

Analyzing User Acceptance of NFJuara Mobile Application Using TAM and D&M IS Success Model

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Abstract: This study purposes to know how NFJuara application is accepted by the users in Nurul Fikri Lampung using the Technology Acceptance Model (TAM) Integrated with D&M IS Success Model. Data was collected by a validated questionnaire with inner model and outer model testing using PLS-SEM software SmartPLS. The type of data in this study is a quantitative approach. The number of samples collected was 143 respondents. Results of this research show that one of the hypotheses is rejected, that is, Service Quality (SEQ) does not affect Perceived Usefulness (PU) significantly. Besides that, this study shows that Perceived Usefulness (PU) and Perceived Ease of Use (PEU) affect as significant Acceptance of IT (AI) with $R^2=0.59$ (Moderate) and $\beta=0,36$ (PU→AI), $\beta=0,46$ (PEU→AI). These findings imply that developers of NFJuara applications need to improve the service quality to increase acceptance, although overall NFJuara application is accepted by the user because they still feel the benefits and usefulness of the application. The contribution of this study lies in testing the technology acceptance model in the context of mobile learning, which enriches the literature on the adoption of application-based e-learning, as well as providing practical recommendations for application developers to enhance user experience.

Keywords: NFJuara, Technology Acceptance Model (TAM), PLS-SEM, D&M IS Success Model, SmartPLS

INTRODUCTION

Information technology plays an important role within organizations to support decision-making by employees and managers, operational processes and business, as well as strategies in competitive advantage. The presentation of information needs that is quick, accurate, and reliable in the utilization of information technology is highly necessary. In order to provide services to students and teachers, the role of information technology becomes a primary focus for tutoring institutions to improve the quality and system of learning activities. Nurul Fikri is one of the tutoring institutions that utilizes information technology in teaching and learning activities. One of the uses of information technology leveraged by Nurul Fikri is the mobile-based Learning Information System called NFJuara. NFJuara is a mobile-based learning information system used by students to support learning activities at Nurul Fikri. The features available in this application include online tryouts, statistics of tryout results, SNBP rationalization, learning videos, a question bank, consultations, and more. The NFJuara application is designed to support student learning in the classroom so that students using the NFJuara application can experience the benefits of it.

Technology that is easily accepted and whose operation can be understood by users is one indicator that the technology system can be successfully accepted by society. How users accept the technology system becomes one of the critical reference factors for the success of technology system implementation. The implementation of a system is determined by two factors for it to be considered accepted or rejected, namely ease of use and the benefits perceived by users when using the system. After the technology system is used by the users, the system owner can immediately evaluate the application's implementation based on feedback/assessment from the users (Susanti & Syamsuar, 2022).

As an application that has been implemented for a long time, the evaluation of the NFJuara application is deemed necessary to determine whether the NFJuara application has been accepted by its users and has operated

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as the company expected. Moreover, the number of NFJuara application users at Nurul Fikri Lampung is still relatively low. Based on observations made at the Nurul Fikri Lampung learning location, there are still interruptions or errors when students use the NFJuara application, for example during try-out sessions or when using the consultation feature. From the perspective of user acceptance of an application, the researcher needs input or suggestions from users. Feedback from NFJuara application users as seen on the Play Store shows a rating of 4.2 out of a maximum value of 5. There are several topics to serve as a reference for the implementation of this application evaluation, namely errors during try-out sessions, interface, software, and responses. Reviews of NFJuara application and Skolla application as compare a mobile learning application show at Figure 1.

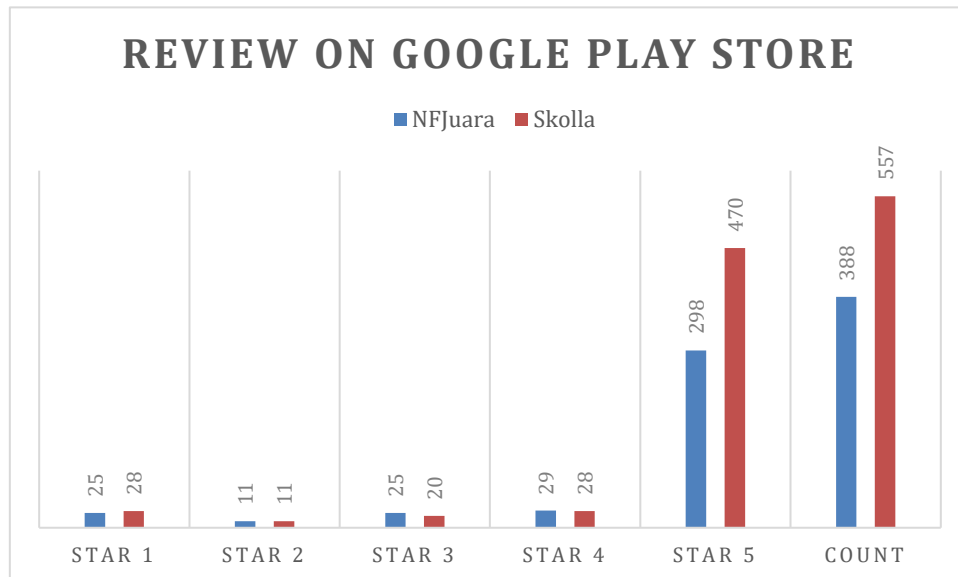


Figure 1. Reviews NFJuara and Skolla Application

Therefore, an evaluation of the system regarding this application is needed with the hope of understanding the factors that support user acceptance of the application, which can serve as a basis for decision-making for future application development. The methods used to evaluate acceptance in this research are the DeLone & McLean Information System (D&M IS) Success Model (DeLone and McLean, 2003) and the Technology Acceptance Model (TAM) by Davis (1989) developed in (PUTRI, 2019). The D&M IS Success Model is a method proposed by DeLone and McLean (2003) to measure the success level of a system. This model has 6 variables: system quality, information quality, service quality, use, user satisfaction, and net impact. On the other hand, TAM is a model that has been widely used, especially for analyzing the acceptance of a system. Perceived usefulness and perceived ease of use are two factors of TAM that can describe and predict acceptance of a technology (Wicaksono, 2022). Perceived usefulness relates to the user's level of confidence in the application of technology systems in achieving the business goals of an organization. Meanwhile, perceived ease of use refers to an individual's level of confidence that a system can facilitate learning and using technology. Some previous researchers (Aeni Hidayah et al., 2020; Groho et al., 2014) calculated the success of application usage by merging two methods (TAM and D&M IS Success Model).

In previous study conducted by (Huzaima et al., 2023) who using TAM and D&M IS Success Model to analysis acceptance of Academic System show that 7 out of 8 hypothesis were accepted, as the relationship of Service Quality (SEQ) to Perceived Ease of Use (PEU) has no significant effect with the *t*-test value 0,98 (less than 1,96) it means hypothesis was rejected. Beside that, The R-Square value of Perceived Ease of Use (PEU) is 0.669, or 66.9%, placing it in the "strong" category, showing that it can be influenced by System Quality (SQ), Service Quality (SEQ), and Information Quality (IQ). The Perceived Usefulness measure is moderately significant (R-Square = 0.648, or 64.8%). In addition, (Aeni Hidayah et al., 2020) also used these method on the Mobile AIS UIN Jakarta Mobile Application Acceptance, findings indicating that the variables of Service Quality (SEQ) have no significant effect to Perceived Ease of Use (PEU). In other hand, (Groho et al., 2014), with the findings indicating that the variables of System Quality (SQ) and Service Quality (SEQ) has no effect to Perceived Ease of Use (PEU) on Application for Managing Learning Tasks in BPK. The finding by (Kafabih, 2024) in his study of acceptance mobile application MYMRTJ show that one of 8 hypothesis are rejected. System Quality (SQ) no influence Perceived Usefulness (PU). It means that user still feeling benefits of application although the system has poor quality.

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Referring to the description that has been presented, the researcher is motivated to conduct a study titled 'The Application of Technology Acceptance Model (TAM) and D&M IS Success Model on the Acceptance of the NFJuara Application'. The researcher hopes that the results of this study can prove and show the factors that influence users' acceptance of the NFJuara application, as well as provide input and suggestions for the application owners to improve user experience and implementation success to be more accepted by users.

LITERATURE REVIEW

Relevant Research Result

Some references from previous research that serve as the basis for this study are shown in the Table 1.

Table 1. Previous Research

Title of Study	Variables	Result
Analysis Using the Technology Acceptance Model (TAM) and DeLone & McLean Information System (D&M IS) Success Model of AIS Mobile User Acceptance (Aeni Hidayah et al., 2020)	System Quality (SQ), Information Quality (IQ), Service Quality (SEQ), Perceived Usefulness (PU), Perceived Ease of Use (PEU), Acceptance of IT (AI)	Out of 8 hypotheses, 7 hypotheses were accepted: $IQ \rightarrow PU$, $IQ \rightarrow PEU$, $SQ \rightarrow PU$, $SQ \rightarrow PEU$, $SEQ \rightarrow PU$, $PU \rightarrow AI$, $PEU \rightarrow AI$, and 1 hypothesis was rejected: $SEQ \rightarrow PEU$. The removal of 3 indicators IQ5, SEQ4, and SEQ5..
Analysis Acceptance Of Academic System Using TAM And DeLone & McLean (D&M ISSM) (Huzaima et al., 2023)	System Quality (SQ), Information Quality (IQ), Service Quality (SEQ), Perceived Usefulness (PU), Perceived Ease of Use (PEU), Acceptance of IT (AI)	Out of 8 hypotheses, 7 hypotheses were accepted which are $SQ \rightarrow PU$, $SQ \rightarrow PEU$, $SEQ \rightarrow PU$, $IQ \rightarrow PU$, $IQ \rightarrow PEU$, $PU \rightarrow AI$, $PEU \rightarrow AI$, and 1 hypothesis was rejected which is $SEQ \rightarrow PEU$.
Analysis of User Acceptance of the MyMRTJ Application System Using Technology Acceptance Model (TAM) dan DeLone McLean Information System Success (Kafabih, 2024)	System Quality (SQ), Information Quality (IQ), Service Quality (SEQ), Perceived Usefulness (PU), Perceived Ease of Use (PEU), Acceptance of IT (AI)	Out of 8 hypotheses, 7 hypotheses were accepted which are $IQ \rightarrow PEU$, $IQ \rightarrow PU$, $SQ \rightarrow PEU$, $SEQ \rightarrow PU$, $PEU \rightarrow AI$, $SEQ \rightarrow PEU$, $PU \rightarrow AI$, and 1 hypothesis was rejected which is $SQ \rightarrow PU$.
Evaluation of the Success of Implementing the Learning Task Management Application at BPK (Groho et al., 2014)	System Quality (SQ), Information Quality (IQ), Service Quality (SEQ), Perceived Usefulness (PU), Perceived Ease of Use (PEU), User Satisfaction (US), Net Benefits (NB)	Out of 10 hypotheses, 8 hypotheses were accepted, namely $SQ \rightarrow PEU$, $IQ \rightarrow PU$, $IQ \rightarrow PEU$, $SEQ \rightarrow PU$, $PEU \rightarrow PU$, $PU \rightarrow US$, $PEU \rightarrow US$, $US \rightarrow NB$, and 2 hypotheses were rejected, namely $SQ \rightarrow PU$ and $SEQ \rightarrow PEU$.
Evaluation of the Acceptance of the E-KTP System Using TAM (Technology Acceptance Model) (Case Study: Ilir Timur I Sub-District Office in Palembang) (Fatmasari et al., 2015)	Perceived Usefulness (PU), Perceived Ease of Use (PEU), Acceptance of IT (AI)	$PU \rightarrow AI$, $PEU \rightarrow AI$. PU and PEU together have a positive and significant relationship with AI.

User Acceptance

In supporting their work, the desire of some people who use information technology is referred to as user acceptance. Two factors that influence the acceptance of a system are whether a person emphasizes the use or non-use of an application system if they believe that the application can help make their work easier (Davis & Davis, 2015) and the ease of applying the application system. User acceptance becomes a criterion in determining the success of an information system. The longer a person is willing to use the new application system, the greater the acceptance of that system (Hidayat et al., 2020).

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Technology Acceptance Model (TAM)

TAM is a model used to understand how users receive and adopt a technology. This model was introduced and developed by Fred Davis in 1986. TAM was created to explain how user acceptance occurs when using new technologies such as management information systems or software. There are three main variables in the TAM model developed by Fred Davis, namely perceived usefulness, perceived ease of use, and intention to use (Davis, 1993). With the advancement of technology, TAM has undergone changes and enhancements. These three factors influence the acceptance of a system. The easier it is to use a system and the more benefits it provides to its users, the greater the user's intention to use the system. Over time, TAM continues to undergo changes and improvements to adapt to technological advancements. Venkatesh and Davis (1996) improved the TAM by removing the variable attitude toward using (Yousafzai et al., 2007). Then, Oktavianti in (PUTRI, 2019) also made modifications to the TAM which introduced a new variable acceptance of IT, which is a combination of behavioral intention to use and actual system use. The model improvement is explained in Figure 2.

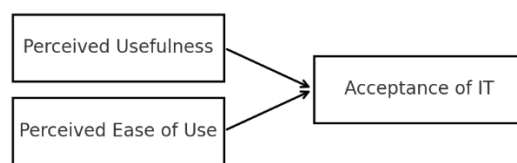


Figure 2. Modification TAM by Oktavianti

D&M IS Success Model

D&M IS Success Model is one of the models used to determine the success of an information system introduced in 1992. DeLone & McLean proposed that there are six variables that influence the success in implementing an information system. These six variables include information quality, system quality, use, user satisfaction, individual impact, and organizational impact. The relationship between these six variables indicates that system quality will affect use and user satisfaction. Furthermore, use and user satisfaction will also influence individual impact. If any of the six variables fail, the overall success of an information system will be disrupted (DeLone & McLean, 2003).

DeLone and McLean revised the model that had been introduced previously after 10 years. The revision made to this model was to add the variables of service quality and intention to use as replacements for the use variable to align with technological developments. In addition, the intention to use variable replaced the use variable. Furthermore, the individual impact variable and the organizational impact variable were also revised into a single variable, Net Impacts. The latest revised model is shown in Figure 3.

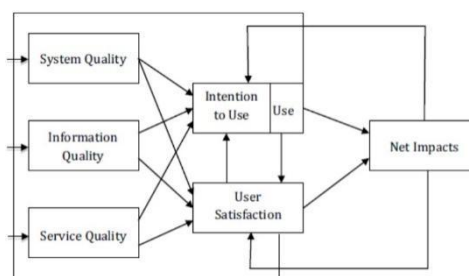


Figure 3. Revised D&M IS Success Model

NFJuara

NFJuara is a mobile-based application used by Nurul Fikri to support learning activities. NFJuara provides service features that can be utilized by students to support learning activities in schools. The features available in NFJuara include learning videos, online try-outs, a question bank, and solutions for the SNBT exam questions. Additionally, NFJuara also has a consultation service feature that students can use to communicate directly via chat to discuss subjects of interest or to discuss school assignments that the students cannot complete. NFJuara is currently a mobile-based application supported only by Android devices (Juara, 2024).

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METHOD

The approach used is a quantitative approach that requires data collection and analysis methods in its research. Questionnaires are used in the data collection process. Meanwhile, data analysis is performed with the help of statistics using the PLS-SEM method with the SmartPLS 3.0 statistical processing application to process the data from the distributed questionnaires. The sample used employs purposive sampling (Lenaini, 2021), defining the population as first-semester students of the 2024-2025 academic year at Nurul Fikri Lampung, ranging from junior high school to senior high school, as well as the teachers at Nurul Fikri Lampung. The recorded population as of November 30, 2024, is 418, consisting of 366 first-semester students and 52 active teachers. The determination of the sample size uses the Slovin formula (Suradi & Windarti, 2020) with a standard error of 7% , resulting in a minimum sample size of 137 samples. A margin of error of 7% was chosen because the population is relatively homogeneous and due to time and resource limitations, so the sample size remains representative even though the tolerance for error is slightly higher. The research model is adapted from previous research (Aeni Hidayah et al., 2020; Huzaima et al., 2023; Kafabih, 2024) that shown in Figure 4.

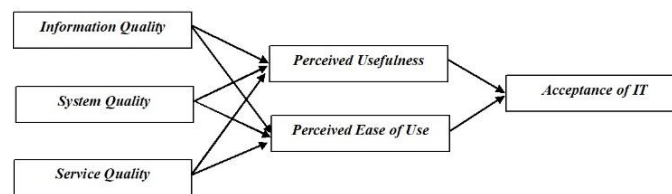


Figure 4. Research Model

The arrows in the research model above indicate that there are 8 hypotheses to be tested.

1. H1: Information quality (IQ) affects perceived usefulness (PU)
2. H2: Information quality (IQ) affects perceived ease of use (PEU)
3. H3: System quality (SQ) affects perceived usefulness (PU)
4. H4: System quality (SQ) affects perceived ease of use (PEU)
5. H5: Service quality (SEQ) affects perceived usefulness (PU)
6. H6: Service quality (SEQ) affects perceived ease of use (PEU)
7. H7: Perceived usefulness (PU) affects information technology acceptance (AI)
8. H8: Perceived ease of use (PEU) affects information technology acceptance (AI)

Based on the research model above, there are 6 variables in this study, each of which consists of several indicators used as the basis for developing the research questionnaire. In assessing the information quality (IQ), seven indicators are used such as Completeness (IQ1), Easy to Understand (IQ2), Relevant (IQ3), Accurate (IQ4, IQ5), Punctuality (IQ6), Reliability (IQ7). System quality (SQ) used six indicators (Reliability (SQ1), Response Time (SQ2), Security (SQ3), Accessibility (SQ4), Language (SQ5), Realization of Expectation (SQ6)). While service quality (SEQ) used five indicators namely Assurance (SEQ1), Empathy (SEQ2), Responsive (SEQ3), Service (SEQ4,SEQ5). Perceived usefulness (PU) using three indicators in this study among them are Work Quickly (PU1), Effective (PU2), Useful (PU3). Indicators used in Perceived Ease of Use (PEU) consist of five indicators namely Easy to Learn (PEU1), Easy to Manage (PEU2), Clear and Easy to Understand (PEU3), Easy to Become Skilled (PEU4) and Easy to Use (PEU5). Whereas variable Acceptance of IT (AI) consist of three indicators namely Attitude Toward Using (AI1) and Actual Use (AI2, AI3).

This research involves several steps starting with identifying the problem and formulating it. The next step shifts to the research methods which include 2 methods of data collection and observation, data collection using questionnaires, and analysis methods including the research design applied from the TAM model and the D&M IS Success Model. The final step is to interpret the research results, which includes demographic analysis, measurement of the outer model, and measurement of the inner model. From the interpretation of the research results, conclusions and recommendations can be drawn. The research steps are presented in Figure 5.



Figure 5. Research Steps

RESULT

Demographic Analysis

After distributing the questionnaire for one week to the respondent teachers and students of the Nurul Fikri Lampung institution, a total of 143 respondents were gathered in this study. This number has fulfilled the minimum sample size required. The results of the demographic analysis consist of several groups, including groups based on gender, occupation, grade level, and the status of the NFJuara mobile application acceptance. The detailed results of the demographic data analysis are displayed in Table 2.

Table 2. Demographic Analysis

Category	Information	Total	Percentage (%)
Gender	Female	91	64
	Male	52	36
Occupation	Teacher	19	13
	Student	124	87
Grade Level	Junior High School	19	19
	Senior High School	65	81
Status of Acceptance	Accept	122	85
	Not Accept	3	2
	Netral	18	13

This study used a SEM strategy built on the PLS method for analyzing the data. There are two kinds of models used in SEM-PLS analysis: measurement models (outer model analysis) and structural models (inner model analysis). The PLS algorithm is used to provide a descriptive account of the route analysis that approximates the relationship specified by the system's structural equations in the path diagram. The PLS-SEM method is used in conducting this test analysis. The measurement model is evaluated using validity and reliability.

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Outer Model Analysis

This stage of analysis consists of several phases, namely conducting tests on the results of the questionnaires filled out by respondents, which include four outer model tests such as individual item reliability, internal consistency reliability, Average Variance Extracted (AVE), and discriminant validity.

1. Individual Item Reliability Test

The tests conducted by examining the results of the standardized loading factor values as shown in table 3 indicate the strength of the relationship between each indicator and its latent variable. The validity criterion for this test is that the loading factor value must be > 0.7 .

Table 3. Loading Factor Analysis

Variable	Kode	Outer Loading	Description
Information Quality	IQ1	0.810	Valid
	IQ2	0.824	Valid
	IQ3	0.842	Valid
	IQ4	0.812	Valid
	IQ5	0.626	Invalid
	IQ6	0.818	Valid
	IQ7	0.790	Valid
System Quality	SQ1	0.468	Invalid
	SQ2	0.820	Valid
	SQ3	0.666	Invalid
	SQ4	0.841	Valid
	SQ5	0.800	Valid
	SQ6	0.839	Valid
Service Quality	SEQ1	0.776	Valid
	SEQ2	0.826	Valid
	SEQ3	0.841	Valid
	SEQ4	0.640	Invalid
	SEQ5	0.600	Invalid
Perceived Usefulness	PU1	0.935	Valid
	PU2	0.945	Valid
	PU3	0.887	Valid
Perceived Ease of Use	PEU1	0.814	Valid
	PEU2	0.833	Valid
	PEU3	0.782	Valid
	PEU4	0.767	Valid
	PEU5	0.819	Valid
Acceptance of IT	AI1	0.850	Valid
	AI2	0.906	Valid
	AI3	0.879	Valid

Based on the results of the tests conducted, table 3 shows that out of 29 questionnaire items, there are 5 items that have a loading factor value of less than 0.7 (Hair et al., 2019; Huzaima et al., 2023), namely IQ5, SEQ4, SEQ5, SQ1, and SQ3. These five questionnaire items do not meet the specified criteria, so they were removed from the research model.

2. Internal Consistency Reliability Test

At this stage, it is done by looking at the composite reliability (CR) and Cronbach's Alpha (CA) value where the criterion for composite reliability is more than 0.7 (Rahadi, 2023). The measurement results of the composite reliability value for all variables in this study have shown numbers above 0.7, so it can be said to be valid and meets good criteria. The details of the composite reliability value results in this study can be seen in table 4.

Table 4. Internal Consistency Reliability Analysis

Variable	CA	CR	Description
Information Quality (IQ)	0.902	0.924	Reliable
System Quality (SQ)	0.858	0.904	Reliable
Service Quality (SEQ)	0.812	0.888	Reliable
Perceived Usefulness (PU)	0.912	0.945	Reliable
Perceived Ease of Use (PEU)	0.862	0.901	Reliable
Acceptance of IT (AI)	0.854	0.910	Reliable

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3. Average Variance Extracted (AVE) Test

The AVE value is used to describe the magnitude of the diversity of indicators that can be contained within a latent variable. A good AVE value criterion is above 0,5. This value indicates that the latent variable can explain more than 50% of the diversity of the indicators within it. The AVE value in this study has shown a good value and has met the criterion of being above 0,5, thus it can be considered valid. The detailed results of the AVE value in this study can be seen in Table 5.

Table 5. Average Variance Extracted Analysis

Variable	AVE	Description
Information Quality (IQ)	0.671	Valid
System Quality (SQ)	0.702	Valid
Service Quality (SEQ)	0.727	Valid
Perceived Usefulness (PU)	0.851	Valid
Perceived Ease of Use (PEU)	0.645	Valid
Acceptance of IT (AI)	0.772	Valid

4. Discriminant Validity

This phase is carried out by testing the cross loading values among indicator blocks and the Fornell-Lacker's cross loading values. The cross loading values among indicator blocks are used to compare the relationships between indicators with their latent variables and other latent variables. The testing of the Fornell-Lacker's cross loading values is done by observing the square root of the AVE among latent variables and other latent variables. The Fornell-Lacker's cross loading value for each latent variable must show a higher value compared to other latent variables. The results of the tests conducted show that the cross-loading values between indicators and their variables exhibit a higher correlation compared to other variable indicators, thus the cross-loading values for each indicator have met the criteria. In addition to the cross loading values among indicators, the cross loading value of Fornell-Lacker's must also show that the square root of AVE among latent variables is greater than the value of other latent variables. The results of the study show that the square root of AVE for each latent variable has a higher value compared to other latent variables, thus it can be considered valid. The cross loading values of Fornell-Lacker's in this study can be seen in table 6.

Table 6. Cross Loading Fornell-Lacker's

	AI	IQ	PEU	PU	SEQ	SQ
AI	0,879					
IQ	0,677	0,819				
PEU	0,737	0,725	0,803			
PU	0,714	0,726	0,768	0,923		
SEQ	0,682	0,686	0,771	0,739	0,852	
SQ	0,726	0,722	0,768	0,798	0,826	0,838

From the results of the outer model test, it was found that all variables are considered valid as they have met the minimum requirements of each test. Thus, this research model can be continued for testing with an analysis of the inner model measurement. Research model final after for this study is shown in figure 6.

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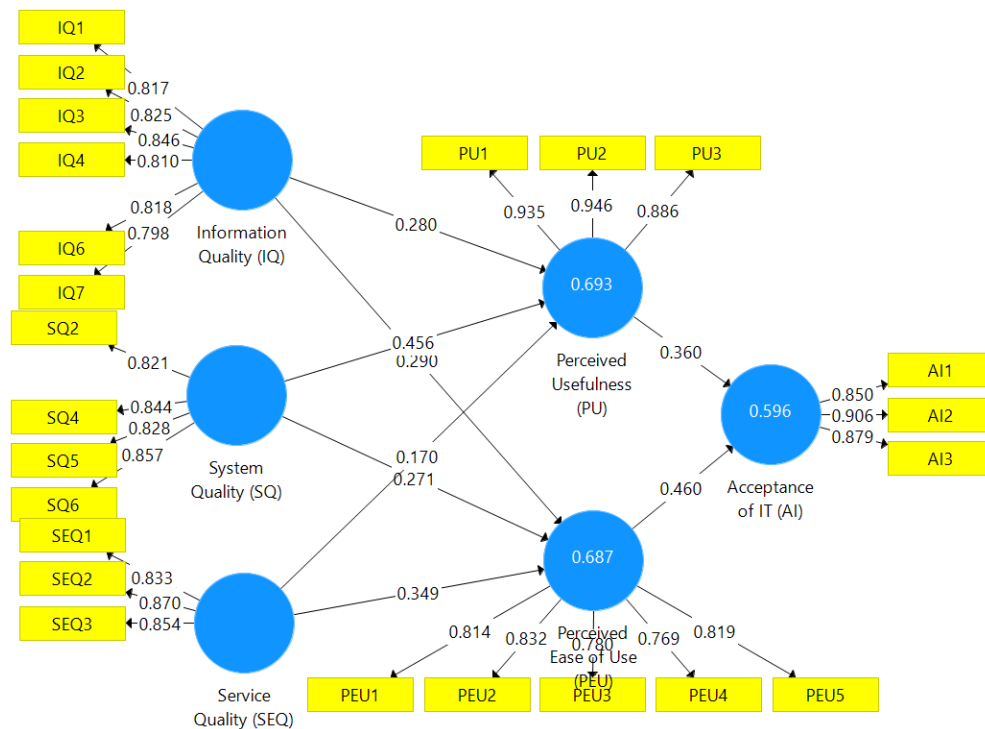


Figure 6. Research Model Final.

Inner Model Analysis

In the analysis stage of the inner model, there are five tests to be conducted, namely path coefficient test (β), coefficient of determination (R^2), t-test, effect size (f^2), and predictive relevance (Q^2).

1. Path Coefficient test (β)

This stage of testing is carried out to determine the relationships among each latent variable present in the research model. The criterion for the path coefficient value is 0.1, which means that this path has a significant influence. The results of the research shown in Table 6 indicate that all path coefficient values in this study are above 0.1, thus all paths are stated to have a significant relationship.

Table 6. Path Coefficient (β)

Path	Path Coefficient	Description
IQ → PEU	0.290	Significant
IQ → PU	0.280	Significant
SEQ → PEU	0.349	Significant
SEQ → PU	0.170	Significant
SQ → PEU	0.271	Significant
SQ → PU	0.456	Significant
PEU → AI	0.460	Significant
PU → AI	0.360	Significant

From the analysis results, the Perceived Ease of Use (PEU) → Acceptance of IT (AI) path has a coefficient value of $\beta = 0.460$, thus it can be concluded that PEU is the most dominant factor affecting AI compared to other paths.

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2. Coefficient of Determinant (R²)

In the research model, there are three independent latent variables namely Perceived Usefulness (PU), Perceived Ease of Use (PEU), and Acceptance of IT (AI). This testing stage is conducted to measure how much the dependent latent variable is explained by the independent latent variables. The criteria for measurement are a value of 0.67 is considered substantial, 0.33 is moderate, and less than 0.19 is considered weak.

Table 7. Coefficient of Determinant (R²)

Variable	R ²	Description
Acceptance of IT (AI)	0.590	Moderat
Perceived Ease of Use (PEU)	0.680	Substansial
Perceived Usefulness (PU)	0.686	Substansial

Based on the analysis results, the R² value for the AI construct is 0.590, which is categorized as having moderate explanatory power. Meanwhile, the R² values for the PEU (0.680) and PU (0.686) constructs fall into the substantial category, thus it can be concluded that this research model has a strong explanatory capability regarding endogenous variables, particularly in PEU and PU.

3. *t*-test

The purpose of this test is to examine the hypotheses present in this research. To determine the *t*-test value in the SmartPLS application, a two-tailed bootstrap method is performed with a significance level of 0.05, which will subsequently serve as the basis for hypothesis testing. The criterion that indicates the hypothesis is accepted is that the *t*-test value must be greater than 1.96, while a value below this criterion indicates that the hypothesis is rejected.

Table 8. *t*-test Analysis

Path	<i>t</i> -test	Description
IQ → PEU	2.926	Accepted
IQ → PU	3.372	Accepted
SEQ → PEU	3.692	Accepted
SEQ → PU	1.693	Rejected
SQ → PEU	2.370	Accepted
SQ → PU	4.957	Accepted
PEU → AI	4.689	Accepted
PU → AI	3.717	Accepted

Of the 8 research paths that have undergone *t*-test, there is one path that has a *t*-test value < 1.96, namely Service Quality (SEQ) towards Perceived Usefulness (PU), which has a *t*-test value of 1.693, thus the hypothesis is rejected. Meanwhile, the other 7 paths are stated to have accepted hypotheses. It mean that Service Quality (SEQ) not affect Perceived Usefulness (PU).

DISCUSSIONS

Based on the results of the outer model testing conducted and explained previously, here are several important points to note. The results of all outer model tests conducted indicate that the measurement model in this study meets the requirements and has good model characteristics, making it suitable for further testing, namely the inner model. Five indicators were removed: IQ5 (Accuracy), SQ1 (System Reliability), SQ3 (Security), SEQ4 (Service), and SEQ5 (Service). This was because these five indicators had outer loading values below 0.7. Furthermore, removing these five indicators ensured that the Fornell-Lacker cross-loading values met the requirements for discriminant validity testing, allowing for further testing, namely the inner model testing. The researchers believe that the removal of indicators may be due to a lack of additional description in the questionnaire, which could lead to biased and inaccurate interpretations by respondents. Furthermore, direct assistance with respondents during the questionnaire completion is necessary to obtain more accurate results.

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Meanwhile, based on the previous inner model testing description, the interpretation of the results of five inner model tests, including the path coefficient test, t-test, coefficient of determinant, effect size, and predictive relevance, is as follows. Of the eight research hypotheses, one hypothesis is rejected, namely $SEQ \rightarrow PU$, while the other seven are accepted. All path coefficients from the 8 paths have significant values and relevance values in predictive relevance with small and medium effect size values. This shows that each path has a significant influence and relevance.

The finding that service quality does not significantly affect perceived usefulness (PU) in the NFJuara application can be explained through several theoretical lenses. First, according to agency theory (Jensen & Meckling, 1976), students as principals emphasize the provider's main deliverable the quality of learning content rather than peripheral service aspects. Second, grounded in expectancy theory (Vroom, 1964), students perceive usefulness primarily when they believe that accessing high-quality content will directly improve their academic performance; thus, service quality does not substantially contribute to the expected outcome. Third, following the socio-technical theory (Trist & Bamforth, 1951), system success depends on the interplay between technical subsystems (content, technology, system design) and social subsystems (services, interactions). The results suggest that in content-driven e-learning, the technical dimension (content quality) plays a more decisive role in shaping PU than the social dimension (service quality). Therefore, the study highlights that enhancing PU in such platforms should prioritize content and system improvements, with service quality functioning more as a supporting factor.

The finding that service quality does not significantly influence perceived usefulness (PU) provides several practical insights for application developers. First, developers should prioritize enhancing content quality (curriculum-aligned materials, diverse practice exercises, interactive explanations), as this dimension is the key determinant of students' perceived usefulness. Second, system innovations such as data-driven personalization, content recommendation features, and gamified learning experiences can further reinforce the perception that the platform meaningfully supports academic achievement. Third, while service quality may not directly shape PU, it should still be maintained as a supporting element, for instance through responsive helpdesks or communication channels with tutors, as it contributes to overall user satisfaction. Hence, development strategies should focus primarily on content and system excellence, with service quality functioning as a complementary differentiator.

CONCLUSION

This study concludes that users' acceptance of the Mobile NFJuara application is influenced by several key factors analyzed using the Technology Acceptance Model and DeLone & McLean Information System Success Model. The research results indicate that information quality (IQ), system quality (SQ), service quality (SEQ), perceived usefulness (PU), and perceived ease of use (PEU) significantly influence information technology acceptance (AI). However, it was found that system quality (SQ) does not significantly affect perceived usefulness (PU). As indicated by the t-test values that are lower than the threshold. This study also identifies that information quality and service quality have a positive impact on the perception of benefits and ease of use, while the perception of benefits and ease of use directly enhances user acceptance of the application.

This research contributes theoretically through the combined validation of the TAM and D&M models in a local context, as well as practically providing recommendations for the development of digital tutoring applications to be more effective and aligned with user needs. Beside that, this research has limitations on the scope of respondents that only come from Lampung, the dominance of students as participants, and the use of online questionnaires. Future research is suggested to expand the area, involve various stakeholders, and use mixed methods for more comprehensive results. To strengthen the research findings, several future research directions can be considered. First, conducting a longitudinal study to capture behavioral changes and user acceptance over time. Second, making comparisons with other tutoring applications to identify differentiation factors and the relative advantages of a platform. Third, adding external factors such as social influence and trust into the model, as these variables have proven to play an important role in previous research related to technology acceptance.

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