio-cultural barriers significantly impact women's entrepreneurial journey. Many women entrepreneurs, especially in rural areas, struggle to access formal credit facilities and face limited policy support for mid-scale business growth. Women-led rural enterprises currently employ between 22 to 27 million people, yet they continue to face structural challenges in scaling their businesses (World Bank, 2024). Additionally, MSMEs offer flexible work schedules, allowing women to balance their domestic and professional responsibilities, further enhancing their participation in the economy.

As the saying goes, "Women are homemakers," but today, they are also nation-builders. By leveraging government initiatives, financial inclusion, and digital advancements, women entrepreneurs are shaping a new era of economic empowerment in India. With continued policy support and societal encouragement, women-led MSMEs will play an even greater role in India's vision of becoming a $5 trillion economy. Addressing the existing gender disparities, increasing access to financial resources, and encouraging digital entrepreneurship will be crucial in ensuring sustainable growth for women in the MSME sector.

**Review of Literature: Women Entrepreneurs in MSME Sector (2010-2024)**

Women entrepreneurs play a vital role in the Micro, Small, and Medium Enterprises (MSME) sector, contributing to economic growth, employment generation, and social empowerment (Ministry of MSME, 2024). Despite various government initiatives and policy interventions, they continue to face significant challenges such as financial constraints, sociocultural barriers, and limited market access (Economic Times, 2024). This systematic review analyses the existing literature on women entrepreneurship in MSMEs, focusing on financial access, policy interventions, socio-cultural factors, digital transformation, and their overall contribution to economic development.

**Growth and Contribution of Women Entrepreneurs**

The MSME sector is often referred to as the growth engine of the Indian economy, significantly contributing to industrialization and employment generation. Women entrepreneurs have increasingly become a part of this sector, leading to positive socio-economic impacts. However, disparities remain evident, as women-owned MSMEs constitute only 20.37% of the sector, while male-owned enterprises dominate at 79.63% (Patel & Rewadikar, 2024). This gender gap highlights the need for targeted interventions to encourage more women-led businesses.

**Financial Access and Government Support**

Access to finance remains a critical issue for women entrepreneurs. Studies indicate that government policies, incentives, and subsidies significantly influence the success of women-led enterprises (Danabakyam & Kurian,

2012). Although initiatives such as the Start-up India Seed Fund Scheme (SISFS), Credit Guarantee Scheme for Start-ups (CGSS), and other financial support mechanisms have improved funding opportunities (Press Information Bureau, 2024), bureaucratic hurdles and gender biases in loan disbursement persist (Economic Times, 2024). Research by Singh & Raina (2013) emphasizes the role of financial literacy and access to technology in improving women's entrepreneurial participation. Despite these interventions, a significant credit gap remains, particularly for women-led rural enterprises, which employ between 22 to 27 million people but still struggle with access to formal credit (World Bank, 2024).

**Socio-Cultural Barriers and Gender Disparities**

Traditional gender roles and societal expectations continue to hinder women's entrepreneurial aspirations. Studies highlight that women face challenges related to risk management skills, education, and technological knowledge, contributing to lower participation rates in MSMEs compared to male entrepreneurs (Singh & Raina, 2013). Inheritance laws, property rights, and discriminatory banking practices further restrict women's access to capital and resources (Ministry of MSME, 2024). Research by Chavan & Murkute (2016) underscores the necessity of gender-sensitive policies to bridge these gaps and support women entrepreneurs. With India's female entrepreneurship rate at only 14%, significantly lower than other developing economies (Economic Times, 2024), addressing these challenges requires policy changes, gender-sensitive financial products, and mentorship programs (Global SME News, 2024).

**Role of MSMEs in Women's Economic Empowerment**

The contribution of MSMEs in empowering women through job creation and self-employment is well-documented. Ilahi (2018) analyzed NSSO data and found that women-owned enterprises accounted for only 20.37% of the MSME sector, with most being micro-enterprises. Similarly, research by Vejju (2018) highlighted the impact of Self-Help Groups (SHGs) in fostering women entrepreneurship in Andhra Pradesh, where female entrepreneurs constituted 60% of SHG-promoted enterprises. These studies suggest that localized efforts can effectively enhance women's participation in the MSME sector.

**Digital Transformation and Market Expansion**

The digital era has created new opportunities for women entrepreneurs. Studies indicate that e-commerce platforms, fintech solutions, and digital payment systems have helped women expand their businesses beyond traditional markets (Global SME News, 2024). The adoption of digital marketing strategies and online sales channels has increased women's business visibility, allowing them to compete in national and global markets (Economic Times, 2024). However, barriers such as digital literacy and access to technology remain significant, particularly in rural areas (Sanu, Ahmad, & Anjum, 2021). Government initiatives such as Digital India and Skill India aim to bridge this gap by offering training programs on digital tools, financial literacy, and online business management (Ministry of MSME, 2024).

**Factors Influencing Women's Entrepreneurial Success**

Several factors contribute to the success of women entrepreneurs in the MSME sector. Research by Kamal & Chandrakala (2023) found that prior work experience has a significant impact on entrepreneurial success, whereas factors like age, education level, and parental occupation have a relatively lower influence. Furthermore, studies indicate that women-led MSMEs generate more employment opportunities than male-led enterprises, though profitability remains higher in male-owned businesses (Sanu, Ahmad, & Anjum, 2021).

**Policy Interventions and Future Prospects**

To enhance women's participation in the MSME sector, policymakers must focus on financial inclusion, education, and socio-cultural transformation. Tiwari (2023) highlights the role of MSMEs in women's empowerment but also points out existing challenges such as gender biases, lack of infrastructure, and financial constraints. The World Bank (2024) recommends tailored financial solutions, mentorship programs, and business incubators to support women entrepreneurs. Strengthening these initiatives will be crucial in achieving gender parity in the MSME sector.

A review of the literature from 2010 to 2024 reveals that women entrepreneurs in MSMEs contribute significantly to economic development and social transformation. However, persistent challenges such as financial constraints, gender disparities, and socio-cultural norms continue to hinder their progress. A comprehensive approach involving policy reforms, financial support, and digital inclusion is essential for fostering a more inclusive entrepreneurial ecosystem. Future research should focus on assessing the long-term impact of government schemes and technological advancements on women-led MSMEs.

**Research Gap**

While numerous studies have explored the challenges faced by women entrepreneurs in MSMEs, there is limited research that quantitatively examines how financial access is influenced by various internal and external factors using advanced methods like Structural Equation Modeling (SEM). Additionally, existing literature often treats socio-cultural barriers, digital transformation, and policy support as separate elements rather than examining their combined impact. This gap creates a need for a more holistic framework that captures the complex interplay among these factors. By applying SEM, this study offers a deeper understanding of how these variables collectively affect financial access and the overall performance of women-led MSMEs in India.

**Objective:**

- To assess the growth and challenges of the MSME sector in India from the perspective of entrepreneurs.
- To analyze women's participation in the MSME sector by exploring their challenges, opportunities, and contributions.

**Research Methodology**

**Research Design**

This study adopts a mixed-methods approach, combining both quantitative and qualitative research methods. A descriptive research design is employed to analyze the participation of women entrepreneurs in the MSME sector, their challenges, opportunities, and the impact of government policies and digital transformation on their businesses.

**Sampling and Data Collection**

A primary data survey will be conducted among women entrepreneurs operating in the MSME sector across different regions in India. The study will use purposive and stratified random sampling to ensure representation across micro, small, and medium enterprises.

**Sample Size:** A Sample of 250 women entrepreneurs has been surveyed.

**Sampling Method:** A stratified random sampling technique will be used to ensure diversity in terms of business type, size, and geographical location.

**Data will be collected using a structured questionnaire, divided into five sections:**

- **Demographics (age, education, business experience, type of enterprise, and financial background).**
- **Financial Access (funding sources, credit accessibility, financial literacy).**
- **Socio-cultural barriers (gender discrimination, work-life balance, family support).**
- **Digital Transformation (technology adoption, e-commerce usage, digital literacy).**
- **Policy Support (awareness and effectiveness of government schemes).**

The questionnaire will include 5-point Likert scale statements to measure perceptions on financial access, socio-cultural barriers, digital transformation, and policy support.

**Data Analysis**

Quantitative data will be analyzed using descriptive statistics (mean, frequency, standard deviation) and inferential statistics (t-tests, chi-square tests, regression analysis) using SPSS. Qualitative data from interviews and open-ended survey responses will be analyzed using thematic analysis to identify key trends and insights.

**Reliability and Validity**

The survey instrument was pre-tested with a pilot study of 30 respondents to ensure reliability and validity. Cronbach's Alpha .678 will be used to test the internal consistency of Likert-scale responses.

**Ethical Considerations**

Participation in the study will be voluntary, and all responses will be kept confidential and anonymous. Informed consent will be obtained before data collection, ensuring compliance with ethical research guidelines.

**Descriptive Statistics**

**Table No.1: Descriptive Statistics**

| Statistic | Age | Experience (years) |
|---|---|---|
| **Valid Count** | 250 | 250 |
| **Missing** | 0 | 0 |
| **Mode** | 43[a] | 26[a] |
| **Median** | 41 | 16 |
| **Mean** | 39.72 | 15.45 |
| **Range** | 39 | 28 |
| **Minimum** | 20 | 1 |
| **Maximum** | 59 | 29 |

[a] The mode is computed assuming that variables are discreet.

**Distribution Plots**

**Age**

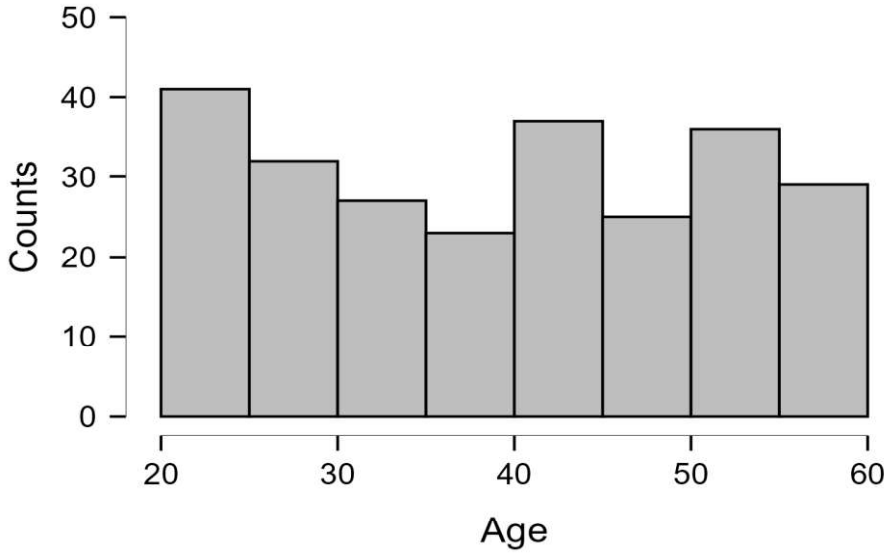


**Chart-1 Age of the respondents**

The descriptive statistics reveal key insights about the age and experience distribution of the given population. The average age is approximately 39.72 years, with a median of 41 years and a mode of 43 years, indicating that most individuals are in their early 40s. The age range spans 39 years, from 20 to 59 years, showing a diverse age group. Similarly, the experience level varies significantly, with a mean of 15.45 years and a median of 16 years, suggesting that half of the individuals have over 16 years of experience. The most frequently occurring experience level is 26 years, implying a substantial number of seasoned professionals. The experience range extends from 1 to 29 years, reflecting a workforce with both newcomers and highly experienced individuals. The close values of the mean and median for both variables suggest that the data is relatively symmetrically distributed, with no extreme skewness. Overall, the dataset represents a workforce with a broad mix of ages and experience levels, with a concentration of individuals in their early 40s and mid-career experience.

**Table No. 2: Frequencies for Education**

| Education | Frequency | Percent |
|---|---|---|
| Graduate | 66 | 26.4 |
| Postgraduate | 55 | 22 |
| Diploma | 67 | 26.8 |
| High School | 62 | 24.8 |
| Missing | 0 | 0 |
| Total | 250 | 100 |

*Note.* The following variables have more than 10 distinct values and are omitted: Age, Experience (years).

The frequency distribution of education levels provides insight into the educational background of the given population. Among the **250 individuals**, the highest proportion holds a **Diploma (26.8%),** followed closely by **Graduates (26.4%).** Individuals with a **High School education** make up **24.8%,** while those with a **Postgraduate degree** account for **22%**. The data indicates a fairly even distribution across all educational categories, with no extreme dominance of a single group. The fact that a **majority (73.6%) have at least a diploma or higher** suggests a well-educated workforce. Additionally, since there are no missing values, the data is complete and reliable for further analysis.

**Table No. 3: Frequencies for Enterprise Type**

| Enterprise Type | Frequency | Percent |
|---|---|---|
| Micro | 158 | 63.2 |
| Small | 69 | 27.6 |
| Medium | 23 | 9.2 |
| Missing | 0 | 0 |
| Total | 250 | 100 |

The frequency distribution of enterprise types indicates that a majority (63.2%) of businesses fall under the Micro category, making it the most prevalent type. Small enterprises account for 27.6%, while Medium enterprises make up only 9.2%of the total. This suggests that the business landscape is dominated by micro and small enterprises, which together constitute 90.8% of the total. The relatively low percentage of medium-sized enterprises implies that fewer businesses have scaled beyond the small enterprise level. With no missing data, the information is complete and reliable for further analysis. These insights highlight the predominance of smaller businesses, which may have implications for economic policies, support programs, and growth opportunities in the sector.

**Table No. 4: Frequencies for Financial Background**

| Financial Background | Frequency | Percentage |
|---|---|---|
| Low | 116 | 46.4 |
| High | 23 | 9.2 |
| Medium | 111 | 44.4 |
| Missing | 0 | 0 |
| Total | 250 | 100 |

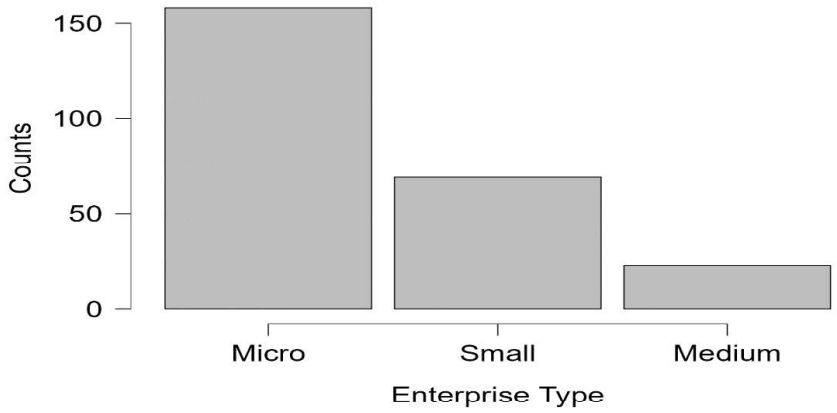


**Chart-2 Enterprise Type**

The frequency distribution of financial backgrounds shows that the majority of individuals fall into the Low (46.4%) and Medium (44.4%) financial categories, while only 9.2% belong to the High financial background group. This indicates that nearly 90.8% of the population has either a low or medium financial background, suggesting potential financial constraints for a significant portion of individuals. The relatively small percentage of individuals with a high financial background implies that wealth is not evenly distributed within the group. With no missing data, the findings are complete and reliable for further analysis. These insights could have important implications for financial support programs, accessibility to resources, and economic mobility within the population.

**Regression Analysis**

| Variable | Coefficient | Standard Error | t-Statistic | p-Value | 95% Confidence Interval |
|---|---|---|---|---|---|
| **Intercept (const)** | 2.9280 | 0.207 | 14.112 | 0.000 | [2.519, 3.337] |
| **Average Socio-Cultural Barriers** | 0.0334 | 0.067 | 0.499 | 0.618 | [-0.098, 0.165] |

The regression analysis shows a positive relationship between **Average Socio-Cultural Barriers** and **Average Financial Access**. The equation for the regression line is:

Average Financial Access=2.93+0.03×Average Socio-Cultural Barriers.

**Interpretation:**

**Intercept (2.9280)**: This is the predicted value of **Average Financial Access** when the **Average Socio-Cultural Barriers** is zero. In other words, without any socio-cultural barriers, the average financial access is around 2.93.

**Coefficient for Socio-Cultural Barriers (0.0334)**: For each unit increase in **Socio-Cultural Barriers**, the **Average Financial Access** increases by approximately 0.03. However, this relationship is not statistically significant because the **p-value** (0.618) is much higher than the typical significance level of 0.05.

**Standard Error**: The standard errors for both the intercept and the coefficient estimate show the precision of the estimated values. For the **Average Socio-Cultural Barriers**, it is 0.067.

**p-Value (0.618)**: This value is greater than 0.05, indicating that the effect of **Socio-Cultural Barriers** on **Financial Access** is not statistically significant. This suggests that **Socio-Cultural Barriers** might not be a strong predictor of **Financial Access** based on this dataset.

**R-squared (0.001)**: The model explains only about **0.1%** of the variance in **Financial Access**. This very low value suggests that the **Socio-Cultural Barriers** are a weak predictor of **Financial Access** in this case.

**R-squared**: **0.001**

This indicates that only **0.1%** of the variation in **Average Financial Access** is explained by the **Average Socio-Cultural Barriers**. The model doesn't seem to fit the data well.

**Adjusted R-squared**: **-0.003**

The adjusted R-squared takes into account the number of predictors. A negative value suggests that the model is not a good fit and that adding more predictors (even just one) does not improve the explanatory power.

**F-statistic**: **0.2494**

This statistic tests whether the regression model as a whole provides a better fit than a model with no predictors. A low F-statistic value suggests that the model is not significantly better than simply predicting the mean of the dependent variable.

**p-Value of the F-statistic**: **0.618**

This p-value is high, meaning that the overall regression model is not statistically significant. The independent variable (**Socio-Cultural Barriers**) does not explain much variation in **Financial Access**.

**Regression Summary:**

The analysis of the regression model reveals several key insights regarding the relationship between Socio-Cultural Barriers and Financial Access. The intercept value of 2.9280 indicates the predicted Average Financial Access when Socio-Cultural Barriers are absent, which is approximately 2.93. The coefficient for Socio-Cultural Barriers is 0.0334, suggesting that for each unit increase in Socio-Cultural Barriers, Average Financial Access increases by about 0.03. However, this relationship is not statistically significant, as evidenced by the p-value of 0.618, which is much higher than the typical significance level of 0.05.

The standard error for the coefficient estimates of Socio-Cultural Barriers is 0.067, showing the precision of the estimation. The low R-squared value of 0.001 indicates that only about 0.1% of the variation in Financial Access is explained by Socio-Cultural Barriers, suggesting that the model does not fit the data well. Furthermore, the negative adjusted R-squared of -0.003 suggests that adding this predictor worsens the model's explanatory power.

The F-statistic of 0.2494, coupled with a p-value of 0.618, indicates that the overall regression model does not significantly improve upon predicting the mean of the dependent variable, further reinforcing the conclusion that Socio-Cultural Barriers is not a strong predictor of Financial Access in this dataset.

**Correlation analysis:**

| | Digital Transformation Score | Policy Support Score | Financial Access Q1 | Financial Access Q2 | Financial Access Q3 | Financial Access Q4 | Financial Access Q5 |
|---|---|---|---|---|---|---|---|
| Digital Transformation Score | 1 | 0.067466 | -0.09205 | 0.154797 | -0.0384 | 0.080754 | -0.01773 |
| Policy Support Score | 0.067466 | 1 | 0.018794 | -0.03431 | -0.04432 | -0.08896 | -0.05538 |
| Financial Access Q1 | -0.09205 | 0.018794 | 1 | -0.07027 | -0.00269 | -0.05143 | -0.0105 |
| Financial Access Q2 | 0.154797 | -0.03431 | -0.07027 | 1 | 0.007603 | -0.10084 | 0.072054 |
| Financial Access Q3 | -0.0384 | -0.04432 | -0.00269 | 0.007603 | 1 | 0.034407 | -0.00386 |
| Financial Access Q4 | 0.080754 | -0.08896 | -0.05143 | -0.10084 | 0.034407 | 1 | 0.077482 |
| Financial Access Q5 | -0.01773 | -0.05538 | -0.0105 | 0.072054 | -0.00386 | 0.077482 | 1 |

**Inference:**

 **Digital Transformation Score and Policy Support Score:**

- Weak correlation: The correlation coefficient between the Digital Transformation Score and the Policy Support Score is very low (0.067), indicating a very weak relationship between these two variables.

 **Financial Access Variables:**

- Financial Access Q1 to Q5: The financial access variables show varying degrees of weak correlation with Digital Transformation and Policy Support.
- Financial Access Q2 has a moderate positive correlation with the Digital Transformation Score (0.1548). This suggests that, for this sample, there may be a slightly stronger relationship between certain financial access types and digital transformation.

**Model Fit Indices for Measurement Models**

| Models | $\chi 2$ | df | P | $\chi 2$/df | GFI | CFI | NFI | RFI | IF | TLI | RMR | RMSEA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| One Factor Model | 5194.319 | 377 | <0.001 | 13.778 | 0.534 | 0.517 | 0.503 | 0.457 | 0.419 | 0.473 | 0.133 | 0.148 |
| Two Factor Model | 3916.429 | 376 | <0.001 | 10.416 | 0.572 | 0.567 | 0.548 | 0.431 | 0.586 | 0.547 | 0.118 | 0.102 |
| Three Factor Model | 3216.429 | 374 | <0.001 | 8.600 | 0.600 | 0.656 | 0.631 | 0.600 | 0.639 | 0.626 | 0.103 | 0.095 |
| Four Factor Model | 3046.615 | 371 | <0.001 | 8.212 | 0.708 | 0.774 | 0.749 | 0.716 | 0.775 | 0.743 | 0.097 | 0.082 |
| Five Factor Model | 1990.761 | 367 | <0.001 | 5.424 | 0.814 | 0.813 | 0.886 | 0.853 | 0.814 | 0.882 | 0.083 | 0.074 |
| Six Factor Model | 1025.934 | 362 | <0.001 | 2.834 | 0.969 | 0.940 | 0.908 | 0.925 | 0.940 | 0.920 | 0.067 | 0.051 |

The SEM approach is used to examine the cause-and-effect relationship between the independent variables (firm attributes, financial obstacles, sources of finance, and life cycle of an MSME) on the dependent variable (access to finance) using maximum likelihood estimation. This study also attempts to examine the impact of access to finance on MSME performance (i.e., outcome variable).

The structural model depicts the relationship between the latent variables. Figure 2 represents the structural equation model which is the combination of a measurement model and a structural model. The hypothetical

relationships between the latent variables are depicted with their corresponding standardized regression coefficient value.

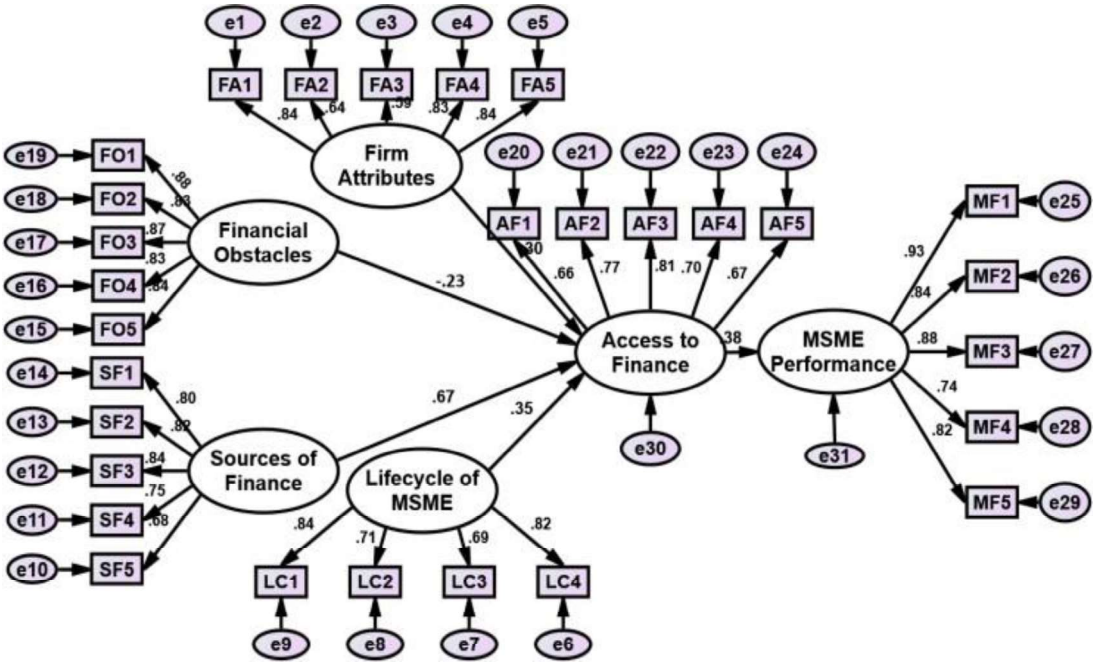


**Figure 2.** Structural Equation Model

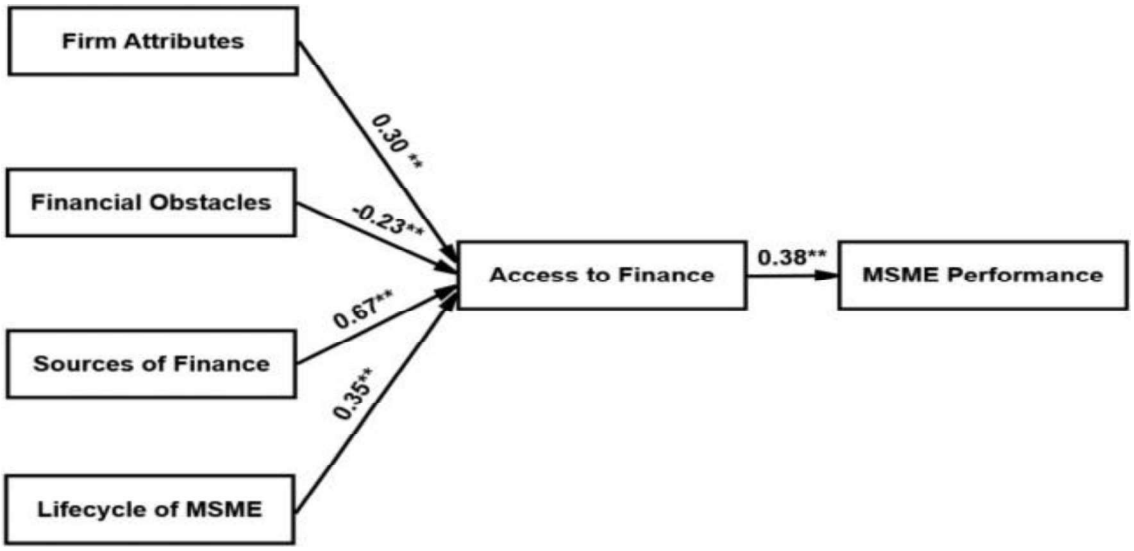


**Figure 3.** Path Analysis

The extension of the regression model is seen in the path analysis (Figure 3), which indicates the kind of cause-and-effect relationship between the selected variables. Among the four independent variables of "access to finance", the variable "sources of finance" has the highest standardized regression coefficient (0.673), whereas the variable "firm attributes" has the lowest standardized regression coefficient (0.296) to the dependent variable (i.e., access to finance).

All the variables (except financial obstacles) have a positive impact on access to finance. Based on the regression coefficient values, it was found that the sources of finance have the highest effect (0.673) on the MSME's access to finance, followed by the life cycle of MSME (0.352), and firm attributes (0.296).

**Regression Weights of the SEM**

| Path | Std. Estimate | C.R. | P | Hypothesis Result |
|---|---|---|---|---|
| Firm Attributes  Access to Finance | 0.296 | 6.624 | <0.001** | Hypothesis 1 Significant |
| Finance Obstacles  Access to Finance | -0.231 | 3.373 | <0.001** | Hypothesis 2 Significant |
| Source of Finance  Access to Finance | 0.673 | 10.008 | <0.001** | Hypothesis 3 Significant |
| Lifecycle of MSME  Access to Finance | 0.352 | 7.417 | <0.001** | Hypothesis 4 Significant |
| Access to Finance  MSME Performance | 0.378 | 6.678 | <0.001** | Hypothesis 5 Significant |

*Note: ** significant at the 1 % level.*

From the results, it is evident that firm attributes, financial obstacles, sources of finance, lifecycle have significant effect on access to finance of MSME. On the other hand, access to finance has significant positive effect on the performance of MSME. All these hypothetical relationships are significant at 1% level.

The model fit indices of the structural model are Chi- square/Degrees of Freedom (3.025), Root Mean Square Error of Approximation (0.029), Root Mean Square Residual (0.021), Goodness of Fit (0.915), Adjusted Goodness of Fit(0.907), Comparative Fit Index(0.928), Tucker Lewis index(0.955), and Normed Fit Index(0.967).The most frequently used model fit indices of the model are within the recommended values, hence, SEM has an absolute fit.

## Findings

**Participation in the MSME Sector**:
Women-led enterprises account for approximately 20% of the 58.5 million MSMEs in India. The study sample reveals that a vast majority (63.2%) of these businesses fall under the micro-enterprise category, indicating that most women entrepreneurs are still operating at a smaller scale with limited resources and reach.

**Key Influencers of Financial Access**:
Structural Equation Modeling (SEM) results demonstrate that financial access is significantly shaped by:

- **Sources of finance (β=0.673) –** the most influential factor, suggesting the availability and variety of funding options (e.g., banks, microfinance, personal funds) greatly enhance accessibility.
- **Business lifecycle stage (β=0.352) –** indicating that women entrepreneurs at growth or expansion stages tend to have better access to finance.
- **Firm attributes (β=0.296) –** such as years of operation, business size, and sector type also positively influence financial access.

**Negative Impact of Financial Obstacles**:
Financial obstacles negatively affect access to finance (**β=-0.231**), confirming that traditional barriers like lack of collateral, limited credit history, and bureaucratic hurdles persist, especially for first-time and rural entrepreneurs.

**Access to Finance and Performance**:
The study found a **positive relationship between access to finance and business performance (β=0.378)**. Enterprises with better financial access reported higher profitability, capacity for growth, and resilience to market fluctuations.

**Socio-Cultural Barriers**:
Although widely recognized as challenges by respondents in qualitative responses, **regression analysis showed no statistically significant link between socio-cultural barriers and financial access** (p=0.618). This suggests that while such barriers are real, they may not directly affect financial transactions as strongly as assumed.

**Digital and Policy Support**:
Correlation analysis revealed **weak yet positive associations between digital transformation, policy support, and financial access**. This highlights their emerging importance in expanding business operations and overcoming geographic limitations, though they are not yet fully leveraged by many women entrepreneurs.

This study offers a comprehensive understanding of the financial and structural dynamics affecting women-led MSMEs in India. It establishes that access to finance is a critical enabler of enterprise performance, significantly influenced by tangible elements like funding sources, business maturity, and organizational characteristics. While financial barriers remain a strong deterrent, the findings challenge the commonly held belief that socio-cultural limitations are the most dominant obstacle—statistically, their impact was found to be negligible in isolation. Despite progressive policy frameworks and technological advances, women entrepreneurs still face considerable hurdles in accessing mainstream financial systems. Digital inclusion and tailored policy support are emerging as promising tools but require deeper penetration and awareness to make a measurable impact. The study validates the role of Structural Equation Modeling in revealing these multifaceted relationships and provides empirical backing for policy and institutional reforms.

**Recommendations**

**Develop Lifecycle-Based Financial Solutions**:
Design and roll out financial instruments aligned with the specific stages of business development (start-up, growth, maturity). For instance, early-stage MSMEs may benefit from seed capital and unsecured loans, whereas mature enterprises might need working capital, equipment finance, or credit lines for expansion.

**Ease of Access to Credit**:
Simplify the loan application and approval processes by:

- Reducing collateral requirements for women entrepreneurs.
- Allowing alternate credit scoring methods (e.g., based on business cash flow or digital transaction history).
- Establishing dedicated women-focused financial desks in public and private banks.

**Capacity Building and Financial Literacy**:
Implement comprehensive training programs covering:

- Basic and advanced financial management.
- Legal and regulatory compliance for MSMEs.
- Digital skills, e-commerce operations, and marketing strategies.
- Navigating government schemes and documentation procedures.

**Promote Digital Adoption**:
Expand digital outreach by:

- Providing low-cost access to smartphones and internet connectivity in rural areas.
- Offering hands-on workshops on using fintech platforms, digital payments, and inventory management tools.
- Supporting online marketplaces and linking them to global trade platforms.

**Strengthen Institutional and Policy Frameworks**:

- Establish **gender-responsive procurement policies**, mandating government departments to procure a certain percentage of goods/services from women-led MSMEs.
- Create regular review and feedback mechanisms to assess the real-world impact of government schemes like CGSS and SISFS.
- Encourage the formation of women-centric industry associations and incubators for collective bargaining and shared resources.

**Facilitate Market Access and Networking**:

- Organize trade fairs, exhibitions, and B2B networking events exclusively for women-led enterprises.
- Support participation in international trade missions and exhibitions under subsidized travel and registration programs.
- Build online platforms that connect rural and urban women entrepreneurs for knowledge exchange and collaboration.

**Discussions**

Timely access to finance plays a significant role in the survival and growth of MSMEs. Federal (or state)

governments of many countries play a major role in offering assistance through various initiatives and schemes for nurturing MSMEs.

The results revealed that the available sources of finance enhance the MSME's access to finance. (Godke Veiga & McCahery, 2019; Khan, 2015; Singh & Wasdani, 2016). For example, the availability of various sources of finance may help them fulfill their financial need to manage the working capital, expand the business, or deal with any unexpected financial crunch in the business. This may be through personal funds or loans from financial institutions or money lenders obtained in a short time with less effort, thus directly enhancing their access to finance. (Bilal *et al.,* 2017; GodkeVeiga & McCahery, 2019; Karedza *et al.,* 2014; Khan, 2015; Rocca *et al.,* 2011; Singh & Wasdani, 2016; Zelalem & Wubante, 2019). The model examined in this study provides a clear picture that the MSME's access to finance is influenced by its attributes, the available sources of finance, and the life cycle stage it is in.

The empirical findings also revealed that the life cycle of MSME has a significant positive impact on access to finance. The need for the different sources of finance may vary according to the stage in which the MSME is in. Hence, the second most important factor, is the lifecycle of an MSME, because MSMEs in the conception/ development stage have more access to loans through government schemes; the MSMEs in the commercialization stage have more access to loans from banks and other financial institutions, and the MSMEs in the growth or maturity/expansion stages have access to finance from various sources based on their reputation and financial stability.

The third most important factor, which has a positive influence on the MSME's access to finance is firm attributes. A firm's attributes enhance its access to finance because the financial institutions or money lenders approve the loan after careful analysis of the various characteristics of the firm. Favorable firm attributes increase an MSME's access to finance, whereas unfavorable attributes decrease the access.

Financial obstacles have a significant negative impact on an MSME's access to finance because financial obstacles prevent MSMEs from getting loans from financial institutions or money lenders to meet the needs of their business (Naidu & Chand, 2012; Pandula, 2011; Wang, 2016).

Meanwhile, access to finance also has a significant positive impact on MSME performance. Ease access to finance helps MSMEs to grow faster and at par with reputed companies in a highly competitive business environment. If the MSMEs have access to the required quantity of funds at the required time at a low interest rate, in addition to fewer procedures, it would help them to meet the financial needs of their business. Timely investments in the business will help the enterprise to rise from financial crises and fulfill its financial commitments (i.e., accounts payables, interest payments, tax payments, etc.), purchase raw materials to increase production based on sudden unexpected demands, and expand its business.

**Suggestions:**

**Financial Infrastructure Enhancement**

- Develop specialized financial products tailored to women entrepreneurs' needs
- Implement simplified loan application processes with reduced collateral requirements
- Create dedicated funding channels for different business lifecycle stages
- Establish alternative credit assessment methods that consider women entrepreneurs' unique circumstances

**Capacity Building Framework**

- Institute comprehensive business management training programs
- Provide specialized technical and digital skills development
- Offer mentorship programs pairing experienced entrepreneurs with newcomers
- Create industry-specific training modules addressing sector-specific challenges

**Digital Transformation Support**

- Facilitate access to digital tools and platforms
- Provide training in e-commerce and digital marketing
- Support the adoption of digital financial services
- Create online networking platforms for women entrepreneurs

**Policy and Regulatory Reforms**

- Streamline business registration and compliance procedures
- Implement gender-responsive procurement policies
- Develop targeted incentives for women-led MSMEs
- Create mechanisms for regular policy review and adaptation

**Market Access Enhancement**

- Establish dedicated market linkage programs
- Create platforms for B2B networking and collaboration
- Facilitate participation in trade fairs and exhibitions
- Support export promotion initiatives for women-led MSMEs

**Ecosystem Development**

- Create women-focused business incubation centers
- Establish support networks and industry associations
- Develop partnerships with large corporations for market access
- Implement monitoring and evaluation systems to track progress

These suggestions require a coordinated effort from government agencies, financial institutions, private sector stakeholders, and civil society organizations. Implementation should be phased, with clear metrics for success and regular evaluation of outcomes. The focus should be on creating sustainable, scalable solutions that can adapt to the evolving needs of women entrepreneurs in the MSME sector.

**Conclusion**

This study sheds light on the pivotal role that women entrepreneurs play in the Micro, Small, and Medium Enterprises (MSME) sector—an economic engine that continues to drive innovation, employment, and inclusive growth in India. While women-led MSMEs make up roughly 20% of the sector, their full potential remains largely untapped due to persistent financial and structural barriers. Through a mixed-methods approach and the application of Structural Equation Modeling (SEM), the research presents a data-driven and holistic understanding of the determinants influencing financial access and business performance among women entrepreneurs.

The findings clearly establish that access to finance is a key enabler of business success, with the sources of finance ($\beta$=0.673) emerging as the most influential factor. This is followed by the lifecycle stage of the enterprise ($\beta$=0.352) and firm-specific attributes ($\beta$=0.296), all of which contribute significantly to a woman entrepreneur's ability to secure necessary financial resources. Notably, financial obstacles ($\beta$=-0.231) continue to act as a strong deterrent, highlighting the urgent need to reform traditional lending practices and enhance credit accessibility for women-owned businesses.

Although socio-cultural factors are often cited as barriers to women's participation in entrepreneurship, the study's regression analysis found no statistically significant relationship between these factors and direct financial access. This suggests that while such barriers affect broader entrepreneurial engagement, they may not independently impede financing decisions—especially when firm-level and financial variables are more dominant. Nonetheless, qualitative data and literature evidence affirm their ongoing relevance in shaping women's entrepreneurial experiences, particularly in rural or traditionally conservative regions.

Additionally, the role of digital transformation and policy support, though showing weaker statistical correlations, cannot be understated. These factors serve as essential enablers that amplify reach, reduce transaction costs, and connect women entrepreneurs to wider markets. However, many of these tools remain underutilized due to low digital literacy and limited awareness of available schemes—especially among micro-enterprises in underdeveloped areas.

The study therefore concludes that an integrated approach—combining financial reforms, digital empowerment, socio-cultural sensitization, and inclusive policy frameworks—is vital to creating a thriving ecosystem for women-led MSMEs. Such an approach should not only aim to remove the visible barriers but also strengthen the underlying infrastructure that supports sustainable business development.

Importantly, empowering women entrepreneurs is not merely an act of promoting gender equality; it is a strategic imperative for accelerating economic resilience, job creation, and community development. Their success holds

transformative potential not just for families and local economies, but for the nation's long-term growth trajectory. The insights from this study can inform government agencies, financial institutions, and development practitioners in designing more inclusive, data-backed policies that unlock the economic power of women in the MSME sector.

**Policy Recommendations**

To bridge existing financial and structural gaps in the MSME ecosystem for women entrepreneurs, the following policy-level interventions are recommended:

Gender-Responsive Financial Policies

- **Establish Women MSME Financing Frameworks**: Design lending programs within public and private banks specifically for women-led MSMEs with relaxed collateral requirements and flexible repayment terms.
- **Subsidized Interest Rates**: Introduce interest subvention schemes for first-time women borrowers to encourage credit uptake and ease initial business pressures.
- **Credit Guarantee Extensions**: Expand the scope of the Credit Guarantee Scheme for Startups (CGSS) to offer higher guarantees (up to 90%) for women entrepreneurs in high-risk sectors like manufacturing and technology.

Simplification of Bureaucratic Processes

- **Single Window Digital Platforms**: Develop user-friendly portals that consolidate MSME registration, subsidy applications, tax compliance, and scheme access—tailored for lower digital literacy levels.
- **Fast-Track Approvals**: Introduce fast-track mechanisms for loan sanctions, business registrations, and scheme enrollments for verified women entrepreneurs.
- **Grievance Redressal Cells**: Set up dedicated helpdesks and redressal cells to support women facing procedural challenges in availing benefits or resolving credit-related disputes.

Inclusive and Targeted Capacity Building

- **Mandatory Training Tie-Ins**: Link government financial support to the completion of certified training programs in entrepreneurship, financial literacy, and legal compliance.
- **Localized Outreach**: Partner with NGOs, SHGs, and women's cooperatives to deliver grassroots-level awareness and training in local languages.
- **Women Business Mentorship Hubs**: Establish mentorship networks at district and state levels to connect emerging entrepreneurs with experienced businesswomen.

Policy Support for Digital Transformation

- **Digital Starter Kits**: Provide subsidized tech bundles (e.g., smartphones, POS machines, e-wallets) to women entrepreneurs in underserved areas.
- **Digital Inclusion Incentives**: Offer tax credits or digital infrastructure grants to women-led MSMEs that adopt e-commerce, cloud-based accounting, or digital inventory systems.
- **Integration into Government E-Marketplaces (GeM)**: Simplify onboarding for women MSMEs onto national procurement portals and ensure priority listing in public tenders.

Market Access and Value Chain Integration

- **Women-Specific Procurement Mandates**: Mandate that a certain percentage of public procurement is sourced from women-led MSMEs (e.g., 5–10%).
- **Export Promotion Cells**: Set up dedicated export advisory services and trade facilitation cells for women-owned businesses, especially those in crafts, textiles, and agro-based products.
- **Cluster-Based Policy Models**: Develop MSME clusters focused on women entrepreneurs with common infrastructure, shared logistics, and co-marketing opportunities.

Policy Monitoring and Impact Assessment

- **Establish Gender-Disaggregated Data Systems**: Require all MSME-related data collection (credit access, scheme utilization, business performance) to be disaggregated by gender for better targeting.

- **Annual Women MSME Impact Reports**: Publish national and state-level reports evaluating the impact of policies on women entrepreneurs.
- **Policy Advisory Committees**: Include women entrepreneurs and representatives from women-led business groups in MSME policy formulation and review bodies.

**Future Scope of Research:**

Future research could explore longitudinal changes in women entrepreneurship patterns to assess the long-term impact of current policy interventions. Cross-cultural comparative studies examining successful models from diverse economies could yield valuable insights for policy adaptation. Additionally, investigating the intersection of gender, technology adoption, and entrepreneurial resilience during economic disruptions presents an important research avenue. Further exploration of innovative financing mechanisms specifically designed for women entrepreneurs and evaluation of mentorship program effectiveness would enhance understanding of sustainable support systems. Finally, research examining the spill over effects of women's entrepreneurial success on community development and intergenerational entrepreneurship could provide a more holistic perspective on their socioeconomic impact.

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