"Exploring the role of digital financial literacy in the adoption of Peer-to-Peer lending platforms"

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EXPLORING THE ROLE OF DIGITAL FINANCIAL LITERACY IN THE ADOPTION OF PEER-TO-PEER LENDING PLATFORMS

Abstract

As financial technologies rapidly expand in developing countries like India, digital financial literacy plays a critical role in shaping how individuals interact with innovative financial services. This study evaluates the influence of financial literacy, digital literacy, and digital financial literacy on the adoption of Peer-to-Peer lending platforms. It also explores the distinct roles and interrelationships among these forms of literacy within the Peer-to-Peer lending ecosystem. Data were collected from 430 participants, exceeding the minimum sample size requirement calculated through G*Power. Participants, comprising borrowers and lenders, actively interacted on Peer-to-Peer lending platforms in cities like Delhi, Mumbai, Hyderabad, Bangalore, and Chennai, ensuring a holistic understanding of the ecosystem. Borrowers are individuals seeking financial assistance, while lenders provide funds, often in exchange for interest-based returns. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the study reveals that while financial literacy and digital literacy significantly contribute to digital financial literacy, they do not directly impact the behavioral intention to adopt Peer-to-Peer lending platforms. Instead, digital financial literacy directly influences adoption intention, highlighting the importance of integrated literacy over isolated skills. The findings underscore the high proficiency levels of existing users in financial, digital, and digital financial literacy, reflecting the platforms' appeal to skilled individuals. Expanding access to less proficient populations remains crucial. Moreover, platform managers can capitalize on user expertise by introducing advanced features tailored to sophisticated needs, thereby enhancing satisfaction and the overall user experience. These insights emphasize digital financial literacy's pivotal role in fostering broader Peer-to-Peer lending adoption.

Keywords

Peer-to-Peer, literacy, adoption, structural equation modeling, India

JEL Classification G23, G41, G53, O16

INTRODUCTION

The financial landscape has been transformed by the emergence of peer-to-peer (P2P) lending platforms and advanced financial technology (fintech) solutions. These innovations have redefined people's access and management of finances, offering unprecedented convenience while bypassing traditional intermediaries (Johnson et al., 2010; Ziegler et al., 2021). P2P lending platforms allow users to borrow and invest directly, making financial interactions more seamless and efficient (Khatri, 2019; Wei et al., 2018). However, these benefits come with challenges such as moral hazard and adverse selection, emphasizing the importance of financial literacy, digital literacy, and digital financial literacy (Khan & Xuan, 2021; Panos & Wilson, 2020).

A strong foundation in financial literacy helps individuals make informed decisions, understand loan terms, assess risks, and manage finances effectively (Jou et al., 2023; Koskelainen et al., 2023; Sharma et al., 2024). Since most transactions occur online, digital literacy is equally essential. It enables users to navigate platforms securely, assess the credibility of service providers, and protect against cyber threats (Yue et al., 2022). Digital financial literacy combines financial literacy and digital literacy, equipping users with the skills to apply financial knowledge confidently in digital contexts (Morgan et al., 2020). In India, P2P lending is emerging as a promising alternative financial model, though it is still nascent. Despite the formal regulation introduced by the Reserve Bank of India in 2017, the widespread adoption of P2P lending platforms remains contingent on individuals' willingness to embrace this innovative form of borrowing and lending (Khatri, 2019). As the financial ecosystem in India undergoes rapid transformation, understanding the factors that influence people's readiness to adopt P2P lending platforms is crucial. The success of these platforms hinges not only on their ability to meet the financial needs of individuals but also on fostering a shift in mindset toward alternative financial services in a country that is still adapting to digital financial innovations.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

P2P lending begins with its primary objective of bridging the gap for lower credit market segments that are still struggling to secure funding through traditional financial institutions. By offering unsecured personal loans, P2P lending platforms meet the financial needs of borrowers while catering to the high-yield expectations of risk-seeking lenders, creating a dynamic marketplace (Johnson et al., 2010; Ziegler et al., 2021). This financial innovation appeals to individuals and small businesses, with several factors influencing participation. These factors span personal characteristics, platform attributes, and macroeconomic conditions, shaping intentions to engage with this fintech solution (Khatri, 2019; Wei et al., 2018).

Personal traits play a significant role in determining participation in P2P lending. Borrowers with good credit ratings and lenders exhibiting high trust levels are more inclined to participate. A penchant for novelty and sensation-seeking also drives engagement, alongside perceptions of legitimacy, ease of use, and usefulness of the platforms. Distrust in traditional banking systems and herding behavior, where individuals follow others' choices, further bolster intentions (Candra et al., 2020; Coakley & Huang, 2020; Demir et al., 2021; Jiang et al., 2018; Saiedi et al., 2022; Sipangkar & Wijaya, 2020; Zhai et al., 2022; Zwilling et al., 2020, Singh et al., 2024). However, certain factors negatively influence engagement. For instance, borrowers with large firm sizes, high leverage ratios, and significant capital expenditures are less likely to adopt P2P lending (Coakley & Huang, 2020). Other critical determinants include perceived risks, borrowing costs, and interest rates, which shape behavioral decisions for both borrowers and lenders (Liu & Xia, 2017; Sipangkar & Wijaya, 2020; Sundjaja & Tina, 2019).

Beyond individual traits, the platforms themselves play a crucial role. Research highlights that platform features such as transparent pricing mechanisms, a large number of counterparties, and robust service quality attract participants. Platforms backed by venture capital or state ownership, along with high registered capital and strong operational histories, enhance trust and participation rates (Abbasi et al., 2021; Jiang et al., 2021; Ma et al., 2017; Wang et al., 2021; Yan et al., 2018). Conversely, fraudulent incidents or negative reports significantly deter engagement (Chen et al., 2021; Gao et al., 2021). On the macroeconomic level, the availability of alternative financial services and the density of bank branches also influence decisions to participate in P2P lending (Maskara et al., 2021; Zhai et al., 2022).

Central to the adoption of P2P lending is customer understanding, leading researchers to explore the roles of financial literacy, digital literacy, and their integration as digital financial literacy (Baumüller & Kah, 2019; Ramasubramanian, 2019; Sangwan et al., 2020). Financial literacy encompasses the knowledge of financial concepts such as saving, borrowing, investing, and budgeting. It enables individuals to make informed choices and achieve financial well-being (Azeez & Akhtar, 2021; Azeez & Banu, 2021). Research indicates that financial literacy significantly influences intentions to adopt digital financial services, including mobile money, by enhancing financial decision-making (Grohmann, 2018; Ha et al., 2023). Financial literacy also helps reduce costs associated with managing risky assets, such as stock investments (Andreou & Anyfantaki, 2021; Corsini & Spataro, 2017; Long et al., 2023; Yang et al., 2023).

Meanwhile, digital literacy, the ability to effectively use digital tools and platforms, has become indispensable in the digital age. It fosters inclusivity and financial resilience, making it vital for underserved communities. However, challenges such as limited access to digital services and technological barriers persist, particularly in rural areas (Baumüller & Kah, 2019; Kass-Hanna et al., 2022). To address these gaps, the concept of digital financial literacy was introduced, an integration of financial literacy and digital literacy, which reflects an individual's capacity to navigate online financial services effectively (Prasad et al., 2018).

Digital financial literacy comprises knowledge of digital financial products, comprehension of risks, familiarity with risk mitigation, and awareness of consumer rights (Morgan & Trinh, 2019). Studies show that higher digital financial literacy levels correlate with improved financial decisionmaking and increased participation in P2P lending. For instance, Liew et al. (2020) assessed digital financial literacy in rural communities, revealing moderate proficiency in understanding digital products but significant gaps in other areas, such as risk mitigation and consumer rights awareness. This indicates that marginalized populations have yet to fully benefit from fintech advancements.

Furthermore, socioeconomic factors influence digital financial literacy, which, in turn, impacts spending and saving behaviors (Setiawan et al., 2022). Research by Lyons and Kass-Hanna (2021) introduced a comprehensive framework for digital financial literacy, emphasizing fundamental knowledge, practical expertise, decisionmaking skills, and a favorable financial mindset. Choung et al. (2023) found that digital financial literacy has stronger impacts on financial welfare compared to financial knowledge alone, with effects across diverse sociodemographic groups. Similarly, Kumar et al. (2023) identified digital financial literacy as both a direct and mediating factor in financial decision-making. In the context of Industry 4.0, financial literacy and digital literacy are crucial for thriving in an increasingly technology-driven economy. Studies underscore a favorable correlation between financial literacy, digital literacy, and the adoption of digital financial services such as borrowing, lending, payments, and insurance (Andreou & Anyfantaki, 2021; Long et al., 2023; Morgan et al., 2020; Prasad et al., 2018). Encouraging the adoption of P2P lending platforms and other fintech innovations requires fostering a combination of financial literacy, digital literacy, and digital financial literacy to ensure equitable access and informed participation in the evolving digital economy. Despite this, no research has examined how financial literacy, digital literacy, and digital financial literacy affect borrowers' and lenders' willingness to adopt P2P lending. To address the research gap, this study focuses on understanding the levels of financial literacy, digital literacy, and digital financial literacy among borrowers and lenders engaged in P2P lending. It also examines how these literacy dimensions influence the behavioral intention to adopt P2P lending platforms, shedding light on their role in driving adoption in the Indian context. Therefore, the following hypotheses have been developed to explore the influence of financial literacy, digital literacy, and composite digital financial literacy scores on P2P lending adoption intention.

- *H1: Financial literacy exerts a notable positive impact on Digital financial literacy.*
- H2: Financial literacy exerts a notable positive influence on the intention to adopt P2P lending.
- H3: Digital literacy exerts a notable positive impact on Digital financial literacy.
- *H4:* Digital literacy exerts a notable positive influence on the intention to adopt P2P lending.
- H5: Digital financial literacy exerts a notable positive influence on the intention to adopt P2P lending.

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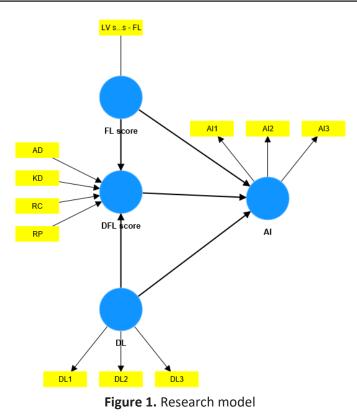
2. RESEARCH METHODS

Drawing on the formulated hypotheses, Figure 1 presents the research model. Initially, the model measures digital financial literacy through its four dimensions, including Knowledge of digital financial products and services (KD), Awareness of digital financial risks (AD), Knowledge of digital financial risk control (RC), and Knowledge of consumer rights and redress procedures (RP). Subsequently, the Digital financial literacy (DFL) score is computed to assess its impact on the intention to adopt P2P lending. Additionally, the model evaluates the individual effects of digital literacy (DL) and financial literacy (FL) score on the digital financial literacy and adoption intention (AI) of P2P lending. The definitions of the variables are given in Table 1.

A comprehensive questionnaire in English, developed with input from subject matter experts, consisted of eight sections. The first segment gathered demographic data (refer to Table 2), while the subsequent seven sections delved into various aspects: Knowledge of digital financial products and services, Awareness of digital financial risks, Knowledge of digital financial risk control, Knowledge of consumer rights and redress procedures, Digital literacy, Financial literacy, and Adoption Intention. Items for these constructs were adapted from existing studies and tailored for this research. Responses were rated on a five-point Likert scale for four dimensions of digital financial literacy, digital literacy, and adoption intention, while financial literacy questions were presented as multiple-choice, assigning a score of 1 for correct answers and 0

Table 1. Variable operationalization

Variable	Definition	Source
	The capability to comprehend financial principles and make well-informed choices regarding personal financial issues.	Angrisani et al. (2023), Kass-Hanna et al. (2022)
Digital literacy	It involves an individual's skill in utilizing IT tools and applications.	Nedungadi et al. (2018)
Digital financial literacy	It highlights essential knowledge and skills assessed through four dimensions: understanding digital financial products and services, awareness of digital financial risks, knowledge of managing these risks, and familiarity with consumer rights and redress procedures.	Morgan et al. (2019)
Adoption intention	Intent to adopt in the future.	Kurniawan (2019)



otherwise, in which a single score has been calculated as a single item. The operationalization summary of items and relevant references is provided in Appendix 1.

The determination of the minimum sample size for Partial Least Squares Structural Equation Modeling (PLS-SEM) involved several considerations, acknowledging the absence of a universal approach (Rahman, 2023). Initially, the sample size was calculated using G*Power, aiming for a statistical power of 0.95, exceeding the established minimum of 0.8 (Erdfelder et al., 2009; Hair et al., 2019). Additionally, the 10 times rule was applied based on the number of items, resulting in minimum sample sizes of 160 and 270, respectively (Rahman, 2023).

Data collection took place over seven months, from June 2023 to January 2024. A Google Form link was shared via email with Indian P2P lending platforms to collect responses from their users, specifically individuals who are actual borrowers and lenders on these platforms in India, primarily residing in big cities where these platforms operate, such as Delhi, Mumbai, Hyderabad, Bangalore, and Chennai. Furthermore, the link was shared across P2P lending groups on LinkedIn, WhatsApp, Facebook, and Instagram. Offline responses were collected through direct distribution of hard-copy questionnaires, utilizing a convenient and snowball sampling approach due to the limited accessibility of P2P lending users. Participation was voluntary, adhering to the principle outlined by Zhu et al. (2020).

Before the questionnaire distribution, a pilot study involving 50 borrowers and lenders was conducted to assess the reliability, clarity, and comprehensibility of the items. Initially, 435 respondents participated in the research. After excluding incomplete or inconsistent responses, the final dataset comprised 430 responses, surpassing the required minimum sample size.

Data analysis was performed using Smart PLS 4.0, leveraging PLS regression for its capacity to handle complex models and non-normal data distributions. The non-normality of the dataset was confirmed by Cramer-von Mises P values below 0.05 (Hair et al., 2019). PLS regression, a multivariate technique that integrates principal component analysis and regression, was employed to maximize the covariance between predictors and response variables. The analysis followed a twostage process: first, assessing the reliability and validity of measurement items and constructs, and second, analyzing the structural model.

A descriptive analysis was conducted to evaluate the levels of financial literacy, digital literacy, and digital financial literacy. The reliability and validity of lower-order constructs, including Knowledge of digital financial products and services, Awareness of digital financial risks, Knowledge of digital financial risk control, Knowledge of consumer rights and redress procedures, Digital literacy, and Adoption Intention, were first established. Subsequently, the reliability and validity of the higher-order construct, digital financial literacy, were assessed. Finally, the structural model analyzed the relationships among constructs, including their significance.

Table 2. Demographics of respondents (N = 430)

Demo	graphic profile	Number (N = 430)	Percentage, %
	Male	296	68.84
Gender	Female	134	31.16
	Others	0	0
	15-25	153	35.58
	26-35	182	42.32
Age	36-45	84	19.53
	46-55	9	2.09
	56 and above	2	0.46
	Single	236	54.88
	Married	185	43.02
Marital status	Widowed	1	0.23
Marital status	Divorced	7	1.63
	Separated	1	0.232
	Others	0	0
	Less than high school	0	0
	High school diploma or equivalent	8	1.86
Education level	Some college or associate degree	23	5.35
	Bachelor's degree	139	32.32
	Master's degree or higher	260	60.46
	Employment	231	53.72
	Business	45	10.47
Occupation	Profession	36	8.37
	Student	118	27.44
	Retired	0	0

3. RESULTS

This section begins with descriptive statistics, followed by the results of various assessments for the measurement and structural models. The combined mean serves as a central metric, reflecting the average literacy levels among participants in the sampled population, thereby helping to identify potential strengths and weaknesses. Concerning digital financial literacy and digital literacy, mean scores falling within the range of 1 to 2.5 may be considered poor, while scores ranging from 2.51 to 3.5 indicate adequacy, and scores from 3.51 to 5 reflect a good level. Similarly, for financial literacy, scores ranging from 0 to 0.33 suggest a poor literacy level, scores between 0.34 and 0.66 denote adequacy, and scores from 0.67 to 1 indicate a good level. As indicated in Table 3, users of P2P lending platforms exhibit a good level of proficiency in financial literacy, digital literacy, and digital financial literacy. Consequently, it is reasonable to anticipate that P2P lending users possess commendable expertise across these domains.

Name	Mean	Combined mean	Scale min	Scale max	Standard deviation
FL1	0.856		0	1	0.351
FL2	0.784	0.7885	0	1	0.412
FL3	0.621	0.7885	0	1	0.485
FL4	0.893		0	1	0.309
DL1	4.109		1	5	1.129
DL2	4.33	4.10066667	1	5	0.978
DL3	3.863		1	5	1.184
KD1	4.163		1	5	1.15
KD2	4.284	3.78325	1	5	1.065
KD3	3.3		1	5	1.351
KD4	3.386		1	5	1.274
AD1	4.149		1	5	1.003
AD2	4.16		1	5	0.967
AD3	4.123	4.1004	1	5	1.01
AD4	3.87		1	5	1.086
AD5	4.2		1	5	0.989
RC1	3.616		1	5	1.147
RC2	3.812	2 0 4 7 7 5	1	5	1.091
RC3	4.056	3.84775	1	5	1.035
RC4	3.907		1	5	1.044
RP1	3.626		1	5	1.057
RP2	3.593	3.60525	1	5	1.143
RP3	3.409	3.00325	1	5	1.112
RP4	3.793		1	5	1.079

Following the descriptive analysis, evaluating the measurement model involves assessing internal consistency reliability to ensure that multiple items measuring the same construct provide consistent responses. For this purpose, Cronbach's alpha and Composite Reliability were used, with satisfactory values ranging from 0.70 to 0.90, while values above 0.95 are considered problematic (Hair et al., 2019). In this study, the Cronbach's alpha and Composite Reliability values for each lower-order construct were found to be above 0.70 but below 0.95, as shown in Table 4.

Furthermore, Average Variance Extracted (AVE) was used to assess convergent validity, which measures the correlation or similarity between items within a construct. An AVE of 0.50 or higher is considered acceptable, indicating that the construct explains at least 50 percent of the variance of its items. In our study, all constructs achieved an AVE greater than 0.50, meeting the minimum threshold, as detailed in Table 4.

Subsequently, for the second-order construct of digital financial literacy, a composite score was calculated based on its four dimensions: Knowledge of digital financial products and services, Awareness of digital financial risks, Knowledge of digital financial risk control, and Knowledge of consumer rights and redress procedures latent scores. However, digital financial literacy, being a second-order formative construct, requires an analysis of its reliability, first by checking the significance of its outer weights and then confirming the significance of outer loadings, as presented in Table 5. It was found that the outer weights of Knowledge of digital financial products and services, Awareness of digital financial risks, and Knowledge of consumer rights and redress procedures were significant, while Knowledge of digital financial risk control was not significant; however, Knowledge of digital financial risk control was retained due to the significance of its outer loadings.

Furthermore, the financial literacy score was derived from four objective questions, where correct answers were scored as one and wrong answers as zero. In PLS-SEM, a composite score was calculated and treated as a single item. However, reporting reliability or validity is not necessary for single-item constructs as the item is equivalent to the construct (Joseph Franklin Hair et al., 2019).

Once convergent validity was confirmed, attention turned to assessing the discriminant validity of lower-order constructs within the measurement model, which examines the distinctiveness of various constructs from one another. Two methods were employed for this purpose. Firstly, the Fornell and Larcker criterion (presented in Table 6) demonstrated that shared variance among all model constructs is considerably lower than their respective square roots of AVEs, both vertically and horizontally, thereby confirming discriminant validity. Secondly, the HTMT (Heterotrait-monotrait ratio of correlations) criterion, as proposed by Henseler et al. (2015), was utilized. Table 7 displays that all HTMT values for the constructs in our study are below 0.85, affirming the achievement of discriminant validity.

Moreover, the study revealed a standardized root mean square residual (SRMR) value of 0.063 and a normed fit index (NFI) of 0.870, below 0.08 and close to 0.9, respectively, indicating good model fitness (Carranza et al., 2020).

Constructs	Items	Factor loadings	Cronbach's a	CR	AVE
	KD1	0.830		0.810	0.645
	KD2	0.841	0.793		
Knowledge of digital financial products and Services	KD3	0.716	0.793	0.810	0.61
	KD4	0.743			
	AD1	0.839			
	AD2	0.861			
Awareness of digital financial risks	AD3	0.831	0.884	0.884	0.683
	AD4	0.788			
	AD5	0.811			
	RC1	0.823	0.865	0.867	0.712
Manufadar of distal financial side and al	RC2	0.859			
Knowledge of digital financial risk control	RC3	0.853			
	RC4	0.841			
	RP1	0.818			
Knowledge of consumer rights and redress procedures	RP2	0.843	0.848		0.687
knowledge of consumer rights and redress procedures	RP3	0.836	0.848	0.848	
	RP4	0.818			
	DL1	0.798			
Digital literacy	DL2	0.878	0.709	0.745	0.634
	DL3	0.702			
	Al1	0.905			
Adoption intention	AI2	0.875	0.845	0.851	
	AI3	0.841	-		

Table 5. Reliability for the higher-order construct

	Out	er weights	Outer loadings					
	Original sample (O)	P values	2.5%	97.5%	Original sample (O)	P values	2.5%	97.5%
AD ightarrow DFL score	0.495	0.000	0.337	0.645	0.882	0.000	0.799	0.939
KD ightarrow DFL score	0.425	0.000	0.278	0.574	0.818	0.000	0.738	0.888
$\text{RC} \rightarrow \text{DFL score}$	0.095	0.259	-0.067	0.264	0.747	0.000	0.646	0.833
$\text{RP} \rightarrow \text{DFL score}$	0.204	0.010	0.047	0.360	0.710	0.000	0.599	0.801

	AD	AI	DL	KD	RC	RP
AD	0.827					
AI	0.348	0.874				
DL	0.588	0.321	0.796			
KD	0.519	0.253	0.584	0.784		
RC	0.645	0.338	0.479	0.473	0.844	
RP	0.514	0.389	0.410	0.448	0.645	0.829

Table 6. Discriminant validity of lower-orderconstructs: Fornell-Larcker criterion

Table 7. Discriminant validity of lower-orderconstructs: Heterotrait-monotrait (HTMT)ratio – Matrix

	AD	AI	DL	KD	RC	RP
AD						
AI	0.401					
DL	0.727	0.410				
KD	0.600	0.297	0.746			
RC	0.734	0.393	0.598	0.562		
RP	0.592	0.458	0.518	0.541	0.748	

After verifying the reliability and validity of the measurement model, attention was turned to assessing the significance of paths within the model. Initially, a collinearity test was conducted to ensure the absence of multicollinearity issues, with all Variance Inflation Factor (VIF) values below 5, as depicted in Table 8. Bootstrapping was then employed to assess the significance of path coefficients and analyze the outcomes of the structural model presented in Table 8. The study develops two hypotheses for financial literacy, labeled H1 and H2. Hypothesis H2 is rejected because its p-value exceeds 0.05, indicating that financial literacy does not have a significant direct impact on the intention to adopt P2P lending platforms. Similarly, among the hypotheses concerning digital literacy, denoted as H3 and H4, H4 was rejected, suggesting that digital literacy does not have a direct significant impact on P2P lending adoption intention. However, H5 was accepted, indicating the significant direct influence of digital financial literacy on the intention to adopt P2P lending.

4. DISCUSSION

This study focuses on the influence of financial literacy, digital literacy, and digital financial literacy on the adoption intention of P2P lending and their interconnections. The proficiency levels of financial literacy, digital literacy, and digital financial literacy dimensions were examined through combined means. Results indicated that users of P2P lending platforms exhibit high proficiency in financial literacy, digital literacy, Knowledge of digital financial products and services, Awareness of digital financial risks, Knowledge of digital financial risk control, and Knowledge of consumer rights and redress procedures, which contrasts with findings from prior studies (Liew et al., 2020). These differences may stem from the increasing digitization of financial education and growing public awareness of digital financial tools, particularly in emerging economies undergoing rapid technological transitions.

In contexts where P2P lending is still at a developmental stage, the study sheds light on essential factors influencing user behavior. The analysis demonstrated that both financial and digital literacy significantly impact digital financial literacy, suggesting that enhanced literacy levels play a vital role in equipping individuals to navigate and adopt digital financial tools effectively. By emphasizing the mediating role of digital financial literacy, the findings advocate for a more integrated approach to improving financial and digital literacy that aligns with the evolving demands of modern financial ecosystems.

The study also highlights digital financial literacy as a critical driver directly influencing the intention to adopt P2P lending, underlining its importance in fostering user trust and confidence. This aspect enriches the existing literature by emphasizing how a nuanced understanding of digital fi-

Hypotheses	Paths	VIF	T values	Path coefficients	P values	Bias CI (L)	Bias CI (H)	Conclusion
H1	FL score \rightarrow DFL score	1.089	2.085	0.089	0.037	0.007	0.174	Accepted
H2	FL score → AI	1.104	0.383	-0.016	0.702	-0.098	0.066	Rejected
H3	$DL \rightarrow DFL$ score	1.089	17.621	0.643	0.000	0.560	0.706	Accepted
H4	DL ightarrow AI	1.847	1.886	0.111	0.059	-0.001	0.231	Rejected
H5	DFL score \rightarrow AI	1.833	4.639	0.322	0.000	0.180	0.451	Accepted

Table 8. Test results of all hypotheses

nancial concepts enables individuals to evaluate risks, recognize benefits, and make informed decisions. Given the evolving regulatory frameworks in emerging P2P lending markets, this capability becomes crucial for promoting responsible participation and adoption.

Compared to earlier research that primarily examined financial literacy or digital literacy independently (Andreou & Anyfantaki, 2021; Long et al., 2023; Yang et al., 2023), this study integrates these dimensions into a comprehensive model where digital financial literacy serves as a key mediating construct. The findings build on and expand existing theoretical frameworks such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), which often emphasize the role of perceived ease of use and usefulness in adoption behavior (Granic & Marangunic, 2015; Xie et al., 2021). This study enhances these models by introducing digital financial literacy as a mediator, suggesting that foundational literacies must be transformed into practical digital financial competencies before influencing adoption intentions.

Other models, like the Diffusion of Innovations (DOI) theory and the Task-Technology Fit (TTF) framework, can also benefit from incorporating digital financial literacy (Mustonen-Ollila & Lyytinen, 2003; Rahi et al., 2021; Tam & Oliveira, 2016). DOI, which focuses on the stages through which innovations are adopted, can integrate digital financial literacy to explain how individuals progress from awareness to decision-making in the context of digital financial services. Similarly, TTF, which examines the alignment between a technology and the tasks it is intended to support, could be enhanced by emphasizing how digital financial literacy enables users to effectively leverage digital financial tools to meet their needs.

Additionally, behavioral economic theories like the Theory of Planned Behavior (TPB) and the Self-Efficacy Theory can be refined by incorporating digital financial literacy as a crucial factor that shapes perceived behavioral control and confidence in digital financial environments. In markets with diverse user proficiencies and varying levels of digital exposure, digital financial literacy bridges the gap between knowledge acquisition and actionable intent, offering a more nuanced understanding of the barriers and enablers to adoption. This advancement highlights the importance of integrating literacy-based constructs into existing theories to better account for the complexities of user behavior in rapidly evolving digital financial ecosystems.

These findings provide meaningful insights for fintech startups and established financial institutions. To encourage broader adoption of P2P lending services, such organizations should focus on educational initiatives to enhance users' understanding of digital financial tools (Roy et al., 2017a). Targeting Generation Z, known for their receptiveness to innovation and potential to educate older generations, can amplify these efforts (Li & Meyer-Cirkel, 2021).

Policymakers must prioritize promoting digital financial literacy by integrating digital financial education into school curricula, offering adult training programs (Bhuyan et al., 2021), and providing accessible online resources. These initiatives could also extend to rural and underprivileged areas where digital literacy and access to financial services remain limited. For wider adoption and growth of P2P lending, targeted interventions in backward regions are essential, such as community-based workshops and mobile-based learning modules tailored to local languages and contexts. Furthermore, including digital financial literacy in national education policies and introducing government-backed programs can help create a sustainable foundation for digital financial awareness and literacy, ensuring inclusive participation in P2P lending and similar innovations.

The finding that P2P lending users already possess high levels of financial literacy, digital literacy, and digital financial literacy suggests these platforms primarily attract financially and digitally savvy individuals. While this reflects the platforms' current appeal, it underscores the importance of extending their reach to less proficient populations. Managers and platform designers could address this by developing simplified interfaces, incorporating educational tools, and offering beginner-friendly onboarding processes to attract a broader user base. Additionally, managers can capitalize on existing users' proficiency by introducing advanced features tailored to sophisticated needs, enhancing satisfaction and user experience (Khan et al., 2024).

By fostering digital financial literacy through these measures, policymakers and platform man-

agers can boost engagement with P2P lending, significantly advancing financial inclusion and empowerment (Demirgüç-Kunt et al., 2020). Such efforts can pave the way for a more inclusive digital financial ecosystem, addressing the socio-economic disparities that often hinder participation in innovative financial services.

CONCLUSION

This study explored the relationships between financial literacy, digital literacy, and digital financial literacy in influencing the intention to adopt Peer-to-Peer lending platforms, particularly in the context of India. The study addresses a gap in the literature, as previous research focused mainly on financial and digital literacy without considering digital financial literacy, which integrates both financial and digital literacy. Given the rapid growth of Peer-to-Peer lending as an alternative financial model, understanding the adoption drivers is crucial for platform providers, policymakers, and regulators. This study provides valuable insights into the key determinants of Peer-to-Peer lending adoption, helping to shape strategies for broader adoption.

The findings revealed that while financial and digital literacy contribute to digital financial literacy, they do not directly impact adoption intention. Instead, digital financial literacy emerged as the critical factor influencing adoption likelihood. This highlights that individuals need an integrated understanding of digital financial tools and concepts to engage with Peer-to-peer lending platforms. Digital financial literacy plays a crucial role in shaping user attitudes, making it a key driver for adoption in the evolving financial services landscape. Furthermore, the study showed that Peer-to-Peer lending platforms attract users proficient in both financial and digital domains, emphasizing the need to foster digital financial literacy for broader participation in these platforms, contributing to financial inclusion.

The study acknowledges some limitations, such as the sample size of 430 responses. Future research could expand the sample to improve generalizability and explore the relationship between digital financial capability and digital financial literacy further. Research could also focus on enhancing digital financial literacy through training modules integrating real-world financial scenarios and trust-building strategies.

AUTHOR CONTRIBUTIONS

Conceptualization: Sahiba Khan, Ranjit Singh. Data curation: Sahiba Khan, Ranjit Singh. Formal analysis: Sahiba Khan. Funding acquisition: H.R. Laskar, Mousumi Choudhury. Investigation: Sahiba Khan, H.R. Laskar. Methodology: Sahiba Khan. Project administration: Ranjit Singh, H.R. Laskar, Mousumi Choudhury. Software: Sahiba Khan. Supervision: Ranjit Singh, H.R. Laskar, Mousumi Choudhury. Validation: Ranjit Singh, H.R. Laskar, Mousumi Choudhury. Visualization: Sahiba Khan. Writing – original draft: Sahiba Khan. Writing – review & editing: Sahiba Khan, Ranjit Singh, H.R. Laskar, Mousumi Choudhury.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by the Indian Institute of Information Technology Allahabad Ethics Committee. This study was conducted in accordance with the Declaration of Helsinki. All participants provide the informed consent in this research.

DATA AVAILABILITY STATEMENT

6.

The datasets generated and/or analyzed during the current study are not publicly available due to data security reasons but are available from the corresponding author on request.

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APPENDIX A

Table A1. Research items

Construct	ID	Measure	Adapted from			
	KD1	I am capable of using e-wallet.				
Knowledge of digital	KD2	I am capable of using online banking.	Liew et al. (2020), Lyons &			
financial products and Services	KD3	I am capable of using online stock trading.	Kass-Hanna (2021)			
Services	KD4	I am capable of using Internet-based insurance services.				
	AD1	I am aware that a hacker may pretend to be an institution to get the user to reveal personal data.				
	AD2	I am aware that a virus may redirect the user to a false page to get the user to reveal personal data.				
Awareness of digital financial risks	AD3	I am aware that malicious software may be inserted into the user's PC or mobile phone and transmit personal data.	Liew et al. (2020), Lyons & Kass-Hanna (2021)			
	AD4	I am aware that someone may pose as the user and obtain the user's SIM card, thereby obtaining the user's data.				
	AD5	I am aware that a hacker may steal my personal data from my online activities, such as social networks.				
	RC1	I know how to use computer programs to avoid spamming, phishing, etc.				
Knowledge of digital	RC2	I know how to use mobile apps to avoid spamming, phishing, etc.	Liew et al. (2020), Lyons 8			
financial risk control	RC3	I know how to protect my personal identification number (PIN).	Kass-Hanna (2021)			
	RC4	I know how to protect my personal information when using digital financial products.				
	RP1	I know my rights as a user of digital financial products and services.				
Knowledge of consumer rights and redress	RP2	I know where I can lodge a report if I fall victim to fraud when using financial products through digital means.	Liew et al. (2020), Lyons &			
procedures	RP3	I know how to obtain redress if I fall victim to fraud.	Kass-Hanna (2021)			
procedures	RP4	I know my rights regarding my personal data.				
	FL1	Suppose you need to borrow Rs. 100. Which is the lower amount to pay back: Rs. 105 Rs. 100 plus 3%?				
Financial literacy	FL2	Suppose you put money in the bank for two years and the bank agrees to add 15% per year to your account. Will the bank add: more money to your account the 2nd year than it did the 1st year, or Will it add the same amount of money both years?	Kass-Hanna et al. (2022)			
Fillancial interacy	FL3	Suppose over the next 10 years the prices of the things you buy double. If your income also doubles, will you be able: to buy less than you can buy today, the same as you can buy today, or More than you can buy today?	Kass-Hallia et al. (2022)			
Is it safer to put your mor FL4 one business or investme		Is it safer to put your money into: one business or investment, or To put your money into multiple businesses or investments?				
	DL1	It is very easy for me to start and turn off my cell phone and computer.				
Digital literacy	DL2	I easily browse the facts with the help of the internet.	Lyons & Kass-Hanna (2021			
	DL3	I am very used to Facebook, WhatsApp, Twitter, Instagram, or any other social networking site.				
	Al1	I wish to use Peer-to-peer lending platforms for borrowing or lending funds in the future.				
Adoption intention	AI2	If possible, I will use peer-to-peer lending platforms in business activities.	Candra et al. (2020)			
	AI3	I would advise others to use peer-to-peer lending platforms.				