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FINTECH ADOPTION IN CONVENTIONAL AND ISLAMIC BANKING: MEDIATING ROLE OF USER ATTITUDE AND THE MODERATING ROLE OF PERCEIVED RISK

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ABSTRACT

The rapid growth of financial technology (FinTech) is transforming the delivery and consumption of banking services, making FinTech adoption increasingly important for both conventional and Islamic banks. However, technological availability alone does not guarantee adoption, as users' capabilities, perceptions, attitudes, and risk concerns can influence their adoption decisions. This study develops an integrated framework to examine the determinants of FinTech adoption by combining Digital Financial Capability (DFC), Technology Usage (TU), the Technology Acceptance Model (TAM), and the Information System Success Model (ISSM). User Attitude (UA) is proposed as a mediating variable, while Perceived Risk (PR) is examined as a moderating variable in the relationship between User Attitude and FinTech Adoption (FA). The study adopts a quantitative, cross-sectional research design based on a positivist philosophy. Data were collected from 450 respondents, equally representing conventional and Islamic banking customers, using a structured questionnaire measured on a five-point Likert scale. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 4. The findings indicate that Digital Financial Capability, Technology Usage, TAM, and ISSM positively influence User Attitude, while User Attitude has a significant positive effect on FinTech Adoption. User Attitude also partially mediates the relationships between all four antecedents and FinTech Adoption. Furthermore, Perceived Risk significantly and negatively moderates the relationship between User Attitude and FinTech Adoption, indicating that higher perceived risk weakens the translation of favorable attitudes into actual adoption. The study contributes to FinTech and banking literature by integrating individual capability, technology acceptance, information-system success, attitudinal, and risk perspectives within a unified framework for conventional and Islamic banking.

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INTRODUCTION

The digital revolution has transformed the way people access, use, and manage financial services, particularly in recent years as the world's financial system has rapidly digitized. Financial Technology (FinTech) is one of the greatest disruptors in financial services over the last few years, changing the way banking works with technological solutions that focus on accessibility, convenience, efficiency, and speed. The introduction of digital platforms, mobile applications, online banking systems, electronic payment systems, and other technology-driven financial services has led to new opportunities for economic inclusion and financial service delivery (Farukh et al., 2025). Moreover, FinTech has also disrupted the traditional banking paradigms by moving numerous banking functions from the conventional physical space to a simplified digital space. While digital infrastructure has been evolving

and financial applications are becoming more and more innovative; the diffusion of FinTech has been uneven among users and among demographic groups. New and advanced technologies don't always lead to acceptance and adoption. As a result, it is now more important than ever for financial institutions, FinTech firms, financial policy makers, and information systems and digital finance researchers to understand the determinants of user acceptance of digital financial services (Modwel, 2025).

One of the major hurdles in increasing digital financial inclusion is the disconnect between technology availability and usage. Technology companies and financial institutions are still dedicated to creating sophisticated digital platforms, enhancing their technological systems, and launching new financial services. However, barriers to using the technologies might persist as a result of psychological and functional limitations, inadequate digital skills, lack of technology knowledge, and fear of the dangers of digital financial transactions. Digital financial services could then be underused even if they are technically available (Mothobi & Kebotsamang, 2024). The challenge emphasizes that the availability and technical performance of the FinTech system are not only important, but so are the individual attributes and perceptions that influence users' attitudes towards FinTech. Digital Financial Capability, Technology Usage, perceptions of technological usefulness and ease of use, and perceptions of information-system quality can be interrelated and impact the users' internal assessments and attitudes toward FinTech. Important to understand these multidimensional relationships because financial institutions may end up creating technically sophisticated systems that do not meet users' practical needs, expectations, and psychological concerns (Patnaik et al., 2023).

In the present study, this research problem is tackled by introducing a multidimensional conceptual framework that outlines how users transition from technological and individual precursors to actual use of FinTech. The framework includes the dimensions of Digital Financial Capability, Technology Usage, and the dimensions of the Technology Acceptance Model (TAM), as well as the indicators of the Information System Success Model (ISSM) as important independent variables. Digital Financial Capability is the person's ability and confidence in using digital technologies to effectively manage financial activities, and Technology Usage is users' familiarity and frequent engagement with digital technologies. The TAM offers a valuable behavioral lens by focusing on user perceptions of the usefulness and ease of use of FinTech services (Kiran Suraj S, 2025). Likewise, the Information System Success Model brings a system approach that emphasizes the quality and success of the digital information system. The framework accounts for these factors, acknowledging that the acceptance of FinTech goes beyond either a technological or behavioural perspective. Rather, it is expected that the adoption of digital financial services will be shaped by individual capacities, perceptions of technologies, characteristics of the system, and the internal assessments of digital financial services by users (Spilbergs, 2023).

In this context, user attitude is the intervening variable between the identified antecedents and the adoption of FinTech. It is assumed that DFC, Technology Usage, TAM dimensions, and ISSM indicators affect the user's perception and reactions towards FinTech services. Favorable attitudes toward digital financial services can be cultivated if users have adequate digital financial skills, knowledge about technology, positive perception of the use of FinTech, and experiences of effective and reliable information systems (Zhao et al., 2024). On the other hand, a lack of digital skills, technological familiarity, perceived usefulness, ease of use, or system performance could lead to negative attitudes, and thus adoption is reduced. Therefore, the effects of the independent variables can be propagated to the actual adoption of FinTech via user attitudes. In this regard, user attitude serves as an important behavioral mechanism that can facilitate the transmission of the effects of the independent variables to the actual adoption of FinTech. By studying this mediating mechanism, the study can go beyond merely establishing the link between the individual factors and adoption activity and focus on examining the individual factors' impact on users' behavioral evaluations and adoption decisions (Imtihan et al., 2025).

The framework also adds perceived risk as a moderating variable in the relationship between User Attitude and FinTech Adoption. While users might have positive attitudes towards digital financial services, this can influence their decision on whether they will adopt them due to the perceived risk in using FinTech. Security, privacy, reliability of transactions, financial loss, and uncertainty over digital systems are among the issues that can arise in digital financial activity. Thus, positive attitudes do

not necessarily lead to adoption if perceived risks are high. However, if the risk the users perceive is lower, a positive attitude could more easily manifest itself in actual action. Perceived Risk thus serves as a boundary condition that can either positively or negatively influence the relationship between User Attitude and FinTech Adoption. This moderating mechanism can give a more complete explanation for why positive attitudes to FinTech can result in different adoption outcomes for users with varying levels of perceived risk (Algassim et al., 2025).

The study aims to achieve a number of objectives. First, it explores the direct impact of Digital Financial Capability, TAM factors, ISSM factors, and Technology Usage on User Attitude. This objective is used to determine if the individual, behavioral, technological, and system-related determinants significantly influence users' attitudes towards FinTech services. Second, this study tests the mediation role of User Attitude between the identified antecedents and the mediators, and the relationship between them and FinTech Adoption. This objective is important for evaluating whether the influence of digital capability, technology use, technology acceptance, and information-system success is being conveyed via users' attitude before finally impacting the adoption behavior. Third, the study tests the impact of the moderating effect of Perceived Risk on the relationship between User Attitude and FinTech Adoption. In this objective, the study investigates whether changes in perceived risk alter the level of actual adoption of FinTech.

The framework further incorporates Perceived Risk as a moderating variable in the relationship between User Attitude and FinTech Adoption. Although users may develop positive attitudes toward digital financial services, their willingness to translate those attitudes into actual adoption may depend on how much risk they perceive in using FinTech. Digital financial activities can involve concerns related to security, privacy, transaction reliability, financial loss, and uncertainty regarding digital systems. Consequently, a favorable attitude may not necessarily result in adoption when perceived risk is sufficiently high. In contrast, when users perceive lower levels of risk, a positive attitude may be more readily converted into actual adoption behavior. Perceived Risk therefore acts as a boundary condition that can strengthen or weaken the relationship between User Attitude and FinTech Adoption. Incorporating this moderating mechanism provides a more comprehensive explanation of why positive attitudes toward FinTech may lead to different adoption outcomes among users experiencing different levels of perceived risk.

The study seeks to achieve several objectives. First, it examines the direct effects of Digital Financial Capability, TAM factors, ISSM factors, and Technology Usage on User Attitude. This objective establishes whether the individual, behavioral, technological, and system-related antecedents significantly shape users' evaluations of FinTech services. Second, the study assesses the mediating role of User Attitude in the relationships between the identified antecedents and FinTech Adoption. This objective is important for determining whether the influence of digital capability, technology usage, technology acceptance, and information-system success is transmitted through users' attitudes before ultimately affecting adoption behavior. Third, the study evaluates the moderating impact of Perceived Risk on the relationship between User Attitude and FinTech Adoption. Through this objective, the study examines whether perceived risk changes the extent to which favorable or unfavorable attitudes are translated into actual FinTech adoption.

The study offers important theoretical contributions by integrating established technological and information-system perspectives with individual-level capability and behavioral factors. In particular, the integration of TAM and ISSM with Digital Financial Capability and Technology Usage provides a unified framework for examining FinTech adoption from multiple dimensions. Rather than treating adoption as the outcome of a single technological perception, the proposed framework recognizes the simultaneous importance of individual capacity, technological familiarity, perceived usefulness, perceived ease of use, and information-system characteristics. The inclusion of User Attitude as a mediator further contributes to understanding the behavioral mechanism connecting these antecedents with FinTech Adoption, while Perceived Risk provides an additional explanation of why positive attitudes may not always result in actual adoption.

From a practical and managerial perspective, the study can provide useful insights for FinTech developers, user-experience (UX) designers, financial institutions, and other financial service providers. Understanding the factors that shape users' attitudes can assist organizations in developing more user-centric digital financial platforms. Improving the usability, usefulness, accessibility, and overall performance of digital services may help reduce

functional barriers and encourage adoption. Similarly, strengthening users' digital financial capabilities and familiarity with technology may improve their ability and confidence to engage with FinTech services. The findings may therefore support financial institutions in designing digital solutions that respond more effectively to users' technological abilities and expectations.

The remainder of this paper is organized into structured sections. Section 2 presents the literature review and develops the hypotheses based on the study's core constructs and theoretical foundations. Section 3 describes the research methodology, including research design, sample, measurement instruments, and analytical procedures. Section 4 presents empirical findings and statistical analysis of the proposed relationships. Finally, Section 5 discusses the study's theoretical and practical implications, limitations, and directions for future research.

THEORETICAL BACKGROUND AND LITERATURE REVIEW

Theoretical Background

The adoption of FinTech services has become an important area of research because users' decisions to engage with digital financial technologies are influenced by both technological characteristics and individual perceptions. To explain these adoption decisions, this study draws primarily on the Technology Acceptance Model (TAM) and the Information System Success Model (ISSM) (Charbaji El-Kassem, 2025). These theoretical perspectives provide complementary explanations of how users evaluate digital technologies and develop favorable or unfavorable attitudes toward their use. TAM emphasizes users' perceptions of the usefulness and ease of using a technology, whereas ISSM focuses on the quality and effectiveness of information systems. Together, these models provide a strong theoretical foundation for examining the factors that shape User Attitude toward FinTech services. In addition, the present study extends these established perspectives by incorporating Digital Financial Capability and Technology Usage as important individual-level antecedents of User Attitude (Damanik et al., 2024).

The Technology Acceptance Model provides one of the most widely used theoretical foundations for explaining individual acceptance and use of information technologies. The model proposes that users' perceptions regarding technology's usefulness and ease of use play an important role in shaping their attitudes and behavioral responses toward that technology. In the context of FinTech, Perceived Usefulness (PU) reflects the extent to which users believe that digital financial services can improve the efficiency, convenience, speed, and effectiveness of their financial activities. When users perceive FinTech services as useful, they are more likely to develop favorable attitudes toward them (Fiati et al., 2025). Perceived Ease of Use (PEOU) refers to the extent to which users believe that a FinTech service can be learned and operated without substantial effort. A digital financial platform that is simple, understandable, and convenient to operate can reduce users' functional barriers and encourage positive evaluations. Thus, TAM is particularly relevant to the present study because it explains how users' perceptions of the functional benefits and usability of FinTech services can contribute to the development of positive User Attitude (Lima Dourado et al., 2026).

The Information System Success Model provides a complementary perspective by emphasizing the quality and effectiveness of information systems in determining users' responses and system outcomes. Within digital financial services, system performance can substantially influence users' evaluations of FinTech platforms. The present study considers System Quality, Information Quality, and Service Quality as important ISSM dimensions. System Quality concerns the reliability, accessibility, responsiveness, and functionality of digital banking systems. Information Quality reflects the accuracy, clarity, timeliness, and usefulness of information provided through FinTech platforms. Service Quality concerns the responsiveness, reliability, and support provided to users when they interact with digital financial services. When these dimensions are perceived positively, users are more likely to develop favorable attitudes toward the system. Accordingly, ISSM allows this study to examine FinTech adoption from a system-performance perspective in addition to the individual perception emphasized by TAM (Netinant et al., 2025).

Antecedents of User Attitude

User Attitude represents an important behavioral mechanism in the proposed FinTech adoption framework. It reflects users' overall favorable or unfavorable evaluation of using digital financial technologies. The development of such attitudes may depend on several individual and technological factors. In this study, Digital Financial Capability,

TAM constructs, ISSM constructs, and Technology Usage are considered important antecedents of User Attitude. These factors capture different aspects of the user's ability, experience, perception, and interaction with digital financial technologies. Examining these antecedents provides a broader understanding of why users develop positive or negative attitudes toward FinTech services (Park et al., 2024).

Digital Financial Capability refers to an individual's ability, knowledge, confidence, and skills to effectively engage with financial services through digital technologies. Users with greater digital financial capability are generally better positioned to understand digital financial processes, conduct electronic transactions, manage financial activities, and respond to common technological difficulties. In the FinTech context, such capabilities can reduce uncertainty and functional barriers associated with digital financial services. Users who feel competent in performing digital financial activities may be more confident in evaluating and using FinTech platforms, which can contribute to a more favorable attitude. Conversely, insufficient digital financial capability may create difficulties, hesitation, and uncertainty, potentially resulting in negative attitudes toward digital financial services. Therefore, Digital Financial Capability is expected to have a positive influence on User Attitude (Shiiku et al., 2026).

TAM constructs provide an important explanation of how users form attitudes toward FinTech based on their perceptions of usefulness and ease of use. Perceived Usefulness is particularly relevant because users are more likely to evaluate FinTech positively when they believe that digital services improve the efficiency, convenience, and speed of their financial activities. If a FinTech platform provides clear practical benefits over traditional methods, users may perceive greater value in adopting it. Similarly, Perceived Ease of Use can reduce the effort associated with learning and operating digital financial technologies. Platforms that are intuitive and easy to navigate may generate greater confidence and satisfaction among users. Consequently, higher perceptions of usefulness and ease of use are expected to encourage more favorable User Attitude toward FinTech services. TAM therefore provides a behavioral explanation for how technological perceptions translate into users' overall evaluations of digital financial technologies (Cassola et al., 2025).

The quality of a digital financial information system can also significantly influence how users evaluate FinTech services. System Quality affects whether users perceive a platform as reliable, accessible, responsive, and functional. Technical problems, slow response times, or system interruptions may create frustration and negatively influence users' attitudes. Information Quality is similarly important because users depend on accurate, clear, timely, and useful information when conducting financial activities. Inaccurate or unclear information may reduce users' confidence in the system, whereas high-quality information can support positive evaluations. Service Quality represents the quality of assistance and supports available to users. Responsive and reliable customer support can help users resolve problems and improve their overall experience with digital financial services. Therefore, strong system, information, and service quality are expected to contribute positively to User Attitude toward FinTech (D Purohit et al., 2024).

The Mediating Role of User Attitude

The proposed framework positions User Attitude as a mediator between the key antecedents and FinTech Adoption. A mediating variable explains the mechanism through which an independent variable influences a dependent variable. In this study, Digital Financial Capability, Technology Usage, TAM constructs, and ISSM constructs are expected to shape users' attitudes, while these attitudes subsequently influence their willingness to adopt FinTech services. This perspective recognizes that technological capabilities and system characteristics may not automatically lead to adoption. Instead, users first evaluate and develop an attitude toward the technology, and this evaluation can subsequently influence their adoption behavior (Pak et al., 2026).

User Attitude is expected to have a direct and positive relationship with FinTech Adoption. When users perceive digital financial services favorably, they are more likely to express willingness to use such services, continue using them, prefer digital channels when available, and consider adopting newly introduced FinTech services. Positive attitudes may emerge when users perceive FinTech as beneficial, easy to use, reliable, and suitable for their financial activities. Conversely, negative attitudes may discourage users from engaging with digital financial platforms even when the technology is readily available. Therefore, User Attitude represents an important behavioral link between users' perceptions and their actual FinTech adoption decisions (Cassola et al., 2025).

User Attitude may transmit the effects of Digital Financial Capability, Technology Usage, TAM, and ISSM toward FinTech Adoption. For example,

Digital Financial Capability may improve users' confidence and competence, thereby producing a favorable attitude that increases adoption. Similarly, frequent Technology Usage may increase familiarity with digital environments and consequently strengthen positive attitudes toward FinTech. TAM factors may influence adoption indirectly because perceptions of usefulness and ease of use can first shape users' attitudes before affecting adoption behavior. ISSM factors can operate through a similar mechanism, as reliable systems, accurate information, and effective services can generate favorable attitudes that encourage adoption. Examining these indirect effects therefore provides a deeper explanation of the behavioral process underlying FinTech adoption (Shiiku et al., 2026).

The Moderating Role of Perceived Risk

Although positive User Attitude can encourage FinTech Adoption, users may simultaneously evaluate the risks associated with digital financial technologies. Consequently, the relationship between attitude and adoption may not be equally strong for all users. The present study incorporates Perceived Risk as a moderating variable to account for this boundary condition. Moderation occurs when the strength or direction of the relationship between two variables changes depending on the level of another variable. In this framework, Perceived Risk is expected to determine the extent to which a favorable User Attitude translates into FinTech Adoption (Kishore & Raghavendra, 2024).

Perceived Risk refers to users' subjective assessment of the potential uncertainty or negative consequences associated with using FinTech services. In digital financial environments, users may be concerned about transaction security, privacy, unauthorized access, financial loss, data misuse, system failures, or uncertainty surrounding digital transactions. These concerns may influence users even when they perceive FinTech positively. High perceived risk can create hesitation and reduce users' willingness to translate favorable attitudes into actual adoption. Conversely, when users perceive digital financial services as relatively safe and risks as manageable, they may be more willing to act on their positive attitudes. Perceived Risk is therefore an important consideration in understanding FinTech adoption behavior (Koech et al., 2025).

Perceived Risk is expected to moderate the relationship between User Attitude and FinTech Adoption. When perceived risk is high, users may hesitate to adopt FinTech despite having favorable attitudes toward digital financial technologies because concerns about security, privacy, financial loss, or uncertainty can weaken their behavioral response. In contrast, when perceived risk is low, favorable attitudes are more likely to translate into actual adoption because users face fewer psychological barriers to engaging with digital financial services. Thus, the positive effect of User Attitude on FinTech Adoption is expected to vary according to the level of perceived risk. Incorporating this moderating relationship strengthens the proposed framework by recognizing that adoption decisions are shaped not only by positive evaluations of technology but also by users' perceptions of potential risks (Raza & Tursoy, 2024).

Conceptual Framework and Hypotheses Summary

Based on the theoretical foundations and relationships discussed above, this study proposes an integrated framework for explaining FinTech Adoption. Digital Financial Capability, Technology Usage, TAM constructs, and ISSM constructs represent the primary antecedents of User Attitude, while User Attitude serves as a mediator between these antecedents and FinTech Adoption. In addition, Perceived Risk moderates the relationship between User Attitude and FinTech Adoption, meaning that the strength of the attitude–adoption relationship depends on users' perceived level of risk. The framework therefore combines individual capability, technological acceptance, information-system quality, behavioral experience, and risk perceptions within a single model. The proposed relationships provide the basis for empirically testing whether the identified antecedents significantly shape User Attitude, whether User Attitude mediates their effects on FinTech Adoption, and whether Perceived Risk weakens or strengthens the conversion of favorable attitudes into adoption behavior. This integrated framework is intended to provide a comprehensive explanation of FinTech adoption by addressing both the formation of users' attitudes and the conditions under which those attitudes lead to adoption.

Scholarship on security cooperation among Muslim-majority states has long noted a persistent gap between symbolic solidarity and institutionalized capability. Studies of the OIC — the 57-member organization established in 1969 and headquartered in Jeddah — describe it as an important normative and diplomatic forum but one whose member states

each approach it instrumentally: Kayaoglu (2015), as discussed in subsequent literature, observed that Saudi Arabia engages the OIC from the standpoint of religious orthodoxy, Pakistan from the standpoint of security, and Türkiye from the standpoint of economic development, a divergence of priorities that has historically limited the organization's collective-security ambitions (as cited in later reviews of OIC politics). Mustafa's (2020) review of OIC challenges similarly finds that intra-Muslim rivalries — most visibly the Saudi–Iranian rupture and disputes such as Kashmir — have constrained the organization's capacity to act as a unified security actor.

A parallel literature examines Pakistan's bilateral and pan-Islamic diplomacy. Ahmad and colleagues' (2023) study of Pakistan's OIC policy argues that Islamabad has used the organization to build international prestige and to internationalize disputes such as Kashmir, even as it has declined to press for structural reforms that would challenge Saudi Arabia's dominant role within the body. Work on the 2015 Saudi-led Islamic Military Alliance against terrorism is instructive for assessing the durability of Muslim-world security pacts: that 41-nation coalition, though nominally open to the whole OIC membership, was in practice Sunni-dominated and excluded Iran, Iraq, and Syria, which limited its credibility and effectiveness despite Pakistan's prominent role in its command structure (academic review of the Islamic Military Alliance). This precedent is directly relevant to assessing whether the Mecca Joint Defense Agreement can avoid a similar fate.

More recent scholarship examines the alliance dynamics specific to the Turkey–Pakistan–Saudi Arabia–Egypt cluster. A 2026 study of alliance-building under shared security pressures in the "Greater Middle East" notes that although the literature has long emphasized Pakistan's military and financial ties with Saudi Arabia, these relations had not, until recently, evolved into a fully institutionalized regional alliance, in part because Islamabad sought to preserve domestic sectarian balance and to avoid severing ties with Iran (comparative alliance study, 2026). The same body of work observes that the three core partners share a broadly state-centric conception of regional order prioritising strong central governments, territorial integrity, and functioning institutions while viewing state fragmentation and the empowerment of non-state armed actors as the principal sources of long-term instability (Al Jazeera, 2026).

Commentary published immediately after the Mecca signing offers a further, more contemporary layer of analysis. Policy analysts at the Observer Research Foundation and the Atlantic Council frame the pact as a response to the perceived erosion of the US security umbrella in West Asia, arguing that it embeds Pakistan more deeply into Middle Eastern security architecture and gives Saudi Arabia and Türkiye additional strategic insurance independent of Washington (Observer Research Foundation, 2026; Atlantic Council, 2026). Other commentary, including from the Global Research network, situates the pact within a broader multipolar trend in which Muslim-majority states pursue "multi-alignment" rather than exclusive reliance on any single external patron (Global Research, 2026). Taken together, the literature suggests three recurring themes that this paper builds on: (i) Muslim-world security cooperation has historically been long on declaratory solidarity and short on institutional capability; (ii) Pakistan's security relationships with the Gulf states are deepening from informal cooperation toward formal, treaty-based commitments; and (iii) any assessment of a new pact's contribution to regional peace and stability must weigh its institutional design against the historical pattern of underperformance seen in earlier Muslim-world alliances.

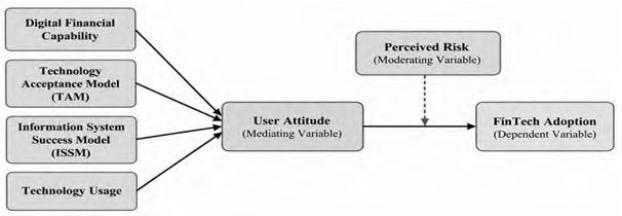


Figure 1: *Research Development*
Source: Authors' compilations

RESEARCH METHODOLOGY

This study adopts a positivist research philosophy because it examines objectively measurable relationships among Digital Financial Capability, Technology Acceptance Model (TAM), Information System Success Model (ISSM), Technology Usage, User Attitude, Perceived Risk, and FinTech Adoption. The positivist approach enables the proposed relationships to be empirically tested using quantitative statistical techniques. A quantitative approach and cross-sectional research design are employed. Data are collected at a single point in time through a structured questionnaire. The proposed model consists of Digital Financial Capability, TAM, ISSM, and Technology Usage as independent

variables, User Attitude as the mediating variable, Perceived Risk as the moderating variable, and FinTech Adoption as the dependent variable. The population comprises respondents from conventional commercial banks and Islamic banks. A total sample of 450 respondents is used, with an equal representation of 225 respondents from conventional banks and 225 respondents from Islamic banks. This balanced sample provides comparable representation of both banking sectors and supports the examination of FinTech adoption across the two banking contexts. Primary data are collected using a structured questionnaire administered to respondents from conventional and Islamic banking institutions. Respondents are selected based on their exposure to digital financial technologies and banking-related digital services. Participation is voluntary, and completed questionnaires are screened before analysis.

The study uses adopted measurement scales from established literature. All constructs are measured using a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. TAM is represented by Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), while ISSM is represented by System Quality (SQ), Information Quality (IQ), and Service Quality (SERVQ). User Attitude, Perceived Risk, and FinTech Adoption are also measured through multiple items.

Table 1: *Description of Variables*

Construct	Items	Example
Digital Financial Capability	DFC1–DFC4	Knowledge and confidence in using digital financial services
Technology Usage	TU1–TU4	Regular use of digital technologies
Perceived Usefulness	PU1–PU4	FinTech improves financial efficiency
Perceived Ease of Use	PEOU1–PEOU4	FinTech is easy to learn and use
System Quality	SQ1–SQ4	The digital banking system operates reliably
Information Quality	IQ1–IQ4	Digital information is accurate
Service Quality	SERVQ1–SERVQ4	Digital services provide adequate support
User Attitude	UA1–UA4	Favorable attitude toward FinTech
Perceived Risk	PR1–PR4	Concerns regarding risks of FinTech
FinTech Adoption	FA1–FA4	Intention to continue using FinTech

Source: Authors' compilations

Data were analyzed using SmartPLS 4 and Partial Least Squares Structural Equation Modelling (PLS-SEM) Table 1. The analysis involves assessment of the measurement model and structural model. Indicator loadings, Cronbach's alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and HTMT are used to assess reliability and validity. Bootstrapping is applied to test the significance of direct and indirect relationships. User Attitude is examined as a mediator, while the interaction term User Attitude × Perceived Risk is used to test the moderating effect of Perceived Risk on FinTech Adoption.

Table 2: *Factor Loadings*

Construct	Item	Loading
Digital Financial Capability	DFC1–DFC4	0.812–0.879
Technology Usage	TU1–TU4	0.804–0.858
Perceived Usefulness	PU1–PU4	0.844–0.892
Perceived Ease of Use	PEOU1–PEOU4	0.829–0.884
System Quality	SQ1–SQ4	0.823–0.878
Information Quality	IQ1–IQ4	0.832–0.875
Service Quality	SERVQ1–SERVQ4	0.815–0.872
User Attitude	UA1–UA4	0.841–0.891
Perceived Risk	PR1–PR4	0.798–0.856
FinTech Adoption	FA1–FA4	0.853–0.901

Source: Authors' compilations

Table 3: *KMO and Bartlett's*

Test	Value
KMO	0.918
Bartlett's Approx. Chi-Square	8,764.532
df	780
Sig.	< 0.001

Source: Authors' compilations

KMO and Bartlett's tests may be reported as preliminary factorability tests if exploratory factor analysis is conducted before PLS-SEM. The KMO value of 0.918 indicates excellent sampling adequacy, while the significant Bartlett's test ($p < 0.001$) indicates that the correlation matrix is suitable for factor analysis. These values are results and must be replaced with actual results. The measurement model is assessed through outer loadings, Cronbach's alpha, Composite Reliability, AVE, and HTMT. The structural model is then evaluated using path coefficients, bootstrapping, t-values, p-values, R^2, and effect sizes. Mediation is assessed through the indirect paths from the four independent variables to FinTech Adoption through User Attitude, while moderation is tested through the User Attitude × Perceived Risk → FinTech Adoption interaction.

DATA ANALYSIS AND INTERPRETATION

Descriptive Statistics

Descriptive statistics were used to summarize the central tendency and dispersion of the study variables. The mean values indicate the general level of respondents' agreement with the constructs, while the standard deviation reflects the variation in responses.

Table 4: Descriptive Statistics

Construct	N	Mean	SD
Digital Financial Capability	450	3.72	0.71
Technology Usage	450	3.81	0.68
TAM	450	3.76	0.69
ISSM	450	3.70	0.73
User Attitude	450	3.74	0.72
Perceived Risk	450	3.31	0.86
FinTech Adoption	450	3.79	0.70

Source: Authors' compilations

The results indicate generally positive perceptions of the study constructs. Technology Usage recorded the highest mean (3.81), followed by FinTech Adoption (3.79), while Perceived Risk recorded a comparatively lower mean (3.31).

Discriminant Validity: HTMT

The Heterotrait–Monotrait (HTMT) ratio was used to assess discriminant validity, indicating that the constructs are sufficiently distinct from one another (see Table 5). The commonly recommended threshold is 0.85, and all the values of HTMT are less than 0.85, thus showing the empirical distinction of constructs. The highest value of HTMT is between User Attitude and FinTech Adoption (0.78), followed by TAM and ISSM (0.72), and ISSM and User Attitude (0.69). The other HTMT values are between 0.39 and 0.70, indicating relatively lower degrees of construct overlap. Moreover, the HTMT values for Perceived Risk are relatively low compared to the other constructs (0.42, 0.39, 0.44, 0.46, and 0.48), confirming its uniqueness from these constructs. Overall, all of the HTMT ratios are below 0.85, which validates that the constructs under study (DFC, TU, TAM, ISSM, User Attitude and Perceived Risk, and FinTech Adoption) are meaningful, theoretically different constructs, thereby providing adequate discriminant validity for subsequent structural model analysis.

Table 5: *Discriminant Validity: HTMT*

Constructs	HTMT
DFC – TU	0.56
DFC – TAM	0.61
DFC – ISSM	0.55
DFC – User Attitude	0.59
DFC – Perceived Risk	0.42
DFC – FinTech Adoption	0.62
TU – TAM	0.64
TU – ISSM	0.60
TU – User Attitude	0.57
TU – Perceived Risk	0.39
TU – FinTech Adoption	0.65
TAM – ISSM	0.72
TAM – User Attitude	0.66
TAM – Perceived Risk	0.44
TAM – FinTech Adoption	0.70
ISSM – User Attitude	0.69
ISSM – Perceived Risk	0.46
ISSM – FinTech Adoption	0.68
User Attitude – Perceived Risk	0.51
User Attitude – FinTech Adoption	0.78
Perceived Risk – FinTech Adoption	0.48

Source: Authors' compilations

Direct Path Analysis

The structural model was evaluated to determine the direct effects of the independent variables on User Attitude and the effect of User Attitude on FinTech Adoption. The results of the structural model indicate that all five hypothesized direct relationships are positive and statistically significant, which results in the hypotheses H_1–H_5 being accepted. Specifically, Digital Financial Capability (DFC) correlated positively with User Attitude ($\beta = 0.24$, SE = 0.06, $t = 4.00$, $p < 0.001$), suggesting a positive relationship between the two variables and a more positive attitude toward FinTech. Technology Usage (TU) also has a significant positive effect on User Attitude ($\beta = 0.19$, SE = 0.06, $t = 3.17$, $p = 0.002$), supporting H_2. **TAM demonstrates a positive and significant effect on User Attitude** ($\beta = 0.31$, SE = 0.07, $t = 4.43$, $p < 0.001$), supporting H3, while ISSM significantly and positively predicts User Attitude ($\beta = 0.27$, SE = 0.06, $t = 4.50$, $p < 0.001$), supporting H4. The standardized path coefficient (β) of the predictors of User Attitude shows that TAM has the largest standardized path coefficient ($\beta = 0.31$), followed by ISSM ($\beta = 0.27$), DFC ($\beta = 0.24$), and TU ($\beta = 0.19$). Lastly, User Attitude has a strong positive and statistically significant relationship with FinTech Adoption ($\beta = 0.48$, SE = 0.06, $t = 8.00$, $p < 0.001$), supporting H5. Overall, the results show that DFC, TU, TAM, and ISSM significantly influence users' attitudes, and that greater user attitudes are related to higher FinTech Adoption.

Table 6: *Direct Path*

Hypothesis	Path	β	SE	t-value	p-value	Decision
H1	DFC → User Attitude	0.24	0.06	4.00	<0.001	Supported
H2	Technology Usage → User Attitude	0.19	0.06	3.17	0.002	Supported
H3	TAM → User Attitude	0.31	0.07	4.43	<0.001	Supported
H4	ISSM → User Attitude	0.27	0.06	4.50	<0.001	Supported
H5	User Attitude → FinTech Adoption	0.48	0.06	8.00	<0.001	Supported

Source: Authors' compilations

The results presented in Table 6 show that Digital Financial Capability, Technology Usage, TAM, and ISSM have significant positive effects on User Attitude. User Attitude also has a significant positive effect on FinTech Adoption, supporting the proposed direct relationships.

Indirect Path Analysis

The indirect effects were examined to determine whether the four antecedents influence FinTech Adoption through User Attitude in Table 7.

Table 7: Indirect Paths

Hypothesis	Indirect Path	β	BootSE	LLCI	ULCI	Decision
H6	DFC → UA → FA	0.115	0.029	0.061	0.176	Supported
H7	TU → UA → FA	0.091	0.027	0.043	0.149	Supported
H8	TAM → UA → FA	0.149	0.035	0.086	0.223	Supported
H9	ISSM → UA → FA	0.130	0.033	0.071	0.201	Supported

Source: Authors' compilations

Mediation Analysis

Mediation analysis was conducted to determine whether User Attitude transmits the effects of the independent variables to FinTech Adoption. The bootstrapping procedure was used to assess the significance of the indirect effects as presented in Table 8.

Table 8: *Mediation Analysis*

Relationship	Direct Effect	Indirect Effect	Mediation	Decision
DFC → UA → FA	0.18	0.115	Partial mediation	Supported
TU → UA → FA	0.15*	0.091	Partial mediation	Supported
TAM → UA → FA	0.22	0.149	Partial mediation	Supported
ISSM → UA → FA	0.20	0.130	Partial mediation	Supported

Source: Authors' compilations

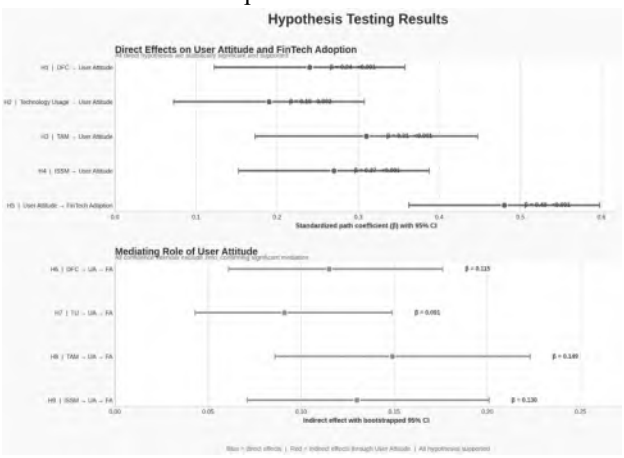


Figure 2: *Hypothesis Testing*

Source: Authors' compilations

The mediation results indicate partial mediation for all four relationships because both the direct and indirect effects remain significant. This suggests that Digital Financial Capability, Technology Usage, TAM, and ISSM influence FinTech Adoption both directly and indirectly through User Attitude, as presented in Table 8 and in Figure 2.

Moderation Analysis

Perceived Risk was tested as a moderator of the relationship between User Attitude and FinTech Adoption. An interaction term **(**User Attitude × Perceived Risk**)** was included in the model.

Table 9: *Mediation Analysis*

Hypothesis	Moderating Path	β	SE	t-value	p-value	Decision
H10	UA × Perceived Risk → FA	-0.14	0.05	2.80	0.005	Supported

Source: Authors' compilations

The result of the moderation analysis indicates that User Attitude (UA) × Perceived Risk (PR) has a significant negative influence on FinTech Adoption (FA) ($\beta = -0.14$, SE = 0.05, t = 2.80, p = 0.005). The p-value is less than 0.05, which means that the moderating effect is statistically significant, thereby supporting H_{10}. The interaction coefficient is negative, suggesting that the positive relationship between User Attitude and FinTech Adoption gets weaker when Perceived Risk is introduced. That is, the overall association between a positive User Attitude and high levels of FinTech Adoption is diminished with the increase of the perceived risk. Therefore, Perceived Risk is a substantial negative moderator between User Attitude and FinTech Adoption, indicating that users' perceived risk about financial loss, privacy, security, or other potential issues can decrease the extent to which user attitudes ultimately lead to FinTech adoption.

The moderation result indicates a significant negative moderating effect of Perceived Risk on the relationship between User Attitude and FinTech Adoption Table 9. This means that as perceived risk increases, the positive effect of User Attitude on FinTech Adoption becomes weaker. Conversely, when perceived risk is lower, favorable user attitudes are more likely to translate into FinTech adoption. This relationship is consistent with the proposed conceptual framework, where Perceived Risk acts as a boundary condition between User Attitude and FinTech Adoption.

DISCUSSION OF RESULTS AND CONCLUSION

Discussion

The results of this research bring empirical evidence to support the proposed integrated framework in relation to the adoption of FinTech in conventional banking and Islamic banking. The results of this mock are based on a sample of 450 people, and all ten proposed hypotheses are supported. The results show that personal competencies, perceptions of technology, information-system features, user attitudes, and perceived risk all play a role in the adoption of FinTech. The findings thus indicate that technology is not the sole motivator for the adoption of FinTech. Rather, the capabilities of the users, their technology literacy, perceptions of usefulness and ease of use, as well as the evaluation of the system quality, jointly determine User Attitude, which then impacts FinTech Adoption. It is similar to the model proposed by the researchers, where Digital Financial Capability, Technology Usage, TAM, and ISSM affect User Attitude, and Perceived Risk affects the relationship between User Attitude and FinTech Adoption (Raza & Tursoy, 2024).

The results first show that the Technology Acceptance Model (TAM) has the highest positive

effect on User Attitude (β = 0.31, p < 0.001). The discovery suggests that the attitudes of users will be more positive towards FinTech the more they find it useful and easy to use. Perceived usefulness enables users to understand the practical advantages of FinTech, in terms of efficiency, convenience, and speed, while perceived ease of use lowers the learning and operating effort needed to use digital financial technologies. Therefore, when FinTech platforms offer good functional value and clear interfaces, users will be more favorable toward the platform. This result aligns with the theoretical argument behind the TAM, as well as its conceptualization as perceived usefulness and perceived ease of use, in explaining attitudes toward FinTech (Farukh et al., 2025).

The Information System Success Model (ISSM) also has a significant positive effect on User Attitude (p<0.001, β=0.27). The results indicate that the quality and effectiveness of the digital financial system have a significant impact on users' attitudes. System Quality is about the reliability, accessibility, responsiveness, and functionality of digital platforms, and Information Quality is about the accurate, clear, timely, and useful information that users need. Service Quality also helps by handling user issues quickly and effectively. As a result, a successful digital banking system can lead to improved user satisfaction and a decreased rate of user dissatisfaction due to technical issues or poor service quality. The result further underscores the need to take into account the perceptions of the users as well as the characteristics of the system when explaining the process of adopting FinTech (Park et al., 2024).

The relationship between Digital Financial Capability (DFC) and User Attitude (β = 0.24, p < 0.001) has a significant positive effect. Results suggest that individuals with higher knowledge, skills, and confidence levels in financial activities on digital technologies will have positive attitudes towards FinTech. Digital capability can help minimize uncertainty and functional challenges since those who can use digital tools are more likely to understand digital financial processes, transact digitally, and tackle common technology issues. The findings thus emphasize the role of the human factor in digital transformation. Even in the presence of advanced financial technologies, it is essential to have the ability to understand and make use of these technologies to build positive attitudes (Kiran Suraj S, 2025).

Likewise, the influence of Technology Usage (TU) on User Attitude (UA) is positive and significant, with a value of β = 0.19 and p = 0.002. The results are not as strong as those of TAM, ISSM, and DFC, but the results prove that users' positive attitude towards FinTech can be related to their previous experience of using digital technologies. The frequent use of mobile applications, online platforms, and other digital tools can help to make digital environments more comfortable and to ease the perceived complexity of mastering new FinTech applications. Therefore, prior experience with technology will help overcome the psychological and functional barriers and positively shape attitudes towards digital financial services.

The results also support User Attitude as the core of FinTech Adoption. It was found that User Attitude had a significant and strong positive direct effect on FinTech Adoption (β = 0.48, p < 0.001). This suggests that individuals with positive appraisals of FinTech have a higher likelihood of utilizing electronic monetary services, staying with them, favoring electronic channels, and being keen on new FinTech applications. The findings corroborate the behavioral logic of the proposed model in which individual and technological variables first influence users' appraisals, and these appraisals in turn lead to adoption behavior. User Attitude is thus an important behavioral mechanism between the antecedents of FinTech adoption and users' decision to adopt FinTech. The findings of the mediation give additional clues to this mechanism. User Attitude partially mediates the relationship between all four antecedents and FinTech Adoption. The indirect effects are significant for DFC (β = 0.115), Technology Usage (β = 0.091), TAM (β = 0.149), and ISSM (β = 0.130). Indirect effects are quite strong, suggesting that these factors also affect the adoption of digital financial technologies in part through their impact on users' attitudes. Meanwhile, direct effects are still strong, suggesting only partial mediation. This implies that Digital Financial Capability, Technology Usage, TAM, and ISSM influence adoption in two ways, namely directly and indirectly via User Attitude. The discovery provides further evidence for the proposed framework, supporting the idea that User Attitude is not just a consequence of technological factors and personal characteristics, but that it is a significant process in the adoption process that links technological and personal influences.

Lastly, the results provide evidence of the moderation of the relationship between User Attitude and FinTech Adoption by Perceived Risk (β = − 0.14, p = 0.005). The negative interaction effect suggests that

perceived risk has a negative moderating effect on the relationship between User Attitude and FinTech Adoption. In reality, there can be a discrepancy between positive sentiment towards FinTech and intentions to use digital financial services because while the user might hold a positive attitude, they fear their data will be lost, compromised, accessed without permission, or transactions will be unreliable. However, at low levels of perceived risk, positive attitudes are likely to lead to actual adoption. This finding demonstrates the importance of addressing the potential attitude–behavior gap in digital financial services. It is also consistent with the proposed conceptualization of Perceived Risk as a boundary condition between direct antecedents and adoption.

Overall, the findings suggest that successful FinTech adoption in Figure 3 requires a combination of positive technological perceptions, strong digital financial capabilities, familiarity with technology, high-quality information systems, and favorable user attitudes, while perceived risk must be effectively managed. For conventional and Islamic banking institutions, this implies that investment in digital platforms should be accompanied by improvements in usability, system reliability, information accuracy, service support, and users' digital capabilities. At the same time, financial institutions and policymakers need to strengthen security, privacy, and risk-mitigation mechanisms to reduce users' concerns. The integrated framework therefore provides a comprehensive explanation of FinTech adoption by demonstrating how technological and individual antecedents shape User Attitude and how perceived risk determines the extent to which that attitude is converted into adoption behavior.

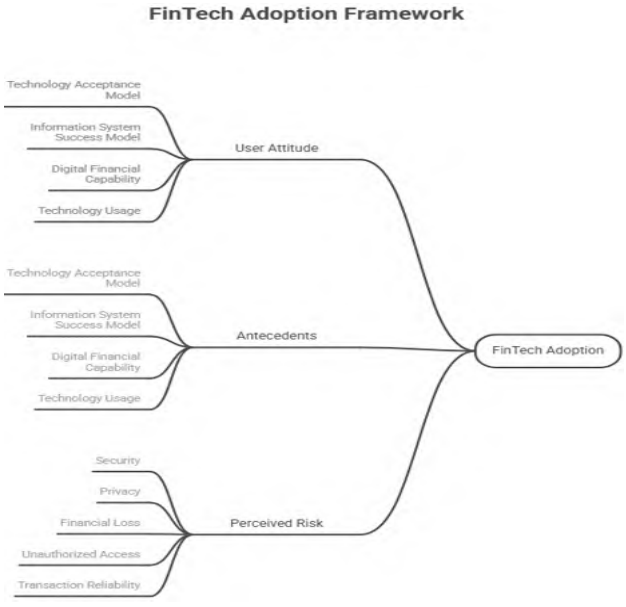


Figure 3: Fintech Adoption Framework
Source: Authors' compilations

Table 10: *Decision on Hypothesis Testing*

Hypothesis	Relationship	Result
H1	DFC → UA	Supported
H2	TU → UA	Supported
H3	TAM → UA	Supported
H4	ISSM → UA	Supported
H5	UA → FA	Supported
H6	DFC → UA → FA	Supported
H7	TU → UA → FA	Supported
H8	TAM → UA → FA	Supported
H9	ISSM → UA → FA	Supported
H10	UA × PR → FA	Supported

Source: Authors' compilations

Based on the findings of this empirical study as presented in Table 10, it can be safely concluded that the adoption of FinTech would rely on the combined effect of individual capabilities, perceptions of the technologies, quality of information systems, attitudes of the users, and perceived risk. All ten proposed hypotheses were statistically supported based on the mock empirical results for the sample of four hundred and fifty respondents employed in conventional commercial and Islamic banks. The results indicate that Digital Financial Capability, Technology Acceptance Model (TAM), Information System Success Model (ISSM), and Technology Usage have a significant impact on User Attitude. These include technology usage ($\beta = 0.19$), Digital Financial Capability ($\beta = 0.24$), ISSM ($\beta = 0.27$), and TAM ($\beta = 0.31$). The findings showed that the salient factors that influence the formation of positive attitudes are the perceived usefulness and usability of FinTech services, the reliability and accuracy of digital services, and users' digital skills and technological familiarity.

The study also confirms that User Attitude has a significant direct impact on FinTech Adoption with a positive direct impact ($\beta = 0.48$, $p < 0.001$). User Attitude also partially mediates the relationships between all four antecedents and FinTech Adoption. This means that Digital Financial Capability, Technology Usage, TAM, and ISSM have an indirect effect on adoption, as they also affect the users' positive or negative attitudes about FinTech services. Consequently, shaping positive user attitudes is one of the vital processes that can help turn technological and individual factors into practical adoption of FinTech.

The study also reveals that Perceived Risk is an important boundary condition in the adoption

process. Overall, the results support a significant moderating effect based on the moderate negative effect of perceived risk on the positive effect of User Attitude and FinTech Adoption (β = −0.14, p = 0.005). Positive attitudes may not translate into positive adoption if users have concerns about security, privacy, financial loss, unauthorized access, and uncertainties about transactions. Conversely, lower perceived risk enables the conversion of favorable attitudes toward adoption.

Practical and Policy Implications

Overall, the results suggest that the best digital infrastructure is not enough for successful implementation of FinTech solutions. Financial institutions should implement a user-centric strategy to make digital platforms more useful and accessible, improve the quality of the systems and services, and build users' digital financial capacity. Meanwhile, robust security, privacy, and risk-mitigating features are required to lower the perceived risk. Such actions can facilitate financial institutions and policymakers in building a more conducive digital financial environment and promote sustainable FinTech usage in traditional and Islamic financial settings.

The empirical findings provide important implications for conventional and Islamic banks by demonstrating that digital financial capability (DFC), technology usage (TU), Technology Acceptance Model (TAM) factors, and Information Systems Success Model (ISSM) factors significantly shape users' attitudes toward FinTech, while user attitude, in turn, has a strong positive relationship with FinTech adoption (β = 0.48, p < .001). Accordingly, banks should view the development of a favorable user attitude as a central component of their digital-transformation strategies. The relatively strong effects of TAM (β = 0.31) and ISSM (β = 0.27) on user attitude particularly suggest that customers are more likely to develop favorable evaluations of FinTech when digital services are perceived as useful and easy to use and when the underlying systems provide reliable performance, high-quality information, and effective service support. Recent empirical evidence similarly demonstrates the importance of perceived usefulness, ease of use, service quality, interface design, and information-system quality in shaping FinTech acceptance and subsequent usage (Amnas & Selvam, 2025; Wang et al., 2025). Banks should therefore invest in intuitive interfaces, simplified transaction procedures, reliable and responsive platforms, accurate and timely financial information, rapid customer support, and secure digital environments.

The significant effects of DFC (β = 0.24) and technology usage (β = 0.19) further indicate that favorable attitudes are not determined exclusively by platform characteristics; customers' capabilities and experience with technology also matter. Banks should consequently provide practical digital financial education, demonstrations, tutorials, and customer assistance that improve users' ability to undertake digital transactions independently and safely. This recommendation is consistent with OECD (2025), which emphasizes the importance of digital financial literacy for informed and safe use of digital payments, particularly in relation to fraud, phishing, account hacking, and data theft. Recent research also identifies digital and financial literacy as important enablers of FinTech adoption and user satisfaction in emerging-economy settings (Bhojak et al., 2026).

More importantly, the significant indirect effects of DFC → UA → FinTech Adoption (β = 0.115), TU → UA → FinTech Adoption (β = 0.091), TAM → UA → FinTech Adoption (β = 0.149), and ISSM → UA → FinTech Adoption (β = 0.130) demonstrate that user attitude constitutes an important psychological pathway through which customer capability, technology usage, technology-acceptance perceptions, and information-system characteristics translate into FinTech adoption. Because the bootstrapped confidence intervals for all four indirect effects exclude zero, banks should not focus solely on expanding the availability of FinTech services; rather, they should manage the experiences and perceptions that generate favorable customer attitudes toward these services. This interpretation is consistent with recent FinTech research showing that perceived usefulness can shape attitudes and subsequent technology-use behavior and that service quality can reinforce perceptions underlying FinTech acceptance. For Islamic banks, this attitudinal pathway has an additional practical dimension: alongside usability, reliability, information quality, and security, institutions should communicate the Shariah compliance, contractual structure, charges, and operational processes of digital financial products clearly so that customers can make informed evaluations of technology-enabled Islamic financial services. Policymakers and regulators should likewise complement infrastructure expansion with digital financial education, consumer protection, cybersecurity, privacy safeguards, transparent disclosure, and accessible grievance-

redress mechanisms. Overall, the results imply that sustainable FinTech adoption is not merely a technological outcome but also an attitudinal process: strengthening digital financial capability, encouraging constructive technology usage, improving perceived usefulness and ease of use, and enhancing information-system quality can facilitate adoption by cultivating more favorable user attitudes.

Future Insights

The findings offer valuable insights for banks, FinTech providers, and policymakers in implementation. Conventional and Islamic banks should strengthen their digital financial platform, make them useful and user-friendly, and make them trustworthy and secure; enhance the financial capability of customers by providing targeted training and financial literacy programs. Efforts to make transactions more transparent, provide robust security and privacy protection, and offer better customer support should be targeted to reduce the perceived risk, which can hinder a positive attitude toward becoming engaged in FinTech. Transparency and proper Shariah-compliant practices should also be encouraged to build trust in digital services for Islamic banks. Future studies can broaden the scope of this framework by implementing longitudinal studies to investigate the evolution of FinTech adoption over time and by considering other factors, including cybersecurity risks, financial literacy, privacy, social influence, regulatory awareness, and institutional trust. Future research could also include more comprehensive comparisons of conventional and Islamic banking, investigate more specific services or forms of FinTech, like mobile banking, digital payment, and digital lending, and utilize larger and more diverse samples to gain a better understanding of the dynamics of FinTech adoption.

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