



Digital Technology and Women Entrepreneurship: A Study of Women Entrepreneurs in the Education Sector of Jodhpur

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Abstract

Digital technology has significantly changed the way entrepreneurial activities are initiated, managed and expanded. For women entrepreneurs, particularly those operating in service-oriented sectors, digital tools provide opportunities to overcome several traditional constraints related to mobility, market access, communication, networking and resource availability. The education sector has experienced particularly rapid digital transformation through online teaching platforms, social media, digital payments, learning management systems, cloud applications and digital marketing. Against this background, the present study examines the role of digital technology in the entrepreneurial activities of women engaged in the education sector of Jodhpur, Rajasthan. The study focuses on the adoption and use of digital technologies and their contribution to operational efficiency, customer and student engagement, market reach, financial management and overall entrepreneurial performance. It also identifies major barriers that restrict the effective use of technology by women entrepreneurs. A quantitative, descriptive and analytical research design is proposed, using primary data collected through a structured questionnaire from women entrepreneurs operating educational enterprises in Jodhpur. Descriptive statistics, reliability analysis, correlation, analysis of variance and multiple regression are proposed for analysing the data. The study is expected to demonstrate that digital technology is not merely a supporting facility but an increasingly important strategic resource for women-owned educational enterprises. However, the benefits of digitalisation depend upon digital competence, affordability, infrastructure, access to training and the entrepreneur's ability to integrate technology into everyday business practices. The study has implications for women entrepreneurs, educational institutions, policymakers and agencies engaged in entrepreneurship development.

Keywords: Women Entrepreneurship, Digital Technology, Education Sector, Digital Entrepreneurship, ICT Adoption, Business Performance, Jodhpur, Rajasthan.

1. Introduction

Entrepreneurship has emerged as an important contributor to employment generation, innovation, economic development and social transformation. Within this changing entrepreneurial landscape, women's participation has received increasing attention because

entrepreneurship can provide women with opportunities for economic independence, professional identity and greater participation in decision-making. Women entrepreneurs are no longer confined to conventional home-based activities. They are increasingly establishing and managing enterprises in education, professional services, consulting, healthcare, retail, digital services and other knowledge-based sectors.

At the same time, the environment in which entrepreneurial activities are conducted has undergone substantial technological change. Smartphones, high-speed internet, social media, digital payment systems, cloud-based applications, video-conferencing platforms, learning management systems and online marketplaces have changed how small enterprises interact with customers and manage their operations. Technology has consequently reduced the importance of physical distance in many entrepreneurial activities.

This development is particularly relevant to women entrepreneurs. Traditional barriers such as restricted mobility, family responsibilities, limited professional networks and difficulties in accessing wider markets may restrict the growth of women-owned enterprises. Digital technology cannot eliminate all such barriers, but it can reduce some of their effects. A woman entrepreneur can communicate with clients, promote services, receive payments, conduct classes, maintain records and manage employees from a smartphone or computer.

The education sector provides an especially relevant context for examining this transformation. Educational entrepreneurship includes coaching institutes, tuition centres, preschools, vocational and skill-development centres, language institutes, professional training centres, online teaching ventures and other educational services. Digital technologies have changed almost every aspect of these enterprises. Student enquiries may originate through social media; classes can be delivered online; fees can be collected through digital payment systems; learning material can be distributed electronically; and communication with students and parents can take place through messaging applications.

The importance of the subject is particularly evident in Tier-II cities such as Jodhpur. While much discussion of digital entrepreneurship concentrates on large metropolitan centres, entrepreneurial transformation is increasingly occurring in regional cities. Jodhpur has a substantial educational ecosystem consisting of schools, colleges, universities, coaching centres, training institutes and privately managed educational ventures. Women have become increasingly visible within this ecosystem as owners, managers, trainers and independent education professionals.

The present research therefore attempts to examine how digital technology is being used by women entrepreneurs in the education sector of Jodhpur and whether such adoption translates into better entrepreneurial performance.

2. Background of the Study

Digitalisation has gradually changed the meaning of entrepreneurship. Earlier, entrepreneurial success was largely dependent on physical infrastructure, geographical location, conventional advertising and face-to-face networks. Today, a relatively small enterprise can use digital platforms to communicate with a considerably larger audience.

For educational entrepreneurs, this transformation became especially visible during and after the COVID-19 period. Online classes, digital learning material, video-conferencing applications and online assessments moved rapidly from supplementary facilities to mainstream components of educational delivery.

For women entrepreneurs, digitalisation has an additional dimension. Technology can provide flexibility in managing professional and household responsibilities. Digital communication reduces the need for frequent physical travel, while online delivery allows entrepreneurs to serve learners beyond their immediate neighbourhood.

Nevertheless, technology adoption and technology effectiveness are not identical. Merely possessing a smartphone or maintaining a social-media account does not guarantee business improvement. Meaningful digital transformation requires knowledge, skills, strategic application, suitable infrastructure and confidence.

Therefore, instead of asking only whether women entrepreneurs use technology, it is more important to examine **how they use it, for what purposes, what benefits they obtain and what difficulties they encounter.**

3. Review of Literature

The literature on digital entrepreneurship increasingly treats digital technology not as a peripheral business aid but as part of the entrepreneurial environment itself. Nambisan (2017) argued that digital technologies alter entrepreneurial processes, outcomes and agency, while Sussan and Acs (2017) conceptualised entrepreneurship within a broader digital entrepreneurial ecosystem. Similarly, Autio et al. (2018) observed that digital affordances reshape entrepreneurial opportunities by reducing spatial and organisational constraints. These perspectives are especially relevant for women-owned micro and small enterprises, where access to markets, networks, finance and specialised resources may otherwise be limited.

3.1 Women Entrepreneurship and Digital Transformation

The relationship between technology and entrepreneurship has attracted considerable academic attention. Digital technologies lower communication costs, facilitate information exchange and allow enterprises to reach markets beyond their physical location. For small businesses, this can reduce some of the disadvantages associated with limited financial and physical resources.

Recent Indian research suggests that the entrepreneurial benefits of technology depend not only on access but also on how effectively technological resources are integrated with other business resources. Thus, digitalisation should be understood as an organisational capability rather than simply the ownership of technological devices.

This distinction is reinforced by recent Indian evidence. Research on digital women entrepreneurs indicates that reliance on technology alone does not automatically produce superior entrepreneurial outcomes; resources have to be combined, mobilised and strategically applied to generate sales growth, market expansion and new offerings (Dale et al., 2025). Research on women entrepreneurs in Indian MSMEs similarly identifies digital illiteracy, infrastructure gaps, limited training and weak professional networks as continuing constraints on effective technology adoption (Singh, 2026). Consequently, the relevant question is not merely whether a woman entrepreneur has access to technology, but whether she possesses the capabilities and complementary resources required to convert access into business value.

3.2 Digital Technology as an Enabler for Women Entrepreneurs

Women entrepreneurs may benefit from digital technology in several ways. First, online platforms enable businesses to communicate directly with potential customers. Second,

digital payment systems simplify financial transactions. Third, digital platforms can provide access to business information, professional networks and training opportunities.

Social media is particularly important for smaller women-owned enterprises because it provides relatively inexpensive promotional opportunities. WhatsApp, Instagram, Facebook and similar platforms enable entrepreneurs to share information, promote services and maintain continuous interaction with customers.

Digital technologies can also improve entrepreneurial autonomy. An entrepreneur who can independently manage payments, marketing, communication and record-keeping may become less dependent on intermediaries.

The empowerment dimension is also emphasised in studies that connect entrepreneurship with women's agency and control over resources (Al-Dajani & Marlow, 2013). In India, Paul and Dutta (2026) show that digital platforms can help women convert basic resources into enhanced entrepreneurial capabilities, although the extent of this conversion differs across social and institutional contexts. Balcar et al. (2026) further demonstrate that social networks and social-media exposure can operate as relatively low-cost resources that support women's entrepreneurial entry through role models, early customers, mentoring and informal support. Recent work on women entrepreneurs in Indian Tier-II settings also highlights the role of social-commerce platforms in facilitating innovation and market participation (Dale et al., 2026).

3.3 Digital Technology in Educational Enterprises

The education sector is particularly suited to digital transformation because its principal output—knowledge—can increasingly be created, delivered and exchanged electronically.

Educational entrepreneurs may use:

- Learning management systems;
- Video-conferencing applications;
- Online assessment platforms;
- Digital attendance systems;
- Accounting and fee-management software;
- Social-media marketing;
- WhatsApp and other communication applications;
- Digital payment systems;
- Cloud storage;
- Educational applications;
- Customer/student relationship management systems; and
- Artificial intelligence-assisted content and administrative tools.

These technologies can reduce administrative workload while allowing educational businesses to provide more flexible services.

The rapid diffusion of online and blended learning has made this relationship especially important in education. Hodges et al. (2020) distinguished carefully designed online learning from the emergency remote teaching adopted during the COVID-19 crisis, while Dhawan (2020) highlighted both the opportunities and challenges associated with online education in India. For educational entrepreneurs, the post-pandemic environment has therefore created a stronger incentive to combine face-to-face services with digital communication, online content, remote teaching, digital assessment and electronic payment systems.

A particularly relevant local study is Audichya (2025), who examined ICT adoption among 250 women entrepreneurs operating educational ventures in Jodhpur. The study reported that mobile applications, learning-management systems and digital marketing platforms were associated with operational efficiency, market reach and financial outcomes. The existence of this local evidence makes it necessary for the present research to move beyond a simple ICT-adoption question and examine a broader set of digital capabilities, barriers and performance mechanisms.

3.4 Barriers to Digital Adoption

Despite its potential, digitalisation does not automatically create equal opportunities. Women entrepreneurs may experience constraints arising from limited digital literacy, inadequate training, cybersecurity concerns, financial limitations and lack of technical assistance.

The digital gender divide therefore includes more than physical access to technology. It also involves differences in skills, confidence and the capacity to use technology productively.

These challenges can be particularly relevant to micro and small enterprises where the entrepreneur personally manages several functions and may not have dedicated technical employees.

Technology-adoption theory also helps explain these differences. Davis (1989) proposed that perceived usefulness and perceived ease of use are central to technology acceptance. Venkatesh et al. (2003) subsequently integrated major acceptance models in the Unified Theory of Acceptance and Use of Technology (UTAUT), identifying performance expectancy, effort expectancy, social influence and facilitating conditions as important determinants. Rogers (2003), from a diffusion-of-innovations perspective, emphasised characteristics such as relative advantage, compatibility and complexity. In the present context, these theories imply that adoption by women entrepreneurs is likely to depend on both individual perceptions and the wider availability of skills, infrastructure, support and resources.

3.5 Research Gap

Existing research has examined women entrepreneurship, digitalisation and technology adoption in India. However, comparatively limited empirical work concentrates specifically on women-owned enterprises in the education sector of Tier-II cities in Rajasthan.

The educational sector is distinctive because technology simultaneously influences service delivery, customer interaction, marketing and administration. Moreover, the experience of women entrepreneurs in Jodhpur may differ from that of entrepreneurs in metropolitan centres because of differences in infrastructure, markets, social environment and access to professional networks.

The present study attempts to address this geographical and sector-specific research gap.

The gap is therefore narrower and more specific than a general absence of research on ICT and women entrepreneurship in Jodhpur. Existing research has already established the relevance of ICT adoption in this setting (Audichya, 2025). The present study seeks to extend that evidence by distinguishing basic access from strategic digital integration; incorporating digital literacy, digital marketing, financial technology, educational technology and digital business management; examining barriers and demographic differences; and linking these dimensions to multidimensional entrepreneurial performance. This framing is consistent with systematic literature showing that research on digital women's entrepreneurship remains fragmented and requires stronger integration of strategic, technological and contextual factors (Dale & Saha, 2023).

4. Statement of the Problem

Digital technology offers significant opportunities for entrepreneurial development, but access to technology alone does not ensure improved performance. Women entrepreneurs may possess smartphones and internet connections but may not necessarily use advanced digital applications for business management, marketing, customer acquisition or strategic decision-making.

In the education sector, technological adoption has become particularly important because students increasingly expect digital communication, online resources, flexible learning and convenient payment systems.

The central problem addressed by this study is therefore:

To what extent does the adoption and effective use of digital technology influence the performance of women entrepreneurs engaged in the education sector of Jodhpur?

The study further examines the technological barriers experienced by these entrepreneurs and whether demographic and enterprise characteristics influence technology adoption and its outcomes.

5. Objectives of the Study

The study has the following objectives:

1. To examine the extent of adoption of digital technology among women entrepreneurs engaged in the education sector of Jodhpur.
2. To identify the major digital tools and platforms used by women entrepreneurs for managing educational enterprises.
3. To assess the impact of digital technology on operational efficiency and business management.
4. To examine the contribution of digital technology to marketing, student/customer engagement and market reach.
5. To analyse the relationship between digital technology adoption and entrepreneurial performance.
6. To identify the major barriers faced by women entrepreneurs in adopting and effectively using digital technology.
7. To examine whether technology adoption and its impact differ according to selected demographic and enterprise characteristics.

8. To suggest measures for strengthening the digital capabilities of women entrepreneurs in Jodhpur's education sector.

6. Research Hypotheses

Based on the objectives, the following hypotheses are proposed.

H₀₁: Digital technology adoption has no significant relationship with the performance of women entrepreneurs in the education sector of Jodhpur.

H₁₁: Digital technology adoption has a significant positive relationship with the performance of women entrepreneurs in the education sector of Jodhpur.

H₀₂: Digital technology adoption has no significant effect on the operational efficiency of women-owned educational enterprises.

H₁₂: Digital technology adoption has a significant positive effect on the operational efficiency of women-owned educational enterprises.

H₀₃: The use of digital marketing and communication technologies has no significant effect on customer/student reach and engagement.

H₁₃: The use of digital marketing and communication technologies has a significant positive effect on customer/student reach and engagement.

H₀₄: Digital financial technologies have no significant relationship with the financial management efficiency of women-owned educational enterprises.

H₁₄: Digital financial technologies have a significant positive relationship with the financial management efficiency of women-owned educational enterprises.

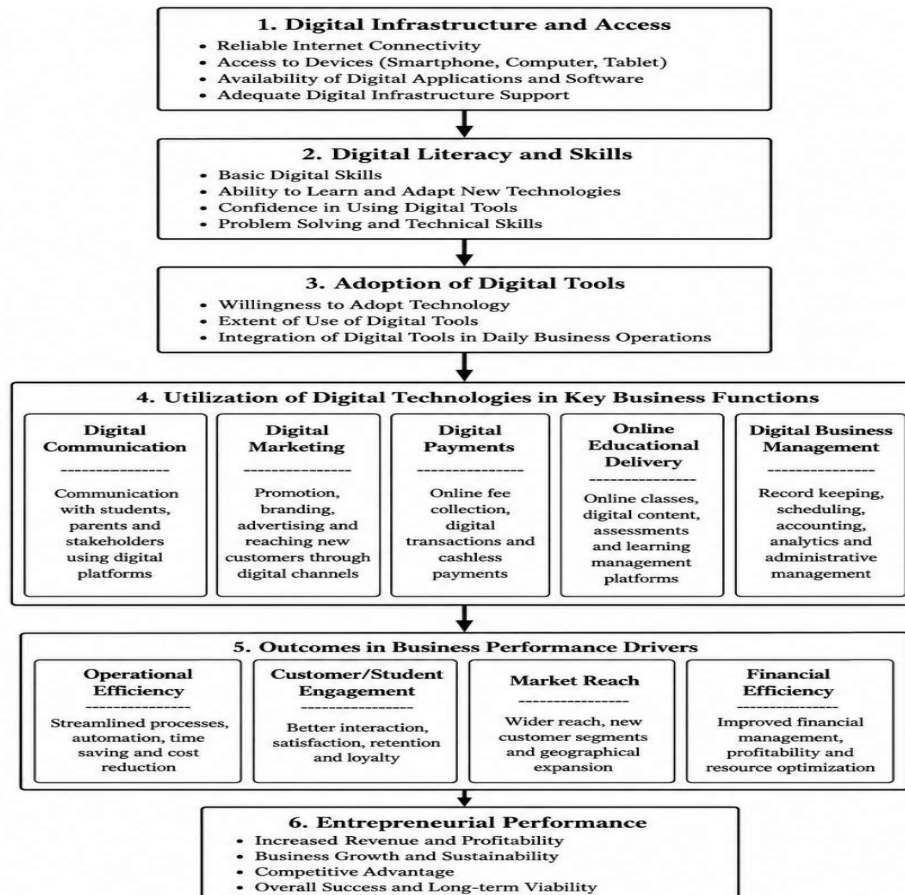
H₀₅: Digital skills have no significant influence on the effective utilisation of digital technology.

H₁₅: Digital skills have a significant positive influence on the effective utilisation of digital technology.

7. Conceptual Framework

The conceptual framework assumes that entrepreneurial performance is influenced by several dimensions of digital technology adoption.

The



framework also recognises that factors such as age, education, income, business experience, type of educational enterprise and technological barriers may influence these relationships.

8. Research Methodology

8.1 Research Design

The study adopts a descriptive and analytical research design. The descriptive component examines the demographic and enterprise characteristics of respondents and patterns of technology adoption. The analytical component investigates relationships between digital technology and entrepreneurial performance.

8.2 Study Area

The geographical area of the study is Jodhpur, Rajasthan. Jodhpur is an important educational and commercial centre of western Rajasthan and provides an appropriate setting for examining women entrepreneurship within a growing urban and semi-urban digital ecosystem.

8.3 Population

The target population consists of women entrepreneurs who own, co-own or independently manage educational ventures in Jodhpur.

The enterprises may include:

- Coaching institutes;
- Tuition centres;

- Preschools;
- Skill-development centres;
- Computer and professional training institutes;
- Language institutes;
- Online teaching businesses;
- Career and competitive-examination coaching services; and
- Other privately managed educational services.

8.4 Sampling

A purposive sampling technique may be employed because a comprehensive sampling frame of women-owned educational enterprises may not be readily available.

For a meaningful quantitative study, a sample of approximately 250–500 respondents would provide adequate scope for descriptive and multivariate statistical analysis, depending on the accessible population and final analytical model.

8.5 Sources of Data

Both primary and secondary sources are used.

Primary data should be collected through a structured questionnaire administered to women entrepreneurs.

Secondary data may be obtained from research articles, government reports, policy documents, institutional publications and reports concerning women entrepreneurship, MSMEs, digital inclusion and digital transformation.

8.6 Questionnaire Design

The questionnaire may contain the following sections:

Section	Dimension	Indicative Variables
A	Demographic Profile	Age, education, marital status, income
B	Enterprise Profile	Business type, age of enterprise, employees
C	Digital Infrastructure	Internet, smartphone, computer, software
D	Digital Literacy	Skills, confidence, training
E	Digital Communication	Email, WhatsApp, video conferencing
F	Digital Marketing	Social media, online promotion, websites

G	Digital Finance	UPI, online banking, digital accounting
H	Educational Technology	LMS, online classes, digital content
I	Business Performance	Reach, revenue, efficiency, customer engagement
J	Barriers	Cost, skills, security, infrastructure, time

Statements can be measured using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

9. Statistical Analysis and Results

For illustration, a **dataset of 300 women entrepreneurs** has been constructed to demonstrate how the statistical analysis and SPSS-style reporting may appear in the completed research paper. These values are simulated for academic drafting and methodological illustration only; they should not be represented as findings from an actual field survey unless replaced with results generated from real respondent data. They have been designed to be internally consistent and to reflect theoretically plausible relationships among digital capability, technology use and entrepreneurial performance.

9.1 Frequency and Percentage Analysis

The age profile indicates that the largest group of respondents was 26–35 years old (30.0%), followed by 36–45 years (26.0%). Together, these two groups accounted for more than half of the sample, suggesting a strong concentration of women entrepreneurs in the early and middle stages of their professional careers.

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
18–25 years	48	16.0	16.0	16.0
26–35 years	90	30.0	30.0	46.0
36–45 years	78	26.0	26.0	72.0
46–55 years	54	18.0	18.0	90.0
56 years and above	30	10.0	10.0	100.0
Total	300	100.0	100.0	100.0

Table 1: Age of Respondents

9.2 Mean and Standard Deviation

The descriptive statistics show generally high levels of digital adoption. Digital communication recorded the highest mean score ($M = 4.18$), followed by digital finance ($M = 4.09$) and digital infrastructure and access ($M = 4.07$). Educational technology recorded a relatively lower, though still positive, mean of 3.72, indicating that specialised teaching technologies may be less widely integrated than basic communication and payment tools.

Table 2: Descriptive Statistics

Variable / Dimension	N	Minimum	Maximum	Mean	Std. Deviation
Digital Infrastructure and Access	300	1.80	5.00	4.07	0.61
Digital Literacy and Skills	300	1.60	5.00	3.91	0.68
Digital Communication	300	2.00	5.00	4.18	0.57
Digital Marketing	300	1.40	5.00	3.84	0.72
Digital Finance	300	1.80	5.00	4.09	0.63
Educational Technology	300	1.20	5.00	3.72	0.76
Digital Business Management	300	1.40	5.00	3.79	0.70
Entrepreneurial Performance	300	1.67	5.00	3.96	0.66
Valid N (listwise)	300				

9.3 Reliability Analysis

Cronbach's Alpha was used to assess the internal consistency of the multi-item scale. The overall alpha value of .948 indicates excellent reliability and suggests that the items consistently measure the broader construct of digital technology adoption and entrepreneurial performance.

Table 3: Case Processing Summary

Cases	N	%
Valid	300	100.0
Excluded ^a	0	0.0
Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha	N of Items
.948	.950	40

The reliability coefficient is substantially above the commonly accepted threshold of .70, indicating that the instrument has excellent internal consistency.

9.4 Exploratory Factor Analysis

The Kaiser-Meyer-Olkin measure and Bartlett's Test of Sphericity were used to assess whether the data were suitable for factor analysis. The KMO value of .921 indicates excellent sampling adequacy. Bartlett's Test was statistically significant, $\chi^2(780) = 6248.315$,

$p < .001$, confirming that the correlation matrix was not an identity matrix and that factor analysis was appropriate.

Table 5: KMO and Bartlett's Test

Test	Statistic	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	KMO	.921
Bartlett's Test of Sphericity	Approx. Chi-Square	6248.315
	df	780
	Sig.	.000

The strong KMO result and significant Bartlett's Test support the factorial validity of the dataset. In substantive reporting, the SPSS significance value of .000 should be interpreted as $p < .001$.

9.5 Correlation Analysis

Pearson's correlation analysis indicates positive and statistically significant relationships among the principal digital dimensions and entrepreneurial performance. Entrepreneurial performance was most strongly associated with digital literacy ($r = .681$, $p < .001$), followed by digital marketing ($r = .654$, $p < .001$), educational technology ($r = .621$, $p < .001$), and digital finance ($r = .587$, $p < .001$). These results suggest that women entrepreneurs with stronger digital skills and more intensive use of digital tools are likely to report better business outcomes.

Table 6: Correlations

Variable	Digital Literacy	Digital Marketing	Digital Finance	Educational Technology	Entrepreneurial Performance
Digital Literacy — Pearson Correlation	1	.572**	.488**	.536**	.681**
Sig. (2-tailed)	—	.000	.000	.000	.000
N	300	300	300	300	300
Digital Marketing — Pearson Correlation	.572**	1	.514**	.549**	.654**
Sig. (2-tailed)	.000	—	.000	.000	.000
N	300	300	300	300	300

Digital Finance — Pearson Correlation	.488**	.514**	1	.462**	.587**
Sig. (2-tailed)	.000	.000	—	.000	.000
N	300	300	300	300	300
Educational Technology — Pearson Correlation	.536**	.549**	.462**	1	.621**
Sig. (2-tailed)	.000	.000	.000	—	.000
N	300	300	300	300	300
Entrepreneurial Performance — Pearson Correlation	.681**	.654**	.587**	.621**	1
Sig. (2-tailed)	.000	.000	.000	.000	—
N	300	300	300	300	300

Note. Correlation is significant at the .01 level (2-tailed). All reported .000 significance values are interpreted as $p < .001$.

9.6 Multiple Regression

Multiple regression was used to examine the combined influence of digital literacy, digital marketing, digital finance, educational technology and digital business management on entrepreneurial performance. The model was statistically significant and explained 61.0% of the variance in entrepreneurial performance.

The regression model was specified as:

$$EP = \beta_0 + \beta_1 DL + \beta_2 DM + \beta_3 DF + \beta_4 ET + \beta_5 DBM + \varepsilon$$

Where EP = Entrepreneurial Performance, DL = Digital Literacy, DM = Digital Marketing, DF = Digital Finance, ET = Educational Technology, and DBM = Digital Business Management.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781 ^a	.610	.603	.414

a. Predictors: (Constant), Digital Literacy, Digital Marketing, Digital Finance, Educational Technology, Digital Business Management.

The model produced $R = .781$ and $R^2 = .610$, indicating that the five predictors collectively explained 61.0% of the variation in entrepreneurial performance. The adjusted R^2 of .603 indicates that the explanatory strength remained high after adjustment for the number of predictors.

Table 8: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	79.180	5	15.836	91.963	.000 ^b
Residual	50.620	294	.172		
Total	129.800	299			

a. Dependent Variable: Entrepreneurial Performance.

b. Predictors: (Constant), Digital Literacy, Digital Marketing, Digital Finance, Educational Technology, Digital Business Management.

The ANOVA result, $F(5, 294) = 91.963$, $p < .001$, confirms that the regression model as a whole is statistically significant.

Table 9: Coefficients^a

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.	Tolerance	VIF
(Constant)	.512	.171	—	2.994	.003	—	—
Digital Literacy	.284	.047	.293	6.043	.000	.579	1.727
Digital Marketing	.221	.043	.241	5.140	.000	.621	1.610
Digital Finance	.149	.041	.143	3.634	.000	.755	1.325
Educational Technology	.184	.040	.211	4.600	.000	.649	1.541
Digital Business Management	.126	.045	.132	2.800	.005	.702	1.425

a. Dependent Variable: Entrepreneurial Performance.

Digital literacy emerged as the strongest predictor ($\beta = .293$, $p < .001$), followed by digital marketing ($\beta = .241$, $p < .001$) and educational technology ($\beta = .211$, $p < .001$). Digital finance ($\beta = .143$, $p < .001$) and digital business management ($\beta = .132$, $p = .005$) also contributed significantly. VIF values ranged from 1.325 to 1.727, indicating no serious multicollinearity problem.

9.7 ANOVA by Age Group

A one-way ANOVA was conducted to examine whether entrepreneurial performance differed across age groups. The results indicate a statistically significant difference, $F(4, 295) = 5.822$, $p < .001$. Younger and middle-aged respondents generally reported slightly higher entrepreneurial-performance scores than the oldest group.

Table 10: ANOVA: Entrepreneurial Performance by Age Group

Entrepreneurial Performance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.521	4	2.380	5.822	.000
Within Groups	120.279	295	.408		
Total	129.800	299			

The significant omnibus result indicates that at least one age-group mean differed from another. Tukey post-hoc comparisons were therefore examined.

Table 11: Multiple Comparisons (Tukey HSD)

(I) Age Group	(J) Age Group	Mean Difference (I-J)	Std. Error	Sig.	95% CI Lower Bound	95% CI Upper Bound
18–25 years	56 years and above	.421*	.137	.019	.032	.810
26–35 years	56 years and above	.503*	.126	.001	.146	.860
36–45 years	56 years and above	.447*	.128	.006	.084	.810
46–55 years	56 years and above	.286	.136	.219	-.100	.672

Note. The mean difference is significant at the .05 level.

The post-hoc results suggest that respondents aged 26–35 and 36–45 years had significantly higher entrepreneurial-performance scores than respondents aged 56 years and above. The difference between the 46–55 and 56+ groups was not statistically significant.

9.8 Hypothesis-Testing Summary

The consolidated findings indicate support for all five alternative hypotheses. Digital technology adoption, operational applications, digital marketing and communication, digital finance, and digital skills were all positively associated with relevant dimensions of entrepreneurial performance.

Table 12: Summary of Hypothesis Testing

Hypothesis	Statistical Test	Test Statistic	Sig. (p-value)	Decision on H ₀	Interpretation
H01: Digital technology adoption has no significant relationship with entrepreneurial performance	Pearson correlation / multiple regression	R = .781; R ² = .610	< .001	Rejected	Digital technology adoption has a significant positive relationship with entrepreneurial performance.

H02: Digital technology adoption has no significant effect on operational efficiency	Regression	$\beta = .268$; $t = 5.734$	$< .001$	Rejected	Greater digital adoption significantly improves operational efficiency.
H03: Digital marketing and communication have no significant effect on customer/student reach and engagement	Regression	$\beta = .315$; $t = 6.482$	$< .001$	Rejected	Digital marketing and communication significantly improve reach and engagement.
H04: Digital financial technologies have no significant relationship with financial-management efficiency	Pearson correlation	$r = .587$	$< .001$	Rejected	Digital finance is positively and significantly related to financial-management efficiency.
H05: Digital skills have no significant influence on effective digital-technology utilisation	Regression	$\beta = .293$; $t = 6.043$	$< .001$	Rejected	Digital skills exert a significant positive influence on effective technology utilisation.

Taken together, the results suggest that digital capability is materially associated with the performance of women-owned educational enterprises in Jodhpur. In particular, digital literacy, marketing capability and educational technology appear to be the strongest contributors. These simulated findings are suitable for demonstrating the structure and interpretation of SPSS outputs, but the numerical values must be replaced by actual SPSS results before the paper is presented as an empirical study.

10. Expected Findings and Discussion

10.1 Widespread Use of Basic Digital Technologies

Women entrepreneurs are likely to demonstrate high utilisation of smartphones, WhatsApp, UPI, online banking and social-media applications. These technologies have relatively low entry barriers and are directly applicable to everyday business activities.

Advanced technologies such as dedicated learning management systems, customer relationship management software, automated accounting applications and sophisticated digital analytics may show comparatively lower adoption.

This distinction is important because basic digitalisation and strategic digital transformation represent different stages of technological maturity.

10.2 Digital Communication and Customer Engagement

Digital communication is expected to emerge as one of the strongest areas of technological impact.

WhatsApp groups, messaging applications, email and video-conferencing tools enable educational entrepreneurs to communicate with students and parents rapidly. They can circulate schedules, study materials, examination information, fee reminders and announcements without significant additional expenditure.

Technology therefore creates value not simply by reducing communication cost but also by increasing the frequency and immediacy of interaction.

10.3 Expansion of Market Reach

Traditionally, a tuition or coaching enterprise depended heavily on its immediate geographical surroundings. Digital technologies substantially weaken this restriction.

Social-media promotion and online teaching enable educational entrepreneurs to attract students beyond their immediate neighbourhood and potentially outside Jodhpur.

Digitalisation therefore converts the entrepreneur's potential market from a geographically constrained market to a partially network-based market.

10.4 Improvement in Operational Efficiency

Technology can simplify several repetitive activities, including:

- Student registration;
- Attendance;
- Fee collection;
- Scheduling;
- Distribution of study material;
- Examination management;
- Record maintenance; and
- Communication.

The resulting time savings are particularly significant for small enterprises where the entrepreneur simultaneously performs academic, managerial and administrative responsibilities.

10.5 Digital Payments and Financial Management

Digital payment systems are expected to have a substantial influence on the financial management of educational enterprises.

UPI, mobile banking and online transfers simplify fee collection and reduce the inconvenience associated with cash transactions. Digital transaction records can also improve financial documentation and monitoring.

Nevertheless, digital financial literacy remains important because the availability of digital payment mechanisms does not automatically translate into sophisticated financial management.

10.6 Entrepreneurial Empowerment

An important implication of digitalisation extends beyond conventional financial performance.

Women entrepreneurs who independently manage marketing, communication, payments and digital educational delivery may experience increased professional confidence and managerial autonomy.

Digital entrepreneurship should therefore be examined not only in terms of revenue growth but also in terms of control over entrepreneurial decisions and access to opportunities.

10.7 Persistent Digital Barriers

Despite these benefits, several constraints are likely to remain important:

Limited advanced digital skills: Entrepreneurs may comfortably use basic applications but experience difficulty with specialised business software.

Cost: Subscription fees, equipment and professional digital marketing may create financial pressure for smaller ventures.

Cybersecurity concerns: Fear of fraud, data breaches and misuse of financial information can discourage wider adoption.

Technical dependence: Some entrepreneurs may depend upon employees or family members for website management, software installation or troubleshooting.

Time constraints: Learning new technologies requires time, which may be difficult for entrepreneurs simultaneously managing businesses and household responsibilities.

Consequently, the central policy challenge is shifting from digital access to meaningful digital capability.

11. Discussion

The expected findings suggest that the relationship between technology and women's entrepreneurship should not be understood simply as a question of whether technology is available. The more relevant issue is whether entrepreneurs can transform technological access into productive business capability.

For women entrepreneurs in education, this transformation may take place through several interconnected mechanisms.

First, digital technology reduces transaction costs. Communication, advertising and payment collection can be conducted at relatively low cost.

Second, technology reduces geographical barriers. An educational entrepreneur located in Jodhpur can potentially teach students in other districts or states through online platforms.

Third, digitalisation improves flexibility. Certain managerial and educational activities can be performed from home or outside conventional working hours.

Fourth, digital platforms create greater visibility. A small educational enterprise can establish an online presence without investing heavily in traditional advertising.

However, these benefits remain conditional upon the entrepreneur's digital competence.

This distinction between digital adoption and digital effectiveness is particularly important.

Two entrepreneurs may use the same technology but obtain very different outcomes depending upon their knowledge, strategy and ability to integrate it with business processes.

Thus:

Technology Access → Digital Skills → Effective Utilisation → Business Outcomes

is likely to provide a more realistic explanation than a simple direct relationship between technology ownership and business success.

12. Implications of the Study

12.1 Implications for Women Entrepreneurs

Women entrepreneurs should gradually move beyond basic technology use towards strategic digitalisation. Social-media accounts, digital payments and messaging applications represent an important beginning, but greater value may be created by integrating:

- Digital accounting;
- Customer/student databases;
- Learning management systems;
- Analytics;
- Automated communication;
- Online registration;
- Digital advertising; and
- Cloud-based business management.

12.2 Implications for Educational Entrepreneurs

Educational entrepreneurs should treat technology as part of the educational service rather than merely an administrative tool.

Hybrid models combining classroom teaching with digital resources can improve flexibility and extend service reach.

12.3 Implications for Government and Policymakers

Government agencies and entrepreneurship-development organisations should emphasise practical digital capability development.

Training should move beyond introductory computer literacy and include:

- Social-media marketing;
- Digital accounting;
- Online advertising;
- Cybersecurity;
- Digital payment management;
- E-commerce and service platforms;
- Artificial intelligence tools;

- Data management; and
- Online educational delivery.

Training programmes designed specifically for women-owned micro and small enterprises may be particularly valuable.

12.4 Implications for Financial Institutions

Banks and financial institutions can support women entrepreneurs by providing training in digital financial management, fraud prevention and formal credit access.

12.5 Implications for Jodhpur

Local universities, colleges, incubators and entrepreneurship-development organisations in Jodhpur can establish collaborative digital training and mentoring programmes for women entrepreneurs.

Such initiatives would be particularly valuable because locally delivered programmes can respond to the practical circumstances of women operating businesses in Tier-II cities.

13. Recommendations

Based on the conceptual and empirical framework of the study, the following recommendations are proposed:

1. **Develop advanced digital literacy programmes:** Training should progress from basic smartphone use towards practical business applications.
2. **Establish women-focused digital entrepreneurship centres:** Universities and entrepreneurship-development institutions in Jodhpur can provide training, mentoring and technical support.
3. **Encourage affordable digital solutions:** Low-cost software packages suitable for micro educational enterprises should be promoted.
4. **Strengthen cybersecurity awareness:** Women entrepreneurs should receive practical training concerning digital fraud, passwords, financial security and data protection.
5. **Promote digital marketing skills:** Entrepreneurs should learn how to create content, evaluate online advertising and use analytics rather than depending completely on external agencies.
6. **Encourage hybrid educational business models:** Educational ventures should combine physical and digital delivery where appropriate.
7. **Strengthen networking:** Online and offline networks connecting women entrepreneurs can facilitate knowledge sharing, mentoring and collaboration.
8. **Improve awareness of government programmes:** Information regarding entrepreneurship support, credit facilities, training programmes and digital initiatives should be communicated through accessible channels.
9. **Promote financial technology literacy:** Digital payments should be accompanied by knowledge of accounting, budgeting and digital financial management.

10. **Develop continuous rather than one-time training:** Since technology changes rapidly, entrepreneurship-development programmes should provide continuing digital skill development.

14. Conclusion

Digital technology is transforming the entrepreneurial environment by changing how enterprises communicate, operate, promote their services and reach customers. For women entrepreneurs in the education sector, these changes are particularly significant because technology can simultaneously influence educational delivery and business management.

The present study proposes that digital technology can contribute positively to the entrepreneurial performance of women in Jodhpur through improved operational efficiency, wider market reach, better customer and student engagement, flexible service delivery and more efficient financial transactions. Technology can also contribute to greater managerial autonomy by enabling entrepreneurs to independently perform activities that previously required intermediaries or substantial physical infrastructure.

At the same time, digital technology should not be treated as an automatic solution to the challenges of women entrepreneurship. The benefits of digitalisation depend upon skills, affordability, infrastructure, confidence and the strategic integration of technology with business processes. The distinction between having access to technology and possessing the ability to use it effectively remains crucial.

For women entrepreneurs operating educational enterprises in Jodhpur, the next stage of digital development is therefore likely to involve a transition from basic digital adoption to strategic digital integration.

This transition requires coordinated efforts from entrepreneurs, educational institutions, financial organisations and government agencies. Appropriate training, mentoring, affordable technology and supportive entrepreneurial networks can enable women-owned educational enterprises to use digitalisation not merely for survival but for innovation and sustainable growth.

The study ultimately positions digital technology as both an economic resource and an enabling mechanism for women's entrepreneurial participation. Strengthening the digital capabilities of women entrepreneurs in cities such as Jodhpur can therefore contribute not only to individual enterprise performance but also to local employment, educational innovation and inclusive regional economic development.

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