

THE ROLE OF DIGITAL TECHNOLOGY AND GOVERNMENT POLICIES IN PROMOTING WOMEN-LED START-UPS IN INDIA: AN EMPIRICAL ANALYSIS OF OPPORTUNITIES, CHALLENGES, AND GROWTH PROSPECTS

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ABSTRACT

Women-led start-ups play an important role in promoting economic growth, innovation, and inclusive development in India. This study examines how digital technology adoption and government policy support enhance the growth performance of women-led start-ups. The study surveyed 125 women entrepreneurs in Tiruchirappalli district, Tamil Nadu, using a structured questionnaire. The researchers analysed the data using Structural Equation Modelling (SEM) in AMOS 24 and regression techniques. The findings show that digital technology adoption and government policy support significantly improve entrepreneurial digital capability, while government policy support directly and positively influences Start-up growth. The study highlights the importance of integrating digital empowerment with effective policy interventions to strengthen women's entrepreneurship.

KEYWORDS: Women Entrepreneurship, Women-Led Start-Ups, Digital Technology Adoption, Government Policy Support, Entrepreneurial Digital Capability, Start-Up Growth Performance, Digital Transformation.

INTRODUCTION

Women-led entrepreneurship has gained significant importance in India because it contributes to economic growth, job creation, innovation, and inclusive development. The expansion of the Startup ecosystem and increasing institutional support have encouraged more women to establish and manage businesses across diverse sectors. However, women entrepreneurs still face several challenges, including limited access to finance, inadequate business networks, restricted market opportunities, and technological barriers (Brush et al., 2019; Jennings & Brush, 2013). In this context, digital transformation has emerged as a key enabler by allowing women-led businesses to improve market access, adopt digital payment systems, use online platforms, and enhance operational efficiency (Nambisan, 2017; Verhoef et al., 2021). Alongside technological

advancement, government initiatives such as StartupIndia, Stand-Up India, and the Women Entrepreneurship Platform have attempted to strengthen women entrepreneurship through financial assistance, skill development, mentoring, and institutional support (Government of India, 2023; NITI Aayog, 2022).

Despite these developments, the combined influence of digital technology adoption and government policy support on women-led Startup growth remains insufficiently examined. Previous studies have mainly focused on women entrepreneurship challenges, digital transformation, or policy interventions independently, while limited research has explored how these factors interact to improve entrepreneurial outcomes. Moreover, the role of entrepreneurial digital capability in transforming technological resources into sustainable business growth remains underexplored, particularly in regional entrepreneurial ecosystems. Therefore, this study addresses this gap by examining the relationships among digital technology adoption, government policy support, entrepreneurial digital capability, and women-led Startup growth performance using empirical evidence from 125 women entrepreneurs in Tiruchirappalli district, Tamil Nadu, India. The study contributes to the literature by showing how technology-enabled strategies and supportive policy frameworks can strengthen the growth and sustainability of women-led enterprises.

REVIEW OF LITERATURE

Women entrepreneurship has gained considerable attention due to its contribution to economic growth, employment generation, and inclusive development. However, previous studies highlight that women entrepreneurs continue to face challenges such as limited access to finance, inadequate networks, and institutional barriers that restrict business expansion (Jennings & Brush, 2013; Brush et al., 2019). These challenges indicate the need for stronger entrepreneurial ecosystems supported by technology and policy interventions.

Digital technology has transformed entrepreneurial activities by enabling wider market access, digital payments, online marketing, and efficient business operations. Nambisan (2017) emphasized that digital technologies create new opportunities for entrepreneurs by improving innovation and resource accessibility, while Verhoef et al. (2021) noted that digital transformation enhances organisational performance through technology-driven processes. However, the benefits of digitalisation depend on entrepreneurs' digital capabilities and their ability to use available technologies effectively.

Government support mechanisms also play an important role in encouraging women-led enterprises through financial assistance, training, mentoring, and incubation support. Although initiatives such as Start-up India, Stand-Up India, and Women Entrepreneurship Platform have strengthened the entrepreneurial ecosystem, limited awareness and accessibility remain major concerns. Existing studies have largely examined digital adoption and government support separately, while their combined influence on women-led Start-up growth through entrepreneurial digital capability remains underexplored. Therefore, this study addresses this gap by examining the relationship between digital technology adoption, government policy support, entrepreneurial digital capability, and women-led Start-up performance in the Indian context.

RESEARCH GAP

Existing studies have examined women entrepreneurship, digital technology, and government support separately; however, limited research has explored their combined impact on women-led start-up growth. The role of entrepreneurial digital capability in linking technology adoption and business performance remains underexplored, particularly in regional contexts. This study addresses this gap by analysing the relationship between digital technology adoption, government policy support, and women-led start-up growth performance.

STATEMENT OF THE PROBLEM

Despite the growing importance of women-led start-ups in India, many women entrepreneurs continue to face challenges related to technology adoption, financial accessibility, market expansion, and institutional support. Although digital technologies and government

initiatives have created new opportunities, their effectiveness in improving start-up growth performance remains unclear. Understanding remains limited on how digital technology adoption and government policy support enhance entrepreneurial digital capability and contribute to sustainable growth. Therefore, this study aims to examine the role of digital technology adoption and government policies in promoting women-led start-ups in India.

OBJECTIVES OF THE STUDY

- To assess the role of digital technology adoption in enhancing the performance and sustainability of women-led start-ups in India.
- To examine the contribution of government policies and support mechanisms in promoting women entrepreneurship.
- To analyse the relationship between digital technology adoption, entrepreneurial digital capability, and Start-up growth performance.
- To investigate the mediating effect of entrepreneurial digital capability between digital technology adoption and Start-up growth.
- To evaluate the moderating influence of government policy support on the relationship between entrepreneurial capability and start-up growth.

RESEARCH HYPOTHESIS

H₀1: Digital Technology Adoption and Government Policy Support does not have a significant positive impact on Women-Led Start-Up Growth Performance in India.

H₀2: Government Policy Support does not have a significant positive impact on Entrepreneurial Digital Capability among women entrepreneurs.

H₀3: Digital Technology Adoption does not have a significant positive impact on Entrepreneurial Digital Capability among women entrepreneurs.

H₀4: Entrepreneurial Digital Capability does not mediate the relationship between Digital Technology Adoption and Women-Led Start-Up Growth Performance.

RESEARCH METHODOLOGY

The study employed a quantitative research approach to investigate the role of digital technology adoption and government policy support in promoting women-led start-ups in India. The research was conducted in Tiruchirappalli district, Tamil Nadu, and primary data were collected from 125 women entrepreneurs engaged in start-up and business activities. The study used purposive sampling to select respondents who owned or actively managed women-led enterprises. Data were collected through a structured questionnaire covering digital technology adoption, government policy support, entrepreneurial digital capability, and start-up growth performance. Respondents rated items on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The collected data were analysed using Regression analysis and Structural Equation Modelling (SEM) through AMOS 24. The study maintained ethical standards by ensuring voluntary participation, confidentiality, and using the collected information exclusively for academic purposes.

CONCEPTUAL FRAMEWORK OF THE STUDY

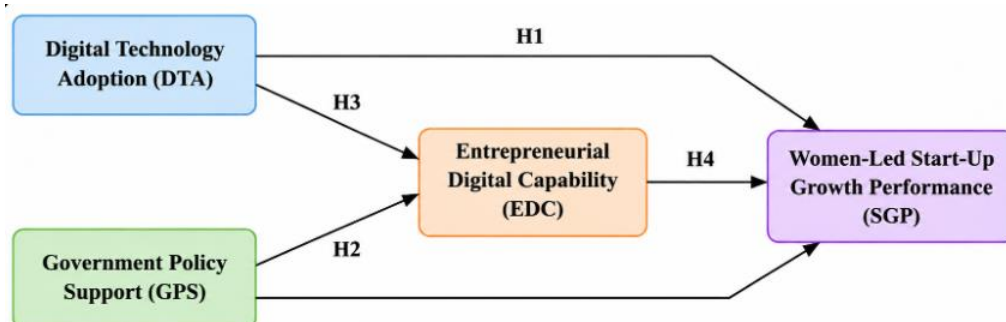


Figure 1: Conceptual Framework of Digital Technology Adoption, Government Policy Support, and Women-Led Start-Up Growth

RESULT AND DISCUSSIONS

Table 1: Reliability Analysis

Measure	Value	Interpretation
Cronbach's Alpha	0.832	Good Reliability
Number of Items	28	Adequate Scale Items

The reliability analysis confirmed that the research instrument achieved satisfactory internal consistency, with a Cronbach's Alpha coefficient of 0.832 for 28 items. According to accepted criteria, a value above 0.70 indicates acceptable reliability, suggesting that all items consistently measure the study's underlying constructs. Therefore, the questionnaire was considered reliable and suitable for further analysis, including correlation, regression, and structural equation modelling.

Multiple Regression Analysis

A multiple regression analysis examined the effects of Digital Technology Adoption (DTA) and Government Policy Support (GPS) on Women-Led Start-Up Growth Performance (SGP). The regression model was statistically significant ($F(2,122) = 4.138$, $p = 0.018$), indicating that the independent variables collectively explain significant variation in start-up growth performance.

Table 2: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df 1	df 2	Sig. F Change	Durbin - Watson
1	.252 ^a	0.064	0.048	3.54696	0.064	4.138	2	122	0.018	2.188

a. Predictors: (Constant), GPS, DTA

b. Dependent Variable: SGP

The model summary shows an R-value of 0.252 and an R^2 of 0.064, indicating that Digital Technology Adoption and Government Policy Support together explain 6.4% of the variance in Women-Led Start-Up Growth Performance. The adjusted R^2 of 0.048 suggests modest explanatory power.

Table 3: Regression Coefficients

Predictor	β (Beta)	t-value	p-value	Result
Digital Technology Adoption (DTA)	0.118	1.341	0.182	Not Significant
Government Policy Support (GPS)	0.215	2.448	0.016	Significant

The coefficient results indicate that Government Policy Support has a significant positive influence on Start-Up Growth Performance ($\beta = 0.215$, $p = 0.016$), suggesting that supportive government initiatives improve the growth prospects of women-led start-ups. Therefore, H2 is supported.

However, Digital Technology Adoption does not show a statistically significant direct effect on Start-Up Growth Performance ($\beta = 0.118$, $p = 0.182$). Although the relationship is positive, digital technology adoption alone does not significantly predict start-up growth in the present sample. Hence, H1 is not supported.

The Durbin-Watson value (2.188) indicates no significant autocorrelation problem in the residuals, confirming the suitability of the regression model. The standardized residual values also remain within an acceptable range, indicating that the regression assumptions are satisfied.

The regression findings reveal that government policy support plays a more prominent role than digital technology adoption in directly influencing women-led start-up growth performance. While digital technology adoption may enhance entrepreneurial capabilities and operational efficiency, its direct contribution to business growth may depend on additional factors such as financial resources, market access, and entrepreneurial skills. The findings highlight the importance of effective government interventions in strengthening the growth and sustainability of women-led start-ups.

Structural Equation Modelling (SEM) Analysis

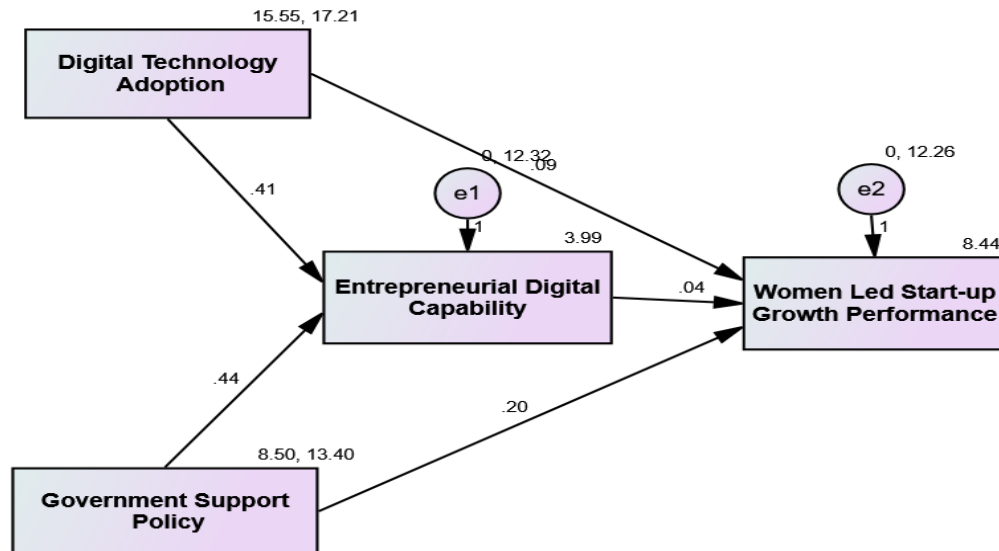


Figure 2: Digital Technology Adoption, Government Policy Support, and Women-Led Start-Up Growth

The proposed structural model was analysed in AMOS using Maximum Likelihood Estimation, based on data from 226 respondents. The model showed a good fit with the observed data ($\chi^2 = 0.741$, $df = 2$, $p = 0.690$), indicating that the proposed framework is suitable.

Table 4: Hypothesis Testing Results

Hypothesis	Relationship	β	C.R.	p-value	Decision
H1	DTA $\rightarrow$ SGP	0.118	1.357	0.175	Not Supported
H2	GPS $\rightarrow$ SGP	0.215	2.478	0.013	Supported
H3	DTA $\rightarrow$ EDDC	0.404	5.425	<0.001	Supported
H4	GPS $\rightarrow$ EDDC	0.381	5.107	<0.001	Supported

The results indicate that Digital Technology Adoption significantly improves Entrepreneurial Digital Capability ($\beta = 0.404$, $p < 0.001$), and Government Policy Support also positively influences Entrepreneurial Digital Capability ($\beta = 0.381$, $p < 0.001$). Further, Government Policy Support has a significant positive impact on Start-Up Growth Performance ($\beta = 0.215$, $p = 0.013$). However, the direct effect of Digital Technology Adoption on Start-Up Growth Performance was insignificant ($\beta = 0.118$, $p = 0.175$).

The model explained 30.8% of the variance in Entrepreneurial Digital Capability ($R^2 = 0.308$) and 6.0% of the variance in Start-Up Growth Performance ($R^2 = 0.060$). Overall, the findings suggest that digital adoption and government support enhance entrepreneurial digital capability, while government policy support plays a more direct role in improving women-led start-up growth.

RECOMMENDATIONS OF THE STUDY

Based on the study's findings, it is recommended that greater emphasis be placed on strengthening digital skills among women entrepreneurs through continuous training and capacity-

building programmes. Government agencies should improve awareness of and access to existing start-up schemes by simplifying procedures and strengthening support mechanisms. In addition, provide better financial assistance, mentoring facilities, and networking opportunities to help women-led start-ups achieve sustainable growth. Entrepreneurs should also focus on effectively integrating digital technologies into business strategies, marketing, and customer management to improve competitiveness and long-term performance.

CONCLUSION

The present study examined the role of Digital Technology Adoption and Government Policy Support in promoting Women-Led Start-Ups in India by analysing the influence of digital capabilities and policy interventions on start-up growth performance. The findings show that digital technology adoption and government support significantly enhance entrepreneurial digital capability among women entrepreneurs. However, digital technology adoption alone does not directly influence start-up growth performance, indicating that technology adoption requires complementary resources and strategic capabilities to generate measurable business outcomes. The study further highlights that Government Policy Support has a significant positive impact on women-led start-up growth, demonstrating the importance of financial assistance, training programmes, incubation support, and institutional mechanisms in strengthening women entrepreneurship.

The research contributes to the existing literature by providing empirical evidence on how technology-driven approaches and policy frameworks influence women-led entrepreneurial development. The findings suggest that building a successful women-led start-up ecosystem requires a combined approach involving digital empowerment, accessible government schemes, entrepreneurial training, and market-oriented support. The study provides valuable implications for policymakers, entrepreneurship development organisations, and women entrepreneurs in designing effective strategies for sustainable business growth.

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