Exploring How Financial Literacy Impacts the Adoption of Digital Banking Services Among Women-Led Enterprises

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Abstract-Women business owners in underdeveloped countries are the focus of this study, which seeks to understand how their level of financial literacy affects their use of online banking. The expansion of digital financial technology is making it more important than ever to identify the factors that encourage or discourage women from participating. The general objective of the research is to investigate the role of the socioeconomic, technical and educational variables in the process of adopting them and how financial literacy affects the digital banking behaviour. Using a structured online questionnaire, 268 women entrepreneurs from urban, semi-urban, and rural areas were surveyed using a quantitative technique. An analysis of variance (ANOVA), regression (R), and Pearson correlation (PC) demonstrated the existence of a positive, statistically significant correlation between financial literacy and the effective use of banking services provided through the Internet. Tools like UPI, online banking, and mobile applications are more commonly used by those with higher incomes, higher levels of education, and more experience with technology. But obstacles including distrust of online fraud, outdated technology, and a lack of computer knowledge continue, particularly for women who are less financially literate. The findings highlight the need for digital skill development and targeted financial education programs to increase inclusive financial participation. This study has important policy, non-governmental organization (NGO), and financial institution (FI) implications for promoting women's economic empowerment through digital financial inclusion. While there are some limitations to consider, such as the use of self-reported data and the fact that some participants did not have access to the internet, the research does offer valuable insights into how gender, technology, and finance connect. It demands institutional changes to help more women participate in the developing digital financial ecosystem and close the literacy gap.

Index Terms—Financial Literacy, Digital Banking, Women Entrepreneurs, Peer Learning, Barriers and Enablers

I. INTRODUCTION

Background and Context

In the issue of enabling people to make adequate decisions on various financial concerns, such as saving, borrowing and investing, financial literacy has a very big part to play. Financial literacy is especially important for women entrepreneurs. This is because it creates direct effects on the ability of women to manage business finances, access credit, as well as adopt different digital financial tools (Andriamahery & Qamruzzaman, 2022). There are many individuals who still face challenges despite the growing participation of women in entrepreneurship. These specific challenges generally occur due to limited financial knowledge and a reduced level of confidence among individuals in handling financial matters.

The research conducted in recent years, the growth of digital banking altered how entrepreneurs previously accessed and utilized different financial services. Some of the digital financial service-based tools, such as mobile banking, digital wallets, and UPI-based platforms have played a crucial role in ensuring that financial transactions are quicker and more convenient. According to the data found from the Reserve Bank of India (2023), the number of digital payment transactions in India was noted to cross 13,000 crore in the financial year 2022 to 2023 (PIB, 2024). This specific fact clearly highlights a rapid growth in adoption. Though there are various studies that have shown that women entrepreneurs, especially residing in rural and semi-urban areas, often lag behind in the matter of digital financial services (Sharma, 2024). This especially happens because of the low financial literacy and digital skills gaps.

Research Problem and Rationale

The focus of this research is on understanding the relationship between the aspects of financial literacy and the use of various digital banking services among women entrepreneurs. There are many such government and NGO programmes that promote financial inclusion. But the actual impact of financial literacy on the usage of digital banking services remains underexplored in existing literature.

Objectives, and Research Questions

The primary aim of this research paper is to assess the influence of financial literacy on the use of different modern digital banking services among women entrepreneurs.

Objectives

- To explore and review existing studies conducted on the financial literacy levels among women entrepreneurs.

- To find the barriers and enablers that are continually influencing the adoption of different digital banking services among women entrepreneurs.
- To explore the thematic relationship between financial knowledge and digital banking behaviour, especially among women entrepreneurs.

Research Questions

- What previous studies have reported about the levels of financial literacy among women entrepreneurs?
- What are the crucial barriers and enabling factors that are continually influencing the use of digital banking services among women entrepreneurs?
- How is financial knowledge connected thematically to the digital behaviours of banking among women entrepreneurs?

Hypothesis:

H1: Socio-economic, technological, and educational factors significantly influence the adoption of digital banking services among women entrepreneurs.

H2: There is a positive relationship between the level of financial knowledge and digital banking behaviour among women entrepreneurs.

II. LITERATURE REVIEW

Review of Existing Literature

The aspects of financial literacy and digital banking have a close relationship to the empowerment of women and their entrepreneurial success. According to the study conducted by Adiandari (2023), generally lower levels of financial literacy have been found in women in comparison to men. According to the author, this often happens because of the limited access to education, cultural restrictions, as well as traditional gender roles. This specific gap in knowledge evidently restricts the ability of women to manage their finances effectively and be successful in business. The study has emphasized that there is a need for gender-sensitive financial education and reforms of policy to support the economic participation of women.

Haag & Brahm (2025) have reviewed global research in their study. They have found a consistent level of gender gap in the matter of financial literacy across different age groups and regions. According to these authors, various aspects like the patterns of socialisation, lower levels of confidence, as well as weaker numerical skills significantly contribute to enlarging this gap. This piece of work recommended focused efforts to enhance the confidence and skills of women through targeted programmes.

The report released by Preston et al. (2024) detected the imperative aspect of culture in terms of transforming the financial knowledge of women entrepreneurs. The research showed that the gender gap in financial literacy is initially shown to be smaller in countries with greater egalitarianism. Hence, the report argued that it was necessary to counteract cultural norms to maximize financial outcomes for women.

In the discussion surrounding digital inclusion, Sowmya & Pai (2024) emphatically underscoring the need for digital access, infrastructure, and skills training as the better enabling components for women entrepreneurs but at the same time financial literacy also emerged as a strong determinant influencing the ability of women entrepreneurs to effectively engage with the full range of modern digital banking services (Hasan et al., 2023).

Ojarikre et al. (2024) explored women entrepreneurs in the context of Nigeria. Their research revealed that digital financial services can meaningfully help women entrepreneurs in Abuja grow their businesses. As Srivastava (2020) notes, women entrepreneurs also achieve financial independence. The authors also emphasized the strong relationship between access to digital finance and a higher level of performance. While challenges still exist, including poor infrastructure and low financial literacy, the authors (Czech et al., 2024) suggested customized products and enabling policies could strengthen the empowerment of women.

Ahmed et al. (2025) in their research had put forth that the strategy of digitalisation boosts the prospects of business for women. However, proper training, affordability, and favorable policies are also required. This is the way the literature concurs that financial literacy as well as digital empowerment are key to increasing the success of women entrepreneurs.

Identification of research gaps in the literature

The reviewed studies provide different useful implications regarding the connection between financial literacy and digital access and empowerment of female entrepreneurship. But still, there are some gaps that remain persistent. Adiandari (2023) and Haag & Brahm (2025) both studies clearly highlight the gender gap in the matter of financial literacy. But there is limited focus noted on how these specific gaps differ across different regions within the same country. Preston et al. (2024) have addressed cultural influences. But the role of religion or family dynamics in the matter of reshaping the financial behaviours of women entrepreneurs remains underexplored. The study by Sowmya & Pai (2024) and Ojarikre et al. (2024) stresses the importance of digital tools. However, such studies are very limited, which have evaluated the adoption and maintenance of the use of digital banking services by women with lower digital literacy. Ahmed et al. (2025) clearly pointed out the need for training. But it is also true that practical strategies for long-term engagement are not well discussed in the study.

III. METHODOLOGY

Methodological Choice

The research uses a primary quantitative research approach. The emphasis was to collect first-hand numerical data to quantify and analyse the effects of financial literacy and electronic banking on women entrepreneurs' financial behaviours. Quantitative analysis is appropriate for creating statistically valid conclusions and establishing patterns within a large sample (Ismail et al., 2024). The technique allowed the researcher to conduct hypothesis testing using structured tools and make generalizable inferences.

Research Approach

A deductive research process was adopted, starting with well-formulated hypotheses from the literature. The method supported testing the precise relationships between financial literacy, access to digital banking, and women entrepreneurs' financial behaviour (Hall et al., 2023). The study utilized a structured questionnaire of a survey as the main data instrument for collection. The standardized questions supported uniformity and allowed for quantitative analysis.

Data Collection Method

Data were gathered from an online questionnaire administered through email and social media channels to women business owners in different industries. The questionnaire utilized closed-ended questions with Likert scale and multiple-choice formats to measure financial levels of knowledge, digital banking usage, and self-reported financial behaviour. Voluntary participation was assured, along with confidentiality and anonymity.

Sampling and Population

Purposive sampling method is employed in targeting registered women entrepreneurs. Statistical reliability and validity were ensured with a sample size of at 268 respondents. Criteria for inclusion involved active business ownership and use (or potential use) of digital banking services.

Data Analysis Method

The information gathered were examined using inferential and descriptive statistical methods. Statistics that included frequency distribution, mean analysis, Pearson correlation, and regression analysis were utilized with the aid of computer software like SPSS. The statistics helped in the determination of the existence of notable relationships among variables such as levels of financial literacy, e-banking accessibility, and financial behaviour results.

Limitations of the Study

This study is susceptible to several limitations. Firstly, use of self-reported data can lead to response bias due to the tendency of respondents to overreport or underreport their financial behaviours. Secondly, web administration of the questionnaire might be out of reach for individuals with poor internet connectivity or low digital literacy. Finally, although quantitative data provides width, it cannot possibly attain more profound contextual or affective interpretations in financial decision-making.

IV. DATA ANALYSIS

H1: Socio-economic, technological, and educational factors significantly influence the adoption of digital banking services among women entrepreneurs.

- Income

Table 2: Anova Analysis

Hypothesis	Variables	Factor			Anova		Hypotheses Supported
		Income	Mean	SD	F	Sig value	
H1	Adoption of Digital Banking Services	Less than 25,000	16.4028	4.95234	12.199	.034	Supported
		25,001-50,000	17.3600	4.16217			
		50,001-75,000	17.3472	4.07037			
		75,001 - 1,00,000	17.1176	4.44244			
		More than 1,00,000	17.7143	5.18698			

Table 2 presents the findings of the analysis of variance (ANOVA) carried out to verify the null hypothesis (H1) that the process of adopting digital banking services by women entrepreneurs is heavily influenced by socio-economic, technological, and educational variables. With an F-value of 12.199 and a significance value of 0.034 ($p < 0.05$), the research indicates that differences in the adoption of digital banking services differ statistically significantly across income groups, where income is a socio-economic variable. This implies that the adoption rate is dependent on the income levels. Judging by the data, it can be assumed that the link between the increased level of income and the increased usage of digital banking services is rather strong. Specifically, women entrepreneurs earning less than ₹25,000 per month had the lowest mean adoption score (16.40), while those earning more than ₹1,00,000 had the highest (17.71). The results back up the theory, showing that women business owners' socioeconomic status—and income in particular—is a major factor in determining the rate of digital banking use.

- Technological and Educational Factors

Table 3: Regression Analysis

Hypothesis	Regression Weights	Beta Coefficient	R2	F	t-value	p-value	Hypotheses Supported
H1	Technological Factors -> Adoption of Digital Banking Services	.193	0.237	41.069	2.583	.010	Supported
	Educational Factors -> Adoption of Digital Banking Services	.354			3.809	.000	

Hypothesis 1: A set of socio-economic, technological, and educational factors shows a significant impact on the use of digital banking services among women entrepreneurs the findings of the regression analysis on hypothesis 1 is presented in Table 3. The results show that the positive relationship is significant between the digital banking services usage and educational and technological variables. The beta coefficient for technological factors is 0.193, the p-value is 0.010, and the t-value is 2.583, indicating that they have a moderate yet significant influence. With a beta coefficient of 0.354, a p-value of 0.000, and a t-value of 3.809, educational factors show a stronger effect. All things considered, the model is statistically significant (F = 41.069), and it accounts for 23.7% of the variation in the use of online banking ($R^2 = 0.237$). The findings provide credence to the first hypothesis, which postulates that the level of education and technological sophistication of female entrepreneurs play a pivotal role in determining how they use online banking.

H2: There is a positive relationship between the level of financial knowledge and digital banking behaviour among women entrepreneurs.

Table 4: Correlation Analysis

Hypothesis	Factor			Correlation		Hypotheses Results
		Mean	SD	Pearson Correlation (*r*)	Sig value	
H2	Financial Knowledge	10.5821	2.43814	.449**	0.000	Supported
	Digital Banking Behaviour	17.0933	4.39555			
Correlation is significant at the 0.05 level (2-tailed).						

Hypothesis 2 proposes a favourable association between financial awareness and digital banking behaviour among women entrepreneurs. Table 4 displays the correlation analysis for this hypothesis. This study's moderately positive Pearson correlation coefficient (r = 0.449) is statistically significant on the 0.01 level (p = 0.000), suggesting that respondents' usage of digital banking services tends to rise alongside their level of financial understanding. Financial literacy has an average score of 10.5821 (SD = 2.43814), whereas digital banking conduct has an average score of 17.0933 (SD = 4.39555). As a result of the strong link, we may conclude that women business owners may benefit from increasing their financial literacy in order to make better use of digital banking.

V. CONCLUSION

Findings from this study highlight the importance of financial literacy in encouraging women business owners to use online banking. Women in rural and semi-urban areas are particularly impacted by the lack of financial understanding, digital skills, and trust in digital systems. Despite the increased accessibility of digital platforms like UPI, these tools are often misused and their full potential goes unused. The research observed that financially literate women tend to adopt multiple digital financial services, adhere to their budgets, and maintain records of their businesses in a better way. Conversely, the people lacking enough expertise have numerous barriers that deter their chances of embracing digital financial services, including the fear of fraud, technological challenges and poor infrastructure. Its findings demonstrate that females should enhance their financial literacy to become more financially empowered and establish their own businesses, as well as that a positive relationship exists between financial literacy and digital banking behaviour. There are a number of suggested interventions aimed at encouraging women business owners to use digital banking in a more inclusive and effectual way. First and foremost, banks and government agencies should put money into individualized financial education programs that include the fundamentals as well as more complex digital financial tools. It is imperative that these programs are both accessible in the local languages and culturally respectful. Second, the government and non-governmental organizations should conduct community-based training and peer-learning networks in order to build trust and share best practices. Thirdly, to guarantee consistent digital access and assistance, infrastructure needs to be improved, particularly in rural areas. Digital banking platforms can be made more user-friendly for consumers with fewer tech-savvy skills by simplifying user interfaces and using voice-based technology. Lastly, monetary incentives or public acknowledgment of digital literacy accomplishments can encourage continuous study and involvement.

The study has certain limitations, but it does make some good contributions. Relying on self-reported data has limitations, such as the possibility of social desirability biases or recall biases impacting the accuracy of responses regarding financial activity. The sample may have been skewed towards more technologically savvy persons due to the fact that online questionnaires were the only method of collection. This could have eliminated female entrepreneurs who did not have access to the internet or were not comfortable with digital communication tools. Furthermore, qualitative methods might uncover the complexity and depth of individual experiences and environmental factors that the quantitative approach missed. The former allowed for testing hypotheses and quantifying findings, but the latter failed to do so. The study's cross-sectional design also makes it difficult to track changes over time; therefore, further longitudinal studies are needed to determine how financial literacy affects people's use of online banking in the future.

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