Artificial Intelligence and Financial Decision-Making in Nigeria: The Mediating Role of Fintech

Iroh, Cosmas Emeziem; Nnedu, Stanley Chinonso; Okonkwo Okechukwu PhD

Department of Accounting, Veritas University Abuja, Nigeria

DOI: https://doi.org/10.51244/IJRSI.2026.1306000036

Received: 27 May 2026; Accepted: 01 June 2026; Published: 18 June 2026

ABSTRACT

This study examined the mediating role of Financial Technology (FinTech) in the relationship between Artificial Intelligence (AI) and financial decision-making within Nigeria's digital financial ecosystem. The study was motivated by the increasing integration of intelligent digital technologies into financial systems and the limited empirical evidence on how FinTech operationalises AI capabilities in financial decision processes within developing economies. A quantitative research approach based on positivist philosophy and a cross-sectional survey design were adopted. Data were collected from 394 respondents comprising bank employees, FinTech professionals, SME operators, and digitally active financial users across major financial hubs in Nigeria. Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed for data analysis. The findings revealed that AI exerts a positive and statistically significant effect on financial decision-making and FinTech adoption and utilisation, while FinTech significantly improves financial decision-making. The mediation analysis further confirmed that FinTech significantly mediates the relationship between AI and financial decision-making, indicating that a substantial proportion of AI's influence on financial decision outcomes is transmitted through FinTech-enabled digital financial systems. The study concludes that AI and FinTech are complementary technologies within modern financial systems, where AI provides predictive intelligence and analytical capability while FinTech provides the operational infrastructure for practical financial decision implementation. The study recommends increased investment in AI-enabled digital financial infrastructure, institutional technological readiness, and supportive regulatory frameworks to enhance digital financial transformation within Nigeria's financial sector.

Keywords: Artificial Intelligence, Financial Technology, FinTech, Financial Decision-Making, Digital Financial Systems

INTRODUCTION

The rapid advancement of artificial intelligence (AI) is fundamentally reshaping global financial systems and transforming the processes through which financial decisions are generated, analysed, and executed. AI-driven technologies such as machine learning, predictive analytics, natural language processing, and intelligent automation have enhanced the speed, accuracy, and efficiency of financial operations, enabling institutions to improve risk assessment, fraud detection, investment analysis, credit evaluation, and customer profiling (Deloitte, 2023; World Bank, 2022). Consequently, financial decision-making has increasingly shifted from intuition-based practices toward data-driven and algorithmic frameworks capable of delivering more precise and timely outcomes. Existing studies further demonstrate that AI adoption significantly improves operational efficiency, predictive capability, and decision quality within financial institutions (Alles, 2021; Appelbaum et al., 2022).

The relevance of AI is particularly significant in emerging economies such as Nigeria, where persistent structural inefficiencies continue to undermine the effectiveness of financial systems. The Nigerian financial sector is characterized by information asymmetry, weak risk assessment frameworks, operational inefficiencies, and limited financial inclusion. Despite ongoing reforms in the financial industry, a substantial proportion of the population remains excluded from formal financial services (World Bank, 2023). Within this context, AI offers

considerable potential to strengthen financial decision-making through intelligent analytics, automated processes, and enhanced predictive modelling. Recent evidence suggests that AI-driven systems improve financial performance and decision accuracy in developing economies by facilitating real-time data processing and strategic decision support (Kumar et al., 2021).

However, the influence of AI on financial decision-making cannot be fully understood independent of financial technology (FinTech), which provides the digital infrastructure through which AI capabilities are operationalized. FinTech encompasses digital financial innovations such as mobile banking, electronic payment systems, blockchain technologies, peer-to-peer lending platforms, and robo-advisory services that enhance financial accessibility and service efficiency. Nigeria has emerged as one of Africa's leading FinTech ecosystems, driven by rapid mobile penetration, expanding digital infrastructure, and increasing demand for electronic financial services. Reports by McKinsey & Company (2024) and the Central Bank of Nigeria (2023) indicate that FinTech adoption has significantly improved financial service delivery and expanded access to digital financial solutions within the country.

Importantly, FinTech represents more than a complementary technological innovation; it functions as the transmission mechanism through which AI capabilities influence financial decision outcomes. While AI supplies the analytical intelligence required for predictive and data-driven decision-making, FinTech provides the operational platforms that facilitate implementation, accessibility, and user interaction. Existing literature suggests that the effectiveness of AI in financial systems depends largely on the maturity and efficiency of FinTech ecosystems supporting its deployment (Lee & Shin, 2018; Gomber et al., 2021). Thus, the relationship between AI and financial decision-making may be indirect, operating substantially through FinTech-enabled financial platforms, particularly in developing economies where digital financial services are predominantly platform-driven.

Despite the rapid expansion of AI and FinTech within Nigeria's financial sector, several challenges continue to constrain their effective integration into financial decision processes. These include inadequate digital infrastructure, cybersecurity risks, regulatory uncertainty, high implementation costs, data privacy concerns, and limited technological expertise (World Bank, 2022; OECD, 2023). More critically, existing empirical studies have largely examined AI and FinTech as independent predictors of financial outcomes, while paying limited attention to the underlying mechanism through which AI capabilities translate into practical financial decision value. Consequently, there remains insufficient empirical evidence on the mediating role of FinTech in the relationship between AI and financial decision-making, particularly within emerging financial ecosystems such as Nigeria.

This gap is significant because weak transmission channels between AI and FinTech may limit the ability of financial institutions to fully realize the benefits of digital transformation. Failure to effectively integrate AI-driven intelligence with FinTech platforms could sustain inefficient credit allocation, poor investment decisions, elevated operational risks, and low financial inclusion, thereby weakening the competitiveness of Nigeria's financial system within the evolving digital economy.

Against this backdrop, this study investigates the mediating role of financial technology in the relationship between artificial intelligence and financial decision-making in Nigeria. By conceptualizing FinTech as a mediating construct, the study advances the digital finance literature by providing deeper insights into how AI capabilities are transformed into actionable financial decision outcomes within emerging financial systems.

Research Objectives

The main objective of this study is to examine the mediating role of financial technology in the relationship between artificial intelligence and financial decision-making in Nigeria. Specifically, the study seeks to:

I. Examine the effect of artificial intelligence on financial decision-making in Nigeria.

II. Investigate the influence of artificial intelligence on financial technology-enabled financial services in Nigeria.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

III. Evaluate the effect of financial technology on financial decision-making in Nigeria.

IV. Analyse the mediating role of financial technology in the relationship between artificial intelligence and financial decision-making in Nigeria.

LITERATURE REVIEW

Conceptualization of Artificial Intelligence and Financial Technology

Artificial intelligence (AI) refers to the capability of computer systems and intelligent technologies to perform tasks that ordinarily require human intelligence, including learning, reasoning, prediction, and decision-making. Through technologies such as machine learning, predictive analytics, natural language processing, and automation, AI has significantly transformed modern financial systems by improving analytical capability, predictive accuracy, and operational efficiency (Russell & Norvig, 2021). Financial institutions increasingly deploy AI-driven systems in fraud detection, credit scoring, customer profiling, investment analysis, and risk management to support evidence-based financial decisions.

The growing integration of AI into financial systems reflects the broader digital transformation of financial intermediation. AI-driven technologies enable organizations to process large volumes of financial data in real time, thereby improving decision quality and reducing human bias in financial operations (Davenport & Ronanki, 2018). According to Alles (2021), AI enhances financial reporting, auditing, and managerial decision-making through intelligent analytical procedures, while Appelbaum et al. (2022) argue that predictive analytics and automated systems improve organizational decision efficiency and forecasting capability.

Closely related to AI is financial technology (FinTech), which refers to the application of digital technologies to improve the accessibility, efficiency, and delivery of financial services. FinTech includes digital payment systems, mobile banking, blockchain technologies, peer-to-peer lending platforms, crowdfunding systems, and robo-advisory services (Schueffel, 2016). The emergence of FinTech has transformed traditional financial systems by decentralizing financial services and expanding financial accessibility beyond conventional banking infrastructure.

Globally, the rapid growth of FinTech has been driven by increasing internet penetration, mobile technology adoption, and growing demand for digital financial services. Lee and Shin (2018) describe FinTech as a technology-enabled innovation capable of improving customer experience and operational efficiency within financial markets. Similarly, Gomber et al. (2018) note that FinTech has redefined financial ecosystems by promoting innovation, competition, and digital transformation.

In Nigeria, the relevance of AI and FinTech has increased considerably due to persistent financial inefficiencies, including information asymmetry, weak institutional systems, and limited financial inclusion. The rapid expansion of digital financial platforms has improved transaction efficiency, increased financial accessibility, and strengthened financial service delivery within the Nigerian financial sector (Central Bank of Nigeria, 2023). Reports by McKinsey & Company (2024) further indicate that Nigeria has emerged as one of Africa's leading FinTech ecosystems, particularly in digital payments and lending services. Nevertheless, the implementation of AI and FinTech within Nigeria continues to face challenges relating to inadequate infrastructure, cybersecurity concerns, regulatory uncertainty, and limited technological expertise (OECD, 2023).

Artificial Intelligence and Financial Decision-Making

Artificial intelligence has become an important driver of financial decision-making due to its ability to process large volumes of data, identify hidden patterns, and generate predictive insights. AI-driven systems improve financial decision quality by supporting real-time analytics, predictive modelling, and automated decision processes. Through machine learning and intelligent analytics, financial institutions can evaluate risks, forecast market behaviour, and optimize investment decisions more effectively.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

Existing literature suggests that AI significantly enhances organizational decision efficiency and strategic financial planning. Davenport and Ronanki (2018) observe that AI improves decision intelligence by automating routine financial processes and strengthening analytical capability. Similarly, Appelbaum et al. (2022) argue that AI-driven analytics improve financial forecasting and managerial decision quality through enhanced predictive capability.

Within the financial sector, AI applications support credit scoring, fraud detection, anti-money laundering compliance, and customer profiling. Alles (2021) further notes that AI enhances audit quality and financial reporting reliability through intelligent analytical procedures. In Nigeria, financial institutions increasingly adopt AI-driven technologies to improve operational efficiency and customer service delivery. However, infrastructural and regulatory limitations continue to constrain the effective deployment of AI within the Nigerian financial ecosystem.

Financial Technology and Financial Decision-Making

Financial technology has significantly improved financial decision-making by enhancing access to financial information, increasing transaction efficiency, and facilitating real-time financial analysis. Through digital financial platforms, FinTech enables users to conduct financial transactions, access credit facilities, evaluate investment opportunities, and manage financial resources more efficiently.

FinTech applications improve financial decisions by increasing the speed, convenience, and accessibility of financial services. Lee and Shin (2018) argue that FinTech innovations strengthen customer engagement and improve financial service efficiency. Similarly, digital payment systems, online lending platforms, and mobile banking technologies provide real-time financial information that supports informed decision-making.

In Nigeria, FinTech adoption has enhanced financial inclusion, reduced transaction costs, and improved access to digital financial services. FinTech platforms now play an increasingly important role in supporting consumer and institutional financial decisions, particularly in payment systems, lending services, and investment management.

Mediating Role of Financial Technology in the Relationship Between Artificial Intelligence and Financial Decision-Making

The relationship between artificial intelligence and financial decision-making may operate through the enabling mechanisms provided by financial technology. While AI supplies the analytical intelligence required for predictive modelling, automation, and intelligent decision support, FinTech provides the operational infrastructure through which these capabilities are deployed and utilized. Consequently, FinTech performs a mediating role in the relationship between AI and financial decision-making.

Existing studies suggest that the effectiveness of AI within financial systems depends largely on the maturity and efficiency of FinTech ecosystems supporting its implementation (Lee & Shin, 2018; Gomber et al., 2021). Through digital financial platforms, AI-driven systems can support automated lending, predictive analytics, fraud detection, and digital investment management. Thus, FinTech serves as the transmission mechanism through which AI capabilities are translated into practical financial decision outcomes.

The mediating role of FinTech is particularly relevant in developing economies such as Nigeria, where technology adoption is predominantly platform-driven. Despite the growing interaction between AI and FinTech, empirical evidence regarding the mediating role of FinTech in financial decision-making remains limited, particularly within emerging financial systems. Most existing studies examine AI and FinTech independently rather than analysing the mechanism linking both technologies to financial decision outcomes. Consequently, this study contributes to the digital finance literature by examining how FinTech mediates the relationship between artificial intelligence and financial decision-making in Nigeria.

Conceptual Framework

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

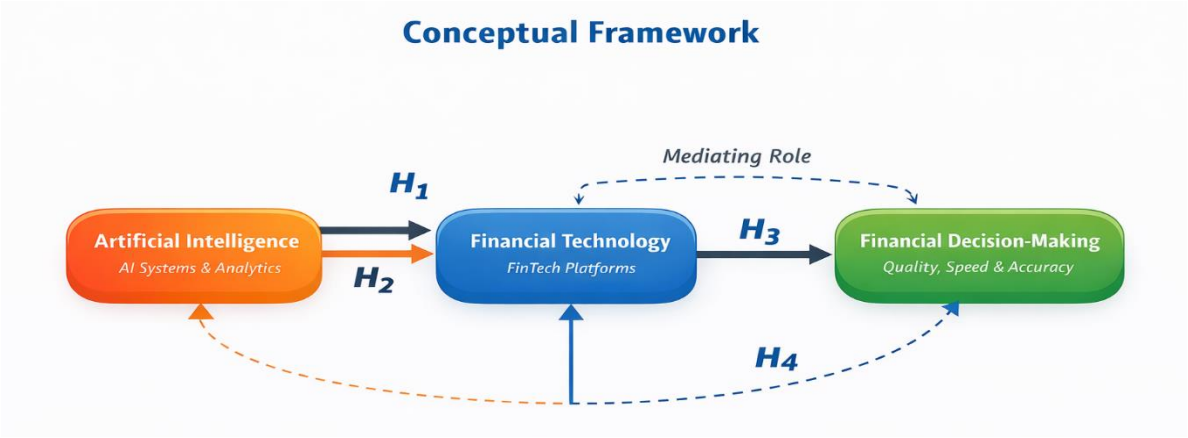

Figure 1: Conceptual Framework. Source: Author's conceptualisation (2026), drawing on the Diffusion of Innovation theory (Everett Rogers, 2003), the Technology–Organisation–Environment framework (Louis Tornatzky & Mitchell Fleischer, 1990), and FinTech–AI integration literature (In Lee & Yong Jae Shin, 2018).

THEORETICAL FRAMEWORK

This study is grounded in the Diffusion of Innovation (DOI) Theory, the Technology–Organization–Environment (TOE) Framework, and Decision Theory. These theories collectively provide a suitable theoretical foundation for explaining the relationship between artificial intelligence (AI), financial technology (FinTech), and financial decision-making in Nigeria. While DOI explains the adoption and diffusion of technological innovations, the TOE framework provides insight into the organizational and environmental conditions influencing technology integration, whereas Decision Theory explains how technology enhances rational financial decision-making.

The Diffusion of Innovation (DOI) Theory developed by Rogers (2003) explains how innovations are introduced, adopted, and diffused within organizations and social systems. The theory posits that the adoption of technological innovations depends on factors such as relative advantage, compatibility, complexity, trialability, and observability. In the context of this study, AI represents an emerging innovation within the financial sector whose adoption depends on its perceived usefulness, efficiency, and compatibility with existing financial systems. Previous studies suggest that digital financial innovations are more readily adopted when they improve operational efficiency and service delivery (Lee & Shin, 2018). Accordingly, FinTech platforms facilitate the diffusion and operationalization of AI-driven financial services, thereby supporting improved financial decision-making within Nigeria's financial ecosystem.

The Technology–Organization–Environment (TOE) Framework proposed by Tornatzky and Fleischer (1990) further explains how technological, organizational, and environmental factors influence technology adoption and integration. The technological context relates to the availability and compatibility of AI and FinTech systems, the organizational context includes institutional readiness and technical expertise, while the environmental context encompasses regulatory support, competition, and digital infrastructure. The TOE framework is particularly relevant to this study because the effectiveness of AI-driven financial systems depends not only on technological capability but also on the institutional and environmental conditions supporting FinTech integration. Existing literature indicates that organizational readiness, infrastructural development, and regulatory support significantly influence digital financial transformation in emerging economies (Gomber et al., 2018). In Nigeria, factors such as cybersecurity concerns, inadequate infrastructure, and regulatory uncertainty continue to shape the integration of AI and FinTech within financial institutions (Central Bank of Nigeria, 2023).

Decision Theory provides the analytical basis for understanding financial decision-making within technology-enabled environments. The theory posits that rational decisions are made through the evaluation of available alternatives based on information, risks, probabilities, and expected outcomes (Brigham & Ehrhardt, 2019). The integration of AI into financial systems enhances this process by improving predictive analytics, information

processing, and risk evaluation. Empirical studies show that AI-driven systems improve financial forecasting, analytical capability, and managerial decision efficiency through automated and data-driven processes (Appelbaum et al., 2022). FinTech platforms further strengthen financial decision-making by enabling real-time financial transactions, accessibility, and operational efficiency. Consequently, the integration of AI and FinTech supports more efficient, evidence-based, and data-driven financial decisions.

Collectively, these theories provide a coherent explanation for the conceptual relationships examined in this study. DOI theory explains the adoption and diffusion of AI innovations within financial institutions, the TOE framework highlights the contextual factors influencing FinTech integration, while Decision Theory explains how AI- and FinTech-enabled systems improve financial decision outcomes. Together, the theories support the proposition that FinTech mediates the relationship between artificial intelligence and financial decision-making in Nigeria.

Empirical review

Empirical evidence increasingly identifies artificial intelligence (AI) as a major driver of efficiency, predictive capability, and strategic financial decision-making within modern financial systems. Existing studies consistently demonstrate that AI-driven technologies improve analytical precision, reduce information asymmetry, and strengthen the quality of financial decisions through automation and real-time data processing. For instance, Alles (2021) argues that AI significantly improves audit quality and financial reporting reliability by minimizing human bias and enhancing predictive judgement. Similarly, Appelbaum et al. (2022) contend that machine learning and predictive analytics strengthen managerial decision-making through improved forecasting accuracy and automated financial evaluation systems. Collectively, these studies suggest that AI has transformed financial decision-making from intuition-based processes toward more data-driven and algorithmically supported frameworks.

The contribution of AI is particularly evident in banking operations and financial risk management. Jha et al. (2022) find that AI-based credit scoring systems outperform traditional statistical models through the integration of behavioural and alternative data sources, thereby improving lending decisions and credit allocation efficiency. Likewise, Kumar et al. (2021) report that AI adoption significantly improves operational efficiency and credit risk modelling within banking institutions. These findings indicate that AI enhances institutional capability to process financial information, evaluate risks, and support evidence-based financial decisions.

Within emerging economies, the relevance of AI has become increasingly significant due to persistent financial inefficiencies, weak institutional systems, and limited financial inclusion. According to the World Bank (2022), AI-enabled financial systems have improved lending accessibility and financial service delivery across developing economies despite infrastructural and governance constraints. However, although existing empirical studies establish the operational and performance benefits of AI, the literature remains largely concentrated on efficiency, fraud detection, and institutional performance outcomes. Consequently, limited empirical attention has been devoted to understanding the mechanisms through which AI capabilities translate into actionable financial decision outcomes.

Parallel empirical evidence highlights the growing role of financial technology (FinTech) in transforming financial intermediation and financial decision-making processes. FinTech innovations such as digital payments, mobile banking, blockchain systems, peer-to-peer lending, and online financial platforms have significantly altered financial service delivery by reducing transaction costs, accelerating transaction speed, and improving financial accessibility. Lee and Shin (2018) observe that FinTech enhances customer engagement and operational efficiency through digital innovation and automation, while Gomber et al. (2021) argue that digital financial platforms strengthen financial intermediation by improving transaction efficiency and reducing operational costs.

Empirical studies further associate FinTech adoption with improved financial inclusion and enhanced financial behaviour, particularly within developing economies. Ozili (2023) demonstrates that FinTech development in Africa has expanded access to financial services and strengthened financial participation among underserved

populations and small businesses. Within Nigeria, the Central Bank of Nigeria (2023) reports that digital financial services, particularly mobile banking and digital lending systems, have improved transaction efficiency and expanded access to financial services. Similarly, reports by McKinsey & Company (2024) identify Nigeria as one of Africa's fastest-growing FinTech ecosystems due to increasing adoption of digital financial platforms and sustained investment in financial innovation.

Beyond financial accessibility, recent empirical literature increasingly emphasizes the convergence between AI and FinTech within digital financial ecosystems. Existing evidence suggests that the integration of AI into FinTech platforms enhances predictive analytics, customer personalization, operational efficiency, and financial intermediation through intelligent automation and scalable digital infrastructure. Chen et al. (2021) demonstrate that AI capabilities significantly improve the performance and adaptability of FinTech systems by strengthening predictive intelligence and data processing capability. Similarly, Frost et al. (2021) argue that the integration of AI into digital financial platforms improves financial intermediation by combining analytical intelligence with scalable digital delivery mechanisms. Philippon (2020) further contends that AI and FinTech collectively reduce the cost of financial intermediation while improving market efficiency and decision quality.

Although these studies provide substantial evidence regarding the independent and complementary roles of AI and FinTech, important empirical gaps remain within the literature. Existing studies predominantly examine AI and FinTech as separate determinants of operational efficiency, financial inclusion, or institutional performance, with relatively limited emphasis on the transmission mechanisms linking both technologies to financial decision-making outcomes. More importantly, empirical evidence from developing economies, particularly Nigeria, remains limited. Most Nigerian studies focus primarily on FinTech adoption and banking service delivery without explicitly examining how FinTech operationalizes AI-driven capabilities into practical financial decision outcomes.

Consequently, there remains insufficient empirical understanding of the mediating role of FinTech in the relationship between AI and financial decision-making, particularly within emerging financial systems characterized by infrastructural limitations and evolving digital ecosystems. This unresolved empirical gap provides the justification for the present study and underscores its contribution to the growing literature on digital finance, intelligent financial systems, and technology-enabled financial decision-making.

METHODOLOGY

This study adopts a quantitative research approach grounded in the positivist research philosophy. Consistent with the deductive research approach, hypotheses derived from the Diffusion of Innovation (DOI) Theory, the Technology–Organization–Environment (TOE) Framework, and Decision Theory are empirically tested to examine the relationships among artificial intelligence (AI), financial technology (FinTech), and financial decision-making in Nigeria. A cross-sectional survey design is employed to obtain data from respondents within Nigeria's financial ecosystem at a single point in time.

The target population comprises banking professionals, FinTech practitioners, SME operators, and digitally active financial service users with practical exposure to AI-driven and FinTech-enabled financial systems. A multi-stage sampling technique is adopted. Stratified sampling ensures representation across major financial hubs in Nigeria, including Lagos, Abuja, Port Harcourt, and Kano, while purposive sampling is used to select respondents with relevant experience in digital financial technologies.

The sample size is determined using Cochran's (1977) formula for large populations, which produced a minimum threshold of 384 respondents. However, following the recommendation of Hair et al. (2022) regarding sample adequacy for structural equation modelling and mediation analysis, 500 questionnaires are distributed to improve statistical power and model stability. A total of 394 valid responses are retrieved and utilized for the analysis, representing a response rate of 78.8%.

Data are collected through a structured questionnaire measured on a five-point Likert scale ranging from strongly disagree to strongly agree. Measurement items for AI, FinTech, and financial decision-making are adapted from

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

validated scales in prior empirical studies. The instrument is electronically administered using online survey platforms to facilitate wider geographic coverage and response efficiency.

The validity and reliability of the measurement instrument are assessed using established statistical procedures. Construct validity is examined using Confirmatory Factor Analysis (CFA), where factor loadings above 0.70 and Average Variance Extracted (AVE) values above 0.50 are considered acceptable. Reliability is evaluated using Cronbach's alpha and Composite Reliability (CR), with threshold values above 0.70 regarded as satisfactory. Discriminant validity is further assessed using the Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (HTMT).

Data analysis is conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM). PLS-SEM is considered appropriate because the study focuses on prediction-oriented relationships and mediation analysis involving latent constructs. The analysis is performed in two stages: evaluation of the measurement model to assess validity and reliability, followed by assessment of the structural model using path coefficients, significance levels, and coefficient of determination (R^2) values. The mediating role of FinTech is examined using bootstrapping procedures to estimate the significance of indirect effects.

Ethical standards are strictly maintained throughout the study. Participation is voluntary, respondents are assured of anonymity and confidentiality, and the data collected are used solely for academic purposes.

Data Analysis and Interpretation

The empirical findings from a two-stage PLS-SEM process are presented in this section: (i) measurement model assessment and (ii) structural model evaluation. The analysis makes sense in relation to the goals and hypotheses of the investigation.

Descriptive Statistics

Table 1

Descriptive Statistics of Key Constructs

Variable	Mean	Standard Deviation	Interpretation
Artificial Intelligence (AI)	3.85	0.74	High adoption and positive perception
Financial Technology (FinTech)	4.02	0.69	Very high utilisation
Financial Decision-Making (FDM)	3.78	0.72	Moderately high efficiency

Table 1 presents the descriptive statistics of the key constructs examined in the study. The findings reveal a relatively high level of adoption and positive perception of Artificial Intelligence (AI) among the respondents, as reflected in the mean score of 3.85. This suggests that AI-driven technologies are increasingly integrated into financial activities and decision-support systems within Nigeria's financial ecosystem.

Financial Technology (FinTech) recorded the highest mean score (M = 4.02), indicating very high utilisation of digital financial platforms and services among the respondents. This finding implies that FinTech innovations such as digital payments, mobile banking, and online financial platforms have become deeply embedded within Nigeria's evolving digital financial environment.

Financial Decision-Making (FDM) recorded a mean score of 3.78, indicating a moderately high level of technology-enabled financial decision efficiency. However, the slightly lower mean value compared to FinTech utilisation suggests that widespread adoption of digital financial technologies does not automatically translate into proportionate improvements in financial decision outcomes. Furthermore, the relatively close standard

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

deviation values across the constructs indicate consistency in respondents' perceptions and stability in the observed responses.

Measurement Model Assessment

Table 2

Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
AI	0.88	0.91	0.63
FinTech	0.90	0.93	0.68
FDM	0.87	0.90	0.61

Note. Recommended thresholds: Cronbach's Alpha ≥ 0.70; Composite Reliability ≥ 0.70; AVE ≥ 0.50.

Table 2 presents the reliability and convergent validity results for the study constructs. The findings indicate that all constructs exceeded the recommended thresholds for Cronbach's alpha and Composite Reliability (CR), confirming satisfactory internal consistency and reliability of the measurement scales.

Specifically, Artificial Intelligence (AI) recorded a Cronbach's alpha value of 0.88 and Composite Reliability of 0.91, while Financial Technology (FinTech) recorded values of 0.90 and 0.93 respectively. Financial Decision-Making (FDM) also demonstrated strong reliability with Cronbach's alpha and Composite Reliability values of 0.87 and 0.90 respectively.

Furthermore, the Average Variance Extracted (AVE) values for all constructs exceeded the recommended threshold of 0.50, indicating satisfactory convergent validity. These findings suggest that the measurement items adequately explained the variance of their respective latent constructs.

Table 3

Discriminant Validity Using HTMT Ratio

Construct Pair	HTMT Ratio
AI ↔ FinTech	0.656
AI ↔ FDM	0.576
FinTech ↔ FDM	0.626

Note. HTMT values below 0.85 indicate satisfactory discriminant validity.

Table 3 presents the Heterotrait–Monotrait Ratio (HTMT) results used to assess discriminant validity among the study constructs. The findings indicate that all HTMT values were below the recommended threshold of 0.85, confirming satisfactory discriminant validity.

Specifically, the HTMT ratios for AI–FinTech, AI–FDM, and FinTech–FDM were 0.656, 0.576, and 0.626 respectively. These findings indicate that the constructs are empirically distinct and adequately capture different conceptual dimensions within the structural model.

Structural Model Results

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

Table 4

Structural Model Results

Path	Beta (β)	t-value	p-value	Decision
AI → FDM	0.29	4.12	0.000	Supported
AI → FinTech	0.61	9.45	0.000	Supported
FinTech → FDM	0.43	6.88	0.000	Supported
AI → FinTech → FDM	0.26	5.73	0.000	Supported

Table 4 presents the structural model results obtained using PLS-SEM bootstrapping procedures. The findings reveal that all proposed relationships were positive and statistically significant at the 5% significance level, thereby confirming the robustness of the structural model.

Specifically, Artificial Intelligence (AI) demonstrated a positive and statistically significant effect on Financial Decision-Making (FDM) ($\beta = 0.29$, $p < 0.05$). This finding suggests that AI-driven technologies improve the quality, speed, and effectiveness of financial decisions through enhanced analytical capability and predictive intelligence.

The results further revealed that AI exerted a strong positive effect on Financial Technology (FinTech) ($\beta = 0.61$, $p < 0.05$), indicating that AI significantly drives the adoption and utilisation of digital financial platforms within the financial ecosystem. The magnitude of this relationship suggests that AI functions as a major technological enabler of FinTech innovation and digital financial transformation.

Similarly, FinTech demonstrated a positive and statistically significant effect on Financial Decision-Making (FDM) ($\beta = 0.43$, $p < 0.05$). This finding indicates that digital financial platforms significantly improve financial accessibility, transaction efficiency, and real-time financial decision processes.

The mediation analysis further revealed that the indirect effect of AI on financial decision-making through FinTech was positive and statistically significant ($\beta = 0.26$, $p < 0.05$). This finding confirms that FinTech significantly mediates the relationship between AI and financial decision-making. The significance of both the direct and indirect relationships indicates partial mediation, suggesting that while AI directly improves financial decision-making, a substantial proportion of its influence is transmitted indirectly through FinTech-enabled digital financial systems.

The structural model further revealed that AI explained 33.6% of the variance in FinTech, while AI and FinTech jointly explained 36.3% of the variance in Financial Decision-Making. These findings indicate moderate predictive power and suggest that AI and FinTech are substantial determinants of financial decision-making within Nigeria's digital financial ecosystem.

Test of Hypotheses

Table 5

Summary of Hypothesis Testing

Hypothesis	Path	Beta (β)	t-value	p-value	Decision
H1	AI → FDM	0.29	4.12	0.000	Supported
H2	AI → FinTech	0.61	9.45	0.000	Supported

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

H3	FinTech → FDM	0.43	6.88	0.000	Supported
H4	AI → FinTech → FDM	0.26	5.73	0.000	Supported

Note. Hypotheses are supported where $p < 0.05$.

Table 5 presents the summary of hypothesis testing results. The findings reveal that all hypothesized relationships were positive and statistically significant at the 5% significance level. Specifically, Artificial Intelligence (AI) significantly improved Financial Decision-Making (FDM) and strongly influenced Financial Technology (FinTech) adoption and utilisation within Nigeria's financial ecosystem.

The results further demonstrate that Financial Technology (FinTech) significantly enhanced financial decision-making, indicating that digital financial platforms improve transaction efficiency, accessibility, and real-time financial operations. In addition, the mediation results confirm that FinTech significantly mediates the relationship between AI and financial decision-making.

Collectively, the findings suggest that AI and FinTech function as complementary technologies within modern digital financial systems, with FinTech serving as an operational mechanism through which AI capabilities are translated into practical financial decision outcomes.

DISCUSSION OF FINDINGS

The findings of this study provide strong empirical evidence regarding the integrated relationship between Artificial Intelligence (AI), Financial Technology (FinTech), and financial decision-making within Nigeria's digital financial ecosystem. The results also offer important theoretical and practical insights into how intelligent digital technologies improve financial operations, innovation, and strategic decision processes in emerging economies.

The study revealed that Artificial Intelligence (AI) exerts a positive and statistically significant effect on financial decision-making. This result suggests that AI-driven technologies enhance the speed, accuracy, quality, and efficiency of financial decisions through predictive analytics, intelligent automation, and improved information-processing capability. The finding implies that financial institutions and digitally active financial actors increasingly rely on intelligent systems to support operational and strategic financial decisions within Nigeria's rapidly evolving digital economy.

This result is consistent with previous empirical studies such as Alles (2021), Appelbaum et al. (2022), and Kumar et al. (2022), which demonstrated that AI improves operational efficiency, fraud detection, risk assessment, and decision accuracy through advanced analytics and machine learning systems. The outcome also supports Decision Theory, which posits that rational decision-making improves when decision-makers have access to higher-quality information, predictive analytical tools, and enhanced information-processing capability (Simon, 1977). In the Nigerian context, the result suggests that AI-driven systems can improve investment analysis, credit evaluation, financial forecasting, and risk management within financial institutions and digital financial platforms.

However, the relatively moderate coefficient of the direct AI–financial decision-making relationship compared to other relationships within the model suggests that technological sophistication alone may not automatically guarantee optimal financial decision outcomes. This may indicate the existence of institutional, infrastructural, and technological integration challenges that constrain the full operational effectiveness of AI within Nigeria's financial ecosystem. Inadequate digital infrastructure, inconsistent regulatory frameworks, cybersecurity concerns, and limited digital literacy may reduce the direct influence of AI on financial decision processes.

The findings further revealed that AI exerts a strong positive and statistically significant effect on Financial Technology (FinTech) adoption and utilisation. This result indicates that AI functions as a major technological driver of digital financial innovation and transformation within Nigeria's financial sector. The strength of the

relationship further suggests that AI substantially improves automation capability, operational efficiency, scalability, predictive intelligence, and intelligent service delivery within FinTech platforms.

This finding corroborates the studies of Dwivedi et al. (2021) and Frost et al. (2021), which argued that AI strengthens the effectiveness of digital financial systems through automation, predictive intelligence, enhanced data processing, and personalised financial services. The result also supports the Diffusion of Innovation (DOI) Theory, which explains how technological innovations such as AI are adopted, operationalised, and diffused through enabling technological systems such as FinTech platforms.

Fundamentally, AI serves as the innovation driver, while FinTech functions as the operational and diffusion mechanism through which intelligent technologies are implemented within financial systems. The strong coefficient observed in the study therefore suggests that FinTech platforms in Nigeria are increasingly becoming AI-enabled systems rather than merely stand-alone digital financial technologies. This reflects the growing convergence between intelligent technologies and digital financial infrastructure within modern financial ecosystems.

The study also revealed that FinTech significantly improves financial decision-making. This finding suggests that digital financial platforms enhance transaction efficiency, financial accessibility, operational speed, service delivery, and real-time information processing, thereby improving financial decision outcomes among individuals, businesses, and financial institutions.

This outcome aligns with the studies of Lee and Shin (2018) and Gomber et al. (2021), which emphasised the role of FinTech in improving transaction efficiency, reducing operational costs, and facilitating real-time financial service delivery. The result also supports reports by the Central Bank of Nigeria (2023), which indicate that digital financial services have improved accessibility, operational efficiency, and financial inclusion within Nigeria's financial sector. The implication is that FinTech platforms have become important instruments for facilitating intelligent and technology-enabled financial decision processes within emerging digital economies.

The finding further supports the Technology–Organization–Environment (TOE) Framework, which emphasises that technological infrastructure significantly influences organisational outcomes and operational effectiveness. In this context, FinTech platforms provide the technological infrastructure through which intelligent digital capabilities are transformed into practical financial actions and decision processes. Consequently, the effectiveness of AI-driven financial systems depends substantially on the quality, accessibility, and operational capacity of FinTech infrastructure.

The most significant outcome of the study is that FinTech significantly mediates the relationship between AI and financial decision-making. The mediation analysis revealed that while AI directly improves financial decision-making, a substantial proportion of its influence operates indirectly through FinTech-enabled digital financial systems. The significance of both the direct and indirect effects confirms partial mediation.

This result represents the major contribution of the study because it empirically validates a relationship that has largely been theorised but insufficiently tested within existing literature, particularly in developing economies such as Nigeria. Although previous studies such as Frost et al. (2021) and Shao et al. (2024) suggested that digital platforms function as channels for technological influence, this study specifically demonstrates the mediating mechanism through which FinTech operationalises AI capabilities within financial decision-making systems.

The mediation outcome therefore implies that the effectiveness of AI in financial decision-making is substantially strengthened when integrated into functional FinTech systems. In essence, AI provides predictive intelligence, automation, and analytical capability, while FinTech provides the digital infrastructure and operational platforms through which these capabilities are implemented in practical financial activities. This confirms that AI and FinTech are increasingly complementary technologies within modern financial systems rather than isolated technological innovations.

From a broader perspective, the findings suggest that digital financial transformation within emerging economies requires more than the mere adoption of intelligent technologies. Effective digital transformation also depends on supportive institutional structures, functional digital infrastructure, regulatory readiness, and technological integration capability. Consequently, the practical value of AI within financial systems is significantly enhanced when embedded within efficient and accessible FinTech ecosystems.

From a practical standpoint, the findings imply that financial institutions, FinTech firms, regulators, and policymakers should prioritise investments in AI-enabled digital financial infrastructure, institutional technological readiness, cybersecurity systems, and digital literacy programmes. Strengthening these areas will improve the operational effectiveness of AI-driven FinTech solutions and accelerate digital financial transformation within Nigeria's financial ecosystem.

CONCLUSION

This study examined the mediating role of Financial Technology (FinTech) in the relationship between Artificial Intelligence (AI) and financial decision-making within Nigeria's digital financial ecosystem. Specifically, the study investigated the direct effect of AI on financial decision-making, the influence of AI on FinTech adoption and utilisation, the effect of FinTech on financial decision-making, and the mediating role of FinTech in the AI–financial decision-making relationship.

The findings revealed that AI significantly improves financial decision-making through enhanced predictive capability, automation, analytical efficiency, and information-processing capability. The study further established that AI exerts a strong positive influence on FinTech adoption and utilisation, indicating that intelligent technologies are increasingly driving digital financial innovation and transformation within Nigeria's financial sector.

The results also demonstrated that FinTech significantly enhances financial decision-making through improved transaction efficiency, operational speed, financial accessibility, and real-time information processing. Most importantly, the study confirmed that FinTech significantly mediates the relationship between AI and financial decision-making, indicating that a substantial proportion of AI's influence on financial decision outcomes is operationalised through FinTech-enabled digital financial systems.

The study therefore concludes that AI and FinTech are complementary technologies within modern financial systems rather than isolated technological innovations. While AI provides predictive intelligence, automation, and analytical capability, FinTech provides the digital infrastructure and operational platforms through which these capabilities are transformed into practical financial decision outcomes.

The study contributes to existing literature by empirically validating the mediating mechanism through which FinTech operationalises AI capabilities within financial decision-making systems, particularly within the context of a developing economy such as Nigeria. The findings further reinforce the relevance of Decision Theory, the Diffusion of Innovation (DOI) Theory, and the Technology–Organization–Environment (TOE) Framework in explaining the interaction between intelligent technologies, digital financial systems, and financial decision processes.

From a practical perspective, the study highlights the need for financial institutions, FinTech firms, regulators, and policymakers to prioritise investments in AI-enabled digital financial infrastructure, institutional technological readiness, digital literacy, and supportive regulatory systems. Strengthening these areas will improve the effectiveness of AI-driven FinTech solutions and accelerate digital financial transformation within Nigeria's financial ecosystem.

Finally, the study demonstrates that the effectiveness of AI in financial decision-making is significantly strengthened when integrated into functional FinTech systems. Consequently, FinTech serves as the operational mechanism through which AI capabilities are translated into efficient, intelligent, and practical financial decision-making outcomes within Nigeria's digital economy.

RECOMMENDATIONS

Recommendations

Based on the findings of this study, the following recommendations are proposed:

1. Financial institutions and FinTech firms in Nigeria should intensify investments in AI-enabled financial systems capable of improving predictive analytics, fraud detection, risk assessment, and real-time financial decision-making. This can be achieved through the integration of machine learning tools, intelligent automation systems, and AI-driven financial analytics into existing digital financial platforms.

2. Regulators and policymakers, particularly the Central Bank of Nigeria (CBN) and financial regulatory agencies, should establish supportive regulatory frameworks and digital infrastructure policies that encourage the responsible adoption of AI-driven FinTech innovations. This should include investments in digital infrastructure, cybersecurity systems, regulatory technology (RegTech), and institutional digital literacy programmes to enhance the operational effectiveness of AI-enabled financial systems.

3. Financial institutions and FinTech operators should prioritise continuous training and digital capacity development for employees and users to improve technological readiness and effective utilisation of AI-driven financial platforms. This will reduce operational inefficiencies and enhance the quality of financial decision-making within Nigeria's digital financial ecosystem.

4. FinTech firms should strengthen the integration of AI capabilities into digital financial platforms to improve service personalisation, operational scalability, transaction efficiency, and intelligent financial service delivery. Greater AI–FinTech integration will significantly enhance the practical effectiveness of financial decision processes within the Nigerian financial sector.

REFERENCES

1. Alles, M. G. (2021). Automating audit: Artificial intelligence in accounting. Routledge.
2. Appelbaum, D., Kogan, A., & Vasarhelyi, M. (2022). Big data and analytics in the modern audit environment. Accounting Horizons, 36(1), 1–23. https://doi.org/10.2308/HORIZONS-2020-121
3. Bisati, A. I., Haque, S. M. I., Ganai, U. J., & Gulzar, I. (2021). Decision making in financial markets: A thematic review and discussion. Journal of Business Strategy Finance and Management, 3(1–2), 54–66. http://dx.doi.org/10.12944/JBSFM.03.01-02.06
4. Central Bank of Nigeria. (2023). Annual report and financial statements 2023. Central Bank of Nigeria.
5. Chand, S. A., Singh, B., Narayan, K., & Chand, A. (2025). The impact of financial technology (FinTech) on bank risk-taking and profitability in small developing island states: A study of Fiji. Journal of Risk and Financial Management, 18(7), 366. https://doi.org/10.3390/jrfm18070366
6. Cochran, W. G. (1977). Sampling techniques (3rd ed.). John Wiley & Sons.
7. Deloitte. (2023). How artificial intelligence is transforming financial services. Deloitte Insights.
8. Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., … Williams, M. D. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management, 57, 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002
9. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50. https://doi.org/10.1177/002224378101800104
10. Frost, J., Gambacorta, L., Huang, Y., Shin, H. S., & Zbinden, P. (2021). BigTech and the changing structure of financial intermediation. Economic Policy, 36(106), 761–799. https://doi.org/10.1093/epolic/eiab018

11. Gomber, P., Koch, J. A., & Siering, M. (2021). Digital finance and FinTech: Current research and future research directions. Journal of Business Economics, 91(5), 537–580. https://doi.org/10.1007/s11573-021-01039-z
12. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). Sage Publications.
13. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8
14. Jha, S., Guillen, M., & Westland, J. C. (2022). Employing machine learning for credit risk assessment. Expert Systems with Applications, 188, 116134. https://doi.org/10.1016/j.eswa.2021.116134
15. Khosravi, M., Zare, Z., Mojtabaeian, S. M., & Izadi, R. (2024). Artificial intelligence and decision-making in healthcare: A thematic analysis of a systematic review of reviews. Health Services Research and Managerial Epidemiology, 11, 23333928241234863. https://doi.org/10.1177/23333928241234863
16. Kumar, V., Dixit, A., Javalgi, R., & Dass, M. (2022). Research framework, strategies, and applications of artificial intelligence in marketing. Journal of Business Research, 145, 80–95. https://doi.org/10.1016/j.jbusres.2022.02.061
17. Lee, I., & Shin, Y. J. (2018). FinTech: Ecosystem, business models, investment decisions, and challenges. Business Horizons, 61(1), 35–46. https://doi.org/10.1016/j.bushor.2017.09.003
18. McKinsey & Company. (2024). FinTech in Africa: The end of the beginning. McKinsey Global Institute.
19. Organisation for Economic Co-operation and Development (OECD). (2023). Artificial intelligence in society: Policy perspectives. OECD Publishing.
20. Ozili, P. K. (2023). FinTech, financial inclusion and economic development: Evidence from Africa. Journal of Financial Regulation and Compliance, 31(2), 145–160. https://doi.org/10.1108/JFRC-10-2021-0101
21. Philippon, T. (2020). On FinTech and financial inclusion. Annual Review of Financial Economics, 12, 273–292. https://doi.org/10.1146/annurev-financial-040120-023537
22. Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.
23. Saunders, M., Lewis, P., & Thornhill, A. (2023). Research methods for business students (9th ed.). Pearson Education.
24. Shao, X., Ahmad, M., & Javed, F. (2024). Firm-level digitalisation for sustainability performance: Evidence from Ningbo City of China. Sustainability, 16(20), 8881. https://doi.org/10.3390/su16208881
25. Simon, H. A. (1977). The new science of management decision (Rev. ed.). Prentice Hall.
26. Tornatzky, L. G., & Fleischer, M. (1990). The processes of technological innovation. Lexington Books.
27. World Bank. (2022). Digital financial services and risk management. World Bank Publications.
28. World Bank. (2023). Global Findex database 2023: Financial inclusion indicators. World Bank.

QUESTIONNAIRE

Effect of Artificial Intelligence on Financial Decision-Making in Nigeria: Mediating Role of Financial Technology

INSTRUCTION

Please tick (✓) the option that best represents your opinion. Participation in this study is voluntary, and respondents are free to withdraw at any time without any consequence. All responses will be treated with strict confidentiality and anonymity, and the information provided will be used solely for academic research purposes. No personal identifying information is required or collected. By completing this questionnaire, you consent to participate in this study.

Scale

☐ 1 = Strongly Disagree

☐ 2 = Disagree

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

☐ **3 = Neutral**

☐ **4 = Agree**

☐ **5 = Strongly Agree**

Section A: Artificial Intelligence (AI)

1. AI tools are used to support financial decision-making.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

2. AI improves the accuracy of financial decisions.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

3. AI helps in predicting financial risks effectively.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

4. AI systems reduce human bias in financial decision-making.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

5. AI enables faster financial analysis and decision processes.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

6. AI improves the quality of financial information available for decision-making.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Section B: Financial Technology (FinTech)

7. FinTech platforms are widely used for financial transactions.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8. FinTech improves the speed of financial decision-making.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

9. FinTech platforms enhance access to financial services.

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

10. FinTech systems integrate advanced technologies such as AI.

    ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

11. FinTech platforms improve the efficiency of financial operations.

    ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

12. FinTech services provide real-time financial information for decision-making.

    ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

Section C: Financial Decision-Making (FDM)

13. Financial decisions are data-driven.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

14. Financial decisions are made quickly and efficiently.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

15. Financial decisions are accurate and reliable.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

16. Financial decisions effectively minimise risks.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

17. Financial decisions improve performance outcomes.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

18. Financial decisions are based on real-time information.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Section D: AI → FinTech Relationship

19. AI enhances the functionality of FinTech platforms.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

20. AI improves the efficiency of FinTech services.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

21. AI enables innovation in FinTech applications.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

22. FinTech platforms depend on AI for advanced operations.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5