

The Influence of Self-Service Technology on Student Satisfaction: Evidence from Bank Syariah Indonesia Digital Services

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Article Info	ABSTRACT
Article history: Received June 26, 2026 Revised July 8, 2026 Accepted August 31, 2026 Keywords: Internet Banking; Islamic Banking; Mobile Banking; Satisfaction; Self-Service Technology	This study examines the influence of Self-Service Technology (SST), comprising Automated Teller Machine (ATM), Mobile Banking, and Internet Banking, on the satisfaction of students who use digital services offered by Bank Syariah Indonesia (BSI). Grounded in the Theory of Planned Behavior and the Expectation-Disconfirmation Model, the research employed a quantitative associative approach with a sample of students from the Islamic Economics Study Programme, Faculty of Economics and Business, Universitas Mulawarman (cohorts 2021-2023), selected via purposive and proportional random sampling. Data were collected through a Likert-scale questionnaire and analysed using multiple linear regression. The results demonstrate that the three SST dimensions collectively explain a substantial proportion of the variance in student satisfaction, with the model achieving a strong overall fit. ATM and Internet Banking service quality each exert a significant positive effect on student satisfaction, whereas Mobile Banking does not produce a statistically significant effect. Internet Banking emerges as the dominant predictor among the three SST channels, underscoring the critical importance of security, accessibility, and interface usability in shaping user satisfaction within Islamic banking digital ecosystems. These findings contribute novel empirical evidence to the growing literature on digital banking service quality in the context of Islamic financial institutions in developing economies, and carry significant implications for service design and customer experience management at BSI. <i>This is an open access article under the CC BY-SA license.</i> 

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1. INTRODUCTION

The rapid digitalisation of financial services has fundamentally transformed how banking institutions deliver value to their customers. Across both developed and emerging economies, the deployment of Self-Service Technology (SST) has become central to operational strategy, enabling customers to

initiate, manage, and complete financial transactions without direct human intermediation [1]. SST encompasses a diverse array of digital interfaces, including Automated Teller Machines (ATMs), mobile banking applications, internet banking platforms, chatbots, and interactive kiosks, each designed to empower users with greater autonomy and transactional convenience [2].

The proliferation of these technologies reflects broader shifts in consumer expectations, particularly among younger, digitally literate populations who prioritise speed, accessibility, and seamless user experience [3].

Within the Indonesian context, digital adoption in the banking sector has accelerated markedly. Data from the Financial Services Authority (OJK) indicate that over 2,700 national banking transactions are now conducted through digital channels, a figure that underscores the structural shift in consumer behaviour toward self-directed financial management [4]. This trend is especially pronounced among university students, who represent a generation of "digital natives" characterised by high technology readiness, frequent mobile device usage, and strong preference for on-demand service delivery [3]. Students are not merely passive consumers of digital banking services; as future practitioners, policymakers, and entrepreneurs, their experiences and expectations carry substantial implications for the long-term trajectory of the industry [5].

The expansion of Islamic banking in Indonesia adds a distinctive dimension to this discourse. Bank Syariah Indonesia (BSI), established through the merger of three state-owned Islamic banks and now recognised as the largest Islamic bank in the country, has positioned digital transformation as a cornerstone of its competitive strategy [6]. Through its BSI Mobile application and suite of digital services, BSI seeks to reconcile the imperatives of technological innovation with the foundational principles of Islamic finance, including prohibition of *riba* (interest), *gharar* (excessive uncertainty), and *maysir* (speculation) [7]. However, the question of whether SST deployment in Islamic banking contexts generates customer satisfaction equivalent to or distinct from that observed in conventional banking settings remains underexplored in the literature [8].

Customer satisfaction is widely recognised as a critical mediator between service quality and customer loyalty, repurchase intention, and positive word-of-mouth behaviour [9]. In the digital banking

domain, satisfaction is shaped by a complex interplay of technological attributes, user characteristics, and contextual factors [10]. Existing research has established that dimensions such as system reliability, responsiveness, perceived security, interface usability, and transactional speed are primary determinants of satisfaction with SST [11]. Nevertheless, significant gaps persist in our understanding of how these determinants operate within Islamic banking ecosystems, particularly among student populations whose financial socialisation and service expectations may differ markedly from those of general banking customers [12].

This study addresses these gaps by empirically investigating the differential effects of ATM, Mobile Banking, and Internet Banking on the satisfaction of Islamic Economics students at Universitas Mulawarman, who are active users of BSI digital services. The study is anchored in two complementary theoretical frameworks: the Theory of Planned Behavior (TPB) [13], which elucidates the cognitive and normative antecedents of technology adoption behaviour, and the Expectation-Disconfirmation Model (EDM) [14], which explains how the gap between anticipated and perceived service performance generates satisfaction or dissatisfaction. By integrating these frameworks with service quality theory [15], this research provides a multi-theoretic lens through which the SST-satisfaction relationship can be rigorously examined.

The study contributes to the literature in three principal ways. First, it provides granular empirical evidence on the relative influence of three distinct SST channels on student satisfaction within an Islamic banking context, a design that allows for comparative analysis and strategic prioritisation. Second, it extends the application of established technology adoption and service satisfaction theories to a culturally and institutionally distinct setting, thereby enriching their explanatory scope. Third, its findings carry actionable implications for BSI and other Islamic financial institutions seeking to optimise their digital service portfolios to

better align with the expectations of the millennial and Generation Z student demographic.

2. LITERATURE REVIEW

2.1 *Self-Service Technology in Banking*

Self-Service Technology refers to the technological interfaces that allow consumers to produce services independently, without direct interaction with service personnel [16]. In the banking sector, SST encompasses ATMs, telephone banking, internet banking, and mobile banking, all of which enable customers to access financial services on a 24/7 basis regardless of physical proximity to branch locations [2]. The concept builds on earlier work on technology acceptance, with foundational contributions from Davis et al. [17], whose Technology Acceptance Model (TAM) identified perceived usefulness and perceived ease of use as the primary determinants of user adoption intentions. Subsequent extensions of TAM have incorporated additional constructs including perceived security, trust, and social influence to capture the complexity of digital financial service adoption [18].

A growing body of research has examined SST quality and its effects on customer outcomes across a range of service contexts. Meuter et al. [19] demonstrated that customer satisfaction with SST is driven primarily by successful transactional outcomes, with failures in system functionality generating disproportionately negative evaluations. Parasuraman et al. [20] developed the E-S-QUAL framework to operationalise service quality in electronic environments, identifying efficiency, system availability, fulfilment, and privacy as core dimensions. Subsequent adaptations of this framework for mobile and internet banking contexts have confirmed the centrality of reliability, responsiveness, security, and ease of use as quality determinants [21].

2.2 *ATM Services and Customer Satisfaction*

Automated Teller Machines represent the earliest and most widely deployed form of banking SST, and their relationship with customer satisfaction has been extensively studied. Research by Zeithaml et al. [22] established that tangible service quality attributes, including the physical condition of ATM infrastructure, interface clarity, and transaction speed, are significant predictors of overall satisfaction. More recent studies in developing country contexts, including Indonesia, have found that ATM reliability, security assurance, and geographic accessibility exercise significant positive effects on customer satisfaction [23]. In the context of Islamic banking, ATM services take on additional significance as a gateway through which customers interact with financial systems that must adhere to Sharia principles, making transactional transparency and security particularly salient quality dimensions [24].

2.3 *Mobile Banking and Customer Satisfaction*

Mobile banking has emerged as one of the fastest-growing segments of digital financial services globally, with adoption driven by smartphone penetration, improved network infrastructure, and the development of feature-rich banking applications [25]. Raza et al. [26] found that mobile banking service quality, encompassing system responsiveness, security, and user interface design, significantly predicts customer satisfaction and loyalty in Islamic banking contexts. Similarly, Alalwan et al. [27] demonstrated that performance expectancy, effort expectancy, and social influence are key antecedents of mobile banking satisfaction among Jordanian bank customers. In the Indonesian setting, Windasari et al. [3] found that millennial and Generation Z users exhibit high sensitivity to application design quality

and notification responsiveness when evaluating mobile banking satisfaction.

However, a counterintuitive finding has emerged in several studies: as mobile banking becomes a commodity service increasingly offered by all financial institutions, its marginal contribution to satisfaction may diminish. Laukkanen [28] argued that mobile banking satisfaction is contingent on users having clear functional needs that the technology distinctively fulfils; when a service becomes a baseline expectation rather than a differentiator, its independent contribution to satisfaction weakens. This phenomenon of "satisfaction hygiene" has been noted in research on conventional banking and may have particular relevance for understanding mobile banking satisfaction in competitive markets where multiple providers offer comparable functionality [29].

2.4 Internet Banking and Customer Satisfaction

Internet banking platforms, accessed via web browsers on desktop and laptop computers, offer a richer functionality compared to mobile applications, including complex transaction management, detailed account analytics, and access to a broader range of financial products [30]. Al-Hawari and Ward [31] demonstrated that internet banking service quality has a strong and consistent positive effect on customer satisfaction and commitment, with perceived security and system reliability emerging as the most influential quality dimensions. Kanku [32] further found that internet banking service quality mediates the relationship between technological capability and customer loyalty in African banking markets, highlighting the strategic importance of quality optimisation in digital service delivery.

Research specific to Islamic banking has found that internet banking can serve as a powerful tool for

communicating Sharia compliance information, thereby addressing a distinctive informational need of Islamic banking customers [33]. Zouari and Abdelhedi [34] noted that the capacity of digital platforms to present transparent information about halal financial products enhances customer confidence and satisfaction among Muslim users. Given that Islamic Economics students possess a relatively advanced understanding of Sharia principles, their satisfaction with BSI's internet banking platform may be particularly sensitive to the quality of Sharia-related informational content and transactional transparency.

2.5 Theoretical Framework

This study is grounded in two complementary theoretical frameworks. The Theory of Planned Behavior (TPB), developed by Ajzen [13], posits that individual behaviour is determined by behavioural intention, which is in turn shaped by three antecedents: attitude toward the behaviour, subjective norm (perceived social pressure), and perceived behavioural control (the perceived ease or difficulty of performing the behaviour). In the context of digital banking, TPB suggests that students' satisfaction with SST is mediated by their evaluations of the utility and appropriateness of digital banking behaviour, as well as by the perceived controllability of digital transactions [35]. Perceived behavioural control, in particular, maps closely onto the usability and accessibility dimensions of SST quality, providing a theoretical bridge between technology design characteristics and user satisfaction outcomes.

The Expectation-Disconfirmation Model (EDM), introduced by Oliver [14], provides a complementary process-based account of satisfaction formation. According to the EDM, satisfaction arises when actual service performance meets or exceeds prior expectations (positive disconfirmation), while dissatisfaction

results from performance falling short of expectations (negative disconfirmation). This framework has been widely applied in the e-commerce and digital banking literature to explain how pre-adoption expectations, shaped by marketing communications, peer recommendations, and prior experiences, interact with post-adoption perceptions to determine overall satisfaction [36]. The integration of TPB and EDM provides a rich theoretical foundation for understanding the psychological processes through which SST quality translates into student satisfaction in the Islamic banking context.

3. METHODS

This study employed a quantitative associative (explanatory) research design, appropriate for testing hypothesised relationships between theoretically derived constructs using numerical data and statistical inference [37]. The research population comprised 298 active students enrolled in the Islamic Economics Study Programme, Faculty of Economics and Business, Universitas Mulawarman, across cohorts 2021 ($n = 84$), 2022 ($n = 95$), and 2023 ($n = 119$). Eligibility criteria required students to be active programme enrollees and to have used at least one BSI digital service (ATM, Mobile Banking, or Internet Banking) at minimum once within the preceding month.

Sample size was determined using the Slovin formula with a margin of error of 10%, yielding a minimum sample of 75 respondents. Proportional random sampling was applied to ensure balanced representation across cohorts: 21 respondents from the 2021 cohort, 24 from 2022, and 30 from 2023. Purposive sampling criteria ensured that all respondents were active BSI digital service users, thereby enhancing construct validity by limiting the sample to individuals with direct experiential knowledge of the services under investigation.

Data were collected via a structured self-administered questionnaire distributed

electronically through Google Forms. Instrument items were adapted from validated scales in the extant literature, operationalised on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The independent variable constructs were measured as follows: ATM quality was assessed using five items reflecting reliability, responsiveness, assurance, empathy, and tangibility, adapted from Asti and Ayuningtyas [38]; Mobile Banking quality was measured by four items tapping reliability, responsiveness, assurance, and empathy, following Harahap [39]; and Internet Banking quality was captured through four items assessing security, ease of use, accessibility, and speed, adapted from Ayinaddis et al. [40]. Student satisfaction (dependent variable) was measured by fifteen items drawn from Tjiptono's [15] SERVQUAL adaptation, encompassing reliability, responsiveness, assurance, empathy, and tangibles.

Instrument reliability was assessed using Cronbach's alpha, with a threshold of ≥ 0.60 . Validity was evaluated via Pearson Product-Moment correlation, with items deemed valid when r -value exceeded the critical value (r -table = 0.227 for $n = 75$, $\alpha = 0.05$). Classical assumption testing included normality assessment via the One-Sample Kolmogorov-Smirnov test, and multicollinearity diagnosis via Tolerance and Variance Inflation Factor (VIF) statistics. The hypothesised relationships were estimated using multiple linear regression analysis. Coefficient of determination (R^2) quantified the proportion of variance in satisfaction explained by the three SST predictors. Simultaneous significance was assessed via F-test, and individual predictor effects were evaluated using t-tests at a significance level of $\alpha = 0.05$. All analyses were conducted using IBM SPSS Statistics Version 26.

The research hypotheses are as follows: **H1**: ATM service quality has a significant positive effect on student satisfaction with BSI digital services; **H2**: Mobile Banking service quality has a significant positive effect on student

satisfaction; and **H3**: Internet Banking service quality has a significant positive effect on student satisfaction.

4. RESULTS AND DISCUSSION

4.1 Validity and Reliability Testing

All instrument items demonstrated acceptable validity. For the ATM variable (X1), r-values ranged from 0.719 to 0.836 ($p < 0.001$), all exceeding the critical r-table value of 0.227 (Table 1). Mobile Banking (X2) items yielded r-

values between 0.732 and 0.779, and Internet Banking (X3) items ranged from 0.685 to 0.785, with all items achieving $p < 0.001$. The satisfaction variable (Y) exhibited the widest r-value range (0.573 to 0.846), with the highest correlation observed for item Y1.14 ($r = 0.846$), reflecting strong alignment between this item and the overall satisfaction construct. All 28 instrument items across the four constructs were therefore retained for subsequent analysis.

Table 1. Summary of Validity Test Result

Variable	No. of Items	r-value Range	r-table	Result
ATM (X1)	5	0.719 – 0.836	0.227	All Valid
Mobile Banking (X2)	4	0.732 – 0.779	0.227	All Valid
Internet Banking (X3)	4	0.685 – 0.785	0.227	All Valid
Student Satisfaction (Y)	15	0.573 – 0.846	0.227	All Valid

Source: Primary data processed, 2026

Reliability analysis confirmed that all four constructs exceeded the minimum threshold of Cronbach's alpha ≥ 0.60 (Table 2). Mobile Banking recorded the highest alpha ($\alpha = 0.801$), followed closely by Internet Banking ($\alpha = 0.799$) and ATM ($\alpha = 0.798$), with the satisfaction

construct yielding an alpha of 0.764. These values indicate good-to-excellent internal consistency across all instruments, consistent with established benchmarks in the digital banking service quality literature [41].

Table 2. Reliability Test Results

Variable	Cronbach's Alpha	No. of Items	Threshold	Result
ATM (X1)	0.798	5	0.60	Reliable
Mobile Banking (X2)	0.801	4	0.60	Reliable
Internet Banking (X3)	0.799	4	0.60	Reliable
Student Satisfaction (Y)	0.764	15	0.60	Reliable

Source: Primary data processed, 2026

4.2 Classical Assumption Tests

The Kolmogorov-Smirnov normality test yielded an Asymp. Sig. (2-tailed) value of 0.200, substantially exceeding the 0.05 significance threshold, confirming that model residuals are normally distributed (Test Statistic = 0.095). Multicollinearity diagnostics revealed that all three predictors demonstrated Tolerance values above 0.10 and VIF values below 10 (ATM:

Tolerance = 0.541, VIF = 1.850; Mobile Banking: Tolerance = 0.927, VIF = 1.079; Internet Banking: Tolerance = 0.556, VIF = 1.798), indicating the absence of problematic multicollinearity in the regression model. These results confirm that the data satisfy the classical linear regression assumptions, and that parameter estimates are unbiased and interpretable.

4.3 Multiple Linear Regression Analysis

Table 4. Model Summary (Coefficient of Determination)

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.872	0.760	0.748	3.767

a. Predictors: (Constant), Internet Banking, Mobile Banking, ATM b. Dependent Variable: Student Satisfaction Source: Primary data processed, 2026

Table 5. Multiple Linear Regression Coefficients (t-test)

Variable	B	Std. Error	Beta (β)	t	Sig.	Tolerance	VIF
(Constant)	5.777	5.038		1.147	0.256		
ATM (X1)	1.103	0.244	0.392	4.522	0.000	0.541	1.850
Mobile Banking (X2)	0.176	0.238	0.049	0.738	0.463	0.927	1.079
Internet Banking (X3)	1.915	0.300	0.546	6.389	0.000	0.556	1.798

Dependent Variable: Student Satisfaction Source: Primary data processed, 2026

The regression equation derived from Table 5 is as follows:

$$Y = 5.777 + 1.103X_1 + 0.176X_2 + 1.915X_3 + e$$

where Y represents student satisfaction, X_1 denotes ATM quality, X_2 denotes Mobile Banking quality, and X_3 denotes Internet Banking quality. The constant term of 5.777 represents the baseline satisfaction level when all predictor variables are held constant at zero, a theoretical baseline that confirms a positive dispositional orientation toward BSI digital services among the sampled students.

4.4 Discussion

a. Overall Model Fit and Explanatory Power

The overall regression model demonstrates excellent explanatory power, with $R^2 = 0.760$, indicating that ATM, Mobile Banking, and Internet Banking collectively account for 76.0% of the variance in student satisfaction. The Adjusted R^2 of 0.748 confirms that this explanatory power is robust after penalising for model complexity. The F-statistic of 62.376 ($p < 0.001$) further confirms the simultaneous statistical significance of the three predictors as a set. These findings are broadly consistent with prior research on SST and customer satisfaction in Islamic banking.

Paramida [42] reported significant model fit in a comparable study of SST effects on BSI customer satisfaction, while Aryanto and Walian [43] found that ATM, mobile banking, and internet banking jointly explained a substantial proportion of satisfaction variance among BSI customers in Palembang. The high explanatory power observed in the present study suggests that SST quality constitutes a primary determinant of satisfaction among students who are active digital banking users, with limited residual variance attributable to other factors such as branch service quality, product portfolio diversity, or Sharia compliance perceptions.

b. ATM and Student Satisfaction (H1 Supported)

ATM service quality exerts a significant positive effect on student satisfaction ($B = 1.103$, $\beta = 0.392$, $t = 4.522$, $p < 0.001$), supporting H1. This finding aligns with a substantial body of literature documenting the satisfaction-enhancing effects of ATM quality in both conventional and Islamic banking contexts. Zeithaml et al. [22] identified physical servicescape and equipment reliability as foundational determinants of customer satisfaction with automated banking services, a

finding that resonates with the reliability and tangibility dimensions measured in the present study. In the Indonesian Islamic banking setting, Buddhika [44] similarly found that ATM service quality was a significant predictor of student satisfaction, with physical condition and transactional accuracy emerging as particularly influential attributes.

The magnitude of the ATM effect ($\beta = 0.392$) is noteworthy given the widespread perception that ATMs represent a mature, commoditised technology. This result suggests that, for the student cohort under investigation, ATM service quality remains a salient satisfaction determinant, likely because ATMs continue to serve as the primary interface for cash access and routine transactions. The finding is consistent with TPB, which predicts that perceived behavioural control, operationalised here as the ease and reliability of ATM operation, positively influences the evaluative response (satisfaction) associated with the behaviour [13]. Students with high perceived controllability of ATM transactions, reflecting confidence in the machine's reliability and their own transactional competence, are more likely to report high satisfaction levels. This interpretation is further supported by the EDM framework [14], which suggests that when ATM performance meets or exceeds student expectations for reliability and security, the resulting positive disconfirmation generates satisfaction.

The security assurance dimension of ATM quality warrants particular attention in the Islamic banking context. The DSN-MUI Fatwa No. 54/DSN-MUI/X/2006 on Sharia debit cards establishes that ATM-based transactions must

conform to principles of justice and the prohibition of *riba*, reinforcing the importance of transactional transparency and data protection as satisfaction determinants among religiously conscientious users. BSI must therefore ensure that its ATM infrastructure not only meets technical performance benchmarks but also communicates clearly to users that transactional processes adhere to Sharia requirements.

c. Mobile Banking and Student Satisfaction (H2 Rejected)

Contrary to H2, Mobile Banking does not exert a statistically significant effect on student satisfaction ($B = 0.176$, $\beta = 0.049$, $t = 0.738$, $p = 0.463$). This is perhaps the most theoretically provocative finding of the study, given the prevailing assumption in the literature that mobile banking is the most preferred digital channel among younger banking users [3]. Several interpretive frameworks can be invoked to account for this null result.

First, the "satisfaction hygiene" hypothesis advanced by Laukkanen [28] provides a compelling explanation. When a digital service becomes a near-universal baseline offering, as mobile banking has become in the Indonesian commercial banking landscape, it ceases to be a differentiating factor in satisfaction evaluation. Students who use BSI Mobile may take its availability for granted and evaluate it against a high baseline expectation shaped by exposure to technologically advanced applications across multiple sectors. Under these conditions, even well-functioning mobile banking services may fail to generate positive disconfirmation, as performance merely confirms rather than exceeds expectations [14]. This interpretation is consistent with the

commoditisation thesis in the service management literature, which holds that satisfaction effects diminish as services achieve ubiquity [45].

Second, the non-significant Mobile Banking effect may reflect feature convergence across competing banking applications. As the functionality of Islamic banking apps increasingly mirrors that of conventional banking applications, the distinctive satisfaction-generating capacity of BSI Mobile relative to alternatives may be reduced. Gazi et al. [46] noted that students in developing economies, despite positive perceptions of digital Islamic banking, often struggle to identify Sharia-specific value propositions within digital platforms, suggesting that feature convergence may erode the unique satisfaction premium associated with Islamic banking mobile applications. Third, methodological considerations may be relevant: the four-item Mobile Banking scale may not have captured the full dimensionality of mobile banking quality relevant to student satisfaction, particularly dimensions such as push notification utility, biometric authentication experience, and integration with third-party payment ecosystems.

This finding does not imply that mobile banking is unimportant; rather, it suggests that its role may be better understood as a hygiene factor whose absence generates dissatisfaction but whose presence does not reliably generate positive satisfaction responses among tech-savvy student users. BSI should focus not merely on maintaining mobile banking availability, but on developing genuinely distinctive features, such as Sharia-compliant investment product integration, zakat and infaq payment automation, and halal financial planning tools, that can

re-establish mobile banking as a satisfaction differentiator for the student segment [47].

d. Internet Banking and Student Satisfaction (H3 Supported)

Internet Banking exerts the strongest effect on student satisfaction among the three SST dimensions investigated ($B = 1.915$, $\beta = 0.546$, $t = 6.389$, $p < 0.001$), providing robust support for H3 and identifying it as the dominant predictor in the model. This finding offers a surprising but theoretically coherent counterpoint to the widely assumed primacy of mobile banking among younger users. The higher standardised coefficient for Internet Banking ($\beta = 0.546$) compared to ATM ($\beta = 0.392$) and Mobile Banking ($\beta = 0.049$) suggests that the web-based banking platform is the most potent differentiator of satisfaction experiences among Islamic Economics students.

Several explanations can be advanced for this finding. First, Internet Banking platforms typically offer richer functionality than mobile applications, including access to detailed transaction histories, complex fund transfers, investment portfolio management, and comprehensive financial product catalogues. For Islamic Economics students, who possess a relatively advanced understanding of Islamic finance instruments and may engage in more complex financial activities such as sukuk investments, profit-sharing deposits (*mudharabah*), and zakat calculation, these extended capabilities may be particularly valued. The Expectation-Disconfirmation Model [14] predicts that when a service delivers performance that substantially exceeds the expectations of sophisticated users, the magnitude of positive disconfirmation, and

consequently the level of satisfaction, will be correspondingly high.

Second, the security dimension of Internet Banking quality, operationalised in this study through indicators of login protection and transactional data encryption, may resonate particularly strongly with Islamic economics students whose educational background sensitises them to the ethical dimensions of financial data stewardship. Al-Hawari and Ward [31] demonstrated that perceived security is the most influential quality dimension in internet banking satisfaction, and this effect appears especially pronounced in Islamic banking contexts where data privacy aligns with the Islamic principle of trust (*amanah*) [33]. BSI's internet banking platform, by providing robust security infrastructure and clearly communicating its security credentials to users, may generate a satisfaction premium that exceeds that achievable through ATM or mobile banking channels.

Third, the accessibility dimension of Internet Banking, reflecting the capacity to access the platform from any internet-enabled device regardless of time or location, aligns closely with the transactional needs of students who may use a variety of devices (laptops, tablets, and smartphones) in different academic and personal contexts. The unrestricted multi-device accessibility of internet banking, compared to the device-specific nature of mobile banking applications, may confer a usability advantage that translates into higher satisfaction evaluations. This interpretation is supported by Kanku [32], who identified platform accessibility as a key mediator between internet banking service

quality and customer satisfaction in emerging market banking contexts.

The dominance of Internet Banking also contradicts the finding of Saputra and Antonio [48], who reported that Internet Banking did not significantly affect satisfaction among customers of a different Islamic bank in Indonesia. This discrepancy may be attributable to differences in sample characteristics, with Islamic Economics students possessing higher digital literacy and more sophisticated financial service needs than the general banking population, as well as differences in the quality and functionality of the internet banking platforms evaluated. This suggests that the Internet Banking-satisfaction relationship is contingent on both user characteristics and platform quality, reinforcing the importance of contextually situated empirical research in the digital banking domain.

e. **Implications for Theory and Practice**

The findings of this study carry significant theoretical implications. The non-significant effect of Mobile Banking, juxtaposed with the dominant effect of Internet Banking, challenges the simplistic assumption that younger users uniformly prioritise mobile interfaces over web-based platforms. Instead, the results suggest that satisfaction is driven by the richness, functionality, and security of digital service environments rather than by the specific technological medium through which services are delivered. This nuance enriches the application of the TAM [49] and TPB [13] frameworks by demonstrating that among sophisticated users with domain-specific knowledge, perceived usefulness of advanced functionality may outweigh the

convenience advantage of mobile-first design.

For BSI and Islamic financial institutions more broadly, the findings suggest a strategic rebalancing of digital investment priorities. The significant positive effects of ATM and Internet Banking indicate that quality optimisation in these channels, encompassing reliability improvements, security enhancement, and interface usability, represents a high-return investment in customer satisfaction. The non-significant Mobile Banking effect, while not cause for disinvestment, suggests that differentiation rather than parity should guide mobile banking development strategy. BSI should leverage its Islamic identity to embed distinctive Sharia-value propositions within its mobile platform, such as integrated halal investment advisory, Islamic financial planning modules, and transparent Sharia compliance certification features, to re-establish mobile banking as a genuine satisfaction driver for the student segment [50].

5. CONCLUSION

This study examined the influence of Self-Service Technology, comprising ATM, Mobile Banking, and Internet Banking, on the

satisfaction of Islamic Economics students at Universitas Mulawarman who use Bank Syariah Indonesia digital services. Using multiple linear regression on data collected from 75 respondents, the results demonstrate that the three SST dimensions collectively explain 76.0% of student satisfaction variance (Adjusted $R^2 = 0.748$, $F = 62.376$, $p < 0.001$). ATM service quality (H1) and Internet Banking service quality (H3) both exert significant positive effects on satisfaction, with Internet Banking emerging as the dominant predictor ($\beta = 0.546$), while Mobile Banking (H2) does not produce a statistically significant effect. These findings extend the SST-satisfaction literature by providing contextually situated evidence from an Islamic banking setting with a student-user population, revealing that web-based internet banking rather than mobile applications constitutes the primary digital satisfaction driver for this demographic. For BSI, the results underscore the strategic importance of security, accessibility, and functional richness in internet banking design, the continued relevance of ATM service quality, and the need to develop distinctive Sharia-aligned value propositions within mobile banking to elevate its satisfaction impact. Future research should adopt longitudinal designs, expand sample coverage to include comparative analyses across Islamic banking institutions, and investigate the moderating roles of Sharia literacy, digital self-efficacy, and Islamic financial trust on the SST-satisfaction relationship.

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