

Digital Empowerment of Women in Traditional Business Sectors

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Abstract

Digital technologies have created new opportunities for entrepreneurs to expand their businesses and improve operational efficiency. This study examines the level of digital empowerment among women entrepreneurs engaged in traditional business sectors. The main objective of the study is to analyze the awareness and adoption of digital tools, digital payment systems, and online marketing platforms among women entrepreneurs. The study is based on primary data collected from 370 respondents through a structured questionnaire. Percentage analysis, mean and standard deviation, chi-square test, correlation analysis, and regression analysis were used to analyze the collected data. The results indicate that a considerable number of women entrepreneurs are aware of digital technologies and have started adopting digital payment systems and online marketing platforms for their business activities. However, some challenges such as limited digital skills, lack of training, and technological barriers still affect the full adoption of digital tools. The study concludes that improving digital literacy, providing training programs, and enhancing access to digital infrastructure can significantly strengthen digital empowerment among women entrepreneurs in traditional sectors.

Keywords: Women entrepreneurs, Digital empowerment, Digital payment systems, online marketing, Traditional business sectors.

1. Introduction

The rapid advancement of digital technologies has transformed the way businesses operate across the world. Digital tools such as mobile applications, digital payment systems, e-commerce platforms and online marketing channels have significantly improved business efficiency, communication and market access. These technologies enable entrepreneurs to reach wider markets, reduce transaction costs and improve overall productivity (Bharadwaj et al., 2013). As a result, digital transformation has become an essential component of modern business development.

Women entrepreneurs play a crucial role in economic growth, employment generation, and poverty reduction, particularly in developing countries. In many regions, women are actively engaged in traditional industries such as handicrafts, textiles, food processing, and small-scale retail businesses. However, these sectors often face limitations in terms of technology adoption, market access, and financial inclusion (Minniti & Naudé, 2010). The integration of digital technologies can significantly enhance the productivity and competitiveness of women-owned enterprises in traditional sectors.

Digital empowerment refers to the ability of individuals to access, use, and benefit from digital technologies for personal and economic development. For women entrepreneurs,

digital empowerment can provide opportunities to expand their businesses, improve financial management, and access digital financial services. Digital payment systems, in particular, have gained significant importance in recent years as they facilitate faster and more secure financial transactions (Donner & Tellez, 2008). Similarly, social media platforms and online marketplaces provide cost-effective channels for promoting products and reaching new customers.

Despite the increasing availability of digital technologies, women entrepreneurs often face several barriers in adopting these tools. Limited digital literacy, inadequate access to digital infrastructure, lack of training opportunities, and concerns about cyber security are some of the major challenges that restrict the effective use of digital technologies in traditional businesses (OECD, 2017). These challenges highlight the need for targeted policy interventions and capacity-building initiatives to promote digital inclusion among women entrepreneurs.

Against this background, the present study aims to examine the level of digital awareness, technology adoption and factors influencing digital empowerment among women entrepreneurs engaged in traditional business sectors. The study also attempts to identify the challenges faced by women entrepreneurs in adopting digital technologies and to suggest measures for enhancing digital empowerment in traditional industries.

2. Review of Literature

Over the years, researchers have increasingly focused on understanding the role of women entrepreneurs and the challenges they face in business development. *Minniti and Wim Naudé (2010)* explored the patterns and determinants of female entrepreneurship across different countries. Their study highlighted that women entrepreneurs significantly contribute to economic growth and employment generation. However, the authors found that women often face structural barriers such as limited access to finance, education, and technological resources, which can restrict the expansion of their businesses.

With the advancement of technology, digital tools have become an important support system for small entrepreneurs. In this context, *Jonathan Donner and Camilo Tellez (2008)* examined how mobile banking and digital financial services influence small business activities. Their findings revealed that digital payment systems enable entrepreneurs to conduct transactions more efficiently and securely. The study also emphasized that mobile banking plays a crucial role in promoting financial inclusion, especially for small-scale entrepreneurs who previously had limited access to formal banking services.

Further emphasizing the importance of technology in modern business environments, *Anand Bharadwaj, Omar El Sawy, Paul Pavlou, and N. Venkatraman (2013)* discussed how digital strategies are transforming business operations. Their research showed that the integration of digital technologies into business activities can enhance productivity, improve customer engagement, and create new market opportunities. The authors argued that digital transformation is no longer optional but essential for businesses aiming to remain competitive in today's rapidly changing environment.

Recognizing the broader economic impact of digital transformation, the *Organisation for Economic Co-operation and Development (2017)* examined how digital technologies influence small and medium-sized enterprises. The report concluded that businesses adopting digital tools tend to experience higher productivity and improved market reach. However, it also noted that many entrepreneurs, particularly those operating in traditional sectors, face challenges such as limited digital skills, lack of proper training, and inadequate digital infrastructure.

Similarly, the *World Bank (2021)* emphasized the growing importance of digital technologies in supporting entrepreneurship and economic development. According to the report, tools such as online marketing platforms, digital payment systems and e-commerce channels enable small entrepreneurs to expand their customer base and improve business performance. The study further highlighted that improving digital literacy and access to digital resources is essential for empowering women entrepreneurs and enhancing their participation in the digital economy.

3. Research Methodology

The present study adopts a descriptive research design to examine the level of digital empowerment among women entrepreneurs engaged in traditional business sectors. The study is based on primary data collected through a structured questionnaire from 370 women entrepreneurs involved in traditional businesses such as handicrafts, tailoring, food processing, and small retail activities. The respondents were selected using a convenience sampling method. The collected data were analyzed using various statistical tools like Percentage analysis, Standard Deviation, Chi-square analysis, correlation and regression analyses. These analytical methods help in understanding the extent of digital adoption and the factors influencing digital empowerment among women entrepreneurs in traditional sectors.

4. Result and Discussions

4.1. Distribution of Respondents Based on Demographic and Digital Adoption Variables

Table: 1 Demographic and Digital Adoption

Variable	Category	Number of Respondents	Percentage (%)
Age Distribution	Below 25 years	46	12.43
	25 – 35 years	124	33.51
	36 – 45 years	108	29.19
	46 – 55 years	58	15.68
	Above 55 years	34	9.19
Educational Qualification	No Formal Education	38	10.27
	School Education	142	38.38
	Diploma	70	18.92

	Undergraduate	84	22.70
	Postgraduate	36	9.73
Type of Traditional Business	Handicrafts	68	18.38
	Textile / Tailoring	96	25.95
	Food Processing	82	22.16
	Agriculture Products	64	17.30
	Retail Shop	60	16.22
	Awareness of Digital Tools	Highly Aware	110
Aware		144	38.92
Neutral		50	13.51
Not Aware		46	12.43
Highly Not Aware		20	5.41
Usage of Digital Payment Systems	Yes	242	65.41
	No	128	34.59
Adoption of Online Marketing Platforms	Yes	198	53.51
	No	172	46.49

Age Distribution of Women Entrepreneurs:

The table shows that **124 (33.51%) of the respondents** belong to the **25–35 years age group**, which forms the largest category. This is followed by **108 (29.19%) respondents** in the **36–45 years category**, **58 (15.68%) respondents** fall in the **46–55 years group** and **46 (12.43%) respondents** are **below 25 years**, **34 (9.19%) of the respondents** are **above 55 years**, indicating that most women entrepreneurs in traditional business sectors are in their productive middle age.

Educational Qualification

Regarding education, 142 (38.38%) of the respondents have school-level education, which constitutes the highest proportion. This is followed by 84 (22.70%) respondents with undergraduate qualifications and 70 (18.92%) respondents with diploma education. Further, 38 (10.27%) respondents have no formal education, while 36 (9.73%) respondents possess postgraduate qualifications.

Type of Traditional Business

The data reveals that 96 (25.95%) of the respondents are engaged in textile or tailoring businesses, representing the largest segment. This is followed by 82 (22.16%) respondents involved in food processing activities and 68 (18.38%) respondents in handicrafts. Additionally, 64 (17.30%) respondents deal with agriculture-related products, while 60 (16.22%) respondents operate retail shops.

Awareness of Digital Tools

With regard to awareness of digital tools, 144 (38.92%) of the respondents are aware, while 110 (29.73%) respondents are highly aware. Further, 50 (13.51%) respondents remain neutral. A smaller proportion of 46 (12.43%) respondents are not aware, and 20 (5.41%) respondents are highly not aware of digital tools used for business activities.

Usage of Digital Payment Systems

The findings show that 242 (65.41%) of the respondents use digital payment systems in their businesses, whereas 128 (34.59%) respondents do not use such systems. This indicates that a majority of women entrepreneurs have adopted digital financial transactions.

Adoption of Online Marketing Platforms

The table further reveals that 198 (53.51%) of the respondents use online marketing platforms for promoting their businesses, while 172 (46.49%) respondents do not adopt such platforms. This suggests a moderate level of digital marketing adoption among women entrepreneurs in traditional sectors.

4.2. Digital Empowerment among Women Entrepreneurs

Table 2
Digital Empowerment

S. No	Digital Empowerment Statements	Mean	Standard Deviation
1	Digital payment systems improve business efficiency	4.12	0.84
2	Digital tools help attract more customers	4.05	0.91
3	Online marketing platforms expand business opportunities	3.98	0.88
4	Digital technology reduces transaction time	4.20	0.79
5	Smartphones and internet improve business management	4.08	0.86
6	Government digital initiatives support women entrepreneurs	3.75	0.95
7	Digital platforms increase market reach	4.10	0.83

The above study found that women entrepreneurs generally have a positive perception of digital technologies in business operations. Among the statements, "Digital technology reduces transaction time" recorded the highest mean value of 4.20, indicating that most respondents strongly agree that digital technologies help to simplify and speed up business transactions. Similarly, digital payment systems improving business efficiency (Mean = 4.12) and digital platforms increasing market reach (Mean = 4.10) also received high mean scores, highlighting the importance of digital tools in enhancing business performance.

Further, smartphones and internet improving business management (Mean = 4.08) and digital tools attracting more customers (Mean = 4.05) indicate that respondents acknowledge the benefits of technology in expanding customer base and managing business activities effectively. The statement online marketing platforms expanding business opportunities recorded a mean value of 3.98, suggesting moderate agreement among respondents.

The comparatively lower mean value of 3.75 for government digital initiatives supporting women entrepreneurs indicates that respondents perceive government initiatives as helpful but not as strongly influential as other technological factors.

The standard deviation values range between 0.79 and 0.95, indicating a moderate level of variation in responses among respondents. Overall, the findings suggest that women entrepreneurs recognize the significant role of digital technologies in improving efficiency, expanding market reach, and strengthening business operations.

4.3. Educational qualification influences the adoption of digital payment systems among women entrepreneurs.

Table 3
Educational Qualification and Digital Payment Adoption

Educational Qualification	Using Digital Payments	Not Using	Total
No Formal Education	18	20	38

School Education	86	56	142
Diploma	50	20	70
Undergraduate	62	22	84
Postgraduate	26	10	36
Total	242	128	370

Chi-Square Results

Test Statistics	Value
Chi-Square Value	14.62
Degrees of Freedom	4
Significance Level (p-value)	0.006

Table 3 presents the relationship between educational qualification and the adoption of digital payment systems among women entrepreneurs. The results show that 86 respondents with school education and 62 respondents with undergraduate education actively use digital payment systems, while comparatively fewer respondents without formal education use digital payments.

The calculated Chi-Square value is 14.62 with a significance level of 0.006, which is less than the standard significance level of 0.05. Therefore, the null hypothesis is rejected, indicating that there is a significant association between educational qualification and the adoption of digital payment systems.

This finding suggests that higher educational attainment enhances the likelihood of adopting digital technologies in business activities. Educated women entrepreneurs may possess better digital literacy, enabling them to utilize digital payment systems more effectively.

4.4. Digital Awareness among Women Entrepreneurs

Table 4
Correlation Matrix

Variables	Digital Awareness	Technology Adoption
Digital Awareness	1	0.642**
Technology Adoption	0.642**	1

(**Significant at 0.01 level)

The results presented in Table 4 reveal that the correlation coefficient between digital awareness and technology adoption is 0.642. This indicates a strong positive relationship between the two variables. The positive coefficient suggests that as the level of digital awareness increases, the level of digital technology adoption among women entrepreneurs also increases.

The correlation is statistically significant at the 0.01 level, confirming that the relationship is not due to random variation. This implies that enhancing digital awareness through training

programs, workshops, and awareness campaigns may significantly increase the adoption of digital technologies in traditional business sectors.

4.5. Impact of Independent Variables on A Dependent Variable

Table 5
Regression Results

Variables	Beta Coefficient	t-value	Significance
Digital Awareness	0.41	6.28	0.000
Internet Access	0.29	4.92	0.000
Training Programs	0.21	3.87	0.001
Government Support	0.16	2.94	0.004

Model Summary

Model Statistics	Value
R	0.71
R Square	0.50
F Value	22.84
Significance	0.000

The regression results presented in Table 5 reveal that several factors significantly influence digital empowerment among women entrepreneurs. Among the independent variables, digital awareness shows the highest beta coefficient ($\beta = 0.41$), indicating that it is the most influential factor in enhancing digital empowerment.

This is followed by internet access ($\beta = 0.29$), suggesting that reliable internet connectivity plays an important role in enabling women entrepreneurs to adopt digital technologies in their businesses. Training programs ($\beta = 0.21$) also contribute positively, indicating that skill development initiatives and digital literacy training can improve the adoption of digital tools.

Further, government support ($\beta = 0.16$) also shows a positive and significant effect, although its impact is relatively smaller compared to other factors.

The R square value of 0.50 indicates that 50 percent of the variation in digital empowerment among women entrepreneurs is explained by the independent variables included in the model. The F value of 22.84 with a significance level of 0.000 confirms that the regression model is statistically significant.

Overall, the findings suggest that improving digital awareness, providing better internet access, organizing training programs, and strengthening government support can significantly enhance digital empowerment among women entrepreneurs in traditional industries.

4.6 Challenges and Barriers in Adopting Digital Technologies among Women Entrepreneurs

Table 6

Challenges in Adopting Digital Technologies

S. No	Challenges / Barriers	Mean	Rank
1	Lack of digital skills and knowledge	4.02	1
2	Fear of online fraud and cyber security risks	3.85	2
3	Poor internet connectivity	3.70	3
4	Lack of training opportunities	3.66	4
5	High cost of digital devices and technology	3.52	5
6	Difficulty in using digital applications	3.41	6
7	Lack of technical support	3.28	7

The results presented in Table 6 indicate that lack of digital skills and knowledge (Mean = 4.02) is the most significant challenge faced by women entrepreneurs in adopting digital technologies. This is followed by fear of online fraud and cyber security risks (Mean = 3.85), which reflects concerns regarding the safety of digital financial transactions.

Further, poor internet connectivity (Mean = 3.70) and lack of training opportunities (Mean = 3.66) also act as major barriers that limit the effective use of digital technologies in traditional businesses. The high cost of digital devices (Mean = 3.52) also discourages some women entrepreneurs from adopting advanced digital tools.

Additionally, respondents reported difficulty in using digital applications (Mean = 3.41) and lack of technical support (Mean = 3.28) as other constraints affecting digital technology adoption. Overall, the findings suggest that improving digital literacy, providing training programs, and strengthening digital infrastructure can significantly reduce these barriers and promote digital empowerment among women entrepreneurs in traditional business sectors.

Conclusion

The study highlights the growing importance of digital technologies in empowering women entrepreneurs involved in traditional business sectors. The findings indicate that while many women entrepreneurs are aware of digital tools and digital payment systems, the level of adoption varies depending on factors such as education, digital literacy, and access to technology. Providing digital training programs, improving digital infrastructure, and creating awareness initiatives can further support women entrepreneurs in effectively utilizing digital technologies. Strengthening digital empowerment will ultimately contribute to business growth, financial inclusion, and overall economic development.

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