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DIGITAL FINANCIAL LITERACY AND FINTECH ADOPTION AMONG RURAL POPULATIONS IN VIETNAM

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ABSTRACT

The rapid development of financial technology (Fintech) has created new opportunities for expanding financial inclusion, particularly among underserved rural populations. However, access to digital financial services does not necessarily translate into adoption, as individuals' knowledge, skills, safety competencies, awareness, and trust may influence their willingness to use Fintech services. This study examines the influence of four dimensions of digital financial literacy (digital financial knowledge, digital financial skills, digital financial safety, and digital financial awareness) on fintech adoption intention among rural populations in Vietnam with fintech trust as a mediating variable. Drawing on the Technology Acceptance Model, Social Cognitive Theory, and Behavioral Finance Theory, the study develops and empirically tests a research model using data collected from 315 rural residents in Vietnam. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3. The findings indicate that all four dimensions of digital financial literacy have positive and statistically significant effects on fintech trust. Among these dimensions, digital financial skills demonstrate the strongest effect, followed by digital financial knowledge, digital financial safety, and digital financial awareness. Fintech trust also has a strong positive effect on fintech adoption intention. Furthermore, fintech trust significantly mediates the relationships between all four dimensions of digital financial literacy and fintech adoption intention. The findings highlight the importance of strengthening practical digital financial capabilities and building trust in Fintech services to support digital financial inclusion among rural populations in Vietnam. The study contributes to the Fintech adoption literature by integrating digital financial capabilities and trust within a rural emerging-economy context.

KEYWORDS: Digital financial literacy; fintech adoption intention; fintech trust; rural populations.

1.0 INTRODUCTION

In recent years, the rapid development of financial technology (Fintech) has fundamentally transformed the delivery of financial services across developing economies. In Vietnam, digital financial services, including mobile banking, e wallets, QR code payments, and app based financial platforms, have expanded rapidly, supported by government digital transformation strategies, increasing smartphone penetration, and the continuous improvement of digital infrastructure (Linh, 2025). These innovations have created new opportunities to improve financial inclusion by extending affordable and convenient financial services to previously underserved populations, particularly those residing in rural and remote areas. Financial inclusion, defined as access to useful and affordable financial products and services that meet the needs of individuals and businesses, is widely recognized as a key driver of sustainable development, poverty reduction, and inclusive economic growth. The United Nations has further identified financial inclusion as an important enabler of seven of the seventeen Sustainable Development Goals, emphasizing its contribution to reducing inequality and promoting economic resilience. Despite these promising developments, significant disparities remain in access to and usage of formal financial services between urban and rural communities in Vietnam. Although the country's economy has experienced remarkable growth since the economic reforms of 1986, rural populations continue to face substantial barriers to financial inclusion due to lower income levels, geographic isolation, limited banking infrastructure, and inadequate access to financial education (Nguyen, 2022). According to the State Bank of Vietnam, approximately 70% of urban adults possess bank accounts, whereas only around 40% of rural adults participate in the formal financial system (Linh et al., 2019). Moreover, although smartphone penetration in Vietnam exceeded 71% in 2020, higher than the Asian average of 65%, and continues to increase in rural regions, the adoption of Fintech services remains uneven across different geographical areas. Technological availability alone is insufficient to ensure meaningful financial inclusion.

Previous studies have primarily attributed the limited adoption of Fintech in rural communities to technological constraints and inadequate infrastructure. However, more recent research indicates that behavioral and cognitive factors, including trust, perceived risk, social influence, and financial capability, play a more decisive role in shaping Fintech adoption among rural users (Patil et al., 2020). In particular, digital financial literacy, defined as the ability to access, understand, evaluate, and effectively use digital financial products and services in a safe and responsible manner, has emerged as a critical determinant of individuals' confidence and willingness to engage with digital financial technologies. Individuals possessing higher levels of digital financial literacy are generally better equipped to assess financial information, recognize potential risks, protect themselves from online fraud, and utilize Fintech services effectively. Conversely, insufficient digital financial literacy often leads to uncertainty, low confidence, and resistance toward adopting digital financial services, especially in environments where formal financial education and institutional support

remain limited (Do et al., 2025). Consequently, even when digital payment platforms and mobile banking services are readily available, many rural residents continue to avoid using them because of concerns regarding security, privacy, financial loss, or insufficient understanding of digital financial products. Although the existing literature has generated valuable insights into Fintech adoption, several important research gaps remain. First, many previous studies have emphasized technological acceptance factors derived from models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), while paying comparatively less attention to the role of digital financial literacy as a foundational capability influencing adoption behavior (Xue et al., 2024). Second, empirical evidence concerning rural populations in emerging economies remains relatively limited, despite the fact that these communities face unique socioeconomic, educational, and infrastructural challenges that differ substantially from urban settings. Third, many existing studies examine users' behavioral intention rather than actual adoption behavior, potentially overlooking the practical constraints that rural populations encounter when engaging with Fintech services (Ali et al., 2024). These limitations highlight the need for a more context sensitive investigation that incorporates both digital financial literacy and rural specific characteristics into the analysis of Fintech adoption.

To address these gaps, this study investigates the influence of digital financial literacy on Fintech adoption among rural populations in Vietnam. Specifically, the study seeks to examine how digital financial literacy enhances individuals' capability and confidence to utilize digital financial services while considering the contextual challenges faced by rural communities. By focusing on underserved populations, the research contributes to a more comprehensive understanding of the mechanisms through which digital financial literacy facilitates financial inclusion and supports the broader digital transformation agenda in Vietnam (Hai et al., 2025). This study makes three important contributions. Firstly, it extends the existing Fintech adoption literature by positioning digital financial literacy as a central explanatory factor for Fintech adoption in rural contexts rather than focusing exclusively on technological acceptance variables. Secondly, it provides empirical evidence from rural Vietnam, a setting that remains underrepresented in current Fintech and financial inclusion research despite its strategic importance for inclusive economic development. Thirdly, the findings offer practical implications for policymakers, financial institutions, and Fintech providers by highlighting the importance of improving digital financial literacy as a sustainable pathway toward expanding financial inclusion and narrowing the urban rural financial divide. Ultimately, the study aims to provide evidence based recommendations that support the development of inclusive digital financial ecosystems capable of benefiting underserved rural communities throughout Vietnam.

2.0 THEORETICAL UNDERPINNING AND HYPOTHESIS DEVELOPMENT

2.1 Theoretical foundations

The Technology Acceptance Model (TAM), originally proposed by Davis (1989), is one of the most widely used theoretical frameworks for explaining individuals' acceptance of new technologies (Adewale et al., 2024). Derived from the Theory of Reasoned Action (TRA) (Hagger, 2019), TAM proposes that individuals' behavioral intention to use technology is primarily determined by two cognitive beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Perceived usefulness refers to the extent to which an individual believes that using a

technology enhances performance, whereas perceived ease of use reflects the degree to which using the technology is free of effort. These perceptions subsequently influence users' attitudes, behavioral intentions, and actual technology usage. Since its introduction, TAM has become one of the most widely applied models in Information Systems research because of its simplicity and strong explanatory power. Nevertheless, previous studies acknowledge that TAM alone cannot fully explain technology adoption across different social and cultural contexts, especially among disadvantaged populations where behavioral and environmental factors extend beyond system characteristics (Musa et al., 2024).

Complementing TAM, Social Cognitive Theory (SCT) explains how individuals acquire knowledge and modify their behavior through continuous interactions among personal, behavioral, and environmental factors. Rather than viewing individuals as passive recipients of environmental influences, SCT proposes the principle of reciprocal determinism, whereby individuals actively shape and are simultaneously shaped by their social environment (Rozenkowska, 2023). Learning occurs through observation, modeling, reinforcement, and accumulated experience. Central to SCT is the concept of self efficacy, referring to an individual's belief in his or her ability to successfully perform specific tasks. According to Zeng et al. (2025), self efficacy, together with goal setting, self evaluation, outcome expectations, and social comparison, plays a fundamental role in determining motivation and behavioral performance. Nabi (2015) similarly emphasizes observational learning as an important mechanism through which individuals adopt new behaviors. Within the financial context, SCT provides a strong theoretical explanation for the development of Digital Financial Literacy (DFL). Rehman et al. (2024) demonstrate that cognitive abilities significantly influence individuals' financial knowledge. However, the rapid digitalization of financial services has made conventional financial literacy insufficient for participating effectively in digital financial ecosystems. Azeez (2021) argues that digital financial literacy has become a critical prerequisite for financial inclusion because individuals must possess the knowledge and skills necessary to understand, evaluate, and safely utilize digital financial services. Empirical evidence further suggests that higher levels of digital financial literacy improve financial well being and strengthen individuals' confidence in managing digital financial activities. In addition, social learning channels such as social media and digital communication platforms substantially contribute to developing digital financial literacy by exposing individuals to financial information and peer experiences. Rural residents can progressively develop the confidence and competence required to adopt Fintech services through learning, observation, and repeated digital experiences.

While TAM and SCT explain technology acceptance and capability development, Behavioral Finance Theory (BFT) provides additional insights into the psychological processes underlying financial decision making. Behavioral Finance combines psychology and financial economics to explain why individuals frequently deviate from rational decision making due to cognitive biases, emotions, and heuristics. Previous studies suggest that psychological biases contribute to market anomalies, speculative bubbles, and irrational investment behaviors. Excessive optimism, for example, may distort individuals' financial judgments and lead to irrational financial decisions. Similarly, Petropoulos et al. (2022) emphasize that subjective perceptions influence financial forecasting because individuals interpret financial information differently according to their psychological characteristics. Behavioral Finance has also been widely applied to household

financial behavior and digital financial services. Kuchler and Stroebe (2021) demonstrate that social networks significantly influence borrowing and saving decisions, while Guan et al. (2022) identify financial stress as an important determinant of financial behavior, particularly among vulnerable populations. Duxbury et al. (2020) further argue that emotions play a crucial role in shaping financial choices, whereas Wong (2020) highlights the increasing relevance of behavioral finance in understanding technology enabled financial decision making. In the context of Fintech adoption, psychological factors such as trust, perceived risk, confidence, fear of financial loss, and emotional responses often determine whether individuals are willing to use digital financial services. The behavioral perspective is particularly relevant for rural populations, who generally possess lower exposure to formal financial institutions and digital technologies. Individuals with stronger digital financial literacy are better equipped to evaluate risks objectively, understand digital financial products, and make informed financial decisions, thereby reducing uncertainty and increasing their likelihood of adopting Fintech services.

It can be concluded that the integration of TAM, SCT, and BFT provide complementary theoretical foundations for the study. TAM explains how individuals evaluate the usefulness and ease of using Fintech services; SCT explains how digital financial literacy is developed through learning, observation, and self efficacy; and BFT accounts for the psychological and emotional factors that shape financial behavior. The integration of these three theories offers a comprehensive framework for understanding how digital financial literacy promotes Fintech adoption among rural populations in Vietnam by simultaneously addressing technological perceptions, learning processes, and behavioral decision making.

2.2 Digital financial literacy

Financial literacy has long been recognized as a fundamental determinant of individuals' ability to understand financial products, manage risks, and make informed financial decisions (Lusardi & Mitchell, 2014). However, the rapid digital transformation of financial services has made traditional financial literacy insufficient for today's technology driven environment. The widespread adoption of digital banking, mobile payments, e wallets, peer to peer lending, and digital investment platforms requires individuals to possess both financial knowledge and digital competencies to use these services safely and effectively (Koskelainen et al., 2023). Against this background, digital financial literacy has emerged as an extension of conventional financial literacy, reflecting the competencies required to participate in digital financial ecosystems. Ravikumar et al. (2022) define "digital financial literacy" as the knowledge, skills, confidence and competencies to safely use digitally delivered financial instruments and services and make informed financial decisions. Similarly, Lyons and Kass Hanna (2021a) argue that Digital Financial Literacy integrates financial literacy, digital literacy, technological competence, and the ability to access and effectively use digital financial services. Researchers have further identified dimensions including financial knowledge, digital skills, awareness of digital financial products, cybersecurity knowledge, and responsible financial decision making (Morgan et al., 2019).

The importance of digital financial literacy has increased alongside the expansion of Fintech services such as mobile banking, electronic wallets, QR code payments, online investment, and digital lending. Digital Financial Literacy facilitates financial inclusion by enabling individuals to

access and use digital financial services confidently while improving their awareness of cybersecurity threats. Similarly, Ozili (2018) argues that digital financial literacy improves users' understanding of digital financial technologies and supports the effective utilization of Fintech services. Digital financial literacy also contributes to responsible financial behaviors, including budgeting, saving, responsible borrowing, financial planning, and risk management (Rahayu et al., 2022a), which can improve financial well being (Jhonson et al., 2023). However, easier access to digital financial services may also increase impulsive purchasing and excessive borrowing, suggesting that its effects depend on how individuals apply their knowledge and competencies. Accordingly, this study conceptualizes digital financial literacy as the knowledge, skills, confidence, and competencies required to effectively and safely utilize digital financial products and services. It is considered the central independent variable expected to help rural populations overcome informational and technological barriers and facilitate Fintech adoption. In rural Vietnam, enhancing digital financial literacy is expected to contribute to inclusive digital finance and narrow the financial inclusion gap between urban and rural communities.

2.3 Dimensions of digital financial literacy

2.3.1. Digital financial knowledge

Digital financial knowledge is a core dimension of digital financial literacy, referring to individuals' understanding of digital financial products, services, technologies, and their associated opportunities and risks. As financial services increasingly shift to digital platforms, individuals require both conventional financial knowledge and digital competencies to navigate technology enabled financial services. Digital financial knowledge is therefore important for financial inclusion and Fintech adoption, particularly in developing economies (Normawati et al., 2021). Digital finance involves delivering financial services through smartphones, computers, and the Internet, including mobile banking, e wallets, digital payments, online lending, insurance, and investment platforms. By reducing transaction costs and expanding accessibility, digital finance has improved financial inclusion (Al-Smadi, 2023). Consistent with the Technology Acceptance Model, individuals are more likely to adopt digital financial technologies when they perceive them as useful and easy to use, which requires sufficient understanding of their functions, benefits, and risks.

Studies in developing regions indicate that digital financial services improve access to financial products among underserved populations (Thathsarani & Jianguo, 2022). In Vietnam, the rapid development of Fintech and digital banking has expanded digital payments and access to formal financial services. Fintech companies have introduced payment systems, digital savings products, and alternative lending services that improve efficiency and accessibility (Do et al., 2025). Digital financial knowledge integrates traditional financial knowledge with digital competencies, enabling individuals to use digital financial services effectively and responsibly (Idrus, 2017). Key competencies include knowledge of digital financial products and services, awareness of digital financial risks, data privacy and cybersecurity, and consumer rights (Ahn, 2024). Morgan et al. (2019) similarly identify knowledge of digital financial products and services, awareness of digital financial risks, digital risk management, and consumer rights and complaint procedures as important dimensions. In rural Vietnam, digital financial knowledge is particularly important because many residents have limited exposure to formal financial institutions and digital

technologies. Individuals with stronger knowledge are better able to understand digital financial services, evaluate risks, protect personal information, and make informed decisions. Therefore, this study considers digital financial knowledge as a key dimension of digital financial literacy expected to facilitate Fintech adoption among rural populations in Vietnam.

2.3.2. Digital financial skills

Digital financial skills represent an essential dimension of digital financial literacy, referring to individuals' ability to effectively apply financial knowledge when using digital financial products and services. These skills include managing digital payments, mobile banking, budgeting, savings, borrowing, and other Fintech services. As digital finance becomes increasingly integrated into everyday life, practical digital financial skills are crucial for enabling individuals to participate confidently and responsibly in the digital financial ecosystem. Previous research highlights the multidimensional nature of digital financial literacy. Morgan et al. (2019) propose three major dimensions: knowledge of digital financial services, awareness of digital financial risk, and digital financial risk control. Lyons and Kass Hanna (2021) further developed a comprehensive multidimensional framework for measuring Digital Financial Literacy. Ardini et al. (2024) demonstrate that knowledge of digital financial services contributes to the development of financial skills, emphasizing the importance of these skills for effectively utilizing digital financial services. The importance of financial skills has also been emphasized in technology adoption research. According to the Theory of Planned Behavior, perceived behavioral control, including perceived skills and abilities, positively influences behavioral intention (Ullah et al., 2022). Individuals with sufficient financial and technological skills are generally more confident in using digital financial technologies and more willing to adopt Fintech services. Koskelainen et al. (2023) argue that financial literacy requires individuals to apply financial knowledge effectively in real life situations. Similarly, financially literate individuals are better able to understand and evaluate digital financial products such as mobile banking and mobile payment services (Jünger & Mietzner, 2020). Practical financial skills can be developed through experience and interaction with financial markets and digital platforms. Examples include budgeting through mobile applications, managing bank accounts, conducting digital transactions, monitoring account balances, and using online financial management tools (Albuainain et al., 2025). Factual financial knowledge alone rarely produces meaningful behavioral change unless individuals can apply it effectively. In rural Vietnam, digital financial skills are particularly important because many residents are first time users of digital financial technologies. Using mobile banking, QR code payments, e wallets, and other Fintech services requires skills in operating digital devices, navigating financial applications, conducting secure transactions, and solving common technical problems. Individuals with stronger Digital Financial Skills are therefore expected to face fewer barriers and show greater confidence in adopting Fintech services.

2.3.3. Digital financial safety

Digital financial safety refers to individuals' ability to protect themselves from financial and cybersecurity risks when using digital financial services. As Fintech becomes increasingly integrated into daily financial activities, users face threats such as phishing, hacking, identity theft, malware, unauthorized access, and online financial fraud. Therefore, digital financial safety is an essential component of digital financial literacy, enabling individuals to use digital financial

services securely and minimize potential financial losses. The importance of digital safety has been widely recognized in studies on digital skills and Internet usage. Scheerder et al. (2017) argue that online safety behavior requires users to adopt preventive measures against digital risks and involves specialized knowledge and technical competencies. Similarly, Livingstone et al. (2023) suggest that individuals with stronger digital skills are more capable of recognizing online threats and avoiding risks associated with Internet use. Previous studies also identify digital skills as an important determinant of individuals' ability to protect themselves in online environments (Audrin et al., 2022). Franco et al. (2024) further argue that digital security skills encourage users to adopt protective measures and reduce risks such as cyber victimization, identity theft, and financial fraud. Empirical evidence supports the role of digital competencies in online security. Judges et al. (2017) report that greater Internet knowledge and more frequent Internet use are positively associated with cybersecurity measures. Demographic characteristics, Internet experience, and digital skills also contribute to privacy awareness and protective online behaviors. In addition, financial goals and structured financial planning can strengthen financial discipline and encourage preventive financial behavior (Hershfield et al., 2020; Ouyang et al., 2025). In the context of Fintech adoption, digital financial safety includes the ability to conduct secure transactions, protect personal and financial information, recognize fraudulent activities, and respond appropriately to security incidents. For rural populations in Vietnam, concerns about fraud, privacy, and transaction security may discourage Fintech adoption. Individuals with stronger digital financial safety are more likely to trust digital financial platforms, perceive lower risks, and confidently use Fintech services. Therefore, this study considers digital financial safety an important dimension of digital financial literacy that facilitates Fintech adoption among rural populations in Vietnam.

2.3.4. Digital financial awareness

Digital financial awareness refers to an individual's understanding of digital financial services, including their functions, benefits, risks, and appropriate usage. It encompasses the awareness and ability required to conduct online financial activities such as online shopping, electronic payments, digital banking, and financial applications. Individuals need sufficient awareness of digital technologies to make informed financial decisions and effectively utilize digital financial services (Mohammed Ridha, 2026). Digital financial awareness is generally viewed as a multidimensional concept. Morgan et al. (2019) identify four key dimensions: understanding digital financial products and services, awareness of digital financial risks, knowledge of digital financial risk management, and awareness of consumer rights. Similarly, Lyons and Kass Hanna (2021) emphasize that digital financial awareness combines financial knowledge, digital literacy, practical experience, and awareness of digital financial developments, enabling consumers to use digital financial services more confidently and responsibly.

The importance of digital financial awareness has increased alongside the development of Information and Communication Technology and digital payment systems. Electronic payment systems improve transaction efficiency, transparency, and accessibility while reducing transaction costs (Al Okaily, 2021). The expansion of smartphones and Internet access has further enabled mobile financial applications to provide convenient payments, transfers, and other financial services, particularly for underserved rural populations. At the same time, greater awareness helps individuals understand the benefits and risks of digital financial services, including cybersecurity

threats, fraud, and misuse of personal information (Rahayu et al., 2022). However, infrastructure development alone is insufficient to ensure widespread adoption of digital financial services. Despite efforts by governments and financial institutions to promote digital financial inclusion, acceptance remains relatively low in many developing countries (Hoernig et al., 2017). Therefore, enhancing digital financial awareness is important for increasing individuals' confidence, improving their ability to use digital financial services effectively, and encouraging broader participation in the digital financial ecosystem, particularly among rural populations.

2.4 Fintech adoption intention

Fintech Adoption Intention refers to an individual's willingness or intention to use financial technology services for future financial transactions. The rapid development of digital technologies has transformed the financial industry through technologies such as artificial intelligence, blockchain, cloud computing, machine learning, and big data analytics, enabling Fintech firms to provide innovative, efficient, and convenient financial services (Appiah et al., 2025). Compared with traditional financial institutions, Fintech offers faster access to financial services, lower transaction costs, and greater accessibility, making it an important instrument for promoting financial inclusion, particularly in developing economies (Kim, 2022). The adoption of Fintech involves multiple stakeholders, including Fintech firms, traditional financial institutions, technology developers, governments, and consumers. Governments establish regulatory frameworks to protect consumers and encourage innovation, while financial institutions and technology developers implement digital solutions. Ultimately, consumers determine the success of Fintech through their willingness to adopt and continuously use digital financial services, contributing to financial inclusion and the development of the Fintech ecosystem.

Despite its benefits, Fintech adoption can be constrained by perceived risks and external barriers. Legal uncertainty, inadequate regulation, operational risks, cybersecurity threats, data breaches, online fraud, and concerns about personal information may discourage users from adopting Fintech services (Trotta et al., 2025). Therefore, potential users often evaluate both the expected benefits and risks before making adoption decisions. Recent studies increasingly examine Fintech adoption from a multidimensional perspective, emphasizing perceived benefits, perceived risks, and trust. Trust is particularly important because it can reduce uncertainty and strengthen users' confidence in digital financial services (Alzahrani et al., 2025). Fintech is also recognized as a contributor to sustainable economic development by improving financial resource allocation, supporting inclusive financial systems, and promoting innovative financial services (Ryu et al., 2020). However, differences in digital infrastructure, regulatory environments, and consumer trust continue to create variations in Fintech adoption across countries and population groups. In rural Vietnam, digital financial services are expanding rapidly, but adoption remains uneven due to differences in digital capabilities, financial knowledge, and confidence in Fintech services. Therefore, examining Fintech adoption Intention provides important insights into how digital financial literacy and trust can encourage wider Fintech adoption among rural populations.

2.5 Fintech trust

Fintech trust refers to users' confidence in the reliability, integrity, security, and competence of Fintech service providers in delivering digital financial products and services (Xia et al., 2023). As

Fintech relies heavily on digital platforms and online transactions, trust is fundamental to reducing uncertainty and perceived risks. Because users must often disclose sensitive personal and financial information through digital channels, establishing trust is an important prerequisite for Fintech adoption. The rapid development of technologies such as big data analytics, artificial intelligence, cloud computing, and mobile technologies has transformed financial services by making them more efficient, personalized, and accessible (Appiah et al., 2025). Artificial intelligence and big data also support more accurate financial decision making and customized financial solutions (Dánielsson et al., 2022). However, increased reliance on digital technologies has raised concerns about data privacy, cybersecurity, and ethical issues, including unauthorized access, identity theft, cyberattacks, and misuse of personal information. Artificial intelligence driven services may also create concerns regarding algorithmic bias, transparency, fairness, and accountability.

Trust is therefore an important determinant of Fintech adoption. Users are more willing to adopt digital financial services when they believe providers can protect personal information, ensure secure transactions, and deliver reliable services. Conversely, privacy breaches, online fraud, and cybersecurity vulnerabilities may discourage adoption (Jafri et al., 2024). Fintech companies can strengthen trust through encryption, multi factor authentication, biometric verification, and other cybersecurity technologies (Aldboush et al., 2023). Compliance with data protection regulations also enhances transparency, accountability, and consumer confidence (Mars & Gouider, 2017). Recent studies further emphasize that trust can reduce uncertainty and strengthen users' confidence in digital financial platforms, thereby facilitating Fintech adoption (Lye et al., 2025). In rural Vietnam, Fintech Trust is particularly important because many residents have limited experience with digital financial technologies and may perceive higher financial and technological risks. Secure digital infrastructure, transparent services, effective consumer protection, and responsible data management are therefore essential for encouraging rural users to adopt Fintech services. Accordingly, this study considers Fintech Trust as a central construct connecting Digital Financial Literacy with Fintech Adoption Intention among rural populations in Vietnam.

2.6 Hypothesis development

Digital financial knowledge refers to individuals' understanding of digital financial products, services, transaction processes, and the potential benefits and risks associated with digital financial technologies. Individuals with higher levels of digital financial knowledge are generally better able to comprehend how Fintech services operate, evaluate the reliability of digital financial platforms, recognize potential security threats, and understand consumer rights in digital financial transactions. Such knowledge reduces uncertainty and information asymmetry, enabling users to make more informed financial decisions and increasing their confidence when interacting with Fintech services (Hai et al., 2025). As users become more familiar with digital financial products and gain a clearer understanding of their functions and security mechanisms, they are more likely to perceive Fintech providers as reliable and trustworthy. This relationship is particularly important in rural areas, where many individuals have limited experience with formal financial institutions and digital financial technologies. In such contexts, insufficient knowledge of digital financial products often results in concerns about transaction security, privacy protection, and the credibility of Fintech platforms. Conversely, individuals who possess greater digital financial knowledge are better equipped to assess potential risks, distinguish legitimate digital financial services from fraudulent

activities, and use digital financial applications more confidently. Consequently, greater knowledge is expected to strengthen users' trust in Fintech services and reduce hesitation toward adopting digital financial technologies. Previous studies provide evidence supporting this relationship. Normawati et al. (2021) identify digital financial knowledge as an important dimension of digital financial literacy that integrates financial knowledge with digital competencies, enabling individuals to understand and effectively utilize digital financial services. Their findings suggest that stronger digital financial knowledge improves individuals' confidence in using digital financial products and facilitates more informed financial decision-making. Similarly, Do et al. (2025) demonstrate that digital financial knowledge positively influences the use of digital finance and contributes to financial inclusion in Vietnam. The study indicates that individuals with greater knowledge of digital financial services are more capable of utilizing digital financial platforms and participating in digital financial ecosystems, reflecting a higher level of confidence in these technologies. Accordingly, the following hypothesis is proposed:

H1: Digital financial knowledge has a positive effect on fintech trust among rural populations in Vietnam.

Digital financial skills refer to individuals' ability to effectively apply financial knowledge when using digital financial technologies and services. These skills include operating mobile banking applications, conducting digital payments, managing online financial transactions, and utilizing digital financial tools efficiently. Individuals with stronger digital financial skills are generally more capable of completing digital financial transactions accurately, understanding transaction procedures, and responding appropriately to operational problems. As a result, they are more likely to perceive digital financial services as reliable and secure, thereby developing greater trust in Fintech providers (Linh, 2025). The positive relationship between digital financial skills and fintech trust can be explained by users' practical competence in interacting with digital financial platforms. Individuals with stronger digital financial skills are less likely to experience difficulties or uncertainty when using Fintech applications because they possess the capability to navigate digital interfaces, perform financial transactions, and manage potential transaction risks effectively. This practical experience increases users' confidence in the safety, reliability, and effectiveness of Fintech services, which ultimately strengthens their trust in digital financial platforms. Empirical evidence supports this relationship. Ullah et al. (2022) found that financial skills significantly influence consumers' willingness to adopt mobile payment and mobile banking services. Their findings indicate that individuals with stronger financial skills are more confident in using digital financial technologies because they better understand transaction processes and are able to use digital financial services effectively. Likewise, Ardini et al. (2024) demonstrate that Digital Financial Literacy significantly improves financial skills within the digital payment ecosystem, suggesting that individuals with stronger digital financial skills are more capable of engaging with digital financial services confidently and effectively. Accordingly, the following hypothesis is proposed:

H2: Digital financial skills have a positive effect on fintech trust among rural populations in Vietnam.

Digital financial safety refers to individuals' ability to protect themselves from financial and cybersecurity risks while using digital financial services. It encompasses the awareness and

adoption of protective behaviors such as safeguarding personal information, recognizing online fraud, conducting secure digital transactions, and managing potential financial risks. When users perceive that they possess sufficient capabilities to protect themselves against digital threats, they are more likely to feel confident when interacting with Fintech platforms (Mulyanto et al., 2025). This confidence reduces uncertainty and perceived vulnerability, thereby strengthening trust in digital financial services. For rural populations, concerns regarding transaction security, privacy protection, and financial fraud remain important barriers to the use of Fintech services. Individuals who possess stronger digital financial safety competencies are better able to recognize potential risks, implement preventive measures, and conduct digital financial transactions securely. As a result, they are more likely to perceive Fintech platforms as reliable and trustworthy. In contrast, users who lack confidence in protecting their financial information may perceive greater risks when using digital financial services, thereby weakening their trust in Fintech providers (Aripin, 2024). Empirical evidence also supports the importance of financial safety in shaping positive financial behavior. Ouyang et al. (2025) demonstrate that financial safety mechanisms strengthen individuals' confidence in financial decision-making and encourage more consistent financial behaviors by reducing perceived uncertainty and improving financial security. Although their study examines financial safety from a broader perspective, the findings suggest that a stronger sense of financial safety enhances individuals' confidence when engaging in financial activities. Applying this perspective to digital finance, users with greater digital financial safety are expected to develop stronger trust in Fintech services because they feel more secure when conducting digital financial transactions. Accordingly, the following hypothesis is proposed:

H3: Digital financial safety has a positive effect on fintech trust among rural populations in Vietnam.

Digital financial awareness reflects individuals' awareness of the existence, functions, benefits, and evolving nature of digital financial products and services. Higher levels of awareness enable individuals to become more familiar with emerging Fintech solutions, understand the value they offer, and recognize how digital financial services can improve the efficiency, accessibility, and convenience of financial transactions. As users become increasingly aware of these advantages, they are more likely to develop favorable perceptions toward Fintech providers, creating a stronger foundation for trust (Ardini et al., 2024). This relationship is particularly important in rural areas, where many individuals have limited exposure to digital financial ecosystems. Without sufficient awareness, rural consumers may remain unfamiliar with available Fintech services or rely on traditional financial practices despite increasing access to digital technologies (Huancollo et al., 2026). Greater digital financial awareness helps individuals recognize legitimate digital financial platforms, understand their potential benefits, and become more receptive to technological innovation. Such awareness reduces hesitation toward unfamiliar financial technologies and encourages users to view Fintech services as credible and dependable. Empirical evidence supports this relationship when Mohammed Ridha (2026) found that digital financial awareness significantly promotes the adoption of digital financial services by improving individuals' understanding of available digital financial solutions and encouraging greater engagement with these services. Similarly, Ardini et al. (2024) emphasized that increasing digital financial awareness strengthens individuals' readiness to participate in digital payment ecosystems, facilitating more positive

perceptions of digital financial technologies. These findings suggest that greater awareness contributes to stronger trust in Fintech services. Accordingly, the following hypothesis is proposed:
H4: Digital financial awareness has a positive effect on fintech trust among rural populations in Vietnam.

Fintech trust refers to users' confidence in the reliability, security, integrity, and competence of Fintech service providers. Since digital financial services require users to share personal and financial information through technology-enabled platforms, trust plays a crucial role in reducing uncertainty and increasing users' confidence in conducting digital financial transactions. Individuals who trust Fintech providers are more likely to perceive digital financial services as reliable and beneficial, thereby strengthening their intention to adopt these services (Hu et al., 2019). The importance of Fintech Trust is even greater among rural populations, where users generally have less experience with digital financial technologies and may be more concerned about transaction security and privacy. When individuals believe that Fintech platforms are capable of protecting their information and delivering secure financial services, they are more willing to overcome concerns associated with unfamiliar technologies and consider using digital financial products (Mai et al., 2025). Therefore, higher levels of trust are expected to encourage stronger Fintech adoption intention. Empirical evidence consistently supports this relationship. Hu et al. (2019) demonstrate that trust is one of the significant determinants of users' intention to adopt Fintech services within the extended Technology Acceptance Model. More recent empirical evidence suggests that trust positively influences Fintech adoption by strengthening users' perceptions of the benefits of digital financial services while reducing concerns associated with potential risks. As a result, higher levels of trust significantly increase consumers' willingness to adopt Fintech services. Accordingly, the following hypothesis is proposed:

H5: Fintech trust has a positive effect on fintech adoption Intention among rural populations in Vietnam.

Fintech trust is widely recognized as a key mechanism through which users translate their knowledge, competencies, and perceptions of digital financial services into behavioral intentions. Individuals with stronger digital financial literacy are generally more likely to understand digital financial technologies, use them effectively, perceive lower levels of uncertainty, and develop greater confidence in Fintech providers. This enhanced trust subsequently increases their willingness to adopt Fintech services (Jawad et al., 2025). Therefore, rather than directly influencing adoption intention alone, the dimensions of Digital Financial Literacy are expected to exert their effects indirectly by strengthening users' trust in Fintech platforms. Previous studies support this mediating mechanism. Hu et al. (2019) demonstrate that trust is a critical determinant of Fintech adoption intention, indicating that users are more willing to adopt digital financial services when they perceive Fintech providers as reliable and trustworthy. More recently, Alzahrani and Bhunia (2025) show that trust functions as an important mediating mechanism linking users' individual characteristics with Fintech adoption intention. Their findings suggest that positive user capabilities and perceptions strengthen trust, which subsequently enhances individuals' intention to adopt Fintech services. Accordingly, the following hypotheses are proposed:

H6a: Fintech trust mediates the relationship between digital financial knowledge and fintech adoption intention.

H6b: Fintech trust mediates the relationship between digital financial skills and fintech adoption intention.

H6c: Fintech trust mediates the relationship between digital financial safety and fintech adoption intention.

H6d: Fintech trust mediates the relationship between digital financial awareness and fintech adoption intention.

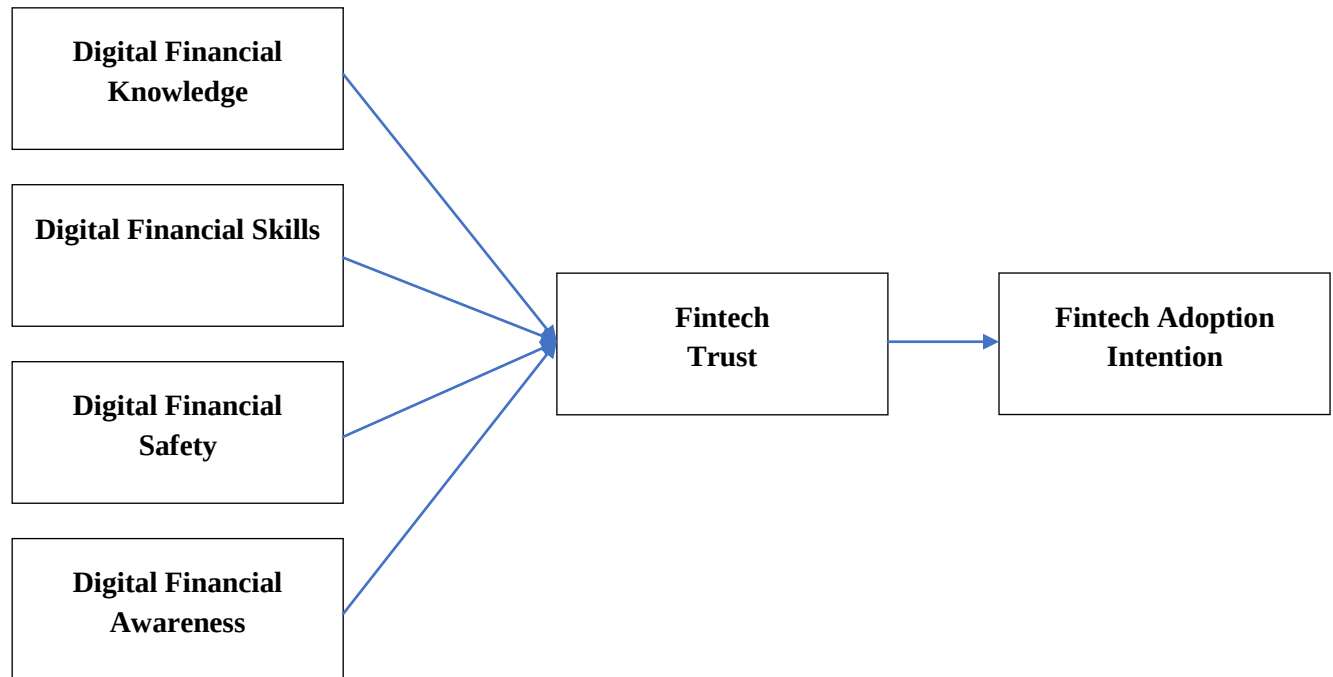


Figure 1: Proposed research model

3.0 METHODOLOGY

3.1 Measures and questionnaire development

The measurement instrument was designed to examine the relationships among digital financial literacy, Fintech trust, and Fintech adoption intention among rural populations in Vietnam. All constructs were measured using items adapted from established studies and assessed on a five-point Likert scale, ranging from 1 = Strongly disagree to 5 = Strongly agree. Accordingly, digital financial knowledge (DFK) was measured using four items adapted from Do et al. (2025) and Normawati et al. (2021). Digital financial skills (DFSK) used four items from Ardini et al. (2024) and Ullah et al. (2022), while digital financial safety (DFSA) used three items adapted from Ouyang et al. (2025). Digital financial awareness (DFA) was measured using four items from Ardini et al. (2024) and Mohammed Ridha (2026). Fintech trust (FT) was assessed using four items from Appiah and Agblewornu (2025) and Hu et al. (2019), while fintech adoption intention (FAI) used five items adapted from Hu et al. (2019) and Alzahrani and Bhunia (2025). All items were contextualized to the Vietnamese rural population. The questionnaire was translated into Vietnamese using a back-translation procedure to ensure clarity and semantic equivalence. Data were analyzed using PLS-SEM with SmartPLS 3 to assess measurement reliability and validity and test the proposed relationships, including the mediating role of fintech trust.

3.2 Sampling method and data collection

The data for this study were collected through a structured questionnaire administered to rural residents in Vietnam to examine the relationship between digital financial literacy, fintech trust, and fintech adoption intention. The questionnaire was distributed through both online and offline channels to reach respondents from different rural areas. Online data collection was conducted through social media platforms, personal networks, and online survey links, while offline questionnaires were distributed directly to residents in rural communities. The sampling process targeted Vietnamese residents aged 18 years and above who were living in rural areas and had experience with or access to digital financial services. This sampling approach was appropriate for the research context because rural residents may differ in their levels of digital financial knowledge, skills, safety awareness, and awareness of digital financial services, which may influence their trust in Fintech and intention to adopt Fintech services.

The final sample consisted of 315 valid respondents. The demographic profile included gender, age, education level, employment status, monthly income, and Fintech usage experience. Regarding age, respondents were classified into four groups: 18–24 years old, 25–34 years old, 35–50 years old, and above 50 years old. Education level was categorized into high school or below, college/bachelor's degree, and postgraduate. Employment status included farmers/agricultural workers, salaried employees, self-employed/business owners, and other occupations. Monthly income was divided into less than USD 500, USD 500–1,000, USD 1,000–2,000, and more than USD 2,000. Fintech usage experience was classified into less than one year, one to three years, and more than three years. These demographic characteristics provide a broad representation of rural residents in Vietnam with different socioeconomic backgrounds and levels of exposure to Fintech services. The inclusion of respondents with different ages, education levels, occupations, income levels, and Fintech usage experience supports a more comprehensive assessment of digital financial literacy. In particular, the sample provides an appropriate basis for examining how digital financial knowledge, digital financial skills, digital financial safety, and digital financial awareness influence fintech trust, and how fintech trust subsequently affects fintech adoption intention among rural populations in Vietnam.

4.0 FINDINGS AND DISCUSSION

4.1 Descriptive statistics result

Table 1 presents the demographic characteristics of the 315 valid respondents in the study. Regarding gender, 178 respondents (56.5%) were male and 137 (43.5%) were female, indicating a relatively balanced gender distribution. In terms of age, respondents aged 18–24 years old represented the largest group with 119 respondents (37.8%), followed by those aged 25–34 years old with 105 respondents (33.3%). The 35–50 age group accounted for 19.7%, while respondents above 50 years old represented 9.2%. Overall, 71.1% of respondents were between 18 and 34 years old, indicating a relatively young sample. Regarding education, 176 respondents (55.9%) had a high school education or below, 131 (41.6%) held a college or bachelor's degree, and only 8 (2.5%) had a postgraduate qualification.

For employment, salaried employees formed the largest group (33.0%), followed by farmers or agricultural workers (28.9%) and self employed or business owners (26.3%). Regarding monthly

income, the largest group earned USD 500–1,000 (34.3%), followed by USD 1,000–2,000 (28.9%), below USD 500 (23.5%), and above USD 2,000 (13.3%). Finally, 39.0% of respondents had more than three years of Fintech usage experience, 35.9% had one to three years, and 25.1% had less than one year.

Table 1: Demographics of respondents (n = 315)

<i>Demographics</i>		<i>Frequency</i>	<i>Percentage (%)</i>
Gender	Male	178	56.5
	Female	137	43.5
Age	18–24 years old	119	37.8
	25–34 years old	105	33.3
	35–50 years old	62	19.7
	Above 50 years old	29	9.2
Education level	High school or below	176	55.9
	College/Bachelor's degree	131	41.6
	Postgraduate	8	2.5
Employment Status	Farmer/Agricultural Worker	91	28.9
	Salaried Employee	104	33.0
	Self-employed/Business Owner	83	26.3
	Others	37	11.7
Monthly Income (USD)	< 500	74	23.5
	500 - 1000	108	34.3
	1000 - 2000	91	28.9
	> 2000	42	13.3
Fintech Usage Experience	Less than 1 Year	79	25.1
	1–3 Years	113	35.9
	More than 3 Years	123	39.0

Source: Authors' analysis

4.2 Scale reliability and validity assessment

Table 2 presents the reliability and validity results of the six constructs. Cronbach's Alpha values range from 0.812 to 0.952, rho_A values range from 0.817 to 0.954, and Composite Reliability values range from 0.888 to 0.965. All values exceed the recommended threshold of 0.70, indicating satisfactory internal consistency.

Table 2: Construct reliability and convergent validity

	<i>Cronbach's Alpha</i>	<i>rho_A</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted (AVE)</i>
DFA	0.941	0.944	0.958	0.849
DFK	0.914	0.915	0.939	0.795
DFSA	0.812	0.817	0.888	0.726
DFSK	0.946	0.955	0.961	0.861
FAI	0.945	0.946	0.958	0.820
FT	0.952	0.954	0.965	0.874

Source: Data analysis by SmartPLS3

The AVE values range from 0.726 to 0.874, exceeding the minimum threshold of 0.50 and confirming adequate convergent validity. Overall, all six constructs demonstrate satisfactory reliability and convergent validity for subsequent PLS-SEM analysis.

The Fornell-Larcker criterion results show that the square root of AVE for each construct is higher than its correlations with other constructs. The diagonal values range from 0.852 to 0.935, while the highest correlation between constructs is 0.722. Therefore, the Fornell-Larcker criterion is satisfied, confirming adequate discriminant validity among the six constructs. This indicates that each construct shares greater variance with its own indicators than with other constructs in the model. The HTMT values range from 0.166 to 0.818, with the highest value observed between DFSA and FAI (0.818). All HTMT values are below the recommended threshold of 0.90, indicating that the constructs are sufficiently distinct from one another. These findings further support the discriminant validity of the measurement model and confirm that the six constructs capture conceptually different aspects of the research framework.

Table 3: Discriminant validity assessment

	Fornell-Larcker Criterion						Heterotrait-Monotrait Ratio (HTMT)					
	DFA	DFK	DFSA	DFSK	FAI	FT	DFA	DFK	DFSA	DFSK	FAI	FT
DFA	0.922											
DFK	0.293	0.892					0.315					
DFSA	0.147	0.187	0.852				0.166	0.212				
DFSK	0.262	0.613	0.255	0.928			0.274	0.655	0.284			
FAI	0.298	0.363	0.722	0.425	0.906		0.316	0.389	0.818	0.446		
FT	0.349	0.612	0.371	0.679	0.567	0.935	0.369	0.655	0.417	0.710	0.596	

Source: Data analysis by SmartPLS3

4.3 Model assessment and discussions of findings

Table 4 presents the structural equation modelling results examining the relationships between the four dimensions of digital financial literacy, fintech trust, and fintech adoption intention among rural populations in Vietnam. The adjusted R² value for fintech trust is 0.569, indicating that digital financial knowledge; digital financial skills, digital financial safety, and digital financial awareness jointly explain 56.9% of the variance in fintech trust. Meanwhile, the adjusted R² value for fintech adoption intention is 0.320, indicating that fintech trust explains 32.0% of the variance in fintech

adoption intention. These results demonstrate that the model has meaningful explanatory power in predicting fintech trust and fintech adoption intention.

Table 4: Structural equation modelling results estimates

<i>Paths</i>	<i>Original Sample (O)</i>	<i>Sample Mean (M)</i>	<i>Standard Deviation (STDEV)</i>	<i>T Statistics (O/STDEV)</i>	<i>P Values</i>	<i>Adjusted R²</i>
DFA -> FT	0.128	0.122	0.048	2.680	0.008	FT = 0.569 FAI = 0.320
DFK -> FT	0.277	0.286	0.074	3.743	0.000	
DFSA -> FT	0.192	0.192	0.041	4.664	0.000	
DFSK -> FT	0.427	0.425	0.067	6.332	0.000	
FT -> FAI	0.567	0.565	0.040	14.312	0.000	
DFA -> FT -> FAI	0.072	0.069	0.028	2.559	0.011	
DFK -> FT -> FAI	0.157	0.161	0.042	3.767	0.000	
DFSA -> FT -> FAI	0.109	0.109	0.027	4.098	0.000	
DFSK -> FT -> FAI	0.242	0.240	0.041	5.920	0.000	

Source: Data analysis by SmartPLS3

The results indicate that all hypothesized relationships are positive and statistically significant, as all path coefficients are positive and the corresponding p-values are below 0.05.

Firstly, digital financial knowledge has a positive and significant effect on fintech trust ($\beta = 0.277$, $t = 3.743$, $p < 0.001$), supporting H1. This finding indicates that individuals with stronger knowledge of digital financial products, services, and risks tend to have greater confidence in Fintech platforms. This result is consistent with Do et al. (2025) and Normawati et al. (2021), who emphasize the importance of digital financial knowledge in improving individuals' understanding and effective use of digital financial services. For rural populations, greater knowledge may reduce uncertainty regarding digital financial products and increase confidence in using Fintech services.

Secondly, digital financial skills have the strongest positive effect on fintech trust among the four dimensions ($\beta = 0.427$, $t = 6.332$, $p < 0.001$), supporting H2. The relatively large path coefficient suggests that practical skills in operating digital financial applications, conducting transactions, and managing digital financial activities play a particularly important role in building trust. This finding supports Ardini et al. (2024), who highlight the contribution of digital financial literacy to financial skills, and Ullah et al. (2022), who demonstrate the importance of financial skills and digital literacy in consumers' intention to adopt mobile financial services. Individuals who can confidently perform digital financial activities may perceive fewer difficulties and risks, thereby developing stronger trust in Fintech services.

Thirdly, digital financial safety has a positive and significant effect on fintech trust ($\beta = 0.192$, $t = 4.664$, $p < 0.001$), supporting H3. This result indicates that the ability to recognize security threats, protect personal and financial information, and conduct secure digital transactions contributes to users' confidence in Fintech providers. The finding is particularly relevant in rural Vietnam, where concerns about fraud, cybersecurity, and unauthorized access may create uncertainty among less experienced digital financial users.

Forthly, digital financial awareness also has a positive and significant effect on fintech trust ($\beta = 0.128$, $t = 2.680$, $p = 0.008$), supporting H4. Although its effect is the weakest among the four dimensions, the significant relationship indicates that awareness of digital financial products, benefits, risks, and consumer rights still contributes to users' trust. This finding is consistent with Mohammed Ridha (2026), who emphasizes the role of digital financial awareness in the adoption of digital financial services. Greater awareness may help rural users better understand available Fintech services and make more informed assessments of their benefits and risks.

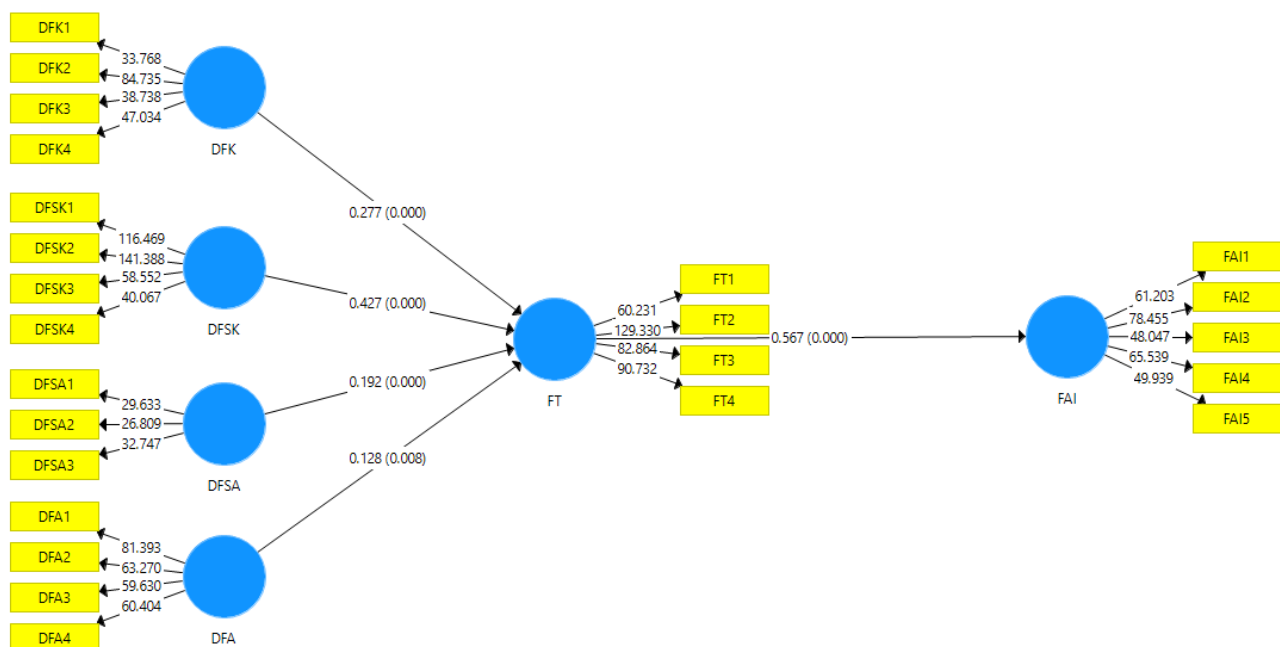


Figure 2: PLS bootstrapping model
Source: Data analysis by SmartPLS3

Among the four dimensions, digital financial skills have the strongest influence on fintech trust, followed by digital financial knowledge, digital financial safety, and digital financial awareness. This ranking suggests that practical competence is particularly important in developing trust toward Fintech services among rural populations. Furthermore, fintech trust has a strong positive effect on fintech adoption intention ($\beta = 0.567$, $t = 14.312$, $p < 0.001$), supporting H5. This is the strongest direct relationship in the structural model, indicating that trust is a key determinant of rural users' intention to adopt Fintech services. The finding is consistent with Appiah and Agblewornu (2025), who identify trust as an important factor in Fintech adoption, and Hu et al. (2019), who demonstrate the importance of trust in users' intention to adopt Fintech services. When users believe that Fintech

providers are reliable, secure, and capable of protecting their information, they are more willing to use these services.

The mediation results further demonstrate that fintech trust significantly mediates the relationships between all four dimensions of digital financial literacy and fintech adoption intention. digital financial knowledge has a significant indirect effect through fintech trust ($\beta = 0.157$, $t = 3.767$, $p < 0.001$), supporting H6a. Digital financial skills also have a significant indirect effect ($\beta = 0.242$, $t = 5.920$, $p < 0.001$), supporting H6b. Digital financial safety has a significant indirect effect ($\beta = 0.109$, $t = 4.098$, $p < 0.001$), supporting H6c, while digital financial awareness has a significant indirect effect ($\beta = 0.072$, $t = 2.559$, $p = 0.011$), supporting H6d. These findings indicate that digital financial literacy facilitates fintech adoption intention not only through users' knowledge, skills, safety competencies, and awareness but also through the trust developed from these capabilities. Among the indirect effects, digital financial skills demonstrate the strongest influence, suggesting that practical competence may be particularly important in transforming digital financial capabilities into greater trust and, ultimately, stronger fintech adoption intention among rural populations in Vietnam.

5.0 RECOMMENDATIONS AND CONCLUSION

This study provides several theoretical contributions to the literature on digital financial literacy and Fintech adoption. First, it extends existing Fintech adoption research by conceptualizing Digital Financial Literacy as a multidimensional construct consisting of digital financial knowledge, digital financial skills, digital financial safety, and digital financial awareness. Rather than treating digital financial literacy as a general capability, this study demonstrates that its individual dimensions contribute to the development of Fintech trust among rural populations in Vietnam. Second, the study integrates the Technology Acceptance Model, Social Cognitive Theory, and Behavioral Finance Theory to provide a more comprehensive theoretical explanation of Fintech adoption. TAM helps explain users' acceptance of digital financial technologies, SCT highlights the role of knowledge, skills, learning, and self-efficacy in developing digital financial capabilities, while Behavioral Finance Theory provides insights into the role of confidence, perceived risk, and psychological factors in financial decision-making. Third, the findings establish Fintech trust as an important mediating mechanism through which digital financial literacy contributes to Fintech adoption intention. The significant indirect effects of all four dimensions indicate that digital financial capabilities may influence adoption not only by improving users' ability to interact with digital financial services but also by strengthening their confidence and trust in Fintech providers. In particular, the relatively stronger effect of digital financial skills on Fintech trust highlights the theoretical importance of practical competence in explaining Fintech adoption among rural users. Overall, these findings extend the existing theoretical understanding of Fintech adoption by linking individual digital financial capabilities with trust formation and adoption intention within an underrepresented rural context.

The findings indicates some appropriate practical implications for Fintech companies and financial institutions seeking to increase Fintech adoption among rural populations in Vietnam. The results suggest that strengthening digital financial literacy should be an important component of strategies aimed at encouraging rural individuals to use Fintech services. Fintech providers and financial

institutions should therefore develop simple, accessible, and user-friendly digital financial platforms that are suitable for users with different levels of digital and financial knowledge. In particular, application interfaces should use clear language, intuitive navigation, and straightforward instructions to reduce difficulties during registration, account management, digital payments, and financial transactions. Providing accessible customer support through both digital and traditional channels may also help rural users address problems and develop greater confidence in using Fintech services.

In addition, Fintech companies and financial institutions should place greater emphasis on digital financial education and user protection. Clear and practical guidance should be provided on topics such as account registration, digital payments, online transactions, personal data protection, password management, fraud prevention, and other digital financial risks. Educational content could be delivered through mobile applications, local bank branches, community organizations, schools, and other channels that are accessible to rural populations. Training programs should be designed using simple and practical examples that reflect users' everyday financial activities rather than relying primarily on technical or financial terminology. Such initiatives may help individuals develop the knowledge and skills required to evaluate digital financial services, recognize potential risks, and use Fintech products more effectively and safely.

Policymakers also have an important role in creating an enabling environment for Fintech adoption and digital financial inclusion in rural areas. Public authorities and relevant financial institutions should continue to support digital financial literacy programs while improving access to reliable digital infrastructure, particularly in rural and underserved communities. Collaboration among government agencies, financial institutions, Fintech providers, educational institutions, and local communities could facilitate the development of coordinated digital financial education initiatives and infrastructure-support programs. In addition, policies that promote consumer protection, transparency, cybersecurity, and responsible Fintech practices may help strengthen users' confidence in digital financial services. By combining improvements in digital financial literacy, digital infrastructure, consumer protection, and service accessibility, stakeholders can address multiple barriers to Fintech adoption and contribute to broader digital financial inclusion among rural populations in Vietnam.

Despite providing meaningful evidence on the relationship between digital financial literacy and Fintech adoption among rural populations in Vietnam, this study has several limitations. The cross-sectional research design limits the ability to examine changes in digital financial literacy and Fintech adoption over time, while the focus on rural populations in Vietnam may limit the generalizability of the findings to urban populations or other countries with different technological, economic, and institutional conditions. In addition, the use of self-reported questionnaire data may result in response bias and may not fully reflect respondents' actual Fintech adoption behaviour. Future studies could employ longitudinal research designs to examine how digital financial literacy and Fintech adoption develop over time and could incorporate objective measures of Fintech usage where available. Comparative studies between rural and urban populations, as well as across different regions of Vietnam, could provide further insights into differences in Fintech adoption. Future research could also examine additional determinants of Fintech adoption, such as trust,

perceived security, perceived usefulness, perceived ease of use, perceived risk, social influence, and access to digital infrastructure. Examining these factors together with digital financial literacy would provide a more comprehensive understanding of Fintech adoption and support the development of more targeted strategies for expanding digital financial inclusion among rural populations in Vietnam.

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