

Impact of Digital Financial Literacy and Security on Financial Inclusion among Women

Harshitha KN¹, Supriya P²

¹MBA Student, Surana College (Autonomous) Department of MBA and Research Centre Bengaluru

²Assistant Professor, Surana College (Autonomous) Department of MBA and Research Centre
Bengaluru

Abstract

The fast development in the field of digital financial services has resulted in altering ways through which people make use of banking facilities. With increasing popularity of online payment systems and banking, digital financial literacy along with security of these services has emerged as an essential factor influencing the usage of these services. Women especially stand to gain from having higher digital financial literacy and safe financial platform because it allows them to do transaction on their own and makes the process of accessing formal banking facilities easier. This research work aims to explore the effects of digital financial literacy and security on financial inclusion of women. For this purpose, the researcher has chosen descriptive type of research design and the researcher will make use of primary data for this research work in the form of structured questionnaire to be administered to women respondents. In this study, the researcher intends to examine how digital financial knowledge and perception regarding the security of digital financial systems affects women's participation in financial services like digital payment, savings, and banking transactions.

Keywords: Digital Financial Literacy, Financial Security, Financial Inclusion, Women.

Introduction

Financial inclusion is a crucial aspect of inclusive economic development because it provides people with access to cost-effective, convenient, and reliable financial products. In India, the implementation of government policies like Pradhan Mantri Jan Dhan Yojana (PMJDY), Digital India, and the swift growth in digital finance services have enhanced access to formal banks and digital payment facilities. With the growing popularity of mobile banking, internet banking, and digital payment systems, financial transactions have become more efficient and convenient. Financial services have become more accessible and inclusive to individuals including women.

Digital financial literacy and financial security are two crucial elements that affect the utilization of digital financial services. Digital financial literacy allows women to be familiar with digital financial instruments, carry out online transactions confidently, and make decisions about their finances. Simultaneously,

financial security helps create trust by ensuring the security of transactions and personal data from any cyber-attacks and frauds. Even though digital financial services have become easily accessible nowadays, many women still encounter difficulties because of their lack of digital skills and fear of unsafe online transactions. For this reason, the purpose of this research is to analyse the influence of digital financial literacy and security on financial inclusion of women. The results of this study will help policymakers, financial institutions, and providers of digital financial services to develop effective ways to ensure greater financial inclusion of women.

Objectives

1. To determine the significance of digital financial literacy on financial inclusion among women.
2. To assess the influence of security in UPI services on financial inclusion among women.

Literature Review

Digital Financial Literacy and Financial Inclusion

The concept of digital financial literacy is playing an imperative role in enhancing the phenomenon of financial inclusion among women through their ability to make full use of digital financial services. According to Mildred Amugune et al. (2025), digital finance promoted the process of financial inclusion among rural women in Kenya despite their poor level of digital literacy. Similarly, it was stated by Pramshu Nepal (2025) that digital awareness and trust in technology motivated the women for participating in the digital financial services. In addition, Murugaganesh Ramachandran and Vimlesh Tanwar (2025) noted that women who possess good knowledge about financial literacy were more inclined to adopt FinTech services during their day-to-day financial transactions. Analogously, it has been identified by Aparna Tripathi and Anurag Agarwal (2025) that digital financial literacy helped women in making their financial decisions, improving business and generating incomes. Mohsin Showkat et al. (2025) emphasized that financially literate women made use of digital financial services due to which they economically empowered themselves.

Financial Security and Trust

Trust and security are two key elements for enhancing the confidence of women in using digital financial services. Technology trust is one such key element that was identified by Pramshu Nepal (2025) as one of the major aspects affecting the adoption of digital banking services among women. The problems of security issues, low levels of digital literacy, lack of smartphones, and poor internet connectivity were identified by Khare et al. (2024) as some of the major barriers for the participation of women in digital financial services. Likewise, the importance of secure digital payment technology has been stressed by Abdelhalem Mohmoud Shahan and Mesbah Fathy Sharaf (2025).

Digital Financial Inclusion among Women

According to previous researches, digital financial services make a valuable contribution to financial inclusion of women. Luka Nzilano and Sarah Magoti (2025) found out that mobile money and agency

banking positively impacted financial inclusion of female entrepreneurs in Tanzania. Peterson K. Ozili (2024) proved that digital financial inclusion contributes to economic growth and that the availability of internet, fintech, and financial education stimulates involvement of women in formal financial services. Likewise, Puneet Kaur (2025) found out that while many women had bank accounts, the utilization of financial services was limited by poor financial education and lack of digital financial tools. Hence, these studies indicate that enhancing digital financial literacy, improving the security of digital financial services, and developing digital infrastructure are crucial for increasing the degree of financial inclusion among women.

Research Gap

From the literature review, it can be concluded that digital financial literacy, financial security, and trust are significant determinants of financial inclusion for women. From the existing research, it has been found that digital financial literacy has an impact on women's ability to access digital financial services, and financial security and trust play a role in enhancing the adoption of digital payment systems by women. Many researchers have also pointed out the significance of digital financial services for women's economic empowerment.

Despite the above results, there are some research gaps that have not been explored yet. Most of the studies conducted have looked at the two variables separately without paying attention to how their combination affects financial inclusion. Additionally, most studies are conducted either in international settings or among the general population, women entrepreneurs, and rural communities, which makes the application of such results among Indian women very difficult. There is also little research done specifically about women with lower levels of education qualifications, especially those with education up to matriculation level.

Thus, it is necessary to analyse the impact of digital financial literacy and financial security together on financial inclusion among women. It is the aim of the current study to fill this void in the literature by presenting empirical analysis concerning the impact of digital financial literacy and financial security on financial inclusion.

Hypotheses

Hypotheses 1

H0₁ (Null Hypothesis): There is no significant impact of digital financial literacy on financial inclusion of women.

H1₁ (Alternative Hypothesis): There is a significant impact of digital financial literacy on financial inclusion of women.

Hypotheses 2

H0₂ (Null Hypothesis): The security of UPI services does not have any effect on financial inclusion of women.

H1₂ (Alternative Hypothesis): The security of UPI services has a significant effect on financial inclusion of women.

Research Methodology

Research Design: Descriptive Research Design

Research Approach: Quantitative Research Approach

Nature of Data: Primary Data

Data Collection Method: Structured Questionnaire

Measurement Scale: Five-point Likert Scale

Sampling Technique: Convenience Sampling

Sample Size: 163 Women Respondents

Target Respondents: Women

Data Analysis Tool: Microsoft Excel

Statistical Techniques: One-Way ANOVA and Regression Analysis

Statistical Tools Used

One-Way ANOVA has been conducted to identify the impact of digital financial literacy on financial inclusion of women, whereas Simple Linear Regression Analysis has been conducted to analyse the impact of security in UPI services on financial inclusion of women.

ANOVA RESULT

ANOVA: Single Factor

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Digital financial transactions can be performed easily using mobile applications.	163	630	3.865030675	0.41377		
UPI is preferred over traditional payment methods.	163	593	3.63803681	0.602742		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	4.19939	1	4.199386503	8.26235	0.0043151	3.8703195
Within Groups	164.675	324	0.508255699			

Total	168.874	325				

Interpretation

One-Way ANOVA was performed to analyse the significance of digital financial literacy on financial inclusion of women. This analysis showed statistically significant differences between the two variables because $F(1, 324) = 8.262$, $p = 0.004$ and $p\text{-value} < 0.05$. Hence, as the calculated value of F-statistics ($F = 8.262$) is greater than critical value of F-statistics ($F = 3.870$) and $p\text{-value}$ (0.004) is less than 0.05, we reject null hypothesis.

It can be seen from results that digital financial literacy plays a significant role in financial inclusion of women. Women who have high level of digital financial literacy prefer UPI to conventional modes of payment and use mobile applications for performing digital financial transactions.

Regression Analysis

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.20							
R Square	0.04							
Adjusted R Square	0.04							
Standard Error	0.76							
Observations	163.00							
ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1.00	4.03	4.03	6.94	0.01			
Residual	161.00	93.61	0.58					
Total	162.00	97.64						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	2.55	0.42	6.15	0.00	1.73	3.38	1.73	3.38
UPI applications	0.28	0.11	2.63	0.01	0.07	0.49	0.07	0.49

protect my financial information.								
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Interpretation

Simple Linear Regression analysis was used to determine the effect of the perception that UPI applications safeguard financial information on financial inclusion among women. From the analysis, it was found out that the regression analysis model is statistically significant with the value of F being 6.94 and Significance F (P-value) 0.01, below the level of significance, 0.05. The regression analysis coefficient for the independent variable is $\beta = 0.28$ with p-value 0.01 and it showed that there is a positive and significant effect on financial inclusion among women. The model accounts for 4% ($R^2 = 0.04$) of the variability of financial inclusion.

Therefore, the null hypothesis (H_0) is rejected and alternative hypothesis (H_1) is accepted. The conclusion from the analysis is that the perception that UPI applications safeguard financial information has a positive and significant effect on financial inclusion among women.

Overall Findings

- The research has established that digital financial literacy significantly affects the financial inclusion of women. The One-Way ANOVA analysis shows that digital financial literacy is positively related to the preference for mobile applications and UPI instead of traditional forms of payment ($F = 8.262$, $p = 0.004$).
- The regression analysis has shown that security of UPI is a significant predictor of women's financial inclusion since the perception of protection of the user's financial information by UPI applications plays a vital role in the process of financial inclusion ($\beta = 0.28$, $p = 0.01$).
- The conclusions have pointed out that the trust of women in security of UPI applications increases the number of those who use digital financial tools.

Conclusion

The study finds that digital financial literacy and security in UPI applications have an important contribution towards promoting financial inclusion of women. This study reveals that digital financial literacy has positive effects on adoption of digital payments by women who use them in formal financial services. Furthermore, security in the use of UPI applications, especially regarding financial information security, also helps in increasing their willingness to use digital financial services. Consequently, improving digital financial literacy and securing digital financial payments can lead to financial inclusion of women and empower them economically.

Limitations of the Study

1. The study used only 163 women as respondents, and this might have limited the applicability of the results from the study.
2. The research used a convenience sample method that did not include the whole population.

3. Primary data was gathered using structured questionnaire; therefore, responses could be affected by bias of the respondent.
4. Only digital financial literacy and security in the UPI services was considered in the study while other variables were ignored.
5. Geographically and temporally the study was limited.

Suggestions

- There should be digital financial literacy awareness programs arranged by the financial institutions and government organizations to empower women in terms of their knowledge and confidence in the digital financial services.
- The providers of the UPI service should further enhance security aspects like fraud prevention system, data security, and authentication security, which will help in increasing the level of confidence of users.
- These awareness programs should also raise awareness about safety while making digital payments, which includes the usage of UPI PINs, OTPs, and fraud prevention aspects.
- Further studies can be done with a higher sample size and from other areas to generalize the results more effectively.
- Other dimensions which can be studied in future studies include digital infrastructure, trust, usability, access to smartphones, and financial awareness.

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