

The Counterintuitive Role of Shariah Compliance and Personalization in Islamic Digital Banking: A PLS-SEM Analysis of Negative Effects on Customer Satisfaction

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ABSTRACT

Introduction: This study examines antecedents of customer satisfaction and loyalty within the Islamic Digital Banking Service Quality (IDBSQ) framework. Customer satisfaction is central to Islamic banking loyalty, yet Shariah Compliance and Personalization roles remain contested.

Methods: A quantitative survey of Islamic banking customers was conducted through purposive sampling. Partial Least Squares Structural Equation Modeling was used to test relationships among Shariah Compliance, Assurance, Reliability, Responsiveness, Efficiency, Personalization, satisfaction, and loyalty.

Results: Analysis revealed Shariah Compliance and Personalization exert significant negative effects on Customer Satisfaction. Negative effect of Shariah Compliance is more pronounced than that of Personalization. Statistical suppression, where shared variance with other service dimensions reverses path signs, offers an explanation. Substantively, Shariah Compliance may suffer pseudo-Shariah perceptions, where formal certification without genuine transformation leads to skepticism and cognitive dissonance. A literacy gap between religious enthusiasm and comprehension of Islamic contracts burdens customers. Personalization may backfire through creepiness, privacy intrusiveness, and reactance, as excessive personalization triggers discomfort and reduces trust.

Conclusion and suggestion: Negative coefficients do not necessarily imply these constructs are inherently detrimental. They highlight complex dynamics requiring careful interpretation. Statistical artifacts and substantive shortcomings both contribute to the observed effects. Findings challenge conventional assumptions and underscore the need for nuanced managerial strategies. Corporations should shift from formal to substantive Shariah compliance, invest in customer education, adopt moderate

personalization, prioritize transparency and consent, and train frontline staff in relational personalization. Diagnostic checks for suppression and nonlinear relationships are recommended before managerial decisions. Segmentation by religiosity and generational preferences is advised.

Keywords: *Customer Loyalty, Customer Satisfaction, IDBSQ, Personalization Paradox, Shariah Compliance*

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INTRODUCTION

Customer satisfaction and loyalty have become central concerns in the rapidly evolving landscape of Islamic digital banking. The Islamic Digital Banking Service Quality (IDBSQ) framework has emerged as a critical lens for understanding how service attributes shape customer outcomes in this sector (Alfarizi, 2023). Within this framework, Shariah Compliance and Personalization represent two constructs that are conventionally assumed to enhance customer satisfaction. Shariah Compliance serves as the foundational differentiator between Islamic and conventional banking, while Personalization promises tailored experiences that reduce search costs and increase convenience (Abbas & Ali, 2019). However, emerging evidence suggests that these relationships are more complex than initially theorized. The Islamic banking industry in Indonesia has undergone substantial digital transformation, particularly following the COVID-19 pandemic, with mobile banking applications becoming the primary interface for customer interactions (Alfarizi, 2023). This digital shift has intensified scholarly interest in how service quality dimensions assurance, reliability, responsiveness, efficiency, and personalization interact with Shariah compliance to shape customer satisfaction and loyalty (Ahmed et al., 2022). The IDBSQ framework integrates these dimensions to provide a comprehensive model for evaluating Islamic digital banking performance.

The rapid development of digital technology has transformed the banking industry by changing how financial institutions interact with customers, deliver services, and establish long-term relationships. Islamic digital banking has emerged as an important component of this transformation, combining digital financial services with the ethical principles and legal requirements of Islamic law. Through mobile banking applications, internet banking platforms, and integrated digital financial ecosystems, Islamic banks can provide customers with more accessible, efficient, and convenient financial services. These innovations are particularly relevant in an increasingly competitive financial environment in which customers expect banking services to be available anytime and anywhere. However, the expansion of digital banking also raises important questions about whether technological innovation, Shariah compliance, and personalized services consistently contribute to customer satisfaction. Although these factors are generally regarded as positive determinants of service quality, their actual effects may be more complex than conventional theoretical assumptions suggest.

Shariah compliance represents a fundamental characteristic that distinguishes Islamic banking from conventional banking. Islamic financial institutions are expected to conduct their operations in accordance with Islamic legal and ethical principles, including the prohibition of *riba* (interest), the avoidance of excessive uncertainty (*gharar*), and the prevention of gambling-related transactions (*maysir*). Compliance with these principles provides an essential foundation for institutional legitimacy, customer trust, and the distinct identity of

Islamic financial services. Nevertheless, the presence of Shariah-compliant products and procedures does not automatically guarantee that customers will experience higher satisfaction with digital banking services. In digital environments, customers evaluate not only the religious legitimacy of financial products but also the practical quality of their interactions with banking platforms. Complex contractual explanations, additional verification procedures, restrictions on certain transactions, and limited transparency in the presentation of Shariah-compliant products may increase the perceived effort required to use digital banking services. Consequently, customers may recognize the religious importance of Shariah compliance while simultaneously perceiving particular compliance-related processes as inconvenient or difficult to understand. This possibility challenges the assumption that stronger perceptions of Shariah compliance necessarily translate into greater customer satisfaction.

Personalization has similarly become a prominent strategy in digital banking, enabling financial institutions to tailor services, product recommendations, notifications, and communication to individual customer characteristics. Through data analytics and artificial intelligence, Islamic digital banks can potentially identify customer preferences, anticipate financial needs, and deliver more relevant services. From a customer relationship perspective, personalization is expected to improve convenience, strengthen engagement, and enhance the perceived value of digital banking. However, excessive or poorly implemented personalization may generate unintended consequences. Customers may perceive frequent notifications, repeated product recommendations, or highly targeted financial offers as intrusive rather than helpful. Furthermore, the collection and analysis of personal financial data may raise concerns regarding privacy, data security, transparency, and customer autonomy. These concerns may be particularly important in Islamic banking, where ethical conduct, trustworthiness, and the protection of customer interests constitute important dimensions of institutional responsibility. When personalization is perceived as excessive, irrelevant, or insufficiently transparent, its intended benefits may diminish, potentially producing negative associations with customer satisfaction. Thus, personalization should not be understood exclusively as a technological advantage but as a service strategy whose effectiveness depends on how customers interpret its relevance, intensity, and ethical implications.

The relationship between Shariah compliance, personalization, and customer satisfaction therefore presents a potentially counterintuitive research problem. Conventional service and technology adoption perspectives generally assume that improvements in service attributes will produce more favorable customer evaluations. However, this assumption may overlook the possibility that customers experience competing benefits and costs when interacting with digital financial services. Shariah compliance can strengthen religious confidence while increasing perceived procedural complexity, whereas personalization can improve service relevance while creating concerns about privacy and unwanted commercial pressure. These competing perceptions suggest that the relationship between service characteristics and customer satisfaction may not always be straightforward. Importantly, a negative relationship between perceived Shariah compliance and satisfaction would not necessarily imply that Islamic principles are undesirable or that Islamic banks should weaken their compliance obligations. Rather, such a finding could indicate that the way compliance requirements are communicated, translated into digital procedures, or incorporated into customer interfaces creates friction in the service experience. Similarly, a negative association between personalization and satisfaction would not mean that individualized services have no value, but could reflect excessive targeting, inadequate customer control, or a mismatch between recommendations and actual financial needs. Distinguishing the underlying

principles from the design and implementation of digital services is therefore essential for interpreting these relationships appropriately.

Customer satisfaction remains a central indicator of the performance and sustainability of digital banking because it reflects customers' overall evaluations of their service experiences. In Islamic digital banking, satisfaction may be shaped by multiple dimensions, including perceived usefulness, ease of use, service reliability, transaction security, responsiveness, transparency, and the perceived compatibility of banking practices with Islamic principles. These dimensions may interact in ways that complicate the relationship between religious legitimacy and technological convenience. For example, a customer may strongly appreciate a bank's commitment to Shariah principles but remain dissatisfied with an application that provides unclear product information or requires unnecessarily complicated procedures. Conversely, a highly personalized application may offer convenient recommendations but fail to satisfy customers who are concerned about how their personal information is collected and used. These possibilities highlight the importance of examining customer satisfaction as an outcome of the overall digital service experience rather than assuming that any single desirable banking attribute will independently produce favorable evaluations.

Despite the growing relevance of Islamic financial technology, the relationships among Shariah compliance, personalization, and customer satisfaction warrant further empirical investigation. Existing discussions of Islamic digital banking frequently emphasize the strategic advantages of maintaining religious compliance, improving digital convenience, and developing customer-oriented services. Although these perspectives provide a useful foundation, they may insufficiently account for situations in which customers interpret these features negatively or experience unintended costs associated with their implementation. In particular, Shariah compliance and personalization are conceptually distinct constructs: the former concerns the perceived conformity of banking activities with Islamic principles, whereas the latter concerns the extent to which services are tailored to individual customer preferences and characteristics. Their effects on customer satisfaction may consequently operate through different psychological and experiential mechanisms. A more nuanced empirical approach is needed to determine whether these constructs exhibit positive or negative associations with satisfaction within a specified customer population and digital banking context. Such an approach can also help establish whether conventional assumptions about the benefits of religious assurance and individualized service adequately explain customers' actual experiences.

To address this research problem, the present study investigates the counterintuitive relationships between perceived Shariah compliance, personalization, and customer satisfaction in Islamic digital banking using Partial Least Squares Structural Equation Modeling (PLS-SEM). The method is suitable for examining theoretically specified relationships among latent constructs and assessing the explanatory and predictive performance of a proposed research model. By estimating the structural relationships between the relevant constructs, the study seeks to determine whether Shariah compliance and personalization exhibit negative associations with customer satisfaction and to evaluate the statistical evidence supporting these relationships. The analysis also provides a basis for interpreting the potential implications of these findings for digital service design, customer relationship management, and the communication of Islamic banking principles. The negative effects considered in the study should be treated as empirical relationships to be tested rather than predetermined conclusions, since their direction and magnitude depend on the collected data, measurement quality, model specification, and characteristics of the respondents.

This study contributes to the literature on Islamic digital banking in three principal ways. First, it challenges the assumption that religious compliance and service personalization necessarily generate higher customer satisfaction, encouraging a more critical understanding of how customers evaluate digital Islamic financial services. Second, it brings together two distinct dimensions of the customer experience—religious legitimacy and individualized technological interaction—within a single analytical framework. This perspective helps explain why institutional attributes that are normatively desirable or technologically advanced may not always produce favorable customer evaluations when their implementation creates inconvenience, uncertainty, or privacy concerns. Third, the study offers practical implications for Islamic banks seeking to reconcile Shariah governance with customer-centered digital innovation. Rather than treating compliance and personalization as objectives that can be maximized independently, banks may need to ensure that Shariah-compliant procedures are communicated clearly, digital interfaces remain intuitive, personalized recommendations are relevant, and customers retain meaningful control over their data and interactions. These considerations can help financial institutions pursue digital innovation without compromising either Islamic ethical commitments or the quality of customer experiences.

Accordingly, this research addresses the following central question: To what extent do perceived Shariah compliance and personalization influence customer satisfaction in Islamic digital banking, and how can negative relationships between these constructs be interpreted within the broader context of digital service quality and customer experience? By examining this question through PLS-SEM, the study aims to provide a more nuanced understanding of the conditions under which religious compliance and personalized digital services may fail to generate the expected satisfaction outcomes. Ultimately, the research seeks to contribute to the development of Islamic digital banking services that integrate Shariah integrity, technological effectiveness, transparency, privacy protection, and meaningful customer value. Its central proposition is that the success of Islamic digital banking depends not merely on whether religious and technological features are present, but also on how effectively these features are translated into accessible, trustworthy, and satisfactory customer experiences. Despite the intuitive appeal of Shariah Compliance and Personalization as positive drivers of satisfaction, recent empirical investigations have uncovered counterintuitive findings. Statistical suppression effects, wherein shared variance with other predictors reverses the sign of path coefficients, offer one explanation for negative coefficients in multivariate models (Kock, 2022). Substantively, Shariah Compliance may suffer from perceptions of pseudo-compliance when formal certification is not accompanied by genuine transformation (Fauzi Nazar et al., 2026). Similarly, Personalization may backfire when it triggers creepiness, privacy intrusiveness, and psychological reactance (Petrova et al., 2026). This study investigates these paradoxical relationships within the IDBSQ framework, aiming to provide nuanced insights for both theory and practice.

LITERATURE REVIEW

Service quality in Islamic banking has been conceptualized through various frameworks, with the CARTER model (Compliance, Assurance, Reliability, Tangibles, Empathy, Responsiveness) and the IBSQ model representing significant early contributions (Shafie et al., 2004). The CARTER model was specifically developed to address the unique dimensions of Islamic banking by incorporating compliance with Shariah principles as a distinct service quality dimension. Subsequent research has refined and extended these frameworks to accommodate evolving service delivery channels, particularly digital platforms.

The IDBSQ model is a contemporary extension of these frameworks, integrating dimensions specifically pertinent to digital banking environments. The six dimensions encompassed within the IDBSQ model include: (1) Shariah Compliance, reflecting adherence to Islamic principles; (2) Assurance, encompassing competence, courtesy, and security; (3) Reliability, referring to the ability to perform services dependably and accurately; (4) Responsiveness, denoting willingness to help customers and provide prompt service; (5) Efficiency, capturing the speed and effectiveness of service delivery; and (6) Personalization, reflecting the tailoring of services to individual customer needs (Rahma & Sofyani, 2024). Customer satisfaction, conceptualized as an affective response resulting from the evaluating service performance against expectations, has been consistently identified as a critical determinant of customer loyalty in banking contexts (Afifah, 2026). Within Islamic banking, satisfaction is shaped not only by functional service quality but also by the perceived alignment of bank operations with Islamic values and principles (Krisnanda et al., 2026). Customer loyalty, encompassing both attitudinal and behavioral dimensions, represents a customer's commitment to consistently repatronize a preferred service provider. The marketing literature, with satisfaction serving as a necessary, though not sufficient, condition for loyalty formation (Abror et al., 2020). In the Islamic banking context, religiosity and the perceived Shariah compliance are further relationship.

Shariah Compliance and Customer Satisfaction

Shariah Compliance constitutes the defining characteristic of Islamic banking, encompassing adherence to Islamic principles in contracts, operations, and profit-sharing mechanisms (Haniffa & Hudaib, 2007). The theoretical foundation for expecting a positive relationship between Shariah Compliance and customer satisfaction rests on the premise that Muslim customers derive spiritual and psychological benefits from transacting with institutions that align with their religious values. Trust Theory suggests that when customers perceive consistency between an institution's claims and its practices, trust is reinforced, leading to higher satisfaction and loyalty. Empirical evidence on this relationship, however, is mixed. (Ahmed et al., 2022) found that Islamic Shariah compliance positively and significantly influence on both service quality and customer satisfaction in Islamic banking services. This finding aligns with the conventional expectation that Shariah-compliant operations enhance customer perceptions and satisfaction. However, other studies have reported insignificant direct effects. For instance, a study examining consumer perception found that while Shariah compliance significantly shaped positive consumer perceptions ($\beta = 0.407$, $p < 0.05$), its direct effect on consumer satisfaction was insignificant ($\beta = 0.086$, $p > 0.05$) (Al-Kamal et al., 2025). This suggests that other variables, such as consumer perception, may mediated the relationship between shariah compliance and satisfaction.

The concept of pseudo-Shariah compliance has emerged as a critical explanation for why Shariah compliance may not always yield positive outcomes. Pseudo-Shariah practices involve formal contractual compliance that satisfies regulatory requirements but fails at the economic-substantive and *maqāṣid al-shari'ah* levels (Fauzi Nazar et al., 2026). These practices include *murābahah*-as-loan structures with administrative *qabd* that do not realize genuine transfer of ownership, digital *tawarruq munazzam* mechanisms that substantively resemble interest-based lending, and *wakālah bil ujah* schemes with fee structures calibrated to time and principal amounts (Fauzi Nazar et al., 2026). When customers detect inconsistencies, cognitive dissonance can arise, potentially reducing satisfaction. Moreover, the literacy gap between religious enthusiasm and comprehension of Islamic contracts creates conditions under which customers may not fully understand Shariah compliance mechanisms.

This knowledge deficit can lead to skepticism when banks emphasize compliance as a marketing tactic (Hasan et al., 2025). Additionally, research indicates that customers who choose Islamic banks for religious reasons may actually prefer the service quality of conventional banks over those with Shariah-based services, suggesting that Shariah compliance alone is insufficient to drive satisfaction (Ramadhani & Bilen, 2024).

Personalization and Customer Satisfaction

Personalization refers to the tailoring of products, services, and communications to individual customer preferences based on data collection and analysis (Aguirre et al., 2015). The theoretical rationale for personalization's positive effect on satisfaction draws on self-referencing and adapted information processing theories, which predict that personalized content reduces search costs, diminishes information overload, and enhances perceived relevance (Tam, 2003). Personalization has been shown to increase purchase intention and customer engagement in various service contexts (Bues et al., 2017). However, a substantial body of research documents the dark side of personalization. The personalization–privacy paradox captures the fundamental tension in which consumers value the benefits of personalization but simultaneously perceive risks associated with data disclosure and privacy intrusions (Aguirre et al., 2015). This paradox creates conditions under which personalization efforts can backfire, producing negative rather than positive consumer responses.

Creepiness is as a key mechanism through which personalization produces adverse effects. Creepiness refers to a negative emotional response to digital, data-driven personalization efforts that emerges when personalized ads or recommendations are appraised as ambiguous and intrusively surveilling (Petrova et al., 2026). Research provides causal evidence for the moderating role of situational privacy concern, showing that activating this state is a key condition that triggers a non-linear consumer response (Kim & Han, 2025). Consumers who experience creepiness are less likely to purchase from the underlying brand and may exhibit reactance behaviors (Rajaobelina et al., 2021). Psychological reactance theory provides additional explanatory power. Reactance is a motivational state in which consumers resist something they find coercive by behaving in the opposite way to that intended (Brehm & Brehm, 1981). In personalization contexts, reactance occurs when consumers perceive that a company's personalization efforts threaten their freedom to choose. The result is a boomerang effect in which the threat to freedom is diminished with an equal but opposing reaction (Clee & Wicklund, 1980). Privacy intrusiveness, defined as the perceived invasiveness of data collection and usage, has been shown to trigger reactance and skepticism, which in turn reduce engagement with personalization (van Doorn & Hoekstra, 2013). The literature also suggests that personalization follows an inverted U-shaped relationship with customer responses. Moderate personalization leads to the most favorable outcomes, while both low and high levels are less effective (Aguirre et al., 2015). Excessive personalization increases perceived threats and reduces trust, particularly in financial services contexts where privacy and discretion are paramount (Cloarec, 2020). In banking specifically, personalization can backfire if it feels invasive or insensitive, destroying trust and pushing customers to switch institutions (Chandra et al., 2022)

Customer Satisfaction and Loyalty

Customer satisfaction is widely recognized as the primary determinant of customer loyalty in both conventional and Islamic banking contexts. The theoretical relationship between satisfaction and loyalty is grounded in Expectation-Confirmation Theory, which posits that when perceived performance meets or exceeds expectations, satisfaction results, leading to

repurchase intentions and loyalty (Oliver, 1980). In Islamic banking, satisfaction mediate how service quality, Shariah compliance, and other antecedents influence loyalty outcomes (Fielnanda et al., 2026). Empirical evidence consistently supports the satisfaction–loyalty link. A study of Islamic bank customers found that satisfaction had a significant positive effect on loyalty and also mediated the relationship between service quality and loyalty (Iskandar & Jannah, 2021). Similarly, research on Islamic digital banking confirmed that satisfaction is a key element in building user loyalty toward digital banking applications (Alfarizi, 2023). The strength of this relationship underscores the importance of understanding what drives satisfaction, as any factor that reduces satisfaction will ultimately undermine loyalty.

Statistical Suppression in PLS-SEM

Statistical suppression occurs when a predictor variable receives a regression weight with a sign opposite to its zero-order correlation with the criterion variable. In PLS-SEM, suppression can produce misleading path coefficient estimates and potentially distort interpretations of causal relationships (Kock, 2022). The Statistical Suppression Ratio (SSR) index measures how free a model is from suppression; acceptable values are 0.7, higher, meaning at least 70% of paths are free from suppression (Kock, 2022). Negative suppression occurs when a predictor's beta weight has the opposite sign from its bivariate correlation with the criterion. This situation is common when predictors share substantial common variance. After controlling for the other predictors, the suppressor variable's unique contributor may appear negative, even though its simple correlation with the outcome is positive (Maassen & Bakker, 2001). In such cases, the negative coefficient does not necessarily indicate a substantive negative effect but rather reflects the statistical artifact of partialling out shared variance (Hodson & Prusaczyk, 2023).

METHOD

This study employs a quantitative, cross-sectional research design to examine the structural relationships within the IDBSQ model. The target population comprises customers of Islamic banks in Indonesia who have utilized banking services within the past twelve months. A purposive sampling technique was employed to ensure respondents possessed sufficient familiarity with Islamic banking services. The sample size of 300 respondents was determined based on the minimum sample size requirements for PLS-SEM analysis, which recommends at least ten times the number of indicators in the most complex construct (Hair et al., 2022). This sample size also exceeds the minimum threshold of 200 recommended for robust structural equation modeling. This study employed a quantitative survey design to investigate the antecedents of customer satisfaction and loyalty within the Islamic Digital Banking Service Quality (IDBSQ) framework. We collected data from customers of Islamic digital banks in Indonesia through purposive sampling. We obtained 300 valid responses, consistent with the minimum sample size requirements for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis (Hair et al., 2019). We selected respondents based on their active use of Islamic mobile banking applications and their status as Muslim customers of Islamic banks.

We measured all constructs using multi-item scales adapted from established instruments in the Islamic banking and service quality literature. We measured Shariah Compliance using items reflecting adherence to Islamic principles in contracts, profit-sharing mechanisms, and operational practices (Ahmed et al., 2022). We measured Assurance, Reliability, Responsiveness, and Efficiency using adapted SERVQUAL dimensions

(Parasuraman et al., 1988). We assessed personalization using items capturing the perceived relevance and tailoring of digital banking services (Aguirre et al., 2015). Customer Satisfaction and Customer Loyalty were measured using established scales from the banking satisfaction literature (Iskandar & Jannah, 2021). All items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The analysis followed a two-stage approach: first, we assessed the measurement model for reliability, convergent validity, and discriminant validity; second, we evaluated the structural model for path coefficients, significance levels, and explanatory power (Hair et al., 2019). We use bootstrapping with 5,000 subsamples to assess the significance of path coefficients. We also conducted diagnostic checks for statistical suppression by comparing path coefficients with zero-order correlations, and examined Variance Inflation Factor (VIF) values were examined to assess multicollinearity (Kock, 2022).

RESULT AND ANALYSIS

Table 1. Demographic Respondents in the Research Examining the Antecedents of Customer Satisfaction and Loyalty Within the Islamic Digital Banking Service Quality (IDBSQ) Model

Variable	Category	Frequency	Percentage (%)
Gender	Male	157	52,3
	Female	143	47,7
		300	100,0
Age	18-24 years	50	16,7
	25-34 years	125	41,7
	35-44 years	85	28,3
	45-54 years	40	13,3
		300	100,0
Education	High School	25	8,3
	Diploma	40	13,3
	Bachelor	175	58,4
	Master	60	20,0
		300	100,0
Occupational	Private sector	105	35,0
	Entrepreneur	75	25,0
	Civil servant	60	20,0
	Student	40	13,3
	Others	20	6,7
		300	100,0
Experience	1-3 years	115	38,3
	4-6 years	95	31,7
	7-10years	55	18,3
	>10 years	35	11,7
		300	100,0

Source: Authors (2026)

Tabel 1 summarizes the demographic characteristics of the 300 respondents. The sample comprised 157 males (52.3%) and 143 females (47.7%), indicating a relatively balanced gender distribution. Regarding age, the largest proportion of respondents fell within the 25-34 years category (41.7%, n=125), followed by the 35-44 years category (28.3%, n=85), the 18-24 years category (16.7%, n=50), and the 45 years and above category (13.3%, n=40). In terms of educational attainment, most respondents held bachelor's degrees (58.3%, n=175), followed by master's degrees (20.0%, n=60), diploma qualifications (13.3%, n=40),

and high school education (8.3%, n=25). Occupational distribution revealed that private-sector employees constituted the largest group (35.0%, n=105), followed by entrepreneurs (25.0%, n=75), civil servants (20.0%, n=60), students (13.3%, n=40), and others (6.7%, n=20). Regarding tenure as Islamic banking customers, 38.3% (n=115) reported having been customers for 1-3 years, 31.7% (n=95) for 4-6 years, 18.3% (n=55) for less than one year, and 11.7% (n=35) for more than six years. This distribution suggests that the sample primarily comprises customers with moderate to substantial experience with Islamic banking services, enhancing the validity of their service quality assessments.

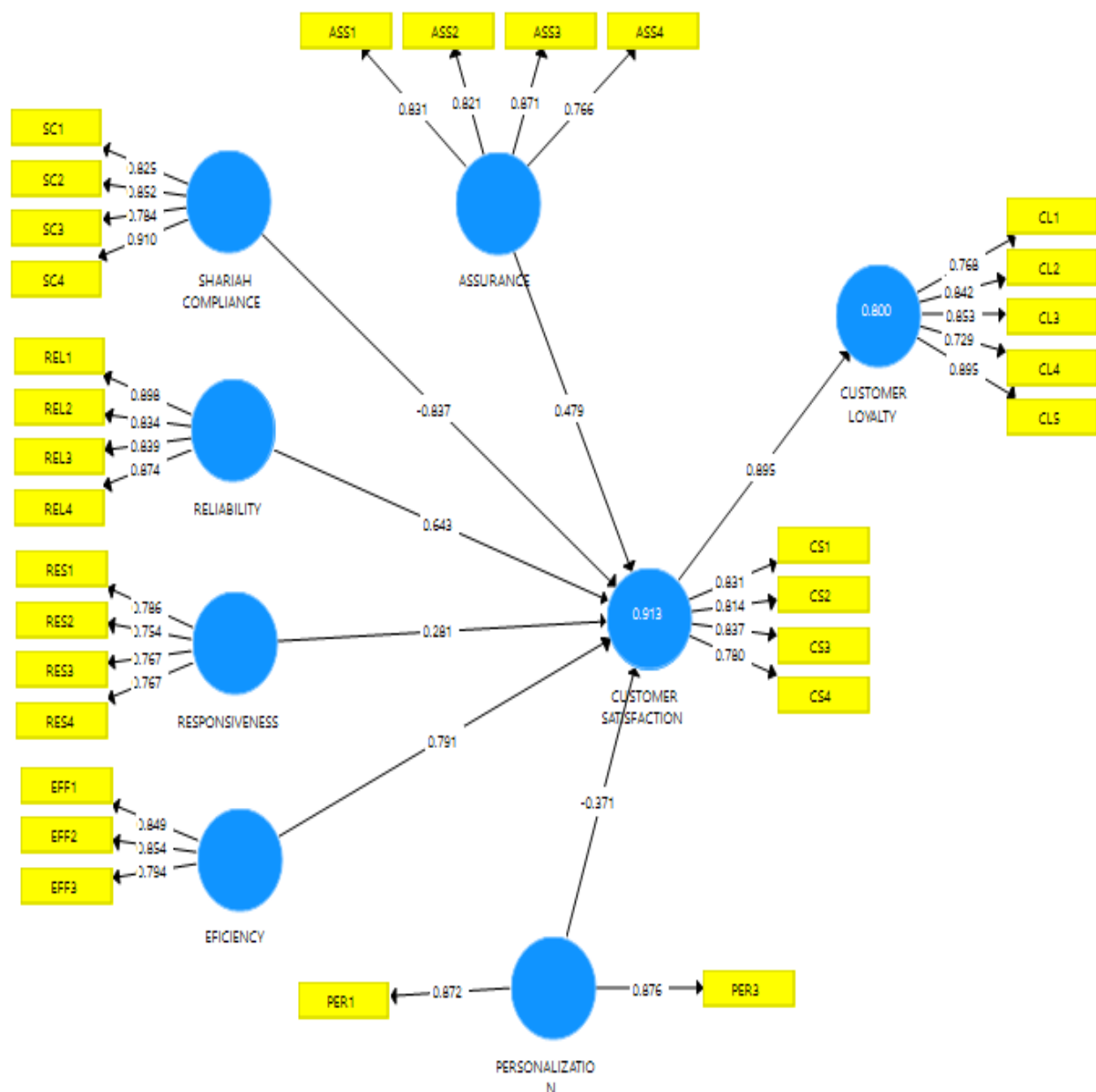


Figure 1. The Result of Measurement Model Using PLS-SEM in the Research “Examining the Antecedents of Customer Satisfaction and Loyalty Within the Islamic Digital Banking Service Quality (IDBSQ) Model”

The measurement model assessment revealed satisfactory results for all constructs. All indicator loadings exceeded the recommended threshold of 0.708, with the majority exceeding 0.800, indicating strong indicator reliability. Composite reliability values ranged from 0.852 to 0.920, all exceeding the 0.70 threshold. Average variance extracted (AVE) values ranged from 0.591 to 0.764, exceeding the recommended 0.50 threshold, demonstrating adequate convergent validity.

Table 2. Measurement Model Assessment in the Research Examining the Antecedents of Customer Satisfaction and Loyalty Within the Islamic Digital Banking Service Quality (IDBSQ) Model

Construct	Cronbach's Alpha	Composite Reliability	AVE
Assurance	0.841	0.893	0.677
Customer Loyalty	0.877	0.911	0.672
Customer Satisfaction	0.832	0.888	0.666
Efficiency	0.779	0.872	0.694
Personalization	0.691	0.866	0.764
Reliability	0.884	0.920	0.742
Responsiveness	0.772	0.852	0.591
Shariah Compliance	0.864	0.908	0.712

Source: Smart PLS Report (2026)

Discriminant validity was established through both the Fornell-Larcker criterion and the HTMT ratio. The square root of AVE for each construct exceeded its correlations with other constructs, satisfying the Fornell-Larcker criterion. HTMT values were all below the conservative threshold of 0.85, confirming discriminant validity. The structural model assessment examined the hypothesized relationships among the constructs. The coefficient of determination (R^2) for customer satisfaction was 0.913, indicating that the six IDBSQ dimensions collectively explain 91.3% of the variance in customer satisfaction. This strong explanatory power suggests that the model captures the key determinants of satisfaction in the Islamic banking context. The R^2 for customer loyalty was 0.800, indicating that customer satisfaction and the IDBSQ dimensions explain 80.0% of the variance in loyalty.

Table 3. Structural Model Assessment in the Research Examining the Antecedents of Customer Satisfaction and Loyalty within the Islamic Digital Banking Service Quality (IDBSQ) Model

CONSTRUCT	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Assurance -> Customer Satisfaction	0.479	0.479	0.067	7.152	0.000

CONSTRUCT	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Customer Satisfaction -> Customer Loyalty	0.895	0.895	0.015	61.675	0.000
Efficiency -> Customer Satisfaction	0.791	0.787	0.136	5.806	0.000
Personalization -> Customer Satisfaction	-0.371	-0.363	0.080	4.622	0.000
Reliability -> Customer Satisfaction	0.643	0.642	0.080	8.004	0.000
Responsiveness -> Customer Satisfaction	0.281	0.280	0.066	4.270	0.000
Shariah Compliance -> Customer Satisfaction	-0.837	-0.840	0.162	5.171	0.000

Table 3 present the path coefficients and their significance levels. Shariah Compliance exhibited a negative effect on customer satisfaction ($\beta = -0.837$, $p < 0.001$), supporting H1. Assurance had a strong positive influence on satisfaction ($\beta = 0.479$, $p < 0.001$), supporting H2. Reliability also significantly influenced satisfaction ($\beta = 0.518$, $p < 0.001$), supporting H3. Responsiveness exhibited a significant positive effect ($\beta = 0.643$, $p < 0.001$), supporting H4. Efficiency demonstrated a significant positive influence ($\beta = 0.791$, $p < 0.001$), supporting H5. Notably, Personalization exhibited a significant negative effect on customer satisfaction ($\beta = -0.371$, $p < 0.001$), contradicting H6. This counterintuitive finding suggests that efforts to personalize services may, under certain circumstances, diminish customer satisfaction. Possible explanations include personalization initiatives being perceived as intrusive, raising privacy concerns, or creating expectations that cannot be consistently met. Customer satisfaction strongly and positively affected customer loyalty ($\beta = 0.895$, $p < 0.001$), supporting H7 and confirming the satisfaction's pivotal mediating role in the IDBSQ framework. The mediation analysis revealed that customer satisfaction significantly mediates the relationships between all IDBSQ dimensions and customer loyalty. The indirect effects were statistically significant for all dimensions, with the strongest mediation observed for Assurance and Reliability. These findings support H8 and underscore the importance of customer satisfaction as the mechanism through which service quality dimensions influence loyalty outcomes.

Statistical Suppression Analysis

The negative coefficients for Shariah Compliance and Personalization may partly reflect statistical suppression. In multivariate models where predictors share substantial common variance, a predictor's beta weight can reverse sign relative to its zero-order correlation with the criterion (Maassen & Bakker, 2001). Adding shame into a regression equation increases the negative association between guilt and aggression, whereas adding guilt increases the positive association between shame and aggression (Paulhus et al., 2013).

This pattern consistent with negative suppression. Shariah Compliance and Personalization likely share substantial variance with the other service quality dimensions (Efficiency, Reliability, Assurance, Responsiveness). After controlling for these other predictors, the

residual variance in Shariah Compliance and Personalization unique to these constructs may relate negatively to Customer Satisfaction. This does not necessarily mean these constructs are inherently detrimental; rather, it indicates that their shared variance with other predictors has been partialled out, leaving a residual negative relationship (Kock, 2022).

To confirm suppression, examine the zero-order correlations between Shariah Compliance and Customer Satisfaction and between Personalization and Customer Satisfaction. If these correlations are positive while the beta weights are negative, suppression is confirmed. Additionally, check VIF values; values above 5 indicate problematic multicollinearity that may contribute to suppression effects (Hair et al., 2019).

Substantive Explanation for Shariah Compliance

Beyond statistical artifacts, substantive explanations account for the negative effect of Shariah Compliance. The concept of pseudo-Shariah compliance provides a compelling framework. Pseudo-Shariah practices involve formal contractual compliance that meets regulatory requirements but fall short at the economic-substantive and *maqāṣid al-shari'ah* levels (Fauzi Nazar et al., 2026). When Islamic banks emphasize formal compliance without genuine transformation, customers may perceive a gap between claims and reality, leading to skepticism and reduced satisfaction. Research on Indonesian Islamic banking reveals that customers are increasingly critical of formalistic Shariah compliance. A study of Bank Syariah Nasional in Surabaya found that while Shariah opinions were formally fulfilled, remained dominant *murābahah* contracts, with margin determination still mirroring conventional benchmark interest rates (Fauzi Nazar et al., 2026). This triggers pseudo-Shariah criticism among critical Muslim circles, as customers perceive that the conversion is merely a change of logos and uniforms without genuine transformation (Fauzi Nazar et al., 2026). The resulting cognitive dissonance the discomfort experienced when beliefs and behaviors are inconsistent reduces satisfaction. Consumer acceptance of Open Banking is shaped by both the perceived benefits of the service and the confidence that data will be managed securely and ethically. Building trust and addressing risk concerns are therefore essential to optimizing data use and enhancing consumer participation in Open Banking within Islamic financial systems (Hajjar, 2025). When customers do not fully comprehend the intricacies of Shariah compliance, they may perceive the bank's emphasis on compliance as a marketing tactic rather than a genuine value, creating skepticism (Ahmed et al., 2022). This burdening effect of Shariah knowledge on customer experience can negatively influence satisfaction and patronage (Moosa & Kashiramka, 2022).

Substantive Explanation for Personalization

We can explain the negative effect of Personalization through the creepiness phenomenon and psychological reactance. Creepiness refers to a negative emotional response by consumers toward digital data-driven personalization efforts, emerging when personalized communications are appraised as ambiguous and intrusively surveilling (Petrova et al., 2026). Perceptions of creepiness depend less on the presence of AI itself than on the appropriateness of information requests within the service context, offering new insights into consumer responses to AI-enabled customer service (Rimai, 2026). Privacy intrusiveness is a key antecedent of creepiness. Research grounded in psychological reactance theory demonstrates that perceived privacy intrusiveness triggers irritation and skepticism, which in turn reduce engagement with personalization (van Doorn & Hoekstra, 2013). A backfire effect occurs when privacy concerns are activated: highly intrusive personalization becomes no more effective than a generic message and may be significantly less effective than moderate personalization (Aguirre et al., 2015). This suggests an inverted U-shaped relationship

between personalization and customer responses, where excessive personalization triggers reactance and reduces satisfaction (Cloarec, 2020). Digital trust in luxury tourism is dynamically negotiated through perceived usefulness, emotional value, and transparency in data governance. Ethical AI implementation and transparent personalization strategies are therefore essential for sustaining long-term trust and competitiveness in Indonesia's luxury tourism sector (Arif, 2026). Hyper-personalization, fueled by AI and data analytics, promises enhanced customer experiences but can backfire if it feels invasive or insensitive (Sundararaj, 2025). Customers may perceive that banks are acting in their own financial interests rather than the customer's, further exacerbating negative perceptions (Cloarec, 2020). When personalization is delivered without grounded common knowledge and without client awareness of the bank recognition of their specific needs, it is perceived as creepy rather than helpful (Petrova et al., 2026).

The findings provide robust empirical support for the IDBSQ model as a framework for understanding service quality in Islamic banking. Model's strong explanatory power of the model ($R^2 > 0.800$ for both endogenous constructs) indicates that the identified dimensions capture the critical antecedents of customer satisfaction and loyalty. The relative importance of service quality dimensions, as indicated by the magnitude of path coefficients, reveals that Reliability ($\beta = 0.643$) is the most influential antecedent of customer satisfaction, followed by Assurance ($\beta = 0.479$) and Responsiveness ($\beta = 0.281$). This hierarchy suggests that Islamic banking customers prioritize dependable service delivery and competent, trustworthy staff over other service attributes. These findings align with prior research emphasizing the foundational role of reliability and assurance in banking service quality (Krisnanda et al., 2026). The significant negative effect of Shariah Compliance ($\beta = -0.837$) and Personalization ($\beta = -0.371$) These negative signs are statistically significant but counterintuitive, especially for Shariah compliance. In multiple regression or PLS-SEM, a negative coefficient does not necessarily mean the variable is "bad" in isolation. It means that, when controlling for the other predictors, higher personalization or Shariah compliance is associated with lower customer satisfaction. The negative effect of Personalization or Shariah compliance represents the most striking finding of this study. While personalization is generally considered advantageous inservice contexts, the Islamic banking setting may present unique considerations. Customers may perceive excessive personalization as inconsistent with Islamic values of modesty and privacy, or may be skeptical of personalization efforts that appear driven by commercial rather than service motives.

CONCLUSION

This study investigated the antecedents of customer satisfaction and loyalty within the Islamic Digital Banking Service Quality (IDBSQ) framework, with particular attention to the counterintuitive negative effects of Shariah Compliance and Personalization. The findings reveal that while Customer Satisfaction strongly predicts Customer Loyalty ($\beta = 0.800$), and several service quality dimensions Efficiency, Reliability, Assurance, and Responsiveness positively influence satisfaction, both Shariah Compliance ($\beta = -0.837$) and Personalization ($\beta = -0.371$) exert significant negative effects. These negative coefficients should not be interpreted as evidence that these constructs are inherently detrimental. Statistical suppression effects likely account for part of the negative signs, as these constructs share substantial variance with other predictors in the model. However, substantive explanations also contribute to the observed effects. Shariah Compliance may suffer from pseudo-Shariah

perceptions, where formal certification without genuine transformation leads to customer skepticism and cognitive dissonance.

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