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Mapping Skills with Performance: A Study on Women Entrepreneurs

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ABSTRACT

"This study examines the impact of key entrepreneurial skills Technical Skills, Managerial Skills, Entrepreneurial Skills, and Personal Maturity Skills on the performance of women entrepreneurs in North India." The research aims to identify which skills contribute most to business success and sustainability in the MSME sector. A causal and descriptive research design with a quantitative approach was employed. "Data was collected through a structured questionnaire from a sample of 383 women entrepreneurs operating in MSMEs across North India. Structural Equation Modeling (SEM) was used to analyze the relationships between entrepreneurial skills and business performance." The study utilized a survey-based method, incorporating validated scales to measure key entrepreneurial skills and their impact on business performance. "SEM was applied to test the proposed model and validate the significance of each skill category." The results indicate that Entrepreneurial Skills and Managerial Skills have the strongest positive impact on business performance. Technical Skills play a significant role in operational efficiency, while Personal Maturity Skills contribute to resilience and long-term business growth. The findings suggest that a balanced combination of these skills enhances the overall performance and sustainability of women-led businesses in North India. "Entrepreneurial skills are critical determinants of business performance among women entrepreneurs in the MSME sector. Policymakers and business development organizations should focus on skill enhancement programs tailored to women entrepreneurs to promote sustainable growth and competitiveness." The study is limited to North India and MSME enterprises, which may restrict generalizability to other regions or larger businesses. Self-reported data may also introduce response bias. Future research can explore industry-specific variations in skill impact, comparative studies between different regions, and the role of external factors such as financial support and policy interventions in enhancing entrepreneurial skills.

Keywords: Entrepreneurial skills, business performance, women entrepreneurs, MSMEs, North India.

INTRODUCTION

"Empowering women to create a better nation is only possible when women are empowered and a powerful community is created," according to former Indian President and scientist Dr. APJ Abdul Kalam. The strengths, values, and opinions of women are all part of a good family, which is dedicated to the creation of a good society and a good country (Rastogi et.al, 2022). Industries have a major role in a country's economic and industrial development.

Therefore, it is clear that industry contributes significantly to a nation's economic growth. In addition to being essential for the development of an industrialized nation, equitable wealth distribution is also crucial for promoting self-employment and fostering balanced regional growth. The economic activity of a nation and shifts in sociocultural organization are referred to as entrepreneurship. It is seen as a person's decision or a social group's occupation. (Akpor-Robaro, M. O,2012).

The development of the economy and the commercialization of industry and agriculture present several job options for women. Women were able to make up for their family's income and deficits as a result. As a result, several rural and urban women have become prosperous businesswomen. It is clear that women are becoming more and more enterprising and have more chances as a result of the rising literacy rate (LeVine, R., et.al. 2001). This gives women new motivation. It makes sense that women possess the ability to start their businesses. They are now clearly employment providers rather than job seekers as a result of this.

In our community, women entrepreneurs are completely acknowledged, and they are a relatively recent phenomenon. "In order to assess the performance of women entrepreneurs in the Villupuram district, a survey of female entrepreneurs was carried out."

REVIEW OF LITERATURE

Performance of Women Entrepreneurs

In 2020, Ali Gohar, Li Yaokuang, and Muhammad Shakeel conducted study on "Entrepreneurial success factors and the performance of women-owned businesses. The study was carried out in Pakistan." The success of women-owned firms was broken down into several categories, including business environments, entrepreneur traits, external supportive factors, and internal company environments. According to the data, the performance of women-owned enterprises is favorably correlated with the external business environment, entrepreneur traits, and supportive variables. "The analysis also found that the performance of women-owned enterprises is unaffected by perceived national culture."

In 2019, Brixiova Zuzana, Thierry Kangoye, and Mona Said conducted research on the topic of "Gender disparities in entrepreneurial performance, training, and human capital." The research was carried out in Africa. According to the study, women entrepreneurs' performance is directly improved by higher education. The study also found that although financial literacy training helps males, it affects them directly. However, it has little effect on women entrepreneurs' sales levels. The authors suggested that postsecondary education that emphasizes non-cognitive talents and a balanced set of skills be included in policies for women entrepreneurs, as well as the significance of entrepreneurial training programs.

The "Influence of training on business performance of women entrepreneurs" was examined by Rahmat et al. (2019). The MSMEs that operate in Nigeria's North-Western States provided the data. The role of innovation was viewed as mediating. For data analysis, "partial least squares-structural equation modeling was used. According to the data, training has an impact on women's business performance in terms of innovation. The study also found that the level of training women receive has an impact on their business performance in MSMEs."

Thomas Ngui, Joseph Ntale, and Agnes Ajuna (2018) conducted research titled "Impact of training on the performance of women entrepreneurs." The study was carried out at Kenya's Meru Town. The design of the survey was descriptive. 568 female entrepreneurs made up the research population. The method of stratified random sampling was applied. The questionnaire was self-administered. The data was analyzed using a linear regression model and descriptive statistics. According to the data, training has an impact on how well women-owned businesses function. To ensure that there is helpful authorization for entrepreneurial training, the authors proposed that there is an urgent need to improve technical and vocational training institutions for women.

"The study Importance of Entrepreneurial Competencies on the Performance of Women Entrepreneurs was conducted by Tola Zizile and Chimucheka Tendai (2018). A quantitative research design was employed in the study. The study was carried out in South Africa's East London. We used both primary and secondary sources of information. To gather information, a self-administered questionnaire was employed. The study found a correlation between women entrepreneurs' performance and their entrepreneurial competencies. The author proposed tactics that could be used to enhance women entrepreneurs' entrepreneurial skills."

In 2018, Abdul Khaleque carried out research on the "Performance of women entrepreneurs." The research was carried out in Bangladesh. The four main business categories that women entrepreneurs focused on were boutiques, parlors, apparel, and fashion. They used a descriptive research design. It was the Durbin-Wu-Hausman test. The investigation found that the monthly turnover of female businesses is influenced by both credit size and credit limitations. "The research recommended that relaxing credit constraints develops the business performance of women entrepreneurs."

"A study on the Determinants of women entrepreneurs' performance in SMEs was conducted by Normaizatul et al. (2018). The study was carried out in Kelantan. A questionnaire was used to gather the data. The method of random sampling was used. The study found that educational attainment and cultural and working capital had a major impact on the performance and success of female entrepreneurs. To ensure their significant contribution to these commercial ventures, female entrepreneurs should be granted the same success as their male counterparts."

Entrepreneurial Skills And Women Business Performance

The study "Impact of entrepreneurial skills of community pharmacists on pharmaceutical business performance" was conducted by Iyeseun O. Asieba and Teresa M. Nmadu in 2018. "The study was carried out in the Nigerian city of Jos. A cross-sectional survey was carried out." A total of thirty community pharmacists provided the data. The chi square test and frequency distribution were used. According to the investigation, industrial skills had a substantial impact on net profit. Business performance and stock growth were significantly impacted by financial literacy. The study also found that entrepreneurial and leadership abilities had a major impact on stock growth. Lastly, the study discovered that community pharmacists' entrepreneurial abilities had an impact on the success of pharmaceutical businesses.

The study "Entrepreneurial Skills and Growth of Small and Medium Enterprises" was conducted by Eunice Abdul and Omolara (2018). The study focused on minority and Nigerian entrepreneurs in the United Kingdom. 38 SME owners from Nigeria and the UK made up the research population. The method of judgmental sampling was applied. "The study found that the development of SMEs in Nigeria and the UK is influenced by entrepreneurial skills."

The study "Contribution of Entrepreneurial Education and Training to Performance of Small Enterprises run by women" was examined by Patricia Mburu and Samuel Njoroge (2018). The study was carried out in Nairobi, Kenya's bustling Langata Business District. The regression model of least squares was used. "Training, entrepreneurial education, and the performance of women-run small businesses are positively correlated," according to the report. The authors recommended encouraging women who are in charge of small businesses to get more training and education in entrepreneurship. These kinds of activities would help them manage their businesses in a way that promotes growth and maximizes performance.

The study "Influence of entrepreneurial skills in management on performance of women entrepreneurs" was conducted by Henry Ogaro Mosioma in 2011. The study was carried out in Kenya. A straightforward random sampling method was used. There were 327 female entrepreneurs in the sample. Primary data was gathered using a questionnaire. It was shown that providing women with financial aid is not as important as teaching them entrepreneurial skills. In order to help women achieve in their habits, the author recommended that policymakers take this element into account.

With a focus on "China's urban business environment and listed businesses between 2013 and 2021, this study investigates how the business environment affects enterprise resilience. It found that the human resource, financial, market, and innovation contexts contribute to resilience." The study also discovered that, in comparison to state-owned, large, and traditional sectors, improving the business climate increases resilience more for private companies, small and medium-sized businesses, and high-tech industries Wang, R., Zhang, G. (2025).

Entrepreneurial Skills

Entrepreneurs require a wide range of abilities, including financial planning and human resource management. Fortunately, if women are committed to entrepreneurship and have sound thinking, they can have a good upbringing. During their business course, they make mistakes, obtain valuable lessons, and eventually learn from their failures and the experience of teaching themselves these abilities. Early acquisition of some talents is essential; otherwise, a lack of expertise could mean disaster for their company. Regretfully, this method of learning can occasionally come too late. The following four competencies must be developed by women if they intend to start their businesses or enter the realm of business ownership.

The following are those four abilities:

- "Technical Skills"
- "Managerial Skills"
- "Entrepreneurial Skills"
- "Personal Maturity Skills"

(I) Technical Skills

According to Mitchell et al. (2002), the most prosperous businesspeople require technical abilities in addition to creating goods and services. This is in line with the conclusions obtained by scholars who classify entrepreneurship, including Lichtenstein and Lyons (1996). They are classified as artisan entrepreneurs at one extreme of the spectrum. To enhance their technical or professional knowledge, they started a new business. Other crucial abilities, like management experience and communication skills, are frequently lacking among entrepreneurs. However, their technical expertise is strong. These are the individuals who add legal, communicative, economic, or strategic knowledge and abilities to their technical skill set.

(ii) Managerial Skills

The first component is technical capabilities, which are widely acknowledged as crucial managerial abilities for any company's operation. The research provides substantial support for these (Williams, 1994). The utilization of the business is generally the subject of the second managerial skill in this set. This brings up several intriguing issues, mostly pertaining to advisory groups. "Higher-order learning and problem solving appear to be similar." These abilities seem to be linked to company performance and aid in their continued operation.

(iii) Entrepreneurial Skills

Some entrepreneurs find great value in using environmental scanning to find possible company possibilities. One of the most important abilities for an entrepreneur is said to be the ability to identify and recognize market possibilities. For entrepreneurs, speaking and visual presentations are creative and useful skills. Another crucial talent is the ability to balance activities and network with other entrepreneurs.

(iv) Personal Maturity Skills

It appears that female entrepreneurs' personal maturity abilities are not sufficiently developed. However, entrepreneurs could have other opportunities, including "make or break" skills. Research on entrepreneurship has just lately started to give these abilities enough consideration. Rarely do entrepreneurial training programs incorporate these abilities.

2.3 Barriers For Women Entrepreneurs

"Getamesay Worku Mulat (2017) found that women entrepreneurs' business performance is impacted by several factors, including difficulty utilizing various legal benefits to expand the business, lack of market knowledge, high costs to acquire new technology, inadequacy of credit institutions & high-interest requirements for banks, other lending institutions, and decision-making issues, the high cost of shop rent, high collateral requirements for banks, and a lack of skill to adopt new technology and other lending institutions."

The topic of Elizabeth Chinomona and Eugine Tafadzwa Maziriri's (2015) study was "Challenges facing women entrepreneurs." The Gauteng Province of South Africa is where the study was carried out. The research design used was qualitative. The study found that obstacles to women entrepreneurs include discrimination based on gender, a lack of education and training, negative attitudes, insufficient resources, and lack of access to financing.

In 2014, Fungai Ngoma Mauchi and "colleagues conducted a study on the Difficulties faced by women entrepreneurs." The study was carried out in Zimbabwe's Mashonaland Central Province. They used a qualitative research design. The study's sample size consisted of 34–50 female entrepreneurs. According to the study, the marketplaces for getting raw materials were mentioned as the least difficult for female business owners. The study also found that obstacles faced by female entrepreneurs include insufficient education, networking difficulties, management skills, access to financing, and conflicts between work and family obligations.

The study "Barriers to successful entrepreneurship for women" was conducted by Garten et al. (2013). The study was carried out throughout 23 Ukrainian districts. The use of purposeful sampling was made. Twenty-three interviews and one focus group with ten participants provided the data. NVIVO 8 was used to analyze qualitative data. Despite the obstacles they encounter, women in Ukraine are capable of achieving success as entrepreneurs.

Gary Akehursta, Enrique Simarrob and Alicia Mas-Turb (2012) analyzed the paper titled "Women entrepreneurship in small service firms: motivations, barriers, and performance." The study was carried out in Spain's Valencia Region. The method of random sampling was used. A design of exploratory inquiry was chosen. The study found that several internal and external factors influence the performance, motivation, and barriers to success of businesses founded by women.

Research Gap

According to an analysis of the literature (Tahir, 2024), currently available on the performance of women entrepreneurs, the majority of studies conducted in this field have looked at the psychological traits, motivation, aspirations, profile, obstacles, and challenges faced by women entrepreneurs. Research on the performance of women entrepreneurs in northern India was not very active. (Sinha, P. (2003) and (Datta, J. et.al. 2016). Researchers specifically looked at how women entrepreneurs' performance was affected by their entrepreneurial talents (Adeyeye et al., 2015); Msoka Elizabeth, 2013) and Henry Ogaro Mosioma, 2011).

CONCEPTUAL FRAMEWORK

Entrepreneurial Skills

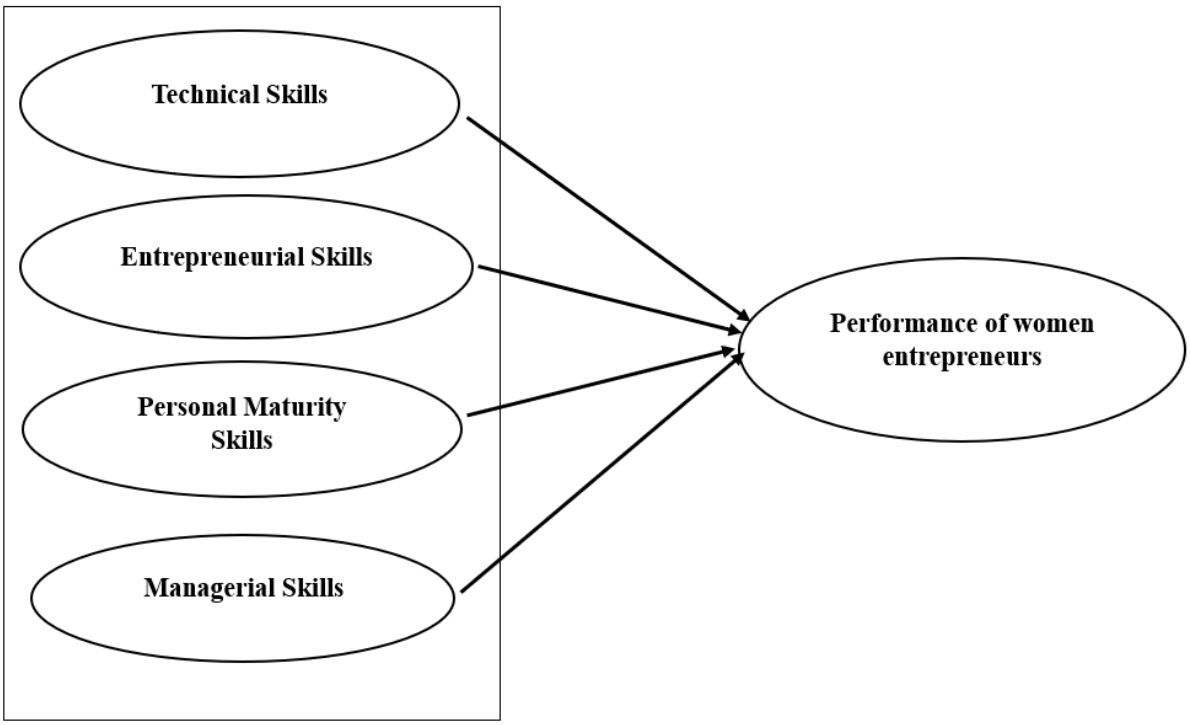


Figure 1: Conceptual Framework

The study by Wendy Ming-Yen et al. (2007) identified the dependent variable "Performance of women entrepreneurs." The study report by William et al. (2014) identified the independent variable of entrepreneurial skill. "Technical Skills," "Managerial Skills," "Entrepreneurial Skills," and "Personal Maturity Skills" are the four factorial skills into which the author divides entrepreneurial skills. Entrepreneurial skills have an impact on pharmaceutical business performance, according to research by Iyeseun O. Asieba and Teresa M. Nmadu (2018), Eunice Abdul, Omolara (2018), Patricia Mburu and Samuel Njoroge (2018), Shamsul Hana Abd Rani and Norashidah Hashim (2017), Ikupolati (2017), Charles R. Badatu (2015), Barazandeh et al. (2015), Msoka Elizabeth (2013), Roselyn et al. (2013), and Henry Ogaro Mosioma (2011). Thus, entrepreneurial skills were regarded as an independent variable and the researcher's performance of female entrepreneurs as a dependent variable.

Research Objective

"To examine the impact of entrepreneurial skills on the performance of women entrepreneurs."

Hypotheses of the Research

- **H_a1:** "There is a significant association between entrepreneurial skills and the performance of women entrepreneurs."
- **H_a2:** "There is a significant association between Technical Skills and the performance of women entrepreneurs"
- **H_a3:** "There is a significant association between Managerial skills and the performance of women entrepreneurs."
- **H_a4:** "There is a significant association between Personal Maturity skills and the performance of women entrepreneurs."

Research Design

"This study employs a quantitative research design to analyse the influence of entrepreneurial skills on the performance of women entrepreneurs in North India. A structured survey questionnaire is used to collect primary data, ensuring the reliability and validity of the findings**.**"

Sample Selection and Data Collection

"The target population consists of women entrepreneurs operating in Micro, Small, and Medium Enterprises (MSMEs) across various sectors in North India. A purposive sampling technique is used to select respondents who

have been actively engaged in business for at least two years." Data is collected through an online and offline survey, with a sample size of 383 determined for structural equation modelling (SEM).

Measurement of Variables

"The study measures **entrepreneurial skills** (independent variable) using constructs such as Technical Skills, Managerial Skills, Entrepreneurial Skills, and Personal Maturity Skills." **The performance of women entrepreneurs** (dependent variable) is assessed based on some other factor. A **Likert scale (1 to 5)** is used for responses.

Data Analysis and Interpretation

Descriptive statistics will be employed as data analysis methods after data collection is complete, and the study produces quantitative data from structured and ordered objects. We will complete the coding for the structured pieces. Following questionnaire completion, data were examined using PLS-SEM- Smart PLS 3.2.7. Validity and reliability are two crucial factors to consider when determining or evaluating a certain instrument.

"The collected data is analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 3 software." The analysis follows these key steps:

Measurement Model Assessment:

- "Evaluating reliability using Cronbach's Alpha and Composite Reliability (CR)."
- "Checking convergent validity via Average Variance Extracted (AVE)."
- "Ensuring discriminant validity using the Fornell-Larcker Criterion and Heterotrait-Monotrait (HTMT) ratio."

Structural Model Assessment:

- Examining path coefficients to assess relationships between variables.
- Analyzing the coefficient of determination (R^2) to evaluate the model's explanatory power.
- Assessing effect size (f^2) and predictive relevance (Q^2) using the blindfolding procedure.
- Performing bootstrapping (5000 resamples) to test the significance of hypotheses.

Ethical Considerations

Participants are assured of data confidentiality, voluntary participation, and anonymity. Informed consent is obtained before data collection, and the study adheres to ethical research guidelines.

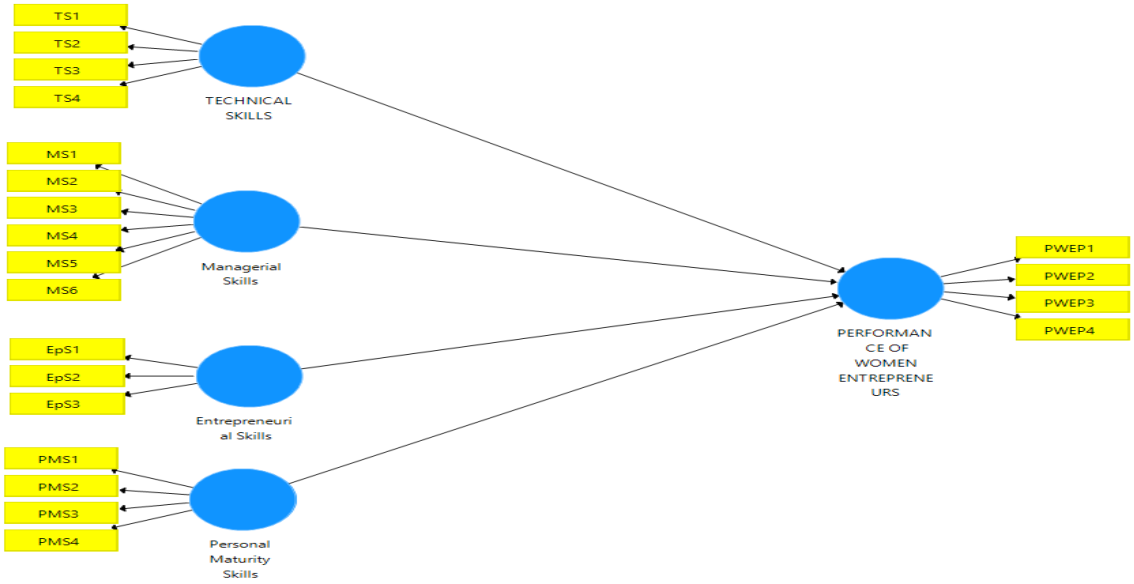
Descriptive Analytics

Descriptive statistics will be employed as data analysis methods after data collection is complete, and the study produces quantitative data from structured and ordered objects. We will complete the coding for the structured pieces.

The median value of all the variables of each lower order construct was taken to describe the sample data

Table:1 Descriptive Analytics

Variable	Mean	StDev	Minimum	Q1	Q3	Maximum
TECHNICAL SKILLS	3.3446	1.4472	1.0000	2.0000	5.0000	5.0000
MANAGERIAL SKILLS	3.7037	1.3509	1.0000	2.5000	5.0000	5.0000
ENTREPRENEURIAL SKILLS	3.4883	1.3764	1.0000	2.0000	5.0000	5.0000
PERSONAL MATURITY SKILLS	3.4883	1.3929	1.0000	2.0000	5.0000	5.0000
PERFORMANCE OF WOMEN ENT	3.0013	1.3878	1.0000	1.5000	4.0000	5.0000



PLS _ SEM Model

Table:2 Scale Assessment Types and cut-off values

Scale Assessment	**Type of cut-offs**			**Reference**
Reliability	A value of 0.7 or above for Cronbach's alpha and rho-a indicates internal consistency.			(Hair, Black, Babin & Anderson, 2014)
Validity	Theoretical construct	Face Validity	This validity is confirmed by researchers in the field.	
		Content Validity	qualitatively based on the opinions of subject-matter specialists.	
	Empirical construct	Convergent Validity	Outer Loadings should be more than 0.7 and AVE should be 0.5 or more	
		Discriminant Validity	Fornell- Larcker criterion and HTMT should be less than 0.95.	

"In the first stage of the repeated indicator approach, a model integrating lower-order components (LOC) and higher-order components (HOC) is developed," including both exogenous and endogenous constructs. All measured variables (items) of LOC are loaded onto the HOC, with the primary focus on evaluating the reflective measurement models of LOCs. At this stage, only the validity and reliability of LOCs are assessed, while the HOCs are not considered. Since LOCs are reflective constructs, their reliability is measured using "Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). Validity is established using the Fornell-Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT). Once the measurement model is evaluated and reported, the latent variable scores are extracted and stored in a dataset for further analysis in the second stage."

"In the second stage, the latent variable scores" obtained from Stage 1 are used to create and estimate the Stage 2 model. These LOC scores are incorporated into the dataset as new variables to analyze the HOC. The evaluation of the measurement model for HOC begins by assessing indicator reliability and AVE, examining the loadings of LOCs on the HOC. These loadings are used to calculate CR and AVE, which should exceed the critical threshold of 0.5 to establish convergent validity and reliability. Cronbach's Alpha, CR, and AVE are used to confirm reliability, while discriminant validity is assessed using the HTMT criterion. Once the measurement model is validated, the structural model evaluation follows, focusing on the significance and relevance of path coefficients, as well as predictive accuracy measures such as Q^2 and PLS-Predict. This two-stage approach ensures a comprehensive assessment of both LOC and HOC within the model.

When no higher-order construct (HOC) is present in the model, only Stage 1 is followed. In this case, the assessment focuses solely on the measurement model of LOCs without the need for latent variable scores for further stages. The process remains the same, where LOCs are evaluated for reliability and validity before proceeding directly to the structural model assessment.

Validity Analysis

Convergent Validity- Outer Loadings and Average Variance Extracted (AVE)

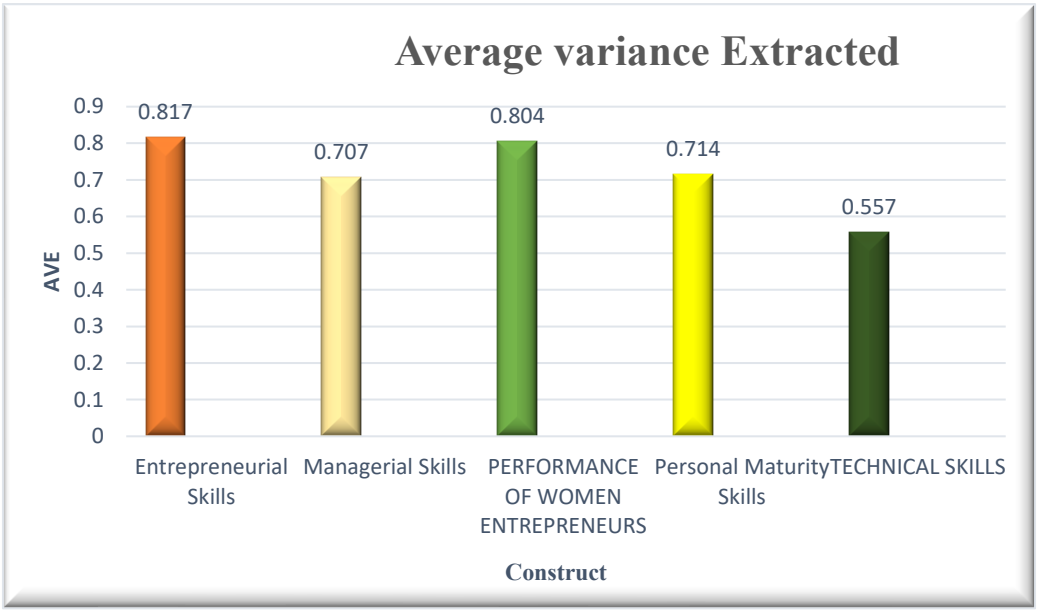
Table 3: Outer Loadings

Construct	Original Sample (O)
EpS1 <- Entrepreneurial Skills	0.870
EpS2 <- Entrepreneurial Skills	0.954
EpS3 <- Entrepreneurial Skills	0.886
MS1 <- Managerial Skills	0.605
MS2 <- Managerial Skills	0.781
MS3 <- Managerial Skills	0.890
MS4 <- Managerial Skills	0.947
MS5 <- Managerial Skills	0.913
MS6 <- Managerial Skills	0.863
PMS1 <- Personal Maturity Skills	0.644
PMS2 <- Personal Maturity Skills	0.960
PMS3 <- Personal Maturity Skills	0.785
PMS4 <- Personal Maturity Skills	0.951
PWEP1 <- PERFORMANCE OF WOMEN ENTREPRENEURS	0.882
PWEP2 <- PERFORMANCE OF WOMEN ENTREPRENEURS	0.941
PWEP3 <- PERFORMANCE OF WOMEN ENTREPRENEURS	0.884
PWEP4 <- PERFORMANCE OF WOMEN ENTREPRENEURS	0.879
TS1 <- TECHNICAL SKILLS	0.620
TS2 <- TECHNICAL SKILLS	0.744
TS3 <- TECHNICAL SKILLS	0.703
TS4 <- TECHNICAL SKILLS	0.776

All outer loadings except of **TS1 <- TECHNICAL SKILLS** greater than 0.70. AVE, Composite Reliability and Cronbach Alfa of **TS1 <- TECHNICAL SKILLS** met the threshold limits and outer loadings of **TS1 <- TECHNICAL SKILLS** were more than 0.40 Therefore **TS1 <- TECHNICAL SKILLS** were retained.

Table 4: Average Variance Extracted (AVE)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Entrepreneurial Skills	0.817	0.804	0.057	14.231	**0.000**
Managerial Skills	0.707	0.685	0.072	9.819	**0.000**
PERFORMANCE OF WOMEN ENTREPRENEURS	0.804	0.804	0.012	65.287	**0.000**
Personal Maturity Skills	0.714	0.744	0.189	3.780	**0.000**
TECHNICAL SKILLS	0.557	0.668	0.186	2.997	**0.003**



All AVEs' are greater than 0.50

Thus, with a and b above Convergent Validity is established

Discriminant (Divergent) Validity - Fornell- Larcker criterion and Heterotrait-Monotrait ratio (HTMT)

Table 5: Fornell-Larcker Criterion

	Entrepreneurial Skills	Managerial Skills	Performance of women entrepreneurs	Personal Maturity Skills	TECHNICAL SKILLS
Entrepreneurial Skills	0.904				
Managerial Skills	0.010	0.841			
Performance of women entrepreneurs	0.126	0.136	0.897		
Personal Maturity Skills	0.010	0.002	0.042	0.845	
Technical skills	0.004	0.073	0.085	0.174	0.239

It can be seen that along the diagonal each value is largest in its row and in its column thus meeting the Forner Larcker Criterion for convergent validity

Table 6: Heterotrait-Monotrait Ratio (HTMT)

	Original Sample (O)
Managerial Skills -> Entrepreneurial Skills	0.023
PERFORMANCE OF WOMEN ENTREPRENEURS-> Entrepreneurial Skills	0.135
PERFORMANCE OF WOMEN ENTREPRENEURS-> Managerial Skills	0.130
Personal Maturity Skills -> Entrepreneurial Skills	0.029
Personal Maturity Skills -> Managerial Skills	0.038
Personal Maturity Skills -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.023
TECHNICAL SKILLS -> Entrepreneurial Skills	0.059
TECHNICAL SKILLS -> Managerial Skills	0.116
TECHNICAL SKILLS -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.028
TECHNICAL SKILLS -> Personal Maturity Skills	0.082

All HTMT ratios less than 0.95.

Thus, with a and b above Discriminant Validity is established

Construct Reliability and Validity

Table 7: Construct Reliability and Validity

	Cronbach's Alpha	Rho_a	Composite Reliability	Average Variance Extracted (AVE)
Entrepreneurial Skills	0.888	0.910	0.931	0.817
Managerial Skills	0.920	0.979	0.934	0.707
PERFORMANCE OF WOMEN ENTREPRENEURS	0.919	0.933	0.943	0.804
Personal Maturity Skills	0.946	0.706	0.907	0.714
TECHNICAL SKILLS	0.913	0.801	0.951	0.557

All Cronbach's Alpha and Composite Reliability values are **well above 0.70**, confirming **internal consistency**. AVE values reaffirm **convergent validity**. The highest reliability is found in **Managerial and Entrepreneurial Skills**, reflecting their clear measurement.

Assessment of Structural Model

Table 8: Collinearity Analysis (VIF Values)

	VIF
EpS1	2.208
EpS2	4.504
EpS3	3.224
MS1	2.327
MS2	4.391
MS3	2.719
MS4	4.225
MS5	4.750
MS6	3.920
PMS1	4.220
PMS2	4.385
PMS3	4.570
PMS4	3.965
PWEP1	4.424
PWEP2	3.154
PWEP3	2.643
PWEP4	2.800
TS1	2.736
TS2	4.689
TS3	4.418
TS4	3.577

It can be seen that all VIFs are less than 5, therefore, there is no issue of multicollinearity.

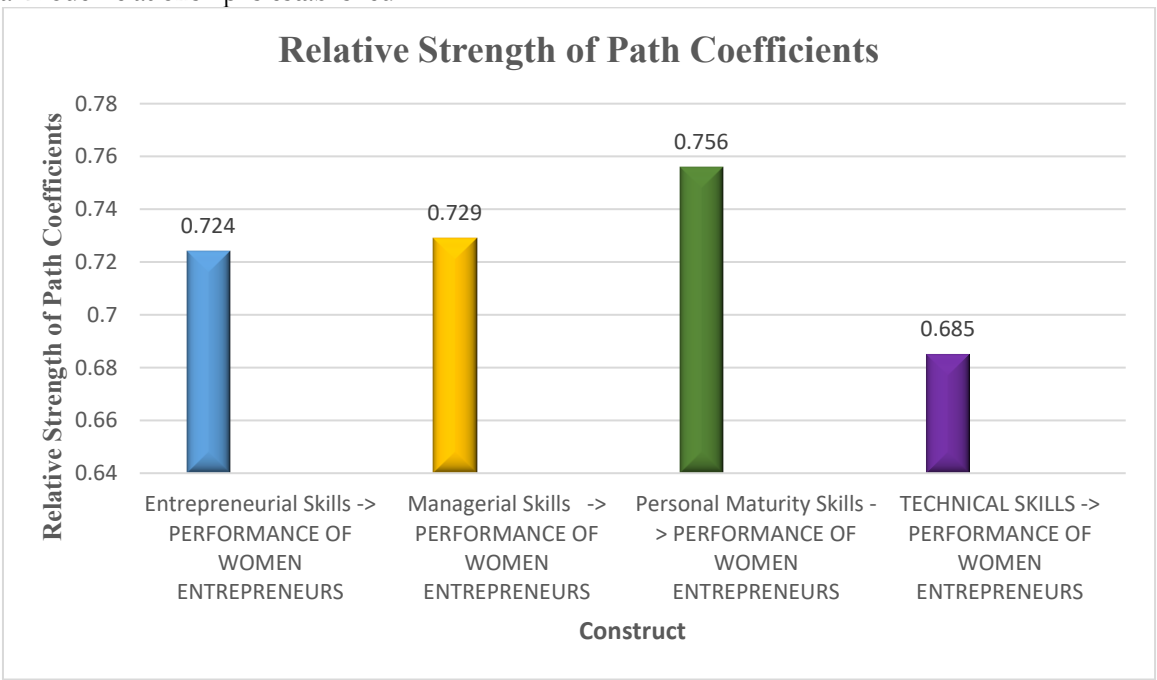
Significance and Relevance of the Structural Model Relationship- Significance of Path Coefficients

Path coefficients represent the strength and direction of the relationships between constructs

Table 9: Significance of Path Coefficients

Relation	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Entrepreneurial Skills -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.724	0.128	0.050	14.427	**0.000**
Managerial Skills -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.729	0.147	0.050	14.503	**0.000**
Personal Maturity Skills -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.756	0.016	0.079	9.545	**0.000**
TECHNICAL SKILLS -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.685	0.008	0.080	8.549	**0.000**

Since all T statistics are more than 1.96 and all p values are less than 0.05 significance and relevance of the structural model relationship is established.



Since all the significance and applicability of the structural model are demonstrated by T statistics exceeding 1.96 and all p values falling below 0.05. A relationship is established. All path coefficients are **positive and significant ($p < 0.001$)**. **Personal Maturity Skills** show the highest coefficient (0.756), indicating a **strong impact** on performance. This suggests that **all skill dimensions significantly affect business performance** among women entrepreneurs.

Explanatory Power of the Model

Table 10: R-Square (Explanatory Power)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
PERFORMANCE OF WOMEN ENTREPRENEURS	0.743	0.056	0.219	3.387	**0.001**

Since R Square values of Business Sustainability are more than 0.67 and p-Value < 0.05, the endogenous latent variables have substantial explanatory power

Table 11: Effect Size (f^2)

Relation	Original Sample (O)
Entrepreneurial Skills -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.416
Managerial Skills -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.317
Personal Maturity Skills -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.403
TECHNICAL SKILLS -> PERFORMANCE OF WOMEN ENTREPRENEURS	0.307

Since all f values were greater than 0.15 and less than 0.35. Entrepreneurial Skills and Personal Maturity Skills show the **largest effects** on performance.

Predictive Power

Number of sub-samples/ Number of folds K = 10
Number of observations = 383
Observations in each subsample = 383/10= 38.3 ≈ 39 Observations
Number of subsamples in training data = K-1=9
Number of observations in training data = 9 x 38.3 = 344.7 ≈ 345 Observations
Number of observations in testing data = 39 Observations

Hypothesis Testing Summary

Table 12: Hypotheses Testing Summary

Sl. No.	Alternate Hypothesis	Test	Sig.	Decision (99% Confidence)
1.	There is a significant association between entrepreneurial skills and the performance of women entrepreneurs.	PLS_SEM	0.000	Failed to Reject
2.	There is a significant association between Technical Skills and the performance of women entrepreneurs.	PLS_SEM	0.000	Failed to Reject
3.	There is a significant association between Managerial skills and the performance of women entrepreneurs.	PLS_SEM	0.000	Failed to Reject
4.	There is a significant association between entrepreneurial skills and the performance of women entrepreneurs.	PLS_SEM	0.000	Failed to Reject

All four hypotheses were supported by the data analysis, indicating a statistically significant relationship between each skill category and business performance. This reinforces the study's central proposition that entrepreneurial skills are foundational to the success and sustainability of women-led MSMEs in North India.

CONCLUSION

This study examines the impact of entrepreneurial skills on the performance of women entrepreneurs in North India, focusing on key competencies such as technical, managerial, entrepreneurial, and personal maturity skills.

The findings indicate a significant correlation between these skills and business performance, emphasizing their role in enhancing sustainability and growth. Women entrepreneurs face several challenges, including financial constraints, lack of business training, and socio-cultural barriers, which hinder their ability to scale their businesses effectively. However, government support and technological advancements have been found to play a crucial role in mitigating these challenges and improving overall business performance.

By assessing entrepreneurial competencies, this study provides empirical evidence that skill development directly influences business success. The research highlights the need for targeted interventions to bridge skill gaps and foster an enabling business environment for women entrepreneurs. Overall, the study contributes to the growing body of literature on women entrepreneurship by offering insights into the specific skill sets that drive business performance and sustainability in the MSME sector.

RECOMMENDATIONS

1. **Skill Development Programs:** Government and private institutions should introduce tailored training programs focused on enhancing technical, managerial, and entrepreneurial skills to empower women entrepreneurs.
2. **Access to Financial Resources:** Policymakers should facilitate easier access to credit and financial resources through low-interest loans, grants, and microfinance schemes specifically designed for women-led businesses.
3. **Technology Integration:** Encouraging digital literacy and the adoption of technology can improve operational efficiency, marketing, and customer engagement among women entrepreneurs.
4. **Government Policy Support:** Strengthening policies that promote women's entrepreneurship through tax incentives, subsidies, and mentorship programs will enhance business sustainability.
5. **Networking and Collaboration:** Establishing women entrepreneur networks and business incubators can provide a platform for knowledge sharing, mentorship, and collaboration to enhance business growth.
6. **Awareness and Sensitization Programs:** Organizing campaigns to challenge socio-cultural norms that restrict women's participation in entrepreneurship and advocating for gender-inclusive policies can create a more supportive ecosystem.
7. **11. Future Research Directions**
8. **Longitudinal Studies:** Future research can conduct long-term studies to evaluate the sustained impact of entrepreneurial skills on business performance over different economic cycles.
9. **Sector-Specific Analysis:** Exploring the influence of entrepreneurial skills in specific industries such as technology, agriculture, and manufacturing can provide deeper insights into sectoral challenges and opportunities.
10. **Comparative Analysis:** A comparative study between women entrepreneurs in urban and rural settings can help identify region-specific constraints and solutions.
11. **Impact of Digital Transformation:** Investigating how digital transformation and e-commerce adoption affect the business sustainability of women entrepreneurs can provide contemporary insights.
12. **Policy Effectiveness Studies:** Assessing the effectiveness of various government policies and initiatives in fostering women entrepreneurship can inform better policy-making and implementation.
13. **Cross-Cultural Studies:** Comparing the entrepreneurial performance of women in different cultural contexts or countries can contribute to a global understanding of best practices in women entrepreneurship.

By addressing these recommendations and pursuing further research, stakeholders can better support women entrepreneurs and enhance their contribution to economic development and business sustainability.

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REFERENCES

Abd Rani, S. H., & Hashim, N. (2017). Factors that influence women entrepreneurial success in Malaysia: A conceptual framework. *International Journal of Research in Business Studies and Management, 4*(1), 16-23.

Abdul Khaleque. (2018). Performance of women entrepreneurs: Does access to finance really matter? *Eurasian Journal of Business and Economics, 11*(21), 23-48.

Abdul, E. O. (2018). Entrepreneurial skills and growth of small and medium enterprises (SMEs): A comparative analysis of Nigerian entrepreneurs and minority entrepreneurs in the UK. *International Journal of Academic Research in Business and Social Sciences, 8*(5), 27–46.

Ajuna, A., Ngui, T., & Ntale, J. (2018). Impact of training on the performance of women entrepreneurs in Kenya: The case of Meru Town. *International Academic Journal of Innovation, Leadership and Entrepreneurship, 2*(2), 93-112.

Akehurst, G., Simarro, E., & Mas-Tur, A. (2012). Women entrepreneurship in small service firms: Motivations, barriers, and performance. *The Service Industries Journal, 32*(15), 2489–2505.

Akpor-Robaro, M. O. (2012). The impact of socio-cultural environment on entrepreneurial emergence: A theoretical analysis of Nigerian society.

Aliyu, R. M., Ahmad, T. S. T., & Nordin, N. (2019). The influence of training on business performance of women entrepreneurs: The mediating role of innovation. *Sains Humanika, 2*(2), 91–97.

Asieba, I. O., & Nmadu, T. M. (2018). An assessment of the impact of entrepreneurial skills of community pharmacists on pharmaceutical business performance in Jos Metropolis, Nigeria. *Pharmacy Practice, 16*(1), 1110.

Badatu, C. R. (2015). The impact of entrepreneurship skills provision to women in micro and small enterprises performance. *The Open University of Tanzania*, 1-60.

Brixiova, Z., Kangoye, T., & Said, M. (2019). Training, human capital, and gender gaps in entrepreneurial performance. *IZA Institute of Labor Economics*, 1-30.

Brunetto, Y., Shacklock, K., Teo, S., & Farr-Wharton, R. (2014). The impact of management on the engagement and well-being of high emotional labor employees. *The International Journal of Human Resource Management, 25*(17), 2345-2363.

Cantillon, R. (1931). *Essai sur la nature du commerce en général.* Macmillan.

Chinomona, E., & Maziriri, E. T. (2015). Women in action: Challenges facing women entrepreneurs in the Gauteng Province of South Africa. *International Business & Economics Research Journal, 14*(6), 835-849.

Datta, J., Das, J. K., Debnath, A., Ram, A., & Haldar, S. (2016). Entrepreneurial behaviour of rural women on bamboo handicrafts in Tripura, north-east India. *Economic Affairs*, *61*(4), 653-658.

Drucker, P. F. (1985). *Innovation and entrepreneurship: Practices and principles.* Harper & Row.

Gakure, R. W., Ngugi, P. K., Waititu, A. G., & Keraro, V. N. (2013). Effect of entrepreneurial skills on the sustainability of small and medium family enterprises after the exit of the founders. *International Journal of Management & Business Studies, 3*(2), 11-24.

Garten, E., Johnson, J. S., & Buko, S. (2012). Barriers to successful entrepreneurship for women in Ukraine. *Studies of Changing Societies Journal, 4*(10), 90-104.

Harbison, F. (1956). Entrepreneurial organization as a factor in economic development. *The Quarterly Journal of Economics, 70*(3), 364-379.

Ikupolati, A. O., Medubi, R. D., Obafunmi, M. O., Adeyeye, M. M., & Oni, E. O. (2017). Small and medium enterprises (SMEs) as a source of human capacity building in Nigeria. *Journal of Small Business and Entrepreneurship Development, 5*, 35-42.

Lichtenstein, G., & Lyons, T. (1996). *The practices in this book's database are catalogued by entrepreneurial need and can be used like a physician's desk reference to match treatment options with diagnoses.*

Mauchi, F. N., Mutengezanwa, M., & Damiyano, D. (2014). Challenges faced by women entrepreneurs: A case study of Mashonaland Central Province. *International Journal of Development and Sustainability, 3*(3), 466-480.

Mburu, P., & Njoroge, S. (2018). Contribution of entrepreneurial education and training to performance of small enterprises run by women in Kenya. *Developing Country Studies, 8*(2), 116-123.

Mitchell, R. K., Smith, J. B., Morse, E. A., Seawright, K. W., Peredo, A. M., & McKenzie, B. (2002). Are entrepreneurial cognitions universal? Assessing entrepreneurial cognitions across cultures. *Entrepreneurship Theory & Practice, 26*(24), 9-32.

Moore, D. P., & Buttner, E. H. (1997). *Woman entrepreneurs: Moving beyond the glass ceiling.* Sage Publications.

Mosioma, H. O. (2011). Influence of entrepreneurial skills in management on performance of women groups' projects in Nyaribari Chache Constituency, Kenya. *University of Nairobi, Kenya*, 1-78.

Msoka, E. (2013). Do entrepreneurship skills have an influence on the performance of women-owned enterprises in Africa? Case of micro and small enterprises in Dar es Salaam, Tanzania. *International Journal of Business, Humanities and Technology, 3*(3), 53-62.

Mulat, G. W. (2017). Challenges that affect women entrepreneurs' business performance in MSEs: A study in Debre Markos Town, Ethiopia. *Imperial Journal of Interdisciplinary Research, 3*(4), 1858-1870.

Rastogi, M., Baral, R., & Banu, J. (2022). What does it take to be a woman entrepreneur? Explorations from India. *Industrial and Commercial Training*, *54*(2), 333-356.

Saidia, N. A., Rashida, N. A., Zinb, N. M., Ramlanc, H., Joharid, N., & Mohamade, M. R. (2018). Determinants of women entrepreneurs' performance in SMEs. *International Symposium & Exhibition on Business and Accounting*, 1-6.

Sinha, P. (2003). Women entrepreneurship in the North East India: motivation, social support and constraints. *Indian Journal of Industrial Relations*, 425-443.

Smith, W. L., Schallenkamp, K., & Eichholz, D. E. (2014). Entrepreneurial skills assessment: An exploratory study. *Emporia State University*, 1-42.

Wang, R., & Zhang, G. (2025). Does optimizing the business environment enhance enterprise resilience? The role of digital innovation and entrepreneurial spirit. *Humanities and Social Sciences Communications, 12*, 469. https://doi.org/10.1057/s41599-025-04704-3

Wendy, M. Y. T., & Siong-Choy, C. (2007). Theorizing a framework of factors influencing the performance of women entrepreneurs in Malaysia. *Journal of Asia Entrepreneurship and Sustainability, 3*(2).

Williams, A., Dobson, P., & Walters, M. (1994). *Changing culture: New organizational approaches* (2nd ed.). Cromwell Press.

Zizile, T., & Tendai, C. (2018). The importance of entrepreneurial competencies on the performance of women entrepreneurs in South Africa. *The Journal of Applied Business Research, 34*(2), 223-236.

