

From Financial Access to Financial Well-Being: The Role of AI-Enabled Digital Finance among Smart Phone using Below Poverty Line Women Workers in Bengaluru

Banumathi V K¹, Dr. Amit Saha²

¹ Research Scholar, School of Commerce, Presidency University, Bengaluru,

Assistant Professor, Department of commerce, Govt. First Grade College, Hebbal

² Assistant Professor, School of Commerce, Presidency University, Bengaluru

Abstract

Financial inclusion has emerged as an important policy measure for promoting inclusive growth and reducing socio-economic inequalities in developing economies. Even though financial access has significantly increased in India thanks to programs like digital banking, Direct Benefit Transfers (DBT), and mobile payment platforms, it is still difficult to translate financial access into meaningful financial well-being, especially for Below Poverty Line (BPL) women who work in the unorganized sector. Artificial Intelligence (AI)-enabled digital financial services are revolutionizing the delivery and accessibility of financial products due to the quick development of financial technologies.

In relation to AI-enabled digital finance, this study looks at the relationship between financial access, financial literacy, and financial well-being among BPL women workers in Bengaluru. The relationship between financial access, financial literacy, and financial well-being among BPL women workers in Bengaluru is examined in this study in relation to AI-enabled digital finance. The study is made with primary data obtained from 100 BPL women respondents through a structured questionnaire. It aims to analyse the impact of digital financial technologies, including mobile banking, automated banking services and digital payment platforms, on financial inclusion and financial potentiality. To evaluate the relationships among the variables, in this study several statistical techniques such as reliability testing, correlation analysis, multiple regression analysis and factor analysis using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity is applied.

The study proposes that digital financial services enabled by AI have the potential to contribute to the women's financial inclusion. Financial inclusion can further contribute to the financial well-being of individuals by enhancing their financial literacy and involvement in financial activities. The study contributes to the literature on digital financial governance and women's financial empowerment by presenting micro-level evidence from an urban low-income group. The study's findings have policy implications that suggest that financial literacy interventions should be promoted along with AI-enabled financial services in order to achieve financial empowerment for marginalized BPL urban working women.

Keywords: Financial Inclusion, Artificial Intelligence, Digital Finance, Financial Literacy, Financial Well-Being, BPL Women Workers

1. Introduction

Financial inclusion has become an important factor in promoting inclusive economic development, particularly in developing countries where many people still remain outside the formal financial system. Access to affordable financial services such as saving accounts, credit, insurance products and digital payments is another significant factor that helps in the improvement of financial well-being, poverty reduction and economic participation. India has achieved enormous progress in the last decade in the area of financial inclusion with the launch of various initiatives such as Pradhan Mantri Jan Dhan Yojana (PMJDY), Direct Benefit Transfer (DBT) and digital payments. These initiatives have led to a substantial rise in the number of people with bank accounts and improved access to digital financial services throughout the country.

However, simply providing access to financial services does not automatically lead to improved financial well-being. In spite of all these developments, many people especially women working in the informal sector or those

from Below Poverty Line families, still face difficulties in fully utilizing the services that are being provided. This is mainly because of a lack of financial literacy among these individuals, which creates a barrier for them in fully utilizing these services. Even though many people from low-income families have bank accounts, they still prefer to borrow from moneylenders or money markets.

In recent times, the development of Artificial Intelligence (AI) has had a substantial impact on the provision of financial services. Various technologies, such as mobile banking, financial advisory services, chatbots, fraud detection systems and digital payment systems, have revolutionized the provision of financial services. These technologies have helped financial institutions reach people who were previously financially excluded at a lower cost. However, limited studies have been conducted on how these financial services, driven by AI, impact financial inclusion and financial well-being among women in low-income groups, especially those in the urban informal economy. This study, therefore, sought to investigate how financial services impact financial inclusion and well-being among women workers in BPL households in Bengaluru.

1.1. Research Gap

Although financial inclusion has been widely discussed in development economics and public policy, most studies mainly focus on access to financial services such as bank account ownership, availability of credit and adoption of digital payments. The government's efforts and advancements in digital financial systems have enhanced financial access among low-income groups. Yet, existing literature indicates that access to financial services is not directly related to financial well-being. The outcomes of financial inclusion are largely determined by individuals' financial literacy, behavioral capabilities, and their ability to make effective use of financial services. Women in BPL households, especially in the informal sector, are likely to be disadvantaged due to their limited financial literacy, exclusion from digital financial services, and cultural issues that restrict their access to formal financial services.

Meanwhile, the rapid development of Artificial Intelligence (AI) in digital finance has reshaped the way in which financial services are made accessible. Technologies like mobile banking, financial advisory, digital payment systems, and AI-powered fraud detection systems have significantly contributed to this reshaping. These technologies can improve accessibility, reduce transaction costs, and support better financial decision-making for under served populations. However, empirical research on how AI-enabled digital financial services influence financial inclusion and financial well-being among low-income women workers is still limited, particularly in developing economies. To address this gap, the present study examines the role of AI-enabled digital finance in strengthening the link between financial access and financial well-being among BPL women workers in urban city of Bengaluru, while also considering the role of financial literacy in this process.

2. Review of Literature

Studies carried out by Ozili (2018) and Demirgüç-Kunt et al. (2022) reveal that digital financial services have made a significant contribution to enhancing bank access in developing nations. Another study carried out by Suri and Jack (2016) reveals that mobile financial services have the potential for enhancing poverty reduction in many nations by enhancing financial resilience and economic security for households. In the case of India, financial inclusion policies implemented by the government, along with the development of digital payment systems, have enhanced bank account ownership among low-income households.

Recent studies have also emphasized the increasing significance of Artificial Intelligence in the realm of digital finance. Financial technologies such as chatbots, financial fraud detection tools, AI-powered financial advisory tools, and predictive analytics are significantly changing the face of financial services through increased efficiency, reduced transactions costs, and improved financial inclusiveness. According to Banna, Hassan, and Alam (2021), financial services enabled by Artificial Intelligence can help to enhance customer engagement and financial inclusiveness to a great extent, especially when backed by an adequate level of digital literacy.

Nevertheless, a number of studies have highlighted the importance of financial literacy as a mediator between financial access and financial well-being. For example, Lusardi and Mitchell (2014) assert that financially literate persons are more likely to make informed financial decisions, save for the future, and plan adequately to meet

their financial needs. Additionally, Grohmann et al. (2018) revealed the importance of financial literacy as a significant contributor to financial inclusion and financial well-being, especially among developing economies.

Studies on the impact of digital financial technologies on women and vulnerable groups indicate that digital financial technologies can contribute to the economic empowerment of women. However, the lack of education, digital literacy, and socio economic factors may hinder the effective use of digital financial technologies. Therefore, scholars increasingly argue that combining digital financial infrastructure with financial education programs is essential for translating financial access into meaningful financial well-being.

2.1. Research Objectives

1. To examine the level of usage of AI-enabled digital financial services among smartphone-using BPL women workers in Bengaluru.
2. To analyze the relationship between AI-enabled digital financial services and financial inclusion among BPL women workers.
3. To investigate the role of financial literacy in enhancing financial well-being among BPL women workers.
4. To analyse the combined impact of AI-enabled digital finance, financial inclusion and financial literacy on the financial well-being of BPL informal women workers in Bengaluru city.

2.2. Research Hypothesis

H1: The influence of AI-enabled digital financial services on the financial inclusion of BPL women workers is positive and significant.

H2: The influence of AI-enabled digital financial services on the financial literacy of BPL women workers is positive.

H3: The effect of financial inclusion on the financial well-being of BPL women workers is positive and significant.

H4: The effect of financial literacy on the financial well-being of BPL women workers is positive and significant.

2.3. Limitations of the Study

Certain limitations are associated with this study that need to be kept in view while interpreting the study's results. Firstly, this study is based on a sample size of only 100 respondents from Bengaluru city. This could be a major drawback of this study that its results may not be generalized for a larger sample size. Secondly, this study is based on BPL women workers in Bengaluru North, which is a specific area of Bengaluru, and its results may not be applicable to other areas of Bengaluru or even other parts of the country, particularly women living in rural areas. Thirdly, due to some issues of accessibility, this study has adopted a convenience sampling approach, which may result in some bias in this study's sample size. In addition, this study is based on primary data, which is cross-sectional in nature, limiting its ability to show changes over time. Despite these drawbacks, this study is very useful in understanding the role of AI technology in digital finance that can be used for improving financial inclusion, financial literacy, and financial well-being of women workers.

3. Conceptual Framework

The conceptual framework for the study argues that digital financial services, which are facilitated by AI, have the potential to contribute to the improvement of financial inclusion as well as the financial capabilities of low-income women. This is because digital platforms, which are used for mobile banking, online payment systems, as well as automated banking systems, are essential tools for individuals, as they can easily access the formal financial sector. When women are able to access the digital platforms, they become more engaged, which translates to better financial capabilities, as they become more knowledgeable over time. From the conceptual framework, AI digital finance can be regarded as a supporting factor for financial systems, which are essential for

encouraging the engagement of individuals with the formal financial sector. The more women are able to access the financial sector, the better their financial literacy becomes.

3.1. Variable Model

Independent Variable	Mediating Variables	Dependent Variable
AI-Enabled Digital Financial Services <ul style="list-style-type: none"> • Mobile banking usage • Digital payment systems • Automated banking alerts • Digital financial information access 	Financial Inclusion <ul style="list-style-type: none"> • Bank account usage • DBT receipt • Loan accessibility • Participation in formal financial programs Financial Literacy <ul style="list-style-type: none"> • Awareness of financial products • Budgeting ability • Knowledge of interest rates • Fraud awareness 	Financial Well-Being <ul style="list-style-type: none"> • Financial security • Ability to meet expenses • Financial resilience • Confidence in making financial decisions

Source: Researcher’s own compilation

3.2. Conceptual Model Structure

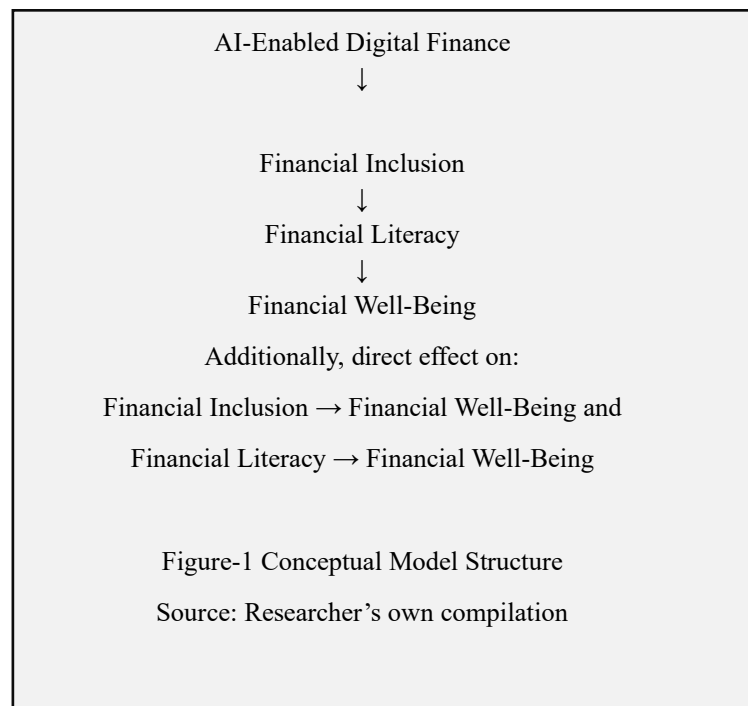
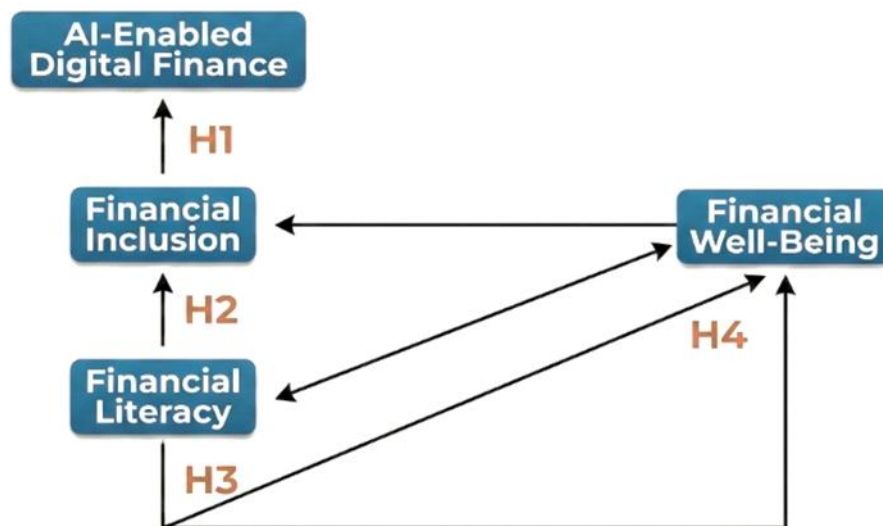


Figure-2 SEM model



Source: Researcher's own compilation

3.3. Theoretical Framework

This study is based on the premise of the significance of three major theories: the Financial Capability Theory, the Capability Approach, and technology adoption theory. These theories are very important in understanding the significance of financial service access in improving the financial well-being of individuals. The Financial Capability Theory states that the financial well-being of individuals is not just based on the access they have to financial services, but also on the knowledge, skills, and confidence that individuals need to access these services. In simpler words, the concept of financial capability can be explained as having two major parts: financial inclusion, which is related to the access that individuals have towards financial services, such as bank accounts, credit, etc., and financial literacy, which is related to the ability of individuals to access these services in a proper manner. This theory is very important for low-income women working in the informal sector, as they do not have the required knowledge of using these banking services for their own benefit.

The study also relies on the Capability Approach developed by Sen, which focuses on the idea that development should not be based on the resources that individuals have but also on their ability to attain outcomes in their lives. In this regard, financial services can contribute to enlarging individuals' opportunities through saving, investment, risk management, and planning for the future. However, these opportunities need to be valuable if individuals have the information, consciousness, and support that enable them to take advantage of them. In this regard, for BPL women workers, financial inclusion can improve their financial capabilities through their ability to engage in formal financial systems, gain control over their household finances, and improve their financial security and autonomy.

3.4. Role of AI-Enabled Digital Finance

Recent advances in financial technology have led to the emergence of AI-enabled digital financial services, which are transforming how financial services are delivered and accessed. The integration of artificial intelligence into mobile banking services, digital payment systems, automated advisory services, and fraud detection mechanisms has made financial transactions faster, safer, and more convenient for users. Technologically, artificial intelligence-based digital finance services can remove barriers related to geographical distances, documentation requirements, and transaction costs for users. These services can also remove barriers related to financial complexity, information gaps, and user interactions with financial institutions. Additionally, digital financial services can provide users with features like timely updates, transaction reminders, and financial advisory services. Such features can play an important role in improving financial awareness and financial understanding among

users. In the context of the study, digital finance services based on artificial intelligence can be seen as an important technological enabler for financial inclusion and financial literacy among Below Poverty Line (BPL) women workers. Such financial inclusion can ultimately lead to better financial decisions for users.

3.5. Integration of Theoretical Perspectives

Using the insights of both Financial Capability Theory and the Capability Approach, as well as new ideas in digital finance, the present research argues that digital financial services facilitated through AI have the potential of improving the relationship between financial access and financial well-being. In this regard, financial inclusion and financial literacy have been identified as major mechanisms through which financial service access can be transformed into financial well-being. On the one hand, digital finance technologies, including those facilitated through AI, have been recognized as an enabling tool through which not only financial service access can be facilitated but also financial literacy can be enhanced. Consequently, financial well-being among marginalized groups in society can be improved.

4. Methodology and Empirical Analysis

To find out the relationship between financial access, financial literacy and financial well-being among BPL women workers in Bengaluru north city in relation to AI-enabled digital finance, primary data is collected from 100 respondents through a organized questionnaire by direct personal interview using Computer-Assisted Personal Interviewing (CAPI) method via mobile devices. Due to fieldlevel accessibility constraints and the informal nature of employment, a convenience sampling technique was adopted to select 100 low-income women informal workers from Bengaluru North City who were available and willing to participate in the study. The primary data collected are analysed using the appropriate statistical tools and interpretations are drawn and results are discussed.

Table 1: Socio-Economic Profile of Respondents (N = 100)

Variable	Category	Frequency	Percentage (%)
Age Group	Below 25 years	30	30.0
	25–34 years	22	22.0
	35–44 years	28	28.0
	45–54 years	17	17.0
	55 years and above	3	3.0
Education Level	No formal education	15	15.0
	Primary (1–5)	7	7.0
	Secondary (6–10)	19	19.0
	Higher Secondary (11–12)	26	26.0
	Graduate & above	33	33.0
Occupation	Domestic work / Maid / Cook	24	24.0
	Self-employed	20	20.0
	Tailoring / Sales	18	18.0
	Factory worker	16	16.0
	Daily wage labourer	11	11.0

	Street vendor	6	6.0
	Others	5	5.0
Monthly Income	Below ₹5,000	6	6.0
	₹5,001–₹8,000	20	20.0
	₹8,001–₹10,000	8	8.0
	₹10,001–₹12,500	66	66.0

Source : Primary Data Collection

The table presents the socio-economic background of the respondents. All respondents belong to the low-income working category with moderate educational levels, reflecting the target group of BPL women workers in Bengaluru city.

Table 2: Reliability Test (using Cronbach’s Alpha test)

Construct	Number of Items	Cronbach Alpha	Interpretation
AI Enabled Digital Finance	5	0.82	Good Reliability
Financial Inclusion	5	0.80	Good Reliability
Financial Literacy	5	0.81	Good Reliability
Financial Well-being	5	0.85	Good Reliability

Source: Researcher’s own compilation

The reliability test results show that all the constructs used in the study have good internal consistency, as the Cronbach’s Alpha values range from 0.80 to 0.85, which are above the acceptable threshold of 0.70. This indicates that the measurement items used for AI-enabled digital finance, financial inclusion, financial literacy and financial well-being are reliable and suitable for further statistical analysis.

Table 3: Mean Score Analysis of Key Variables

Variable	Mean Score	Standard Deviation	Interpretation
AI Digital Finance Usage	3.42	0.61	Moderate
Financial Inclusion	3.18	0.58	Moderate
Financial Literacy	3.05	0.63	Moderate
Financial Well-being	3.33	0.57	Moderate

Source: Researcher’s own compilation

The mean score analysis indicates that respondents show a moderate level of AI-enabled digital finance usage, financial inclusion, financial literacy, and financial well-being, with mean values ranging from 3.05 to 3.42. The relatively low standard deviation values suggest that responses are fairly consistent, indicating that most respondents share similar levels of awareness and engagement with digital financial services and financial management practices.

Table 4: Correlation Matrix

Variables	AI Finance	Financial Inclusion	Financial Literacy	Financial Well-being
AI Digital Finance	1			
Financial Inclusion	0.58	1		
Financial Literacy	0.46	0.52	1	
Financial Well-being	0.49	0.63	0.55	1

Source: Researcher’s own compilation

Karl Pearson Correlation Formula is used. The correlation matrix shows a positive relationship among all the variables in the study. Financial inclusion (0.63) and financial literacy (0.55) have a relatively stronger positive association with financial well-being, indicating that higher levels of inclusion and literacy are linked to better financial well-being, while AI-enabled digital finance also shows a moderate positive relationship with the other variables. Positive correlations indicate that increases in digital finance usage are associated with higher financial inclusion, literacy and well-being.

Table 5: Multiple Regression Results

Independent Variable	Beta Coefficient	t value	p value	Result
AI Digital Finance (AI)	0.31	3.21	0.002	Significant
Financial Inclusion (FI)	0.39	4.50	0.000	Significant
Financial Literacy (FL)	0.27	2.94	0.005	Significant

Source: Researcher’s own compilation

Regression Model is used. Financial Well Being (FWB) = $\beta_0 + \beta_1(AI) + \beta_2(FI) + \beta_3(FL) + \epsilon$. The multiple regression results show that AI-enabled digital finance, financial inclusion, and financial literacy all have a positive and statistically significant impact on financial well-being, as their p-values are less than 0.05. Among the variables, financial inclusion ($\beta = 0.39$) has the strongest influence on financial well-being, followed by AI-enabled digital finance ($\beta = 0.31$) and financial literacy ($\beta = 0.27$), indicating that improving financial access and knowledge can significantly enhance individuals’ financial well-being. All predictors significantly influence financial well-being, suggesting that AI-enabled digital finance improves financial outcomes through inclusion and literacy.

Table 6: KMO and Bartlett’s Test for Factor Analysis

Test	Value	Interpretation
Kaiser-Meyer-Olkin (KMO)	0.78	Sampling adequacy – Good (acceptable if >0.6)
Bartlett’s Test of Sphericity	Chi-square = 245.63, df = 120, p < 0.001	Factor analysis appropriate for values above 0.6

Source: Researcher’s own compilation

The KMO value of 0.78 indicates good sampling adequacy, suggesting that the data is suitable for factor analysis since it exceeds the recommended threshold of 0.60. Additionally, the Bartlett’s Test of Sphericity is statistically significant ($p < 0.001$), confirming that the variables are sufficiently correlated and that factor analysis is appropriate for this dataset.

Table 7: Regression Model Summary and ANOVA

Statistic	Value	Interpretation
R	0.76	Strong relationship between predictors and financial well-being
R Square	0.58	58% of variation in financial well-being explained by the model
Adjusted R Square	0.56	Model remains strong after adjusting for predictors
Standard Error	0.42	Moderate prediction error
ANOVA F value	45.62 ($p < 0.001$)	Overall regression model statistically significant

Source: Researcher’s own compilation

The regression model summary indicates a strong relationship between the independent variables and financial well-being, as reflected by the R value of 0.76. The R^2 value of 0.58 shows that about 58% of the variation in financial well-being is explained by AI-enabled digital finance, financial inclusion, and financial literacy, while the significant ANOVA F value (45.62, $p < 0.001$) confirms that the overall regression model is statistically significant and reliable for explaining the relationship between the variables.

Table 8: Multiple Regression Coefficients and ANOVA

Dependent Variable: Financial Well-Being

Independent Variable	Unstandardized Coefficient (B)	Standardized Coefficient (Beta)	t-value	p-value	Result
Constant	0.87	–	2.14	0.034	Significant
AI-Enabled Digital Finance	0.31	0.34	3.21	0.002	Significant
Financial Inclusion	0.39	0.41	4.50	0.000	Significant
Financial Literacy	0.27	0.29	2.94	0.005	Significant

Regression Equation: $FWB = 0.87 + 0.31(AI) + 0.39(FI) + 0.27(FL) + \epsilon$

Source: Researcher’s own compilation

The regression results indicate that AI-enabled digital finance, financial inclusion, and financial literacy have positive and statistically significant effects on financial well-being. Financial inclusion has the strongest influence ($\beta = 0.41$), followed by AI-enabled digital finance ($\beta = 0.34$) and financial literacy ($\beta = 0.29$). This suggests that increased access to digital financial services improves financial participation and knowledge, which ultimately enhances the financial well-being of BPL women workers.

Table 9: Hypothesis Testing Summary

Hypothesis	Statement	Statistical Test Used	Result	Decision
H1	AI-enabled digital finance positively influences financial inclusion	Correlation / Regression	$r = 0.58, p < 0.01$	Accepted
H2	AI-enabled digital finance positively influences financial literacy	Correlation	$r = 0.46, p < 0.01$	Accepted
H3	Financial inclusion positively influences financial well-being	Regression	$\beta = 0.39, p < 0.05$	Accepted
H4	Financial literacy positively influences financial well-being	Regression	$\beta = 0.27, p < 0.05$	Accepted

Source: Researcher’s own compilation

The hypothesis testing results confirm that all proposed hypotheses are supported. AI-enabled digital finance significantly enhances financial inclusion and financial literacy among BPL women workers. These factors subsequently improve financial well-being, indicating that digital financial technologies play a critical role in strengthening financial capability and economic empowerment among marginalized women.

5. Results and Discussion

This study examined the relationship between AI-enabled digital finance, financial inclusion, financial literacy, and financial well-being among women working in the informal sector. The analysis focuses particularly on low-income women workers such as domestic workers, small street vendors and daily wage earners in urban Karnataka.

According to descriptive statistics derived from the primary data, the majority of the respondents are from the low-income informal sector. Although a substantial number of the respondents own a smartphone, the awareness and understanding of AI-based digital financial services are limited. The majority of the respondents use their smartphones for communication purposes only.

The findings also indicate that the adoption of Direct Benefit Transfer (DBT) among the participants is strongly correlated with the Gruhalakshmi program of the Karnataka State Government. The participants claimed that they started to use bank accounts for the purpose of receiving government benefits from the Gruhalakshmi program rather than for the purpose of active participation in the digital banking system.

The results of the correlation analysis show a positive relationship between the use of AI-based digital financial services, financial inclusion, financial literacy, and financial well-being. These findings support the conceptual framework of the study, which proposed a positive association among these variables. The regression analysis further indicates that both financial inclusion and financial literacy have a significant impact on financial well-

being. This supports Hypothesis H2 and Hypothesis H3, which suggest that greater financial inclusion and higher levels of financial literacy contribute positively to individuals' financial well-being.

Education also emerged as an important factor influencing the adoption and use of digital financial services. Women with higher levels of formal education tend to demonstrate better financial literacy and are more likely to use mobile banking applications, digital payment platforms, and other technology-based financial tools. This finding supports Hypothesis H4, which proposes that higher financial literacy strengthens individuals' ability to effectively utilize digital financial services.

Alternatively, respondents with limited education or those who are illiterate often own smartphones but rely on family members, friends, or intermediaries to perform digital financial transactions. This dependency reduces their direct engagement with financial technologies and limits the potential benefits of digital financial services.

The results also lend partial support to Hypothesis H1, which states that digital finance facilitated by AI contributes to financial inclusion. Although the advancement of digital infrastructure, as well as the increase in the number of smartphone users, can improve access to digital finance, the actual achievement of financial inclusion depends on the ability of the users to understand and confidently use the digital finance tools.

The results suggest that the access to digital finance facilitated by the increase in the number of smartphone users is not enough for financial inclusion. Although the growth of digital infrastructure in urban Indian society is rapid, the use of digital finance depends on the financial literacy and educational level of the individuals. The users possess a smartphone, but they lack the awareness of the use of digital finance tools, including the receipt of financial alerts, digital financial planning, as well as AI-based financial assistance.

In addition, government initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY) have been successful in enhancing bank account ownership among low-income households. Nevertheless, it is evident from the results that the initiative still experiences challenges in enhancing the effective usage of financial services among marginalized women workers. This is because most of the respondents have bank accounts for the purpose of receiving government benefits rather than for other financial purposes.

In conclusion, it is evident from the results that although digital financial technologies, with the aid of AI, are successful in enhancing financial well-being, their efficiency depends on factors like financial literacy, formal education, and awareness. Hence, enhancing financial education and awareness among low-income women workers will play a crucial role in transforming technological access into financial empowerment.

Future Scope for Research

The future study can be conducted by extending the sample size and population of women workers in different regions of India. Comparative studies can also be conducted to assess the difference in the adoption of digital financial services between rural and urban populations or between different income groups. In addition, future studies can be conducted to assess the potential of different forms of financial technology, such as AI-based financial advisory tools, digital credit services, and fintech tools, in enhancing financial capability and economic empowerment among marginalized populations. Future studies can also be conducted to assess the impact of continued use of digital financial services on the financial well-being of individuals.

6. Conclusion

The study reveals that there is a significant potential for financial inclusion and enhancing the financial well-being of women in the informal economy with the aid of AI-based digital finance. At the same time, it reveals that women's access to digital infrastructure, like a smartphone, does not directly translate into their financial empowerment. While various initiatives by the government, like Direct Benefit Transfer and financial inclusion, have resulted in a high number of bank accounts, women are still using these accounts for receiving their benefits rather than for financial management in general.

The results also suggest that financial literacy and educational attainments play an important role in helping individuals make effective use of digital financial services such as mobile banking, digital payments, and AI-based

financial tools. Therefore, policy interventions should focus on strengthening digital and financial literacy programs for low-income women workers in the country through community-based training programs and self-help groups. Governments and financial institutions should also promote user-friendly AI-enabled financial platforms in regional languages and raise awareness about digital financial services. In addition, governments and financial institutions should create a safe and friendly digital environment for low-income women workers. Financial education should be integrated into welfare programs and outreach programs for low-income women workers. The integration can help policy interventions achieve the goal of financial inclusion.

References

- (1) Allen, F., Demirgüç-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, 27, 1–30.
- (2) Banna, H., Hassan, M. K., & Alam, M. R. (2021). Digital financial inclusion and economic growth. *Journal of Asian Economics*, 73, 101300.
- (3) Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank.
- (4) Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does financial literacy improve financial inclusion? *World Development*, 111, 84–96.
- (5) Gomber, P., Koch, J., & Siering, M. (2017). Digital finance and fintech: Current research and future research directions. *Journal of Business Economics*, 87(5), 537–580.
- (6) Jack, W., & Suri, T. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288–1292.
- (7) Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44.
- (8) Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340.
- (9) Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of International Development*, 23(5), 613–628.
- (10) Sen, A. (1999). *Development as freedom*. Oxford University Press.
- (11) World Bank. (2020). *Digital financial services*. World Bank Publications.
- (12) Klapper, L., El-Zoghbi, M., & Hess, J. (2016). *Achieving the sustainable development goals: The role of financial inclusion*. CGAP Working Paper.
- (13) Philippon, T. (2019). *On fintech and financial inclusion*. National Bureau of Economic Research Working Paper.
- (14) Arner, D., Barberis, J., & Buckley, R. (2016). The evolution of fintech: A new post-crisis paradigm. *Georgetown Journal of International Law*, 47, 1271–1319.
- (15) Ghosh, S., & Vinod, D. (2017). What constrains financial inclusion for women? Evidence from India. *World Development*, 92, 60–81.
- (16) Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and poverty. *Journal of Economic Growth*, 12(1), 27–49.