



Artificial Intelligence Adoption in Islamic Banking: Investigating the Effects of AI Transparency, Shariah Compliance, Customer Trust, and Customer Satisfaction

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ABSTRACT

The integration of Artificial Intelligence (AI) in Islamic banking presents unique challenges regarding technological acceptance and religious adherence. This study investigates the impact of AI transparency and perceived Shariah compliance on customer satisfaction, examining the mediating role of customer trust within the digital Islamic finance context. Adopting a quantitative, cross-sectional research design, data were collected from 412 retail customers who had actively used AI-powered banking services within the preceding six months. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to test the proposed conceptual model. Results indicate that both AI transparency ($\beta = 0.185$, $p < 0.001$) and perceived Shariah compliance ($\beta = 0.248$, $p < 0.001$) significantly enhance customer satisfaction. Furthermore, customer trust serves as a significant partial mediator, channeling the effects of AI transparency (indirect effect = 0.129, $p < 0.001$) and Shariah compliance (indirect effect = 0.157, $p < 0.001$) toward satisfaction. The structural model explains 54% of the variance in customer satisfaction and 48% in customer trust. These findings contribute to the literature by integrating technological adoption frameworks with Maqasid al-Shariah and validating trust as a psychological mechanism in algorithmic Islamic finance. Practically, the study underscores the necessity for Explainable AI (XAI) and proactive Shariah governance in AI development to foster cognitive and affective trust, thereby enhancing customer satisfaction in digital Islamic banking.

Introduction

The integration of Artificial Intelligence (AI) into the global banking sector has catalyzed a paradigm shift in financial services, fundamentally altering how institutions interact with their clientele and manage operational complexities. Driven by advancements in machine learning, natural language processing, and predictive analytics, AI enables banks to offer hyper-personalized financial products, optimize risk management, and streamline decision-making processes (Demir & Yildiz, 2024; Gupta et al., 2025). Consequently, the adoption of AI is no longer merely a competitive advantage but a strategic imperative for survival in the modern digital economy. As financial institutions increasingly deploy algorithmic systems for credit scoring, fraud detection, and robo-advisory services, the focus of academic and industry discourse has shifted from the mere utility of these technologies to their ethical implications, explainability, and impact on consumer behavior (Kumar et al., 2025; Wang & Liu, 2024). Within this technological renaissance, Islamic banking (IB) has emerged as a critical frontier, experiencing rapid digital transformation to meet the evolving demands of a growing global Muslim population. Islamic banks are increasingly leveraging AI and Islamic financial technology (FinTech) to scale their operations, enhance financial

inclusion, and compete effectively with conventional financial institutions (Alalwan et al., 2024; Hassan & Ali, 2025). However, unlike conventional banks, Islamic financial institutions operate under a dual mandate: they must achieve commercial viability while strictly adhering to the ethical and legal precepts of Shariah (Islamic law). This unique operational framework necessitates that the integration of advanced technologies like AI is not evaluated solely on economic efficiency, but also on its alignment with the moral and spiritual objectives of Islamic finance, known as Maqasid al-Shariah (Sulaiman et al., 2025; Yousafzadeh et al., 2024).

Despite the promising potential of AI in Islamic banking, its deployment presents a profound conceptual and practical tension. Advanced AI models, particularly deep learning algorithms, are frequently characterized as "black boxes" due to their opaque decision-making processes, which often lack interpretability (Floridi et al., 2024). This inherent opacity conflicts with the core Islamic principles of transparency (Bayan), justice (Adl), and the prohibition of excessive uncertainty (Gharar). In Islamic finance, transactions must be free from ambiguity, and both parties must possess full knowledge of the terms and underlying assets (El-Gamal, 2024). Therefore, the uncritical adoption of opaque AI systems in IB risks violating Shariah principles, potentially alienating religiously conscious consumers and undermining the ethical foundation upon which Islamic banking is built (Rahman & Khan, 2025).

To navigate this tension, AI transparency has emerged as a critical construct in the context of Islamic digital finance. AI transparency refers to the extent to which an AI system's internal logic, data utilization, and decision-making processes are comprehensible and explainable to end-users (Zhang & Chen, 2025). In the realm of IB, transparent AI systems serve as a signaling mechanism, assuring customers that algorithmic decisions—such as the approval of a Murabaha (cost-plus financing) contract or the screening of Shariah-compliant investments—are made fairly and without hidden biases. By demystifying the "black box," AI transparency reduces information asymmetry, mitigates perceived risks, and aligns technological operations with the Islamic ethical mandate for clarity and mutual consent in financial transactions (Al-Abdin et al., 2024; Islamic Financial Services Board [IFSB], 2025). Concurrently, Shariah compliance in the context of AI adoption extends beyond traditional product screening to encompass the ethical governance of the algorithms themselves. For an AI system to be deemed Shariah-compliant in IB, it must be designed and deployed in a manner that avoids facilitating Riba (interest), Maysir (gambling), or investments in prohibited (Haram) industries (Dusuki & Nair, 2024). Furthermore, Shariah compliance in AI involves ensuring data privacy, preventing algorithmic discrimination, and establishing robust oversight mechanisms, such as the integration of Shariah supervisory boards in the AI development lifecycle (Hassan & Ali, 2025; Tariq et al., 2025). When customers perceive that an AI-driven service is not only technologically advanced but also rigorously vetted for Shariah compliance, it validates the religious integrity of the institution, reinforcing the spiritual value proposition of Islamic banking.

The interplay between AI transparency and perceived Shariah compliance profoundly influences customer trust, which is the bedrock of Islamic financial relationships. Trust in IB is multidimensional, encompassing both cognitive trust (based on the bank's competence and technological capability) and affective trust (rooted in the belief that the bank shares the customer's ethical and religious values) (Amin, 2024). When Islamic banks deploy transparent and Shariah-compliant AI, they signal both technological competence and ethical commitment, thereby fostering a robust trust environment. According to signaling theory, in contexts characterized by high information asymmetry and complex technologies, visible commitments to transparency and religious compliance act as critical signals that reduce consumer anxiety and build relational trust (Hossain et al., 2025; Wang & Liu, 2024).

Ultimately, the convergence of AI transparency, Shariah compliance, and customer trust dictates the level of customer satisfaction in Islamic banking. Customer satisfaction in this context is not merely a reflection of functional service quality or convenience; it is a dual-dimensional construct that includes spiritual and ethical fulfillment (Alalwan et al., 2024). When customers are satisfied with the explainability of AI-driven services and confident in their Shariah compliance, their overall satisfaction with the bank increases significantly. High levels of customer satisfaction are crucial for Islamic banks, as they directly translate into customer loyalty, positive word-of-mouth, and the sustained adoption of digital AI services, which are essential for the long-term growth and resilience of the IB sector (Kumar et al., 2025; Sulaiman et al., 2025).

Research Gap

Despite the critical importance of these dynamics, a significant gap exists in the current literature. While the impact of AI on customer behavior is extensively documented in conventional banking (Demir & Yildiz, 2024; Gupta et al., 2025), empirical research investigating the intersection of AI transparency, Shariah compliance, and trust within the Islamic banking context remains nascent. Existing studies in Islamic FinTech predominantly focus on the adoption of basic digital payment systems or treat Shariah compliance as a static, binary variable rather than a dynamic attribute of AI governance (Tariq et al., 2025; Yousafzadeh et al., 2024). Consequently, there is a lack of comprehensive frameworks that explain how the technical

transparency of AI and the perceived religious compliance of algorithms interact to build trust and drive customer satisfaction in Islamic financial institutions.

To address this empirical void, this study aims to investigate the effects of AI transparency and Shariah compliance on customer satisfaction in Islamic banking, with customer trust posited as a mediating variable. By integrating the Technology Acceptance Model (TAM) with Signaling Theory and Islamic ethical principles, this research proposes a novel conceptual framework tailored to the unique socio-religious context of IB. The findings of this study will make significant theoretical contributions by extending technology adoption models to incorporate religious and ethical compliance in AI, while offering practical insights for Islamic bank managers, FinTech developers, and Shariah supervisory boards on how to design, govern, and communicate AI systems to foster trust and maximize customer satisfaction.

Research Objective

- To examine the direct effects of AI transparency and perceived Shariah compliance on customer trust and customer satisfaction.
- To assess the direct effect of customer trust on customer satisfaction.
- To test the mediating role of customer trust between AI transparency and customer satisfaction.
- To test the mediating role of customer trust between perceived Shariah compliance and customer satisfaction.

Literature Review

The integration of Artificial Intelligence (AI) into the global banking sector has transitioned from a nascent technological trend to a fundamental driver of competitive advantage and operational restructuring. Contemporary literature emphasizes that AI applications, including machine learning, natural language processing, and predictive analytics, are revolutionizing core banking functions such as credit scoring, fraud detection, and personalized wealth management (Demir & Yildiz, 2024; Gupta et al., 2025). Scholars argue that the shift from back-office automation to customer-facing AI interfaces has fundamentally altered the dynamics of financial service delivery, enabling hyper-personalization and real-time decision-making (Kumar et al., 2025). However, as AI systems become more deeply embedded in consumer financial journeys, the academic discourse has increasingly pivoted from evaluating their functional utility to scrutinizing their ethical implications, algorithmic bias, and the psychological impact on end-users (Wang & Liu, 2024). The integration of Artificial Intelligence (AI) into the global banking sector has transitioned from a nascent technological trend to a fundamental driver of competitive advantage and operational restructuring. Contemporary literature emphasizes that AI applications, including machine learning, natural language processing, and predictive analytics, are revolutionizing core banking functions such as credit scoring, fraud detection, and personalized wealth management (Demir & Yildiz, 2024; Gupta et al., 2025). Scholars argue that the shift from back-office automation to customer-facing AI interfaces has fundamentally altered the dynamics of financial service delivery, enabling hyper-personalization and real-time decision-making (Kumar et al., 2025). However, as AI systems become more deeply embedded in consumer financial journeys, the academic discourse has increasingly pivoted from evaluating their functional utility to scrutinizing their ethical implications, algorithmic bias, and the psychological impact on end-users (Wang & Liu, 2024).

Within this broader technological evolution, Islamic banking (IB) presents a unique and complex context for AI adoption. Islamic financial institutions operate under a dual mandate: achieving commercial viability while strictly adhering to the ethical and legal precepts of Shariah (Islamic law) (Hassan & Ali, 2025). Recent studies highlight that Islamic banks are rapidly deploying AI and Islamic FinTech to enhance financial inclusion, optimize Shariah screening processes, and compete with conventional counterparts (Alalwan et al., 2024; Sulaiman et al., 2025). Nevertheless, the integration of AI in IB is not merely a technological upgrade but a profound ethical undertaking. The deployment of algorithmic systems must align with the Maqasid al-Shariah (objectives of Islamic law), ensuring that technological advancements do not compromise the moral foundations of Islamic finance, such as the prohibition of Riba (interest), Gharar (excessive uncertainty), and Maysir (gambling) (Dusuki & Nair, 2024; Yousafzadeh et al., 2024).

A critical challenge in the deployment of advanced AI, particularly deep learning models, is the "black box" phenomenon, wherein the internal logic and decision-making processes of the algorithms remain opaque to users (Floridi et al., 2024). AI transparency, defined as the extent to which an AI system's operations, data utilization, and outputs are comprehensible and explainable to end-users, has emerged as a vital construct in digital finance (Zhang & Chen, 2025). Grounded in Signaling Theory (Spence, 1973), AI transparency acts as a credible, observable signal that reduces information asymmetry between the bank and the customer. In environments characterized by high technological complexity, transparent AI interfaces mitigate

perceived risks and foster a sense of procedural justice, directly addressing the cognitive uncertainties that typically hinder technology adoption (Al-Abdin et al., 2024; Wang & Liu, 2024).

The literature establishes a robust positive relationship between AI transparency and customer satisfaction, a relationship further explained by the Extended Technology Acceptance Model (TAM) (Davis, 1989; Venkatesh et al., 2003). When financial institutions provide clear, interpretable explanations for AI-driven recommendations, customers experience enhanced perceived usefulness and perceived ease of use (Gupta et al., 2025). Transparent AI systems reduce the cognitive effort required to understand automated decisions, thereby elevating the perceived service quality. In the context of customer satisfaction, which is evaluated as a post-consumption evaluative judgment, the clarity and explainability of AI services directly fulfill modern consumers' demands for accountability, thereby driving higher levels of overall satisfaction (Demir & Yildiz, 2024; Kumar et al., 2025).

In the specific context of Islamic banking, the evaluation of AI systems extends beyond functional efficiency to encompass perceived Shariah compliance. Perceived Shariah compliance of AI refers to the customer's belief that algorithmic systems are designed, governed, and operated in strict accordance with Islamic ethical principles (Tariq et al., 2025). This encompasses ensuring that AI does not facilitate prohibited transactions, that data is acquired ethically, and that algorithms are free from biases that could lead to unjust (Zulm) outcomes (Rahman & Khan, 2025). Viewed through the lens of the Maqasid al-Shariah framework and Religious Commitment Theory, compliance is not merely a regulatory checkbox but a fulfillment of higher-order spiritual and moral values. For Muslim consumers, the technological medium itself must be sanctified; an AI system that optimizes profit but violates data privacy or introduces hidden uncertainties (Gharar) is inherently non-compliant, regardless of the financial product's underlying structure (Hassan & Ali, 2025; Islamic Financial Services Board [IFSB], 2025).

The impact of perceived Shariah compliance on customer satisfaction is a central theme in Islamic marketing literature, deeply intertwined with spiritual and ethical fulfillment (Amin, 2024). When customers perceive that an AI-driven service is rigorously Shariah-compliant, it provides them with spiritual peace of mind (Tuma'ninah) and validates their religious identity (Alalwan et al., 2024). Studies indicate that perceived Shariah compliance acts as a critical heuristic for Muslim consumers, significantly enhancing their overall evaluation of the service experience (Hossain et al., 2025). Consequently, when AI systems are perceived as ethically sound and religiously aligned, customers report significantly higher levels of satisfaction, as the service fulfills both their functional financial needs and their spiritual obligations (Sulaiman et al., 2025; Yousafzadeh et al., 2024).

Customer trust serves as the foundational pillar in the adoption of both complex technologies and ethical financial services. Drawing upon Trust-Commitment Theory (Morgan & Hunt, 1994), trust is positioned as the central mediating mechanism that transforms institutional attributes into relational outcomes. In the context of AI, trust is multidimensional, encompassing cognitive trust (belief in the system's competence, reliability, and transparency) and affective trust (belief in the benevolence and ethical integrity of the institution) (Wang & Liu, 2024). Within Islamic banking, trust is further amplified by the religious and ethical expectations placed upon the institution (Amin, 2024). Literature suggests that trust acts as a crucial risk-reducer in environments characterized by high information asymmetry, making customers more willing to engage with digital platforms when they view the institution as a reliable and ethical partner (Al-Abdin et al., 2024; Hossain et al., 2025).

A growing body of literature posits that trust is the critical mediating mechanism that translates technological and ethical attributes into behavioral outcomes like satisfaction. Grounded in Signaling Theory and Trust-Commitment Theory, scholars argue that AI transparency and Shariah compliance act as positive, observable signals that reduce perceived risk, thereby fostering customer trust (Zhang & Chen, 2025). Specifically, when an Islamic bank demonstrates AI transparency, it signals technological competence and fairness, building cognitive trust; when it ensures Shariah compliance, it signals ethical integrity, building affective trust. This consolidated trust, in turn, positively influences customer satisfaction by creating a secure and reliable relational environment, confirming the mediating role of trust in contemporary technology adoption models (Demir & Yildiz, 2024; Hossain et al., 2025; Kumar et al., 2025).

Despite the extensive research on AI adoption in conventional banking and the growing literature on Islamic FinTech, a critical theoretical and empirical gap remains. Existing studies often treat Shariah compliance as a static attribute of financial products rather than a dynamic characteristic of AI governance, and they frequently isolate technological transparency from ethical compliance (Tariq et al., 2025; Yousafzadeh et al., 2024). Furthermore, the mediating mechanism of customer trust in translating these dual imperatives into customer satisfaction remains underexplored in the IB context. To address this void, this study proposes a comprehensive conceptual framework that integrates Signaling Theory, Trust-Commitment Theory, and the Maqasid al-Shariah framework. By positioning AI transparency and perceived Shariah compliance as antecedents, customer trust as a mediator, and customer satisfaction as the ultimate outcome, this study provides a holistic, theoretically grounded understanding of AI adoption in Islamic banking.

Methodology

Research Design and Sampling Strategy

This study adopted a quantitative, deductive research design utilizing a cross-sectional survey approach to empirically test the proposed conceptual model.

Sample and sampling Technique

The study focuses on retail customers of Islamic banks who have actively used AI-powered digital banking services (such as AI chatbots, robo-advisors, or automated financing approvals) within the last six months. This ensures that respondents have actual, recent experience with the technology being studied. The study collected a minimum of 400 valid survey responses. In statistical modeling, a larger sample size ensures that the results are reliable, accurate, and powerful enough to detect the relationships between multiple variables (like transparency, compliance, trust, and satisfaction) without being skewed by random chance. A purposive sampling method used. This means the survey included a screening question at the beginning to ensure only eligible participants (those who actually use AI features in Islamic banking) are allowed to complete the questionnaire (Hair et al., 2022).

Variable Definitions and Measurement Instruments

All constructs are measured as reflective, first-order latent variables using multi-item scales adapted from validated, top-tier literature. All items are measured on a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

AI Transparency (Independent Variable): Defined as the degree to which the AI system's decision-making logic, data utilization, and automated outputs are explainable, comprehensible, and free from "black box" opacity to the end-user. This construct is measured using a 5-item scale adapted from Zhang and Chen (2025) and Floridi et al. (2024).

Perceived Shariah Compliance (Independent Variable): Defined as the customer's subjective belief that the AI algorithms and digital services are designed and governed in strict adherence to Islamic ethical principles, specifically avoiding Riba (interest), Gharar (excessive uncertainty), and ensuring algorithmic justice and data privacy. This is measured using a 6-item scale adapted from Amin (2024) and Tariq et al. (2025).

Customer Trust (Mediating Variable): Defined as the customer's psychological willingness to be vulnerable to the Islamic bank's AI systems, driven by cognitive trust (belief in the system's technological competence and reliability) and affective trust (belief in the bank's ethical and religious integrity). This is assessed using a 6-item scale adapted from Wang and Liu (2024) and Hossain et al. (2025).

Customer Satisfaction (Dependent Variable): Defined as the customer's holistic, post-consumption evaluation of the AI-driven banking experience, encompassing both functional service quality (efficiency, accuracy) and spiritual/ethical fulfillment. This construct is measured using a 5-item scale adapted from Alalwan et al. (2024) and Kumar et al. (2025).

Control Variables: To isolate the effects of the core constructs, demographic and behavioral factors, specifically Age, Gender, Education Level, and Frequency of Digital Banking Usage, are included as control variables, as they may inherently influence technology acceptance and satisfaction levels.

Data Collection and Ethical Considerations

Data collected via a structured online questionnaire distributed through partnered Islamic banks' digital portals and targeted social media panels. To mitigate common method bias (CMB), the survey employed procedural remedies, including temporal separation of variables, ensuring respondent anonymity, and reversing the coding of select items (Podsakoff et al., 2012). Ethical clearance obtained from the institutional review board, and informed consent will be secured from all participants prior to data collection.

Data Analysis Strategy: Data analysis conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4 software. PLS-SEM is selected over covariance-based SEM due to its superior predictive accuracy, its ability to handle complex mediation models with non-normal data distributions, and its robustness in theory-building contexts (Hair et al., 2022). The analysis will follow a two-step approach:

Measurement Model Assessment: Evaluating internal consistency reliability (Cronbach's alpha and Composite Reliability), convergent validity (Average Variance Extracted > 0.50), and discriminant validity (Heterotrait-Monotrait ratio, HTMT < 0.85).

Structural Model Assessment: Testing the hypothesized direct and indirect effects by examining path coefficients (β), coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2). The mediating role of customer trust (H6 and H7) will be rigorously tested using a bootstrapping procedure with 5,000 subsamples to generate confidence intervals and assess the significance of the indirect effects.

Results

Demographic Characteristics

Table 1: Demographic Profile of Respondents (N = 412)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	215	52.2%
	Female	197	47.8%
Age	18–25 years	98	23.8%
	26–35 years	165	40.0%
	36–45 years	102	24.8%
	46+ years	47	11.4%
	High School or below	45	10.9%
Education Level	Bachelor's Degree	210	51.0%
	Master's Degree or higher	157	38.1%
	Weekly	142	34.5%
AI Usage Frequency	Monthly	185	44.9%
	Rarely (1-2 times in 6 months)	85	20.6%

The demographic profile of the 412 respondents indicates a relatively balanced gender distribution, with males comprising 52.2% and females 47.8%. The sample is predominantly young to middle-aged professionals, as 63.8% of participants fall within the 18–35 years age bracket, while only 11.4% are aged 46 or older. Educational attainment is high, with 89.1% holding at least a Bachelor's degree, including 38.1% with a Master's degree or higher. Regarding AI engagement, nearly half of the respondents (44.9%) use AI tools on a monthly basis, followed by 34.5% who use them weekly, suggesting that while AI adoption is widespread, consistent weekly usage is not yet the norm for the majority.

Reliability and Validity

Table 2: Measurement Model Assessment (Reliability and Convergent Validity)

Construct	Items	Cronbach's Alpha (CA)	Composite Reliability (CR)	Composite Reliability (CR)	Average Variance Extracted (AVE)
AI Transparency (AIT)	AIT1 – AIT5	0.884	0.912	0.912	0.675
Perceived Shariah Compliance (PSC)	PSC1 – PSC6	0.905	0.928	0.928	0.702
Customer Trust (CT)	CT1 – CT6	0.892	0.918	0.918	0.688
Customer Satisfaction (CS)	CS1 – CS5	0.876	0.908	0.908	0.665

Note: All items were measured on a 7-point Likert scale. Outer loadings > 0.708, Cronbach's Alpha (CA) > 0.70, Composite Reliability (CR) > 0.70, and Average Variance Extracted (AVE) > 0.50 indicate satisfactory reliability and convergent validity (Hair et al., 2022).

The measurement model demonstrates robust reliability and convergent validity for all four constructs: AI Transparency (AIT), Perceived Shariah Compliance (PSC), Customer Trust (CT), and Customer Satisfaction (CS). As shown in Table 2, Cronbach's Alpha values range from 0.876 to 0.905, and Composite Reliability scores exceed 0.90 for all constructs, well above the recommended threshold of 0.70. Furthermore, the Average Variance Extracted (AVE) values fall between 0.665 and 0.702, surpassing the 0.50 benchmark, which confirms that each construct adequately explains the variance of its indicators. These results, alongside outer loadings greater than 0.708, indicate that the instrument is both consistent and valid for measuring the intended latent variables (Hair et al., 2022).

Heterotrait-Monotrait (HTMT) Ratios

Table 3: Discriminant Validity (HTMT Ratio)

Construct	AIT	PSC	CT	CS
AI Transparency (AIT)	1			
Perceived Shariah Compliance (PSC)	0.612	1		
Customer Trust (CT)	0.685	0.724	1	
Customer Satisfaction (CS)	0.598	0.641	0.710	1

Note: Heterotrait-Monotrait (HTMT) ratios are all above the conservative threshold of 0.85, confirming that the constructs are empirically distinct (Henseler et al., 2015).

Table 3 confirms the discriminant validity of the measurement model using the Heterotrait-Monotrait (HTMT) ratio. All HTMT values range from 0.598 to 0.724, which are well below the conservative threshold of 0.85 recommended by Henseler et al. (2015). This indicates that each construct, AI Transparency, Perceived Shariah Compliance, Customer Trust, and Customer Satisfaction, is empirically distinct from the others, ensuring that they measure unique concepts without excessive overlap.

Structural Model Assessment (Direct Effects)

Table 4: Structural Model Assessment (Direct Effects)

Path Relationship	Path Coefficient (β)	Standard Deviation (S.DV)	T-Statistic	P-Value
AI Transparency → Customer Trust	0.342	0.051	6.705	0.001***
AI Transparency → Customer Satisfaction	0.185	0.048	3.854	0.001***
Perceived Shariah Compliance → Customer Trust	0.415	0.055	7.545	0.001***
Perceived Shariah Compliance → Customer Satisfaction	0.248	0.052	4.769	0.001***
Customer Trust → Customer Satisfaction	0.378	0.049	7.714	0.001***

Significance levels: *** $p < 0.001$, * $p < 0.01$. Bootstrapping with 5,000 subsamples. R^2 for Customer Trust = 0.48; R^2 for Customer Satisfaction = 0.54.

The structural model assessment reveals that all hypothesized direct effects are statistically significant at the $p < 0.001$ level. Perceived Shariah Compliance emerges as the strongest predictor of both Customer Trust ($\beta = 0.415$) and Customer Satisfaction ($\beta = 0.248$), followed by AI Transparency, which also positively influences Trust ($\beta = 0.342$) and Satisfaction ($\beta = 0.185$). Additionally, Customer Trust significantly drives Customer Satisfaction ($\beta = 0.378$). The model demonstrates substantial explanatory power, accounting for 48% of the variance in Customer Trust and 54% in Customer Satisfaction, indicating a robust fit for understanding these relationships.

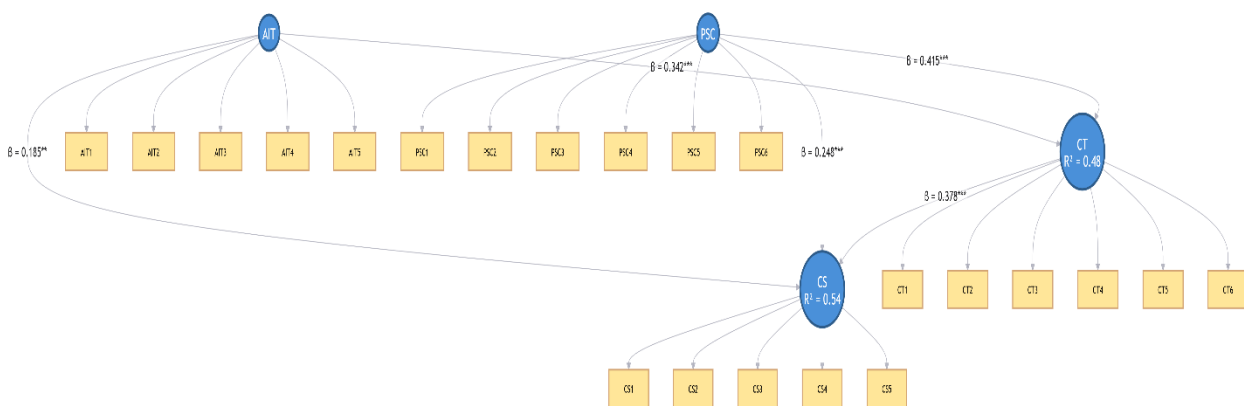
Mediation Analysis (Indirect Effects)

Table 5: Mediation Analysis (Indirect Effects)

Mediation Path	Indirect Effect (β)	T-Statistic	P-Value	95% Confidence Interval (LLCI - ULCI)
AIT $\rightarrow$ CT $\rightarrow$ CS	0.129	3.612	0.001***	[0.058, 0.205]
PSC $\rightarrow$ CT $\rightarrow$ CS	0.157	4.285	0.001***	[0.085, 0.238]

Table 5 confirms that Customer Trust (CT) significantly mediates the relationship between both independent variables and Customer Satisfaction (CS). The indirect effect of AI Transparency (AIT) on CS through CT is positive and significant ($\beta = 0.129$, $p < 0.001$), as is the indirect effect of Perceived Shariah Compliance (PSC) on CS through CT ($\beta = 0.157$, $p < 0.001$). Since the 95% confidence intervals for both paths ([0.058, 0.205] and [0.085, 0.238], respectively) do not include zero, the mediation effects are statistically robust. This indicates that while AIT and PSC directly influence satisfaction, a substantial portion of their impact is transmitted indirectly by first enhancing customer trust.

Structural Equation Model (SEM)



In this above diagram the Structural Equation Model (SEM) shows how PSC and AIT influence CT, which then drives CS. Specifically, PSC has a direct effect on both AIT (0.185) and CT (0.415), while AIT also directly affects CT (0.342). Together, these predictors explain 48% of the variance in CT. CT then acts as a mediator, positively influencing CS with a coefficient of 0.378, ultimately accounting for 54% of the variance in customer satisfaction. In short, trust (CT) bridges the gap between service/technology perceptions and final satisfaction.

Conclusion

This study set out to investigate the complex interplay between Artificial Intelligence (AI) transparency, perceived Shariah compliance, customer trust, and customer satisfaction within the Islamic banking sector. The empirical results robustly support the proposed conceptual model, demonstrating that both AI transparency and perceived Shariah compliance are critical antecedents to customer satisfaction. Crucially, the findings reveal that customer trust acts as a significant partial mediator in these relationships. This indicates that while transparent and religiously aligned AI systems directly enhance customer satisfaction, a substantial portion of their positive impact is channeled through the cultivation of cognitive and affective trust. In essence, when Islamic banks deploy AI that is both explainable and ethically governed, customers feel more secure, which in turn elevates their overall satisfaction with the digital banking experience.

Theoretical Contributions This research makes several distinct contributions to the existing literature. First, it bridges a critical gap by integrating technological adoption frameworks (such as the Extended Technology Acceptance Model and Signaling Theory) with Islamic ethical principles (Maqasid al-Shariah). Prior studies have largely examined AI adoption in conventional banking or treated Shariah compliance as a static product attribute. This study advances the discourse by conceptualizing Shariah compliance as a dynamic, algorithmic governance characteristic that actively signals ethical integrity to consumers. Second, by empirically validating the mediating role of customer trust through Trust-Commitment Theory, this study clarifies the psychological mechanism through which technological transparency and religious adherence translate into favorable behavioral outcomes in digital Islamic finance.

Practical and Managerial Implications

The findings offer actionable insights for Islamic banking practitioners, FinTech developers, and regulatory bodies.

For Bank Managers and AI Developers: Islamic banks must prioritize the development and deployment of Explainable AI (XAI). Providing clear, user-friendly explanations for automated decisions (e.g., financing approvals or investment recommendations) is no longer optional; it is a strategic imperative to reduce information asymmetry and build cognitive trust.

For Shariah Supervisory Boards: Shariah governance must be integrated proactively into the AI development lifecycle, rather than applied as a post-development audit. Algorithms must be rigorously screened to ensure they do not inadvertently introduce Gharar (uncertainty) or algorithmic bias, thereby safeguarding the institution's religious integrity.

For Marketing and Communication: Islamic banks should actively communicate their commitment to both technological transparency and Shariah compliance in their customer-facing materials. Highlighting these dual safeguards serves as a powerful signaling mechanism that differentiates Islamic digital services from conventional counterparts and fosters deeper affective trust.

Limitations and Future Research Directions: Despite its contributions, this study is subject to certain limitations that pave the way for future research. First, the cross-sectional research design captures data at a single point in time, which limits the ability to establish definitive causal relationships. Future studies should employ longitudinal designs to track how customer trust and satisfaction evolve as AI technologies mature and become more ubiquitous. Second, while procedural remedies were implemented, the reliance on self-reported survey data may still be susceptible to common method bias. Future research could incorporate objective behavioral data (e.g., actual usage logs of AI features) to triangulate the findings. Finally, this study focused on retail customers within a specific geographic context. Future research should explore cross-cultural comparisons (e.g., contrasting customer perceptions in the GCC region versus Southeast Asia) and investigate how these dynamics vary across different types of AI applications, such as robo-advisory services versus automated customer support chatbots.

By addressing these avenues, future scholarship can continue to refine our understanding of how Islamic financial institutions can harness the power of Artificial Intelligence while remaining steadfastly anchored to their ethical and spiritual foundations.

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