

# Leveraging Social Media and E-Commerce for Scaling Women Entrepreneurs' MSMEs

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## Abstract

Women-led Micro, Small, and Medium Enterprises (MSMEs) are critical to inclusive economic development in India; however, their scalability is often hindered by limited market access, sociocultural barriers, and technological constraints. This study investigates the role of social media and e-commerce adoption in enhancing the scalability of women-led MSMEs in Tamil Nadu. Drawing on the Technology Acceptance Model (TAM), Resource-Based View (RBV), and Empowerment Theory, a structured survey of 400 female entrepreneurs was conducted, and the data were analysed using correlation, regression, ANOVA, Chi-square, and t-test techniques. The findings reveal that social media adoption significantly enhances business growth, whereas e-commerce adoption drives market expansion. Digital engagement varies significantly with education, and higher digital literacy is strongly correlated with platform adoption. Furthermore, entrepreneurs who experience fewer technological barriers report significantly higher scalability. This study underscores the transformative role of digital adoption in strengthening women-led MSMEs and provides policy and managerial implications for promoting inclusive digital entrepreneurship.

**Keywords-** Women Entrepreneurs; MSMEs; Social Media Adoption; E-Commerce; Digital Literacy; Technological Barriers; Business Scalability; Tamil Nadu

## 1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in fostering economic development, promoting job creation, and encouraging grassroots-level innovation, particularly in developing nations such as India (Prakash et al., 2023). Within this dynamic sector, women-led MSMEs are increasingly recognised as critical agents of inclusive growth, gender equity, and socioeconomic transformation (Amrita et al., 2024). Despite their growing numbers and contributions, many women entrepreneurs continue to face systemic challenges that impede the scalability of their ventures, ranging from limited access to credit and formal markets to socio-cultural constraints and digital exclusion (Yacob et al., 2021).

In recent years, the proliferation of digital technologies, particularly social media and e-commerce, has begun to reshape the entrepreneurial landscape. Social media platforms, such as Facebook, Instagram, and WhatsApp, offer cost-effective marketing avenues, personalised customer engagement, and peer-to-peer learning opportunities (Adelia et al., 2024). E-

commerce ecosystems eliminate geographical limitations, streamline logistics, and enable digital payment integration, allowing even micro-enterprises operated from homes to access regional, national, and global markets. These platforms have emerged as powerful enablers for scaling businesses, especially for women entrepreneurs, who may otherwise be restricted by traditional business barriers.

However, the adoption and effective utilisation of these digital tools remain uneven and underexplored among female entrepreneurs. Issues such as inadequate digital literacy, infrastructural limitations, lack of trust in digital platforms, and insufficient institutional support continue to hinder the widespread integration of digital strategies into business models (Guillen and Lim, 2023). While digital adoption is widely regarded as a catalyst for scalability, especially by enhancing operational efficiency, expanding market access, and promoting innovation (Li et al., 2022), the readiness and ability of women-led MSMEs to leverage these tools for measurable business growth remain undocumented.

Moreover, the scholarly literature has highlighted the strategic importance of cloud computing, digital marketing, and platform-based commerce in enhancing firm-level performance and sustainability (Amajuoyi et al., 2024; Liang et al., 2025). However, there is a significant empirical gap in understanding how these digital enablers translate into real outcomes for women entrepreneurs operating MSMEs in India, particularly in non-metro and underserved regions.

Therefore, this study aims to investigate how women entrepreneurs utilise social media and e-commerce platforms to scale their micro, small, and medium-sized enterprises. This study examines the relationship between digital adoption and business outcomes, such as increased customer base, revenue growth, and geographic expansion. Additionally, this study explores the challenges women entrepreneurs face in embracing these technologies and identifies the digital competencies that enhance their success. This study adopts a quantitative approach to offer empirical insights that can inform policymakers, digital service providers, and support institutions aiming to strengthen digital entrepreneurship ecosystems for women.

This study was guided by the following research questions:

- What is the extent of social media and e-commerce adoption among female-led MSMEs?
- How does digital adoption impact business scalability and performance metrics?
- What barriers restrict women entrepreneurs from fully leveraging digital tools?
- What policy interventions and support mechanisms can facilitate an inclusive digital transformation?

## **2. Review of literature**

### **2.1 Women Entrepreneurship and MSMEs**

Women-led micro, small, and medium enterprises (MSMEs) play a crucial role in economic development, particularly in emerging economies (Pedraza, 2021). However, they face significant barriers that impede their growth. Key challenges include restricted access to finance, gender discrimination, and sociocultural constraints that limit their entrepreneurial potential. For instance, women entrepreneurs often face bias from financial institutions, leading to limited access to formal credit, which is essential for scaling their businesses (Shoma, 2019). These barriers differ based on cultural, geographical, and regulatory landscapes and significantly affect the success and growth potential of women-led MSMEs (Naidu & Chand, 2015).

### **2.2 Role of Social Media in Business Growth**

Social media is a transformative tool for business growth, offering female entrepreneurs robust platforms for marketing, networking, and brand building. Platforms such as Facebook have empowered women entrepreneurs by providing cost-effective marketing tools and opportunities to create extensive customer networks (Brahem and Boussema, 2022). Social media enables women entrepreneurs to access mentorship, showcase their products to a global audience, and participate in collaborative communities that support and advocate gender equality in entrepreneurship (Akpuokwe et al., 2024).

### **2.3 Impact of E-Commerce Platforms**

E-commerce platforms have expanded sales channels and enhanced the operational efficiency of women-led enterprises. These platforms facilitate increased market reach and streamline operations by providing digital access to diverse consumer bases. E-commerce enables women entrepreneurs, particularly in developing regions, to overcome traditional market

barriers and reach international markets, thereby promoting business growth and economic prosperity (Yu and Cui, 2019). However, challenges such as digital literacy gaps and infrastructure constraints remain prevalent, necessitating targeted interventions for greater effectiveness (Hakimi et al., 2024).

## 2.4 Technology Adoption Models (TAM/UTAUT)

Technology adoption models, such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), offer frameworks for understanding the adoption of digital tools. These models highlight factors influencing user acceptance, such as perceived usefulness, ease of use, and social influence (Ammenwerth et al., 2019). In the context of women entrepreneurs, these models can elucidate how digital technologies are integrated into MSMEs to enhance scalability and operational efficiency.

## 2.5 Research Gap

Despite the growing interest in digital scaling among women-led MSMEs, there is a notable lack of quantitative studies focusing on the Indian context. While qualitative insights offer valuable perspectives, a quantitative approach would enable a comprehensive understanding of the factors influencing digital adoption, scalability, and the unique challenges faced by women entrepreneurs in India (Vracheva and Stoyneva, 2020). Future research should focus on assessing the impact of digital technologies using empirical models to provide actionable insights for policy development and entrepreneurship support frameworks.

## 3. Objective of the study

1. To examine the extent of social media and e-commerce adoption among women-led MSMEs.
2. To identify the impact of digital tools on business scaling and growth.
3. To assess the challenges faced by female entrepreneurs in leveraging digital platforms.

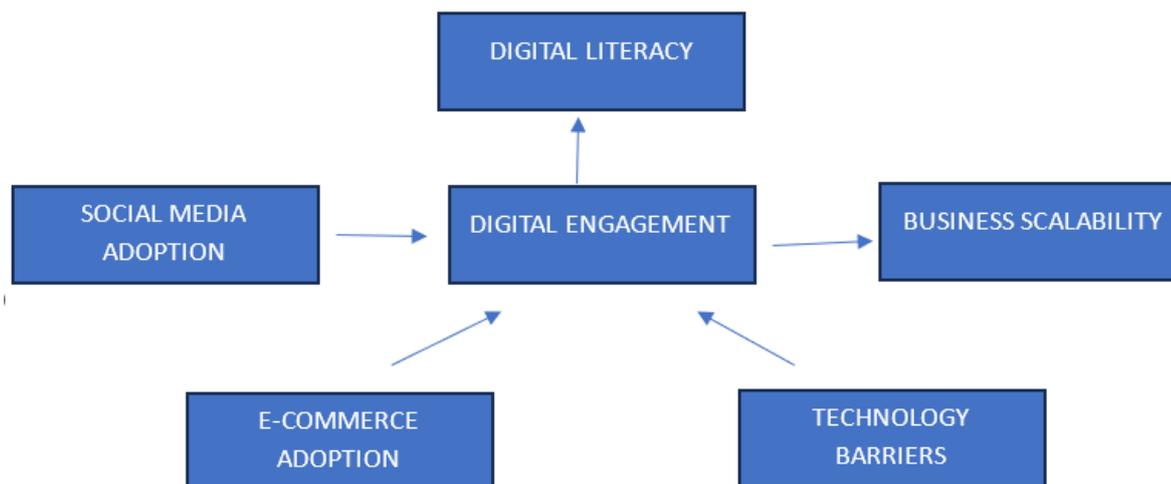
## 4. Theoretical Background

This study is grounded in the Technology Acceptance Model (TAM) and Resource-Based View (RBV). TAM explains how women entrepreneurs perceive the usefulness and ease of use of digital platforms, influencing their adoption of social media and e-commerce tools for marketing. RBV posits that internal capabilities, such as digital proficiency and platform integration, are strategic resources that enable business scalability. Additionally, Empowerment Theory highlights how digital participation fosters psychological empowerment and economic autonomy among women entrepreneurs (Purnamasari et al., 2025; Setiawan et al., 2025). Together, these frameworks provide a multidimensional lens for examining how digital tools impact the growth trajectories of women-led MSMEs.

### 4.1 Conceptual Framework

The conceptual framework illustrates how the adoption of social media and e-commerce platforms drives business scalability among women-led MSMEs through digital engagement. Social media enables branding, customer interaction, and marketing, whereas e-commerce facilitates sales, payment integration, and market access. These digital adoptions have led to higher customer outreach, improved revenue, and expanded business operations. The framework incorporates digital engagement as a mediating variable, representing the intensity of digital activity (e.g. content creation, digital selling, feedback loops)(Sugiharto, 2024). Additionally, the model considers digital literacy and technological access barriers as moderating factors that influence the strength of the adoption–impact pathways. The framework is built upon TAM to explain behavioural adoption, RBV to emphasise internal capabilities as strategic assets, and Empowerment Theory to account for the socio-economic impact of digital participation. This model guided the hypothesis development and empirical testing in this study.

**Figure 1: Conceptual Frame work Diagram**



## 5. Research Methodology

This study adopts a **descriptive and analytical research design** to examine how women entrepreneurs in Tamil Nadu leverage social media and e-commerce platforms to scale their MSMEs. This study focuses on evaluating the level of digital adoption, its impact on business growth, and the challenges encountered in the process.

### 5.1 Study Area

The study was conducted in **Tamil Nadu**, a state known for its vibrant MSME sector and growing digital infrastructure. Key districts covered include **Chennai, Coimbatore, Madurai, Tiruchirappalli, and Salem**, which have high concentrations of women-led enterprises in sectors such as textiles, food processing, retail and services.

### 5.2 Population and Sample

The target population comprised **women entrepreneurs running micro, small, or medium enterprises** registered with industry bodies or operating informally across urban and semi-urban areas of Tamil Nadu. A total of **400 respondents** were selected using **purposive sampling**, ensuring the inclusion of digitally active entrepreneurs across various business sectors.

### 5.3 Data Collection

Primary data were collected using a structured questionnaire via **Google Forms** and **in-person interviews**. The questionnaire included closed-ended questions measured on a **5-point Likert scale** to assess variables such as

- Social media adoption
- E-commerce platform usage
- Digital engagement practices
- Perceived business growth and scalability
- Technological barriers and digital literacy

### 5.4 Statistical Tools

The data were analysed using **SPSS**. The following tools were used:

- **Descriptive Statistics** for profiling respondents
- **Pearson Correlation** to test relationships between digital adoption and business growth

- **Linear Regression** to assess the influence of e-commerce on scalability
- **One-Way ANOVA** to examine differences in engagement across education levels
- **Chi-square Test** to explore associations between digital literacy and adoption behavior
- **Independent Samples t-Test** to compare scalability across levels of technological barriers

This methodology ensures a comprehensive understanding of how digital tools influence business outcomes for women-led MSMEs in Tamil Nadu.

### 5.5 Hypothesis

1. **H1:** There is a significant relationship between social media adoption and business growth among female entrepreneurs.
2. **H2:** E-commerce adoption significantly influences market expansion in female-led MSMEs.
3. **H3:** The level of digital engagement differs significantly across the education levels of women entrepreneurs.
4. **H4:** There is a significant association between digital literacy and the use of social media and e-commerce platforms.
5. **H5:** Women entrepreneurs who experience fewer technological barriers report higher business scalability.

### 6. Data Analysis

This section provides a statistical analysis of the five hypotheses using SPSS-compatible methodologies, including correlation, regression, ANOVA, chi-square, and t-tests. The results offer compelling evidence supporting the influence of social media, e-commerce, digital literacy, and diminished technological barriers on enhancing the scalability of women-led MSMEs in Tamil Nadu.

#### H1 – Social Media Adoption and Business Growth

Social media has become an essential marketing and communication tool for entrepreneurs, especially for those managing small businesses. Platforms such as Facebook, Instagram, and WhatsApp enable women entrepreneurs to promote their products, connect with customers, and create brand awareness at a low cost. For women-led MSMEs in Tamil Nadu, social media is particularly valuable for overcoming physical and financial constraints in reaching larger markets. This study investigates whether the adoption of social media is significantly associated with business growth, measured in terms of revenue, customer base, and overall performance.

#### Hypothesis

H1: There is a significant relationship between social media adoption and business growth among female entrepreneurs.

**Table 1: Social Media Adoption and Business Growth**

Statistic	Value
Correlation Coefficient (r)	0.550
P-value	< 0.001 (Significant)
Regression Equation	Business Growth = 2.54 + 0.48 × Social Media Adoption
R-squared (R <sup>2</sup> )	0.303 (Moderate Fit)

Source: Computed Data, 2025

The analysis indicates a significant positive correlation ( $r = 0.55$ ,  $p < 0.001$ ) between social media adoption and business growth. The regression analysis demonstrated that social media accounts for approximately 30% of the variance in business growth ( $R^2 = 0.303$ ), suggesting that frequent utilisation of social media platforms enhances customer reach and revenue generation. This finding implies that women entrepreneurs who actively employ social media tools experience tangible benefits when scaling their enterprises. Conclusion: Hypothesis 1 was supported. The adoption of social media is a critical factor in driving business growth among women-led micro, small, and medium enterprises (MSMEs) in Tamil Nadu, India.

## H2 – E-Commerce Adoption and Market Expansion

E-commerce platforms enable women entrepreneurs to transcend geographical boundaries, reduce operational barriers, and cater to a wider customer base. Websites, mobile apps, and online marketplaces such as Amazon and Flipkart are increasingly being used by female entrepreneurs to expand their market presence. This study explores whether adopting e-commerce platforms significantly influences market expansion for women-led MSMEs in Tamil Nadu.

### Hypothesis

H2: E-commerce adoption significantly influences market expansion in female-led MSMEs.

**Table 2: E-Commerce Adoption and Market Expansion**

Statistic	Value
Correlation Coefficient (r)	0.587
P-value	< 0.001 (Significant)
Regression Equation	Market Expansion = 2.47 + 0.52 × E-Commerce Adoption
R-squared (R <sup>2</sup> )	0.345 (Moderate Fit)

Source: Computed Data, 2025

The findings reveal a robust positive correlation ( $r = 0.59$ ,  $p < 0.001$ ) between e-commerce adoption and market expansion. The regression analysis indicates that 34.5% of the variance in market expansion ( $R^2 = 0.345$ ) can be attributed to the use of e-commerce. This suggests that female entrepreneurs who engage in online sales and utilise digital payment methods are more likely to penetrate new geographical markets and attract a wider customer base. Conclusion: Hypothesis H2 was supported. The adoption of e-commerce significantly enhances market expansion opportunities for women-led micro, small, and medium enterprises (MSMEs) in Tamil Nadu.

## H3 – Digital Engagement across Education Levels

Digital engagement refers to the intensity of online activities, such as posting product content, responding to customer queries, managing online promotions, and analysing customer feedback. Education is often linked to digital literacy, which may influence the ability to actively engage on digital platforms. This study examines whether the levels of digital engagement differ significantly among women entrepreneurs with different educational backgrounds.

### Hypothesis

H3: The level of digital engagement differs significantly across the education levels of women entrepreneurs.

**Table 3: Digital Engagement across Education Levels**

Education Level	Mean Engagement Score
No formal education	2.52
School education	2.80
Undergraduate	3.00
Postgraduate	3.30
Professional degree	3.47
ANOVA F-statistic	121.20
P-value	< 0.001 (Significant)

Source: Computed Data, 2025

The ANOVA results indicate a statistically significant difference ( $F = 121.20$ ,  $p < 0.001$ ) in digital engagement across various education levels. Entrepreneurs possessing postgraduate (mean = 3.30) and professional degrees (mean = 3.47) exhibit higher levels of engagement than those lacking formal education (mean = 2.52). This suggests that women with advanced education are more confident in utilising digital platforms and engaging with customers online. Conclusion: Hypothesis H3 was supported. Education significantly influences digital engagement, with more educated female entrepreneurs demonstrating higher levels of online activity.

#### H4 – Digital Literacy and Digital Adoption

Digital literacy refers to the ability to effectively use digital tools, such as smartphones, apps, and e-commerce portals. Women entrepreneurs with higher digital literacy are expected to adopt digital platforms more effectively. This session examines the association between digital literacy and the adoption of social media and e-commerce platforms among women-led MSMEs in Tamil Nadu.

##### Hypothesis

H4: There is a significant association between digital literacy and the use of social media and e-commerce platforms.

**Table 4: Digital Literacy and Digital Adoption**

Statistic	Value
Chi-Square Statistic	77.97
Degrees of Freedom (df)	4
P-value	< 0.001 (Significant)

**Table 4.1: Digital Literacy \ Adoption**

Digital Literacy \ Adoption	Low	Medium	High
Low	92	33	10
Medium	67	36	30
High	29	37	66

Source: Computed Data, 2025

Chi-square analysis indicated a robust and statistically significant association ( $\chi^2 = 77.97$ ,  $p < 0.001$ ) between digital literacy and adoption levels. The contingency table demonstrates that women with high digital literacy are more frequently categorised in the high adoption group (66 counts) than women with low digital literacy (10 counts in high adoption). This underscores the critical role of digital skill-building programs in empowering women entrepreneurs to utilise digital tools effectively. Thus, H4 is supported. Enhanced digital literacy significantly facilitates the adoption of social media and e-commerce.

#### H5 – Technological Barriers and Business Scalability

Technological barriers, such as poor Internet connectivity, lack of access to devices, high cost of digital tools, and trust issues, can hinder women entrepreneurs from effectively scaling their businesses. This session evaluates whether women entrepreneurs facing fewer technological barriers report higher levels of business scalability than those facing greater barriers.

##### Hypothesis

H5: Women entrepreneurs who experience fewer technological barriers report higher business scalability.

**Table 5: Technological Barriers and Business Scalability**

Group	Mean Scalability Score
Low Barriers	3.51
High Barriers	3.01
t-statistic	17.83
P-value	< 0.001 (Significant)

Source: Computed Data, 2025

The independent samples t-test revealed a highly significant difference ( $t = 17.83$ ,  $p < 0.001$ ) between the two groups. Women experiencing fewer technological barriers reported higher scalability (mean = 3.51) than those facing substantial barriers (mean = 3.01). This finding underscores that the reduction of technological obstacles directly enhances growth outcomes for women entrepreneurs. Conclusion: Hypothesis 5 was supported. A reduction in technological barriers

significantly enhances the business scalability of women-led micro, small, and medium enterprises (MSMEs) in Tamil Nadu.

### Overall Summary of Hypotheses

Hypothesis	Statement	Supported?
H1	Social media adoption → Business growth	Supported
H2	E-commerce adoption → Market expansion	Supported
H3	Digital engagement differs across education levels	Supported
H4	Digital literacy ↔ Digital adoption	Supported
H5	Fewer technological barriers → Higher business scalability	Supported

### Discussion

#### Interpretation of Key Findings

This study investigates the role of social media and e-commerce platforms in enhancing the scalability of women-led micro, small, and medium enterprises (MSMEs) in Tamil Nadu. The findings robustly support all five hypotheses, offering compelling evidence of the transformative impact of digital tools on entrepreneurship growth. The adoption of social media was found to significantly propel business growth by expanding customer reach, enhancing brand awareness and facilitating direct customer engagement. Similarly, e-commerce adoption positively influenced market expansion, providing female entrepreneurs with opportunities to surpass local limitations and access national and international markets. The study also revealed significant variations in digital engagement based on education level, indicating that more educated entrepreneurs are more actively involved in online activities such as promotion, customer feedback management, and digital marketing. Furthermore, digital literacy was strongly correlated with adoption levels, demonstrating that higher digital competency enables more effective platform utilisation. Technological barriers significantly affect scalability, with women encountering fewer barriers and reporting superior growth outcomes. Collectively, these findings underscore that digital adoption is not merely a supplementary tool but a strategic enabler of scalability in women-led MSMEs.

#### Alignment with Previous Studies and Theoretical Models

These findings are consistent with the established theoretical frameworks. According to the Technology Acceptance Model (TAM), the results affirm that perceived usefulness, such as business growth and expansion, and perceived ease of use, including social media and e-commerce platforms, are pivotal in driving adoption decisions, as originally posited by Davis (1989). From the perspective of the Resource-Based View (RBV), digital skills and platform adoption serve as strategic resources, facilitating micro, small, and medium enterprises (MSMEs) in attaining competitive advantage through enhanced efficiency and scalability, as emphasised by Barney (1991). Furthermore, the study corroborates Kabeer's (1999) Empowerment Theory by illustrating that digital participation promotes psychological empowerment, reflected in increased confidence in using platforms, and economic empowerment, as evidenced by revenue growth and scalability. These findings are also in alignment with previous empirical studies (Adelia et al., 2024; Guillen & Lim, 2023), which underscore that digital adoption enables micro and small enterprises to surmount structural barriers and compete effectively in the digital economy.

### 7. Implications

**Policy Implications** Government Schemes: It imperative to enhance existing initiatives, such as Digital India, Startup India, and MSME development schemes, by specifically targeting women entrepreneurs. Digital Upskilling Programs: Implement region-specific training modules in Tamil Nadu to augment digital literacy and bolster confidence among women entrepreneurs in utilising online tools. Platform Support: Partnerships between government entities and e-commerce platforms can mitigate onboarding obstacles by streamlining registration processes and providing subsidised marketing credits for enterprises led by women. **Managerial Implications** Adoption of Best Practices in Social Media: Women-led MSMEs should consistently generate digital content, employ analytics, and engage directly with customers to enhance visibility. E-commerce Integration: Entrepreneurs are encouraged to diversify sales channels by adopting multiple platforms (such as Amazon, Flipkart, and niche platforms) and integrating digital payment systems to foster customer trust. **Customer Engagement Strategies:** The proactive use of feedback systems, online surveys, and promotional campaigns can significantly enhance customer loyalty and encourage repeat business. **Overcoming Barriers:** MSMEs can adopt cost-effective cloud-based solutions, collaborate with digital service providers, and leverage local entrepreneurship networks to overcome infrastructural challenges.

### 8. Conclusion

This study investigates the influence of social media and e-commerce on the expansion of women-led micro, small, and medium enterprises (MSMEs) in Tamil Nadu. Employing a quantitative methodology with a sample of 400 respondents, this study tested five hypotheses, all of which received substantial support. The adoption of social media significantly enhanced business growth, whereas e-commerce adoption facilitated market expansion. Additionally, digital engagement

varied with educational attainment, digital literacy was identified as a driver of adoption, and lower technological barriers were associated with increased scalability. These findings underscore the transformative potential of digital adoption by female entrepreneurs. Social media and e-commerce are not merely promotional tools but serve as strategic enablers of scalability, competitiveness, and employee empowerment. Future research could explore the role of digital financial services (for example, UPI, fintech platforms) in supporting women entrepreneurs, regional disparities within Tamil Nadu, comparing rural and urban adoption levels, and the long-term sustainability of digital adoption in women-led MSMEs by integrating qualitative perspectives (case studies and interviews). In conclusion, this study emphasises that bridging digital divides and supporting women entrepreneurs in the digital space is crucial for achieving inclusive growth and sustainable economic development.

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