Journal of Management Science Research Review
https://jmsrr.com/index.php/Journal/about

Volume 5 Issue No 1 (2026)

Online ISSN: 3006-2047
Print ISSN: 3006-2039

Perceived Integration of Fintech and Blockchain in Islamic Banking: A Quantitative Study of Employee Perspectives

Zoya Khan
MBA Scholar, Bahria University, Karachi Campus
Email: Zoya01277@gmail.com

Umar Farooq
MS-Management Sciences, City University, Peshawar, ACCA-Member

Muhammad Asif
PhD, Associate Professor, Business Studies Department, Bahria University, Karachi Campus Email: drasifbaloch78@gmail.com

Abstract

Purpose: This study focuses on the Merging of fintech and blockchain technologies into Islamic banking to discourse difficulties related to operational ineptitudes, financial inclusion, and Shariah compliance. Its goal is to examine how the Islamic financial industry is affected by technical advancements, consumer acceptability, and governing frameworks.

Methodology & Design: In order to examine the hypotheses, this study uses a quantitative research approach, concentrating on the gathering and statistical analysis of numerical data. Descriptive and explanatory in nature, the study seeks to establish connections among factors including employee viewpoints in Islamic banks, fintech uptake, and Shariah compliance.

Findings: The findings of the study provide empirical support for most of the proposed hypotheses. Hypothesis 1 (H1), which posited a significant relationship between Consumer Perceptions (CP) and Fintech Adoption (FA), was supported by the data. In contrast, Hypothesis 2 (H2), which proposed a negative relationship between Consumer Perceptions and Smart Contracts (SC), was not supported, as no significant relationship was found. Hypothesis 3 (H3) suggested a positive relationship between Fintech Adoption and Fintech and Blockchain (FB), and the results confirmed this association. Similarly, Hypothesis 4 (H4), which postulated a positive link between Fintech and Blockchain and Smart Contracts, was also supported.

Hypothesis 5 (H5), which proposed a direct relationship between Regulatory Framework (RF) and Fintech Adoption, was supported by significant findings. The results also supported Hypothesis 6 (H6), indicating a positive relationship between Regulatory Frameworks and Smart Contracts. Hypothesis 7 (H7), which proposed a positive relationship between Fintech Adoption and Shariah Compliance (SC), was

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Online ISSN: 3006-2047
Print ISSN: 3006-2039

confirmed by the analysis. Additionally, Hypothesis 8 (H8), stating a positive relationship between Shariah Compliance and Smart Contracts, was supported. Finally, Hypothesis 9 (H9), which posited a positive relationship between Fintech Adoption and Smart Contracts, was also validated by the findings. Overall, the results confirm the significance of most hypothesized relationships within the proposed research framework.

Keywords: Islamic Banking, Fintech, Blockchain Technology, Shariah Compliance, Smart Contracts, Financial Presence, Regulatory Frameworks, Consumer Acceptance, Operational Efficiency, Transparency in Money, Peer-to-Peer Advancing

INTRODUCTION

Blockchain and financial technology's (fintech) quick development has revolutionized banking and finance by providing creative solutions that improve accessibility, efficiency, and transparency. Certain that Islamic banking and money adhere to certain moral and legal principles derived from Shariah law, the addition of these technologies presents exclusive chances as well as difficulties.

Islamic banking in Pakistan has grown rapidly, with assets exceeding PKR 4.6 trillion (2023) and a network of 22 Islamic banking institutions.

With a expectable market size of $2.88 trillion in 2021, this sector has knowledgeable considerable development (Islamic Financial Services Industry Stability Report, 2022).

Despite the enormous growth and promise of the Islamic banking and financial sector, persistent challenges nevertheless stand in the way of its advancement and accessibility. Regulatory constraints that may impede novelty, operational inefficiency, and restricted access to disadvantaged individuals are common tests faced by traditional Islamic financial institutions. SBP's Shariah Governance Framework (2021) lacks guidelines for FinTech innovations like P2P lending (State Bank of Pakistan, 2021).

LITERATURE REVIEW

The financial sector is closely regulated since it is a sensitive and essential component of society. FinTech's adoption has the ability to boost economic growth, especially in emerging countries like Pakistan. Regulators must endeavor to preserve the stability of financial systems while protecting against fraud and crises, which presents difficulties for them. To reduce threats like cyberattacks, data breaches, and the abuse of private information, strong regulatory monitoring is necessary. Both users and regulators need to be knowledgeable about the structure and workings of FinTech in order for its deployment to be successful, and proactive regulatory measures need to be in place.

World Economic Forum (2017), FinTech creates new opportunities and problems by fusing cutting-edge technologies with financial services. FinTech refers to businesses or individuals using cutting-edge technology to provide financial services.

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Although many FinTech companies are still tiny and use insight-driven business models, investments in this industry have increased dramatically. According to an IMF analysis, venture capital funding increased from USD 0.8 billion in 2010 to USD 13.6 billion in 2016, and global FinTech investments increased from USD 9 billion in 2010 to USD 25 billion in 2016. Since the global financial crisis, the value of publicly traded FinTech companies has doubled, surpassing that of other industries (International Monetary Fund, 2016).

Shariah regulations must be followed by FinTech in Islamic finance. According to Shariah, technology is neutral unless it specifically contravenes Islamic law (Oseni & Ali, 2019).

Fintech technology have a lot to offer Islamic finance, which shadows Shari'ah norms. Abubakar, Ogunbado, & Saidi (2018); Biancone, Secinaro, & Kamal (2019); Todorof (2018); Abu-Bakar (2018); and other recent research have brought attention to the incompatibilities of Fintech solutions in the Islamic finance sector. Fintech's potential uses in Islamic finance are still obvious, although disagreements over whether or not certain of its products are Shari'ah-compliant. The importance of smart contracts in guaranteeing that Islamic financial services and products adhere to Shari'ah norms has been highlighted by Elasrag (2019).

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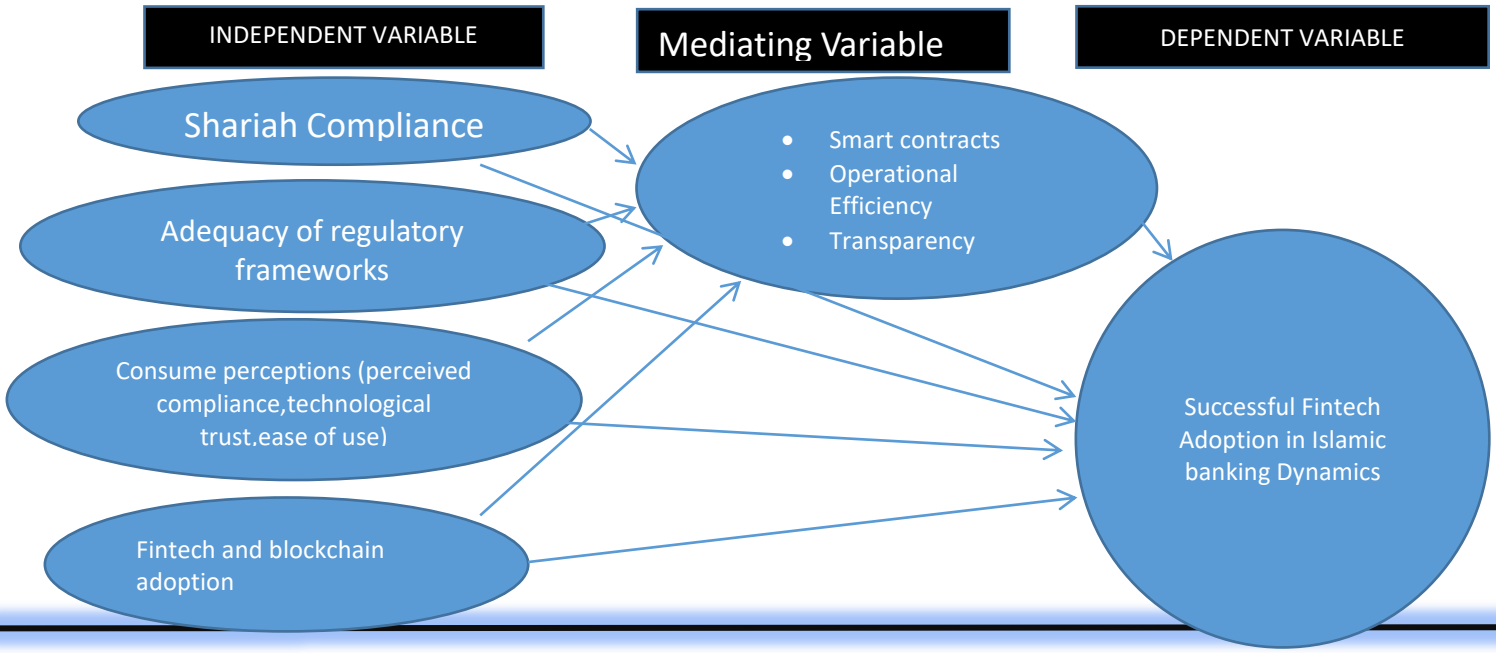
CONCEPTUAL FRAMEWORK



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RESEARCH METHODOLOGY

This study employs a **mixed method approach**, focusing on the collection and statistical analysis of both quantitative (numerical) data and qualitative (textual) data to test the hypotheses. The research is **descriptive and explanatory**, aiming to identify relationships between variables such as Shariah compliance, fintech adoption, and employee perspectives in Islamic banks.

The research design is **cross-sectional**, where data is collected at a single point in time. This design is chosen to efficiently examine the perceptions of bank employees regarding the adoption and implementation of fintech solutions in Islamic banking

The target population consists of employees working in Islamic banks, specifically those involved in technology, Shariah compliance, or higher management-related roles. These employees are likely to have direct or indirect exposure to fintech applications.

The study employs a sample size determined using the **Raosoft sample size calculator**, with a population size of 383. The final sample size is calculated to ensure statistical accuracy and representativeness. A **random sampling technique** is used to ensure equal probability of selection among participants, enhancing the generalizability of the results.

The study uses an **adopted questionnaire**, designed to measure variables using a **Likert scale** ranging from strongly disagree to strongly agree. The instrument is carefully selected for its validity and reliability in similar studies.

Data was collected using a **Google Docs form**, distributed through **email** and **social media platforms** to reach a broader audience. Additionally, **personal visits** was conducted to collect responses directly from bank employees, ensuring higher response rates and clarity.

The collected data was analyzed using **correlation** and **regression analysis** to examine the relationships between variables and to test the proposed hypotheses. Statistical tools such as Smart PLS was utilized to ensure accurate and reliable results.

Several tests were conducted to assess the results of our data. As proposed by (Leguina, 2015), the initial step in evaluating the outcomes of Partial Least Squares Structural Equation Modeling (PLS-SEM) involves the analysis of the measurement model. PLS-SEM was employed in this framework due to the presence of a mediating variable.

Several tests were conducted to assess the results of our data. As proposed by (Leguina, 2015), the initial step in evaluating the outcomes of Partial Least Squares Structural Equation Modeling (PLS-SEM) involves the analysis of the measurement model. PLS-SEM was employed in this framework due to the presence of a mediating variable. The total number of answers is 293.

The assessment of both the structural and reflective models involves an examination of various factors, including indicator loadings, convergent validity, discriminant validity, and internal consistency reliability.

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To evaluate the reliability of the data collection instrument and the corresponding responses for each construct, the researchers employed the Partial Least Squares (PLS) Algorithm and examined the outer loading values. The extreme loading values were assessed, representing the strength of the relationship between each item and its corresponding construct. Notably, all external loading values should surpass the recommended threshold of 0.40 to 0.70 (Hair Jr, Sarstedt et al., 2017). On the other hand, if it leads to a rise in composite reliability and average variance, extraction is recommended to eliminate indicators with an outer loading below 0.40 (Hulland, 1999). This signifies the suitability and appropriateness of the items for subsequent testing and analysis, affirming their reliability in capturing the intended constructs.

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Convergent validity is a fundamental aspect of research methodology that plays a vital role in evaluating the degree of correlation between various indicators that assess the same underlying construct and exhibit agreement. When examining convergent validity, it is important to consider various factors. These factors include the factor loading of each indicator, composite reliability (CR), and the average variance extracted (AVE) common research practice (Hair, Hult et al., 2014). It is typically assessed on a scale from 0 to 1, with higher values indicating stronger convergent validity. In order to establish adequate convergent validity, it is generally recommended that the AVE value should surpass the threshold of 0.50 (Bagozzi & Yi 1988; Henseler, Ringle et al., 2009). As per (Chin & Marcoulides, 1998) findings, the value must be greater than or equal to 0.50. According to Table 7, it can be observed that all AVE constructs have satisfied the recommended threshold, as all the values are close to 0.50.

ANALYSIS AND FINDINGS

The study obtained 293 valid responses from the targeted population and employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the measurement and structural models. The analysis was conducted in two stages. First, the measurement model was assessed through indicator loadings, internal consistency reliability, convergent validity, and discriminant validity. Second, the structural model was evaluated using the coefficient of determination (R^2), path coefficients, t-statistics, p-values, and specific indirect effects based on 5,000 bootstrap iterations. This sequence is appropriate because the quality of the measurement model should be established before interpreting relationships among latent constructs.

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Note: The manuscript states that PLS-SEM was selected because of the mediating variable and reports 293 valid responses.

MEASUREMENT MODEL ASSESSMENT

The measurement model evaluates whether the observed indicators adequately represent their respective latent constructs. The reported assessment covers outer loadings, Cronbach's alpha, composite reliability (rho_c), and average variance extracted (AVE). The results are reproduced and reorganized below for clearer interpretation.

Table 1. Construct Reliability and Convergent Validity

Construct	Items	Outer loading range	Cronbach's α	Composite reliability	AVE
Smart Contracts	SC1–SC4	0.471–0.516	0.851	0.899	0.691
Shariah Compliance	SC1–SC4*	0.758–0.864	0.809	0.887	0.710
Regulatory Frameworks	RF1–RF4	0.806–0.843	0.840	0.893	0.675
Consumer Perceptions	CP1–CP4	0.786–0.874	0.844	0.895	0.681
Fintech and Blockchain	FB1–FB4	0.807–0.844	0.826	0.885	0.658
FinTech Adoption	FTA1–FTA3	0.785–0.885	0.864	0.907	0.710

Note: The manuscript labels the Shariah Compliance items as SC1–SC4, while Smart Contracts also uses SC1–SC4. For publication, distinct abbreviations should be adopted (e.g., SC for Smart Contracts and SHC for Shariah Compliance). The reliability values shown are those reported in the manuscript.

Indicator Reliability

The outer loadings indicate the strength of the association between each observed item and its underlying construct. The results show a clear distinction between Smart Contracts and the remaining constructs. The Smart Contracts indicators have loadings between 0.471 and 0.516, which are comparatively weak. In contrast, the indicators for Shariah Compliance, Regulatory Frameworks, Consumer Perceptions, Fintech and Blockchain, and FinTech Adoption generally show substantially higher loadings, ranging from approximately 0.758 to 0.885.

Accordingly, the Smart Contracts construct warrants particular attention. Although the manuscript reports acceptable composite reliability and AVE for this construct, the low indicator loadings suggest that its individual items do not represent the

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construct as strongly as the indicators of the other constructs. The results therefore support proceeding with the reported model, but the Smart Contracts measurement should be refined and revalidated in future work.

Internal Consistency Reliability

All six constructs report Cronbach's alpha and composite reliability above 0.70. Cronbach's alpha ranges from 0.809 for Shariah Compliance to 0.864 for FinTech Adoption, while composite reliability ranges from 0.885 to 0.907. These results indicate satisfactory internal consistency across the constructs used in the empirical model.

Convergent Validity

Convergent validity is assessed using AVE. The reported AVE values range from 0.658 to 0.724, all exceeding the 0.50 criterion. Thus, each construct explains more than half of the variance in its indicators on the basis of the reported AVE statistics. FinTech Adoption records the highest AVE (0.710 in the reported table, alongside Shariah Compliance at 0.710), while Fintech and Blockchain has the lowest reported AVE (0.658). Overall, the AVE results provide evidence of convergent validity, subject to the previously noted concern regarding the low individual Smart Contracts loadings.

Discriminant Validity

Discriminant validity was assessed using the HTMT approach and the Fornell–Larcker criterion. The manuscript states that the HTMT results were favorable. However, the numerical matrix reproduced in the article is described in one place as an HTMT matrix and elsewhere as a correlation matrix. Therefore, the table should be explicitly verified against the original SmartPLS output before publication.

Table 2. Discriminant Validity Matrix

Construct	CP	FA	FB	RF	SHC	SC
Consumer Perceptions	1.000	0.625	0.669	0.501	0.319	0.527
FinTech Adoption	0.625	1.000	0.835	0.714	0.656	0.843
Fintech and Blockchain	0.669	0.835	1.000	0.623	0.611	0.851
Regulatory Frameworks	0.501	0.714	0.623	1.000	0.660	0.681
Shariah Compliance	0.319	0.656	0.611	0.660	1.000	0.646

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Smart Contracts	0.527	0.843	0.851	0.681	0.646	1.000

Table 3. Fornell–Larcker Criterion

Construct	CP	FA	FB	RF	SHC	SC
Consumer Perceptions	0.831	0.524	0.566	0.427	0.271	0.457
FinTech Adoption	0.524	0.851	0.693	0.592	0.541	0.706
Fintech and Blockchain	0.566	0.693	0.822	0.525	0.515	0.727
Regulatory Frameworks	0.427	0.592	0.525	0.825	0.556	0.584
Shariah Compliance	0.271	0.541	0.515	0.556	0.811	0.547
Smart Contracts	0.457	0.706	0.727	0.584	0.547	0.843

The diagonal values in Table 3 represent the square roots of AVE, whereas the off-diagonal values represent the reported inter-construct associations. Each diagonal value is greater than the corresponding off-diagonal values in its row and column. On the basis of the reported Fornell–Larcker criterion, discriminant validity is therefore supported for the six constructs.

Overall Assessment of the Measurement Model

Taken together, the reported reliability and validity statistics indicate that the measurement model is generally adequate for structural analysis. Cronbach's alpha and composite reliability exceed the reported minimum levels for all constructs, and AVE exceeds 0.50 for all constructs. The Fornell–Larcker criterion is also satisfied. Nevertheless, the Smart Contracts construct remains the principal measurement concern because all four reported item loadings are below 0.60. This issue should be acknowledged as a limitation of the measurement model rather than obscured by the acceptable aggregate reliability and AVE statistics.

Structural Model Assessment

After establishing the measurement model, the structural model was evaluated to determine the explanatory power of the endogenous constructs and to test the hypothesized relationships. The empirical model reported in the PLS-SEM results contains FinTech Adoption and Smart Contracts as endogenous constructs. Consumer Perceptions, Fintech and Blockchain, Regulatory Frameworks, and Shariah Compliance are used as exogenous predictors, while Smart Contracts also predicts FinTech Adoption.

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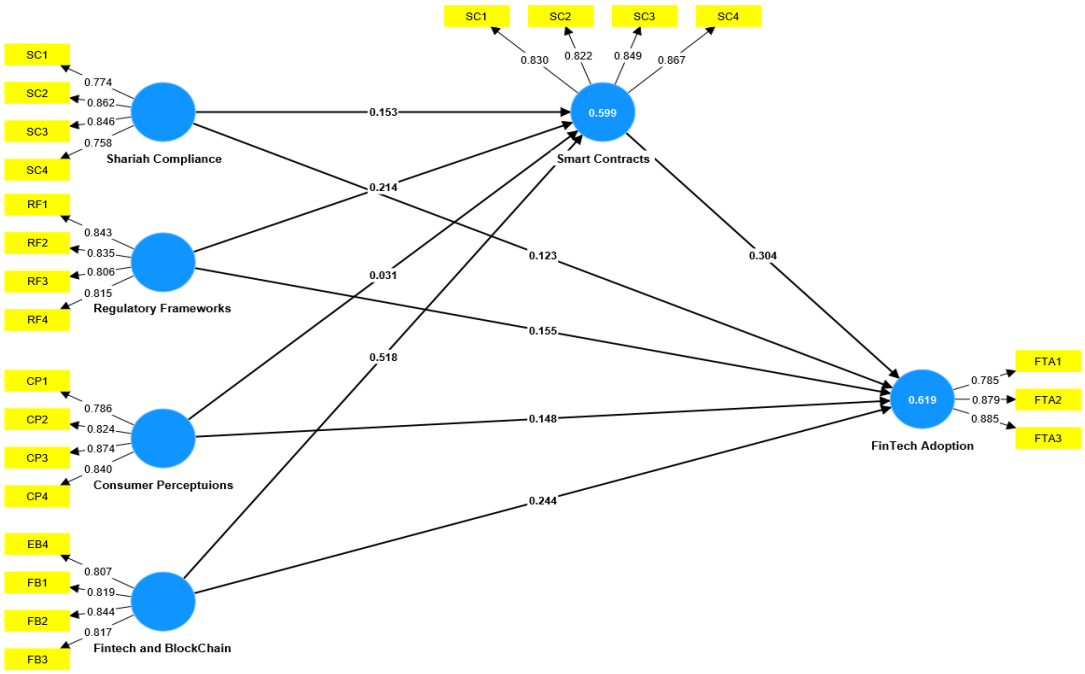
Figure 1. Empirical Structural Model



Coefficient of Determination (R^2)

R^2 indicates the proportion of variance in an endogenous construct explained by its predictors. The reported results show that the model explains 61.9% of the variance in FinTech Adoption and 59.9% of the variance in Smart Contracts. The adjusted R^2 values are 0.612 and 0.594, respectively.

Endogenous construct	R^2	Adjusted R^2	Interpretation
FinTech Adoption	0.619	0.612	The predictors jointly explain 61.9% of the variance.
Smart Contracts	0.599	0.594	The predictors jointly explain 59.9% of the variance.

These values indicate substantial explanatory capacity for the reported empirical model: a considerable proportion of variation in both Smart Contracts and FinTech Adoption is accounted for by the predictors included in the model. The manuscript's

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earlier statement attributing FinTech Adoption to Smart Contracts, Operational Efficiency, and Transparency should be removed or revised because Operational Efficiency and Transparency do not appear in the reported structural results.

Direct Path Coefficients and Hypothesis Testing

The significance of the hypothesized relationships was evaluated using bootstrapped t-statistics and p-values. At the conventional 5% significance level, a path is considered statistically significant when $p < 0.05$. The original sample coefficient (β) indicates the direction and magnitude of the reported relationship.

Path	B	T	p	Decision
Consumer Perceptions → FinTech Adoption	0.148	3.530	<0.001	Supported
Consumer Perceptions → Smart Contracts	0.031	0.643	0.520	Not supported
Fintech and Blockchain → FinTech Adoption	0.244	3.195	0.001	Supported
Fintech and Blockchain → Smart Contracts	0.518	9.029	<0.001	Supported
Regulatory Frameworks → FinTech Adoption	0.155	2.441	0.015	Supported
Regulatory Frameworks → Smart Contracts	0.214	3.453	0.001	Supported
Shariah Compliance → FinTech Adoption	0.123	2.159	0.031	Supported
Shariah Compliance → Smart Contracts	0.153	2.726	0.006	Supported
Smart Contracts → FinTech Adoption	0.304	4.378	<0.001	Supported

Interpretation of Direct Effects

Consumer Perceptions → FinTech Adoption. The path from Consumer Perceptions to FinTech Adoption is positive and statistically significant (β = 0.148, t = 3.530, p <

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0.001). Thus, stronger favorable perceptions are associated with higher reported FinTech Adoption. The effect is positive but relatively modest in magnitude.

Consumer Perceptions → Smart Contracts. The path is positive but statistically insignificant (β = 0.031, t = 0.643, p = 0.520). Therefore, the reported data do not provide evidence that Consumer Perceptions directly predict Smart Contracts. This finding is important because it suggests that favorable perceptions of fintech adoption do not necessarily translate directly into perceptions or use of smart-contract applications.

Fintech and Blockchain → FinTech Adoption. The relationship is positive and significant (β = 0.244, t = 3.195, p = 0.001). The result indicates that stronger perceived integration or adoption of fintech and blockchain is associated with greater FinTech Adoption. This is one of the core technology-related effects in the model.

Fintech and Blockchain → Smart Contracts. This is the strongest reported direct path in the model (β = 0.518, t = 9.029, p < 0.001). The result indicates a strong positive association between fintech/blockchain integration and Smart Contracts. Among the predictors of Smart Contracts, this path provides the strongest empirical evidence in the reported model.

Regulatory Frameworks → FinTech Adoption. Regulatory Frameworks have a positive and statistically significant relationship with FinTech Adoption (β = 0.155, t = 2.441, p = 0.015). The result suggests that perceptions of an adequate regulatory environment are associated with greater FinTech Adoption in Islamic banking.

Regulatory Frameworks → Smart Contracts. The relationship is positive and significant (β = 0.214, t = 3.453, p = 0.001), indicating that regulatory conditions are also relevant to the development or acceptance of smart-contract applications.

Shariah Compliance → FinTech Adoption. Shariah Compliance has a positive and significant direct relationship with FinTech Adoption (β = 0.123, t = 2.159, p = 0.031). The finding indicates that stronger perceptions of Shariah compliance are associated with greater FinTech Adoption, although the coefficient is comparatively modest.

Shariah Compliance → Smart Contracts. The relationship is positive and significant (β = 0.153, t = 2.726, p = 0.006). This suggests that Shariah compliance considerations are positively associated with Smart Contracts in the reported employee perspectives.

Smart Contracts → FinTech Adoption. Smart Contracts have a positive and significant relationship with FinTech Adoption (β = 0.304, t = 4.378, p < 0.001). The coefficient is relatively strong compared with most other direct predictors of FinTech Adoption. This finding supports the proposed role of smart-contract technology as an important mechanism associated with broader fintech adoption.

Table 5. Hypothesis Testing Summary

Hypothesis	Reported relationship	β	t	p	Decision
H1	Consumer Perceptions →	0.148	3.530	<0.001	Supported

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H2	FinTech Adoption Consumer Perceptions → Smart Contracts	0.031	0.643	0.520	Not supported
H3	Fintech and Blockchain → FinTech Adoption	0.244	3.195	0.001	Supported
H4	Fintech and Blockchain → Smart Contracts	0.518	9.029	<0.001	Supported
H5	Regulatory Frameworks → FinTech Adoption	0.155	2.441	0.015	Supported
H6	Regulatory Frameworks → Smart Contracts	0.214	3.453	0.001	Supported
H7	Shariah Compliance → FinTech Adoption	0.123	2.159	0.031	Supported
H8	Shariah Compliance → Smart Contracts	0.153	2.726	0.006	Supported
H9	Smart Contracts → FinTech Adoption	0.304	4.378	<0.001	Supported

Mediation Analysis

The manuscript further examines whether Smart Contracts transmit the effects of selected predictors to FinTech Adoption. The indirect effects were assessed using bootstrapping with 5,000 iterations. A statistically significant indirect effect indicates that the predictor is associated with FinTech Adoption through Smart Contracts. The significance of an indirect effect should be interpreted alongside the corresponding direct effect when determining the overall type of mediation.

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Indirect path	Indirect β	T	p	Interpretation
Fintech and Blockchain → Smart Contracts → FinTech Adoption	0.158	3.979	<0.001	Significant mediation
Regulatory Frameworks → Smart Contracts → FinTech Adoption	0.065	2.605	0.009	Significant mediation
Consumer Perceptions → Smart Contracts → FinTech Adoption	0.009	0.618	0.537	No significant mediation
Shariah Compliance → Smart Contracts → FinTech Adoption	0.047	2.280	0.023	Significant mediation

Interpretation of Mediation Effects

Fintech and Blockchain → Smart Contracts → FinTech Adoption. The indirect effect is positive and significant (β = 0.158, t = 3.979, p < 0.001). Because the direct Fintech and Blockchain → FinTech Adoption path is also significant (β = 0.244), the results are consistent with complementary/partial mediation rather than full mediation, subject to confirmation from the direct and total-effect output.

Regulatory Frameworks → Smart Contracts → FinTech Adoption. The indirect effect is positive and significant (β = 0.065, t = 2.605, p = 0.009). Since the direct Regulatory Frameworks → FinTech Adoption path is also significant (β = 0.155), Smart Contracts appear to transmit part of the relationship between regulatory frameworks and FinTech Adoption.

Consumer Perceptions → Smart Contracts → FinTech Adoption. The indirect effect is not significant (β = 0.009, t = 0.618, p = 0.537). This result is consistent with the non-significant direct Consumer Perceptions → Smart Contracts path. Therefore, the reported evidence does not support Smart Contracts as a mediator of the Consumer Perceptions–FinTech Adoption relationship.

Shariah Compliance → Smart Contracts → FinTech Adoption. The indirect effect is positive and significant (β = 0.047, t = 2.280, p = 0.023). Since the direct Shariah Compliance → FinTech Adoption path is also significant (β = 0.123), the results suggest that Smart Contracts transmit part of the positive association between Shariah Compliance and FinTech Adoption.

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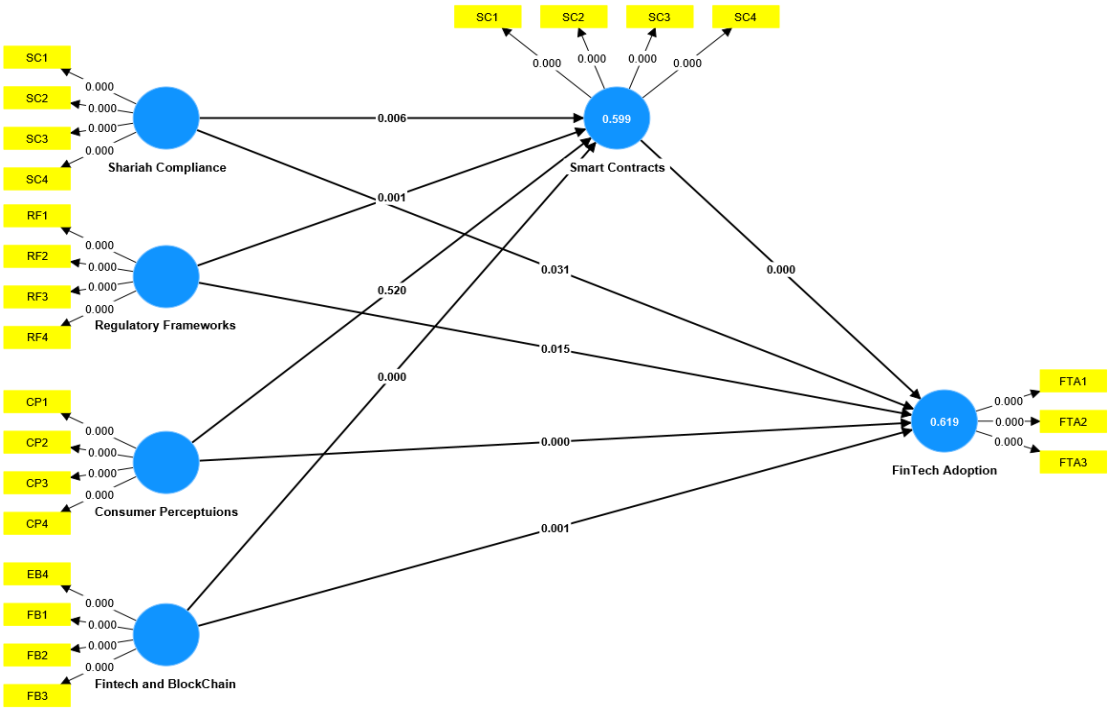
Figure 2. Mediation Model



Integrated Findings

The combined findings indicate that FinTech Adoption in the reported employee sample is associated with technological, regulatory, perceptual, Shariah, and smart-contract factors. The structural model explains 61.9% of the variance in FinTech Adoption and 59.9% of the variance in Smart Contracts, indicating meaningful explanatory capacity within the sample.

The strongest direct relationship in the model is between Fintech and Blockchain and Smart Contracts (β = 0.518), followed by the Smart Contracts → FinTech Adoption path (β = 0.304). This pattern positions Smart Contracts as an important technology mechanism linking fintech/blockchain integration to broader FinTech Adoption. The mediation results reinforce this interpretation: Smart Contracts significantly mediate the effects of Fintech and Blockchain, Regulatory Frameworks, and Shariah Compliance on FinTech Adoption.

Consumer Perceptions present a more nuanced finding. Although Consumer Perceptions have a significant positive direct relationship with FinTech Adoption (β = 0.148), they do not significantly predict Smart Contracts (β = 0.031, p = 0.520), and the indirect effect through Smart Contracts is also non-significant (β = 0.009, p = 0.537). Thus, perceptions appear to matter for FinTech Adoption directly rather than through the reported Smart Contracts mechanism.

The results also show that Regulatory Frameworks and Shariah Compliance have both direct and indirect associations with FinTech Adoption. This suggests that the

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institutional and Shariah dimensions may influence adoption not only independently but also through technology-specific mechanisms represented by Smart Contracts.

LIMITATIONS

The results of this study cannot be generalized because it was conducted in Pakistan.When examining how monetary innovations, like as blockchain and numerical revolution, impact Islamic finance within financial institutions, there are a few aspects to consider. The increasing challenge posed by blockchain knowledge and rapidly evolving financial technology is that the real-world environment may change throughout the course of the course, potentially affecting the practical outcomes. Because different Islamic financial organizations may not have equal access to comprehensive and standardized data on the application of these abilities, the study's generalizability may be limited.

RECOMMENDATIONS

To assist Islamic finance in navigating the constantly evolving financial technology landscape, a set of strategic guidelines and regulations emerges in the context of digital transformation and blockchain expertise in financial presence. Regulatory organizations must, first and foremost, engage closely with Islamic scholars and fintech authorities to establish a consistent regulatory framework that ensures that financial technology conforms with Islamic finance values. This framework should address risk organization, ethical concerns, and shariah compliance. Financial companies that use these abilities must put in place sound cybersecurity procedures to safeguard private client and financial data and promote trust in the digital financial environment.

In the context of financial inclusion, Islamic finance is also cognizant of the challenges posed by new technologies. Therefore, in order to guarantee the ethical application of blockchain technology and other digital solutions, organizations should think about partnering with skill providers. To encourage innovation and long-term growth, politicians might also provide incentives for fintech research and development that is specifically aimed at Islamic finance.

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