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Evaluation of Mobile Application Service on User Loyalty Using Expectation Confirmation Model

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Abstract— **Background**: Mobile-based Academic Information Systems (AIS) have become essential for improving accessibility and efficiency in higher education. UIN Jakarta's AIS Mobile aims to support academic activities; however, user loyalty remains low, as many students prefer accessing services via the web platform. **Objective**: This study evaluates AIS Mobile services and identifies key factors influencing user loyalty using an extended Expectation Confirmation Model (ECM). **Methods**: A quantitative approach was employed, involving 334 respondents selected through purposive sampling. Data were collected via an online questionnaire and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS 4.0.9.3. The proposed model integrates ECM constructs—confirmation, perceived usefulness, satisfaction, and continuance intention—with additional variables: system quality, information quality, trust, habit, and loyalty. **Results**: Findings indicate that eight hypotheses were supported, confirming significant relationships among confirmation, perceived usefulness, trust, habit, and continuance intention in shaping loyalty. Satisfaction, however, showed no significant effect on continuance intention. The model demonstrates strong explanatory power, with R^2 values of 0.737 for continuance intention and 0.726 for satisfaction. Habit exhibited the largest effect size, emphasizing its role in sustaining usage. **Implications**: To enhance user loyalty, developers should prioritize improving system reliability, security, and usability while fostering habitual engagement through intuitive design and personalized features. These insights provide actionable strategies for strengthening AIS Mobile adoption in Islamic higher education contexts.

Keywords— Academic Information System; Expectation Confirmation Model; Mobile Application; User Loyalty; PLS-SEM

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I. INTRODUCTION

Information technology has become a decisive driver of service transformation in higher education, reshaping how institutions deliver academic administration and how students engage with core processes such as course registration, academic records, and learning resources. Mobile-based Academic Information Systems (AIS Mobile) embody this transformation by providing ubiquitous access, immediacy, and personalization, complementing or substituting web portals in many universities. As mobile channels increasingly mediate student–institution interactions, understanding the determinants of sustained use and loyalty moves to the forefront of information systems research, because the long-term success of digital platforms depends not only on initial adoption but on post-adoption behavior shaped by expectations, perceived value, trust, and usage routines [1], [2]. In Islamic higher education where governance, service expectations, and student digital habits may differ the relevance of AIS Mobile is amplified by institutional digitalization goals and the need for secure, reliable, and user-friendly services [27].

A growing body of post-adoption studies consistently shows that continuance intention and loyalty in mobile services arise from the interplay of confirmation, perceived usefulness, satisfaction, system and information quality, trust, and habit. The Expectation Confirmation Model (ECM) remains a central lens to explain these relationships, originally positing that confirmation drives perceived usefulness and satisfaction, which then influence continuance intention [1]. Subsequent works broaden this view across e-learning and mobile contexts, underscoring the roles of perceived usefulness and satisfaction while highlighting trust as pivotal when data sensitivity and service reliability are salient [2]–[5], [7]. Recent extensions also emphasize habit as a powerful antecedent that fosters automaticity and lowers cognitive effort, thereby strengthening continuance intention in mobile environments [3], [4]. Methodological advances in PLS-SEM further enable rigorous estimation of these multifaceted relationships and effect sizes in complex models, facilitating theory testing with real-world datasets [6]. Despite these advances, much of the empirical evidence centers on commercial platforms or general higher education, with limited attention to Islamic universities and to loyalty as a deeper outcome beyond continuance intention [3], [5], [7], [9], [28], [29]

These gaps are practically visible in the case of AIS Mobile at UIN Syarif Hidayatullah Jakarta, where students still report mixed experiences and many prefer the web version for routine tasks. The literature offers only sparse, context-specific examinations of mobile AIS loyalty in Islamic higher education; few studies integrate the ECM with trust, habit, system quality, and information quality in

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a unified explanatory model; and loyalty frequently remains under-theorized relative to continuance intention, even though loyalty better reflects sustained commitment, advocacy, and first-choice preference for the mobile channel [2], [3], [5], [10], [11]. Furthermore, prior research rarely connects behavioral constructs with technical quality in a way that yields actionable guidance for university developers and digital service units. Addressing these limitations requires a model that simultaneously captures technical reliability and informational accuracy alongside psychological and behavioral drivers of repeated use and commitment [1], [6], [10], [11], [30].

Accordingly, this study aims to provide a comprehensive, context-specific evaluation of the determinants of user loyalty toward AIS Mobile at UIN Syarif Hidayatullah Jakarta by employing an extended ECM. The model explicitly examines how confirmation, perceived usefulness, trust, habit, system quality, and information quality shape satisfaction and continuance intention, and how these pathways culminate in loyalty. Theoretical contributions include integrating technical quality and behavioral constructs within an ECM-based framework in an Islamic higher education setting and foregrounding loyalty as a distinct post-adoption outcome beyond continuance intention, thereby enriching ECM's explanatory scope [1]–[4], [6]. Practically, the study delivers evidence-based recommendations to improve reliability, usability, and data assurance, and to cultivate habit formation through thoughtful interaction design—guidance that is immediately actionable for developers and university management [7]–[9], [10], [11]. Methodologically, the research leverages PLS-SEM to assess measurement validity, structural relationships, and predictive relevance using a substantial student sample, strengthening the robustness and generalizability of the findings in mobile academic service contexts [6], [31].

II. RESEARCH METHOD

This study adopts the Expectation Confirmation Model (ECM) as the core lens to explain post-adoption behavior, complemented by extensions that incorporate trust, habit, and loyalty relevant to mobile application contexts. In ECM, confirmation shapes perceived usefulness and satisfaction, which in turn drive continuance intention [1]. Given empirical evidence that habit and trust strengthen continuance and loyalty in mobile services, the proposed model integrates these constructs to capture behavioral automaticity and confidence in the system. Accordingly, the framework guides instrument development, hypothesis formulation, and analysis using PLS-SEM to estimate relationships among latent constructs [6]. The research process is visualized in a flowchart where the "Proposed Model Development" stage is explicitly highlighted as the study's novelty (figure 1). This design aligns with

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contemporary ECM extensions in mobile contexts that emphasize trust and habit as salient predictors of continuance and loyalty [3], [27], [28]

A. Research Framework

This study employs the Expectation Confirmation Model (ECM) as the primary theoretical lens to explain post-adoption behavior, integrating additional constructs—trust, habit, and loyalty—to enhance explanatory power in mobile application contexts. The framework illustrates relationships among confirmation, perceived usefulness, satisfaction, and continuance intention, complemented by system and information quality. Using PLS-SEM with SmartPLS, the model guides hypothesis development and empirical testing, ensuring robust analysis of user loyalty determinants in AIS Mobile services.

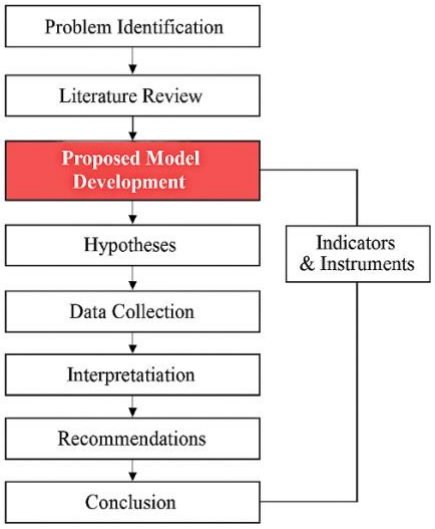

Fig 1. Research Stage (Novelty highlighted)

B. Population and Sample

In quantitative research, the population refers to the entire group of individuals or objects that possess specific characteristics relevant to the study [6]. For this research, the population comprises all users of the UIN Jakarta AIS Mobile application. Based on data from the Google Play Store, the AIS Mobile application had been downloaded by approximately 20,125 users as of July 19, 2024. This figure represents the potential user base from which the sample was drawn.

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The sampling technique applied in this study is purposive sampling, which involves selecting respondents based on predetermined criteria aligned with the research objectives [6], [25]. The main criterion was that respondents must have used the AIS Mobile application for at least one month to ensure familiarity and meaningful experience with the system. This approach guarantees that the collected data reflects informed user perceptions rather than initial impressions.

Determining the appropriate sample size is critical for ensuring statistical validity. Following the rule of thumb suggested by Hair et al. the minimum sample size should be ten times the number of structural paths or hypotheses in the research model [25]. Since this study tested ten hypotheses, the minimum required sample size was 100 respondents (10 × 10). To enhance reliability and generalizability, the actual sample collected consisted of 334 respondents, exceeding the minimum threshold [38].

Respondent data were gathered through an online questionnaire distributed over six days, from September 12 to September 18, 2024. The questionnaire included demographic questions (e.g., gender, age, faculty, academic batch, experience using AIS Mobile, and frequency of use) and 37 statements corresponding to the research indicators measured on a five-point Likert scale. This design ensures comprehensive coverage of user characteristics and perceptions [25].

The demographic profile of respondents indicates diversity across faculties and academic batches, with the majority aged between 20 and 22 years. Most respondents reported using AIS Mobile regularly, reflecting active engagement with the application. Such diversity strengthens the representativeness of the sample and supports robust hypothesis testing using PLS-SEM [6], [25], [38]. In summary, the sampling strategy and sample size adopted in this study align with established methodological standards, ensuring that the findings accurately represent the population of AIS Mobile users at UIN Jakarta.

C. Research Model and Hypothesis

This study adopts the Expectation Confirmation Model (ECM) as the primary framework to explain continuance of intention and user loyalty. ECM includes four core constructs: confirmation, perceived usefulness, satisfaction, and IS continuance of intention. To enhance explanatory power in the mobile application context, the model integrates additional variables system quality, information quality, trust, habit, and loyalty adapted from prior studies. This extended model enables comprehensive analysis of behavioral and technical factors influencing AIS Mobile user loyalty [27], [28].

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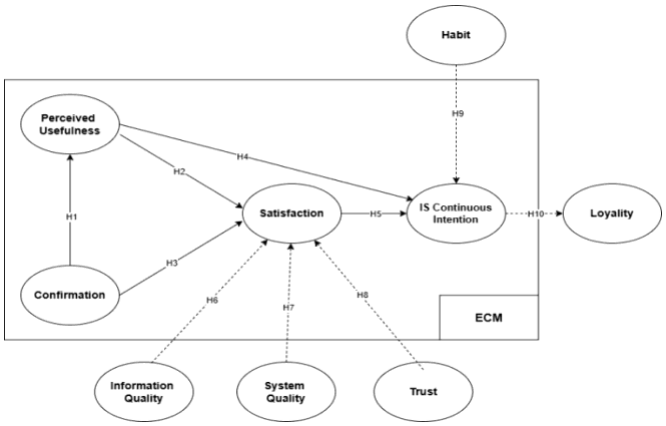

Fig 2. Proposed Research Model

Based on the proposed model, ten hypotheses were formulated to examine relationships among constructs:

• H1: Confirmation → Perceived Usefulness
• H2: Perceived Usefulness → Satisfaction
• H3: Confirmation → Satisfaction
• H4: Perceived Usefulness → IS Continuance Intention
• H5: Satisfaction → IS Continuance Intention
• H6: Information Quality → Satisfaction
• H7: System Quality → Satisfaction
• H8: Trust → Satisfaction
• H9: Habit → IS Continuance Intention
• H10: IS Continuance Intention → Loyalty

D. Research Indicators

The research indicators were developed to operationalize nine variables in the proposed model, adapted from prior studies, and adjusted to the context of AIS Mobile. A total of 37 indicators were used, grouped under constructs such as confirmation, perceived usefulness, information quality, system quality, trust, satisfaction, habit, continuance intention, and loyalty [1], [3], [14], 17]. Each indicator was measured using a five-point Likert scale ranging from “strongly disagree” to “strongly agree.” These indicators aim to capture user's perceptions of technical quality, behavioral tendencies, and attitudinal factors influencing loyalty [25]. Table 1 presents the complete list of variables and indicators employed in this study.

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Table 1. Research Indicators

Variables	Indicators	
	Code	**Indicator Name**
Confirmation	CON1	User Experience
	CON2	Service
	CON3	Expectation
	CON4	Reality of Use
	CON5	Proven/Confirmed
Perceived Usefulness	PU1	Performance
	PU2	Productivity
	PU3	Benefits
	PU4	Effectiveness
Information quality	IQ1	Information provided is easy to understand (clear)
	IQ2	Accurate
	IQ3	Format
	IQ4	Information provided on time
System quality	SQ1	Easy to learn system
	SQ2	Navigation on the system
	SQ3	System that operates quickly
	SQ4	Reliable system
Trust	TRU1	Confidentiality
	TRU2	Can be trusted
	TRU3	System
	TRU4	Reputation
Satisfaction	SF1	Highly satisfying user experience
	SF2	Enjoyment when using the app
	SF3	App performance
	SF4	Overall user satisfaction with the app
Habit	HAB1	Previous user experience
	HAB2	Dependency/Addiction
	HAB3	Automatic Behavior
	HAB4	Habits
IS Continuance Intention	CUI1	Intention to reuse as first choice
	CUI2	Repeated reuse intention
	CUI3	Intention to reuse in the future
	CUI4	Increased frequency of use
Loyalty	LOY1	Loyalty of use
	LOY2	Provide usage recommendations to others
	LOY3	As first choice
	LOY4	Positive comments to other users

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E. Research Instruments

Research instruments in this study were developed based on the indicators identified for each construct in the proposed model. A structured questionnaire was designed to measure user perceptions of AIS Mobile using 37 statements aligned with nine variables: confirmation, perceived usefulness, information quality, system quality, trust, satisfaction, habit, continuance intention, and loyalty. Each statement employed a five-point Likert scale ranging from "strongly disagree" to "strongly agree," ensuring consistency and ease of interpretation [6]. The instrument was validated through a pilot study involving 30 respondents, following recommendations for preliminary testing to assess clarity, reliability, and validity. Results confirmed that all indicators met reliability and validity criteria, making the instrument suitable for the main study [38]. The questionnaire also included demographic questions (e.g., gender, age, faculty, academic batch, experience using AIS Mobile, and frequency of use) to support descriptive analysis and segmentation. This structured approach ensures that the instrument captures both technical and behavioral dimensions, influencing user loyalty, providing robust data for hypothesis testing using PLS-SEM [6], [25].

F. Data Analysis and Interpretation of Results

Data analysis in this study was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS version 4.0.9.3. The analysis consisted of two main stages: a measurement model (outer model) and a structural model (inner model). The outer model evaluated indicator reliability, internal consistency, convergent validity, and discriminant validity to ensure construct validity. The inner model tested hypotheses through path coefficients, t-statistics, and significance levels, supported by R^2 values, effect size (f^2), predictive relevance (Q^2), and relative impact (q^2). This approach provides robust estimation of relationships among latent variables and confirms the explanatory power of the proposed model in predicting user loyalty [37], [38-41].

The interpretation of results focuses on validating the proposed research model and hypotheses using PLS-SEM analysis. Findings indicate that eight out of ten hypotheses were supported, confirming significant relationships among key constructs such as confirmation, perceived usefulness, trust, habit, and continuance intention in shaping user loyalty. Notably, satisfaction showed an insignificant effect on continuance intention, suggesting contextual differences in AIS Mobile usage compared to classical ECM assumptions. These results highlight the dominant role of habit and perceived usefulness in predicting continued use and loyalty, aligning with prior studies on

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mobile application behavior. The interpretation underscores the need for improving system quality and trust to strengthen user engagement.

III. RESULT AND DISCUSSION

The findings of this research are that confirmation, perceived usefulness, trust, habit, and IS continuance intention significantly influence user loyalty in AIS Mobile, whereas satisfaction shows an insignificant effect on continuance intention in this context. The results of this research are in line with or supported by prior ECM extensions in mobile applications that identify perceived usefulness, trust, and habit as key antecedents of continuance and loyalty, and contrast partially with the classical role of satisfaction posited by Bhattacherjee (2001), suggesting contextual particularities in AIS Mobile usage [29], [30], [32]–[36]. Based on PLSpredict evaluation, the model exhibits medium predictive power because many indicators show lower RMSE and MAE compared to the linear model benchmark [37], [38].

A. Demographic Analysis of Respondents

The demographic analysis provides an overview of the characteristics of 334 respondents who participated in the study. Data were collected through an online questionnaire distributed over six days, from September 12 to September 18, 2024. Respondents were categorized based on gender, age, academic batch, faculty, experience using AIS Mobile, and frequency of use within one month. Many respondents were female (53.9%) and aged between 20 and 22 years, representing the dominant age group in the sample. Most participants were from the Faculty of Science and Technology (48.8%), followed by other faculties such as Economics and Education. Regarding academic batch, the largest proportion came from the 2021 cohort (38.6%), indicating active engagement among mid-level students.

In terms of AIS Mobile usage, 35.9% of respondents reported three years of experience, while 34.7% accessed the application four to six times per month, reflecting regular utilization. These demographic patterns suggest that the sample is diverse and representative of active AIS Mobile users, supporting the validity of subsequent analyses.

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Table 2. Demographic Analysis of Respondents

Category	Item	Total	Percentage
Gender	Male	154	46.1
	Female	180	53.9
Age	17 Years	0	0
	18 Years	28	8.4
	19 Years	36	10.8
	20 Years	52	15.6
	21 Years	86	25.7
	22 Years	80	24
	23 Years	31	9.3
	24 Years	12	3.6
	> 24 Years	8	2.4
Batch	2018	13	3.9
	2019	16	4.8
	2020	73	21.9
	2021	129	38.6
	2022	40	12
	2023	63	18.9
	2024	0	0
Faculty	FITK	17	5.1
	FAH	23	6.9
	FU	16	4.8
	FSH	13	3.9
	FDI	11	3.3
	FDIKOM	12	3.6
	FPsikologi	11	3.3
	FEB	26	7.8
	FST	163	48.8
	FIKES	18	5.4
	FISIP	14	4.2
	FK	10	3
Experience using AIS Mobile	<1 Years	7	2.1
	1 Years	48	14.4
	2 Years	76	22.8
	3 Years	120	35.9
	4 Years	73	21.9
	5 Years	10	3
Frequency of use of AIS Mobile (within 1 month)	1-3 Times	107	32
	4-6 Times	116	34.7
	7-9 Times	52	15.6
	>9 Times	59	16.7

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B. Measurement Model Analysis (Outer Model)

1. Individual Item Reliability

Individual Item Reliability is a test that aims to measure the correlation between each indicator measured based on the outer loading value. The outer loading value that can be said to be valid and good / ideal is more than 0.7[6], [20],[21]. Based on the results of this research main study the outer loading value obtained using Smart-PLS version 4.0.9.3, each indicator has met the requirements and is said to be ideal and valid. The Individual item reliability score attached in appendix.

2. Internal Consistency Reliability

Internal Consistency Reliability is a test that aims to measure the consistency of the score of each indicator item measured based on the composite reliability value. A good / ideal composite reliability value is worth more than the threshold (> 0.7) [6], [20], [21]. Based on the results of the composite reliability value obtained using Smart-PLS version 4.0.9.3, each indicator has exceeded the specified threshold (> 0.7). The Internal Consistency Reliability Score attached in appendix.

3. Convergent Validity

Convergent validity is a test that aims to identify the AVE value. The AVE value shows how much the indicator variance is in the latent variable (construct) and can be said to be good / ideal, if the value is more than the threshold (> 0.5) [6], [20], [21]. Based on the results of the AVE value obtained using Smart-PLS version 4.0.9.3, the AVE value has exceeded the predetermined threshold (> 0.5). The Convergent Validity Score attached in appendix.

4. Discriminant Validity

Discriminant validity consists of 2 methods in testing, namely examination of the cross-loading value between indicators and Fornell Lacker's criterion. The cross-loading value between indicators can be obtained by comparing the outer loading value of the indicator with variables in other parts (blocks). This outer loading value must be higher than the variables in other parts (blocks) [6], [20], [21]. The results of the analysis of cross loading score of this study can be accessed in appendix. The next discriminant validity test is to check the value of Fornell Lacker's criterion by comparing the AVE value between one construct variable and another construct variable. The root AVE value obtained must be greater than the correlation between one construct variable and another construct variable. The results of the calculation of Fornell Lacker's criterion score of this study attached in appendix.

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C. Structural Model Analysis (Inner Model)

1. Path Coefficient

Path Coefficient (β) is a test that aims to identify the significance of the influence between variables [6]. The path coefficient (β) value that has passed the threshold value of 0.1 (minimum) can be declared to have an influence on the research model [6], [20], [21]. Table 3 is the path coefficient (β) value of each hypothesis. Based on the results of testing the path coefficient (β), there is 1 hypothesis out of 10 hypotheses that are declared insignificant (insignificant) due to the path coefficient (β) value being below the specified threshold (0.1), H5 with the satisfaction path to continuance intention (SF → CUI) with a path coefficient (β) value of 0.066.

Table 3. Path Coefficient Score

Hypothesis	Path Relationship	Path Coefficient Value	Description
H1	CON → PU	0.830	Significant
H2	PU → SF	0.142	Significant
H3	CON → SF	0.172	Significant
H4	PU → CUI	0.225	Significant
H5	SF → CUI	0.066	Not significant
H6	IQ → SF	0.188	Significant
H7	SQ → SF	0.116	Significant
H8	TRU → SF	0.311	Significant
H9	HAB → CUI	0.623	Significant
H10	CUI→ LOY	0.806	Significant

2. Coefficient of Determination

Coefficient of Determination (R2) is a test that aims to show the proportion of variance of endogenous variables that can be explained by exogenous variables in the model. The Coefficient of Determination () value is grouped into 3, namely 0.67 is considered strong, 0.33 is considered moderate, and 0.19 is considered weak [6], [20], [21]. Table 4 is the coefficient of determination (R2) value of each variable. Based on the results of the coefficient of determination (R2) there are 3 variables that have a strong proportion in the proposed model of this study, namely continuance intention (CUI), perceived usefulness (PU), and satisfaction (SF). Meanwhile, the loyalty variable (LOY) has a medium/moderate proportion in the proposed research model.

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Table 4. Coefficient of Determination Score

Variables	Coefficient of Determination (R^2) Value	Description
CUI	0,737	Strong
LOY	0,649	Moderate
PU	0,689	Strong
SF	0,726	Strong

3. T-Test

T-Test is a test that aims to test the significance of the relationship between latent variables and the hypothesis being tested. The research hypothesis can be accepted if the t-test value exceeds 1.96 with a significance level of 5%. Table 5 is the T-Test value of each hypothesis. Based on the results of t-test testing that 8 hypotheses are accepted and 2 hypotheses out of 10 hypotheses are rejected due to the t-test value being below the specified threshold (1.96), H5 with the satisfaction path to continuance intention (SF → CUI) with a t-test value of 1.056 and H7 with the system quality path to satisfaction (SQ → SF) with a t-test value of 1.807.

Table 5. T-Test Score

Hypothesis	Path Relationship	T-Test Value	Description
H1	CON → PU	38.186	Accepted
H2	PU → SF	2.235	Accepted
H3	CON → SF	2.279	Accepted
H4	PU → CUI	3.952	Accepted
H5	SF → CUI	1.056	Rejected
H6	IQ → SF	2.886	Accepted
H7	SQ → SF	1.807	Rejected
H8	TRU → SF	4.918	Accepted
H9	HAB → CUI	11.675	Accepted
H10	CUI→ LOY	34.633	Accepted

4. Effect Size

Effect Size is a test that aims to assess the substantive effect of variables on other latent variables [26]. The effect size value used can be identified in tests categorized as 0.02 for small effects, 0.15 for medium effects, and 0.35 for large effects [6], [20], [21]. Table 6 is the effect size value (f2) of each hypothesis. Based on Table 6, that 8 hypotheses have a small effect on the proposed research model based on the path tested, 1 hypothesis has a medium effect on the proposed research model based on the variables on the path tested, and 1 hypothesis has a large effect on the proposed research model based on the path tested.

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Table 6. Effect Size Score

Hypothesis	Path Relationship	f^2			Description
		R^2-in	R^2-ex	$\sum f^2$	
H1	CON → PU	0.689	0.638	0.164	Medium
H2	PU → SF	0.726	0.721	0.018	Small
H3	CON → SF	0.726	0.720	0.021	Small
H4	PU → CUI	0.737	0.718	0.072	Small
H5	SF → CUI	0.737	0.736	0.003	Small
H6	IQ → SF	0.726	0.718	0.029	Small
H7	SQ → SF	0.726	0.723	0.010	Small
H8	TRU → SF	0.726	0.700	0.094	Small
H9	HAB → CUI	0.737	0.603	0.509	Large
H10	CUI → LOY	0.649	0.718	-0.197	Small

5. Predictive Relevance

Predictive Relevance (Q^2) is a calculation that aims to determine the predictive ability value of a research model. The predictive relevance (Q^2) value is obtained from testing through PLSpredict / CVPAT. A Q^2 value greater than 0 indicates that the model has good predictive relevance [6], [20], [21]. Table 7 is the Predictive Relevance (Q^2) value of each variable. The variables of continuance intention (CUI), loyalty (LOY), perceived usefulness (PU), and satisfaction (SF) have the appropriate predictive ability value for the proposed research model in this study.

Table 7. Predictive Relevance Score

Variables	Q^2	Description
CUI	0.735	*Predictive Relevance*
LOY	0.671	*Predictive Relevance*
PU	0.685	*Predictive Relevance*
SF	0.710	*Predictive Relevance*

6. Relative Impact

Relative Impact (q^2) is a measurement that aims to assess the relative influence of variables on other variables. The relative impact (q^2) value is obtained from testing through PLSpredict / CVPAT. The q^2 value can be identified and grouped based on the established threshold, namely 0.02 declared small, 0.15 declared medium, and 0.35 declared large [6],[20],[21]. Table 8 is the relative impact value (q^2) of each hypothesis. Based on, the q^2 test results identify the relative influence of variables on other variables. For the SF → CUI, IQ → SF, and TRU → SF paths, it is interpreted as having a

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relatively small influence between the variables on each path used. Meanwhile, CON → PU and HAB → CUI are interpreted as having a relatively medium influence between the variables on each path used.

Table 8. Relative Impact Score

Hypothesis	Path Relationship	q^2			Description
		Q^2-in	Q^2-ex	$\sum q^2$	
H1	CON → PU	0.685	0.634	0.162	Medium
H2	PU → SF	0.710	0.710	0	Not Affected
H3	CON → SF	0.710	0.710	0	Not Affected
H4	PU → CUI	0.735	0.732	0.011	Not Affected
H5	SF → CUI	0.735	0.729	0.022	Small
H6	IQ → SF	0.710	0.699	0.038	Small
H7	SQ → SF	0.710	0.708	0.007	Not Affected
H8	TRU → SF	0.710	0.680	0.103	Small
H9	HAB → CUI	0.735	0.645	0.340	Medium
H10	CUI → LOY	0.671	0.722	-0.155	Not Affected

IV. CONCLUSION

This study concludes that user loyalty toward AIS Mobile is primarily influenced by confirmation, perceived usefulness, trust, habit, and continuance intention. Among these, habit and continuance intention show the strongest effects, while satisfaction demonstrates an insignificant impact on continuance intention, indicating contextual differences from classical ECM assumptions. The extended ECM model used in this research provides a comprehensive framework for understanding post-adoption behavior in Islamic higher education settings. To enhance user loyalty, developers should prioritize improvements in system quality and trust. Key actions include optimizing navigation, ensuring faster and more reliable system performance, and strengthening data security to build user confidence. Additionally, promoting habitual use through user-friendly features and personalized experiences can reinforce continuance intention. Future research should consider multi-institutional comparisons and qualitative approaches to validate findings and explore design interventions for better user engagement.

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