

MEASURING THE SUCCESS OF IMPLEMENTING SIGNATURE AND DIGITAL STAMP ON THE “PEN” (PENYELAMATAN EKONOMI NASIONAL) – NATIONAL ECONOMIC RECOVERY CREDIT GUARANTEE APPLICATION SYSTEM IN A CREDIT GUARANTEE COMPANY IN INDONESIA



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ABSTRACT

The study examines the implementation of technology in Indonesia's non-bank finance industry, particularly in state-owned company credit guarantees. It explores how the System Application Guarantee, including digital signatures and stamps, supports the government's National Economic Recovery program during COVID-19. By adapting DeLone and McLean's model, the research assesses how system quality impacts user satisfaction and benefits. Data from 108 officials across Indonesia were analysed using Partial Least Square method, revealing a positive correlation between system quality, user satisfaction, and the effectiveness of digital signatures and stamps in the PEN Guarantee System.

INTRODUCTION

This study assesses the adoption of digital signatures and stamps in Indonesia's credit guarantee sector, particularly within the context of the National Economic Recovery (PEN) program amid the COVID-19 pandemic. It utilizes the DeLone and McLean models to measure implementation success and analyse variable correlations. The research aims to evaluate the impact of these features, develop improvement strategies, and enhance cooperation with electronic certification providers. While focusing on active users of application systems in credit guarantee companies, the study aims to support companies in enhancing the quality of underwriting services aligned with the government's PEN program.

METHODOLOGY

This study employs a quantitative approach, starting with theoretical frameworks and collecting data via questionnaires on system quality, information, use, user satisfaction, and net profit, using a five-point Likert scale. It assesses the suitability of implementing digital signatures and stamps in an Indonesian credit guarantee company's Application System, utilizing the DeLone and McLean Information Success model to evaluate and recommend improvements. Data will be analysed using the Partial Least Square (PLS) method within Structural Equation Modelling (SEM) and processed with SmartPLS version 3 software.

MODEL

This study utilizes DeLone and McLean's (2003) information system success model, aiming to establish formation hypotheses to explain the relationships among its dimensions. Previous research suggests significant connections, particularly between system quality and end-user satisfaction, along with other relationships like information quality with user satisfaction, system use with user satisfaction, and quality system with system usage.

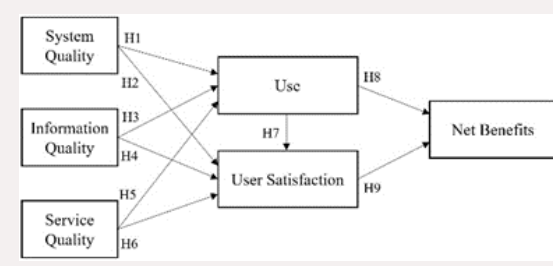


FIGURE 1. DELONE & MCLANE INFORMATION SUCCESS MODEL (2003)

HYPOTHESIS

- H1: System quality has a positive influence on Use.
- H2: System quality has a positive influence on User Satisfaction.
- H3: The quality of information (Information Quality) positively influences the use (Use).
- H4: Information quality has a positive influence on User Satisfaction.
- H5: Service Quality has a positive influence on Use.
- H6: Service Quality has a positive influence on User Satisfaction.
- H7: Use has a positive influence on User Satisfaction.
- H8: Use has a positive effect on Net Benefits.
- H9: User Satisfaction has a positive influence on Net Benefits

FRAMEWORK

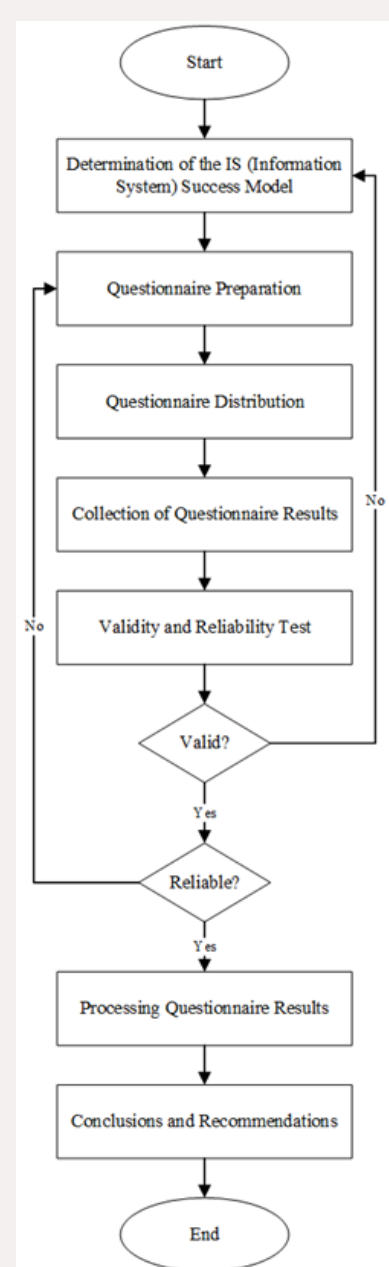


FIGURE 2. FRAMEWORK FLOWCHART

TESTING THE MEASUREMENT MODEL (OUTER MODEL ANALYSIS)

CONVERGENT VALIDITY TESTING

The data testing results show a loading factor below 0.7. The results indicate that indicators meet convergent validity and are valid for construct dimensions. See Table 1 for loading factor results.

Variable Components	Indicator	Outer Loading	Validity
System Quality (SQ)	SQ1	0.727	Valid
	SQ2	0.767	Valid
	SQ3	0.859	Valid
	SQ4	0.765	Valid
	SQ5	0.902	Valid
	SQ6	0.892	Valid
Information Quality (IQ)	IQ1	0.815	Valid
	IQ2	0.942	Valid
	IQ3	0.920	Valid
	IQ4	0.835	Valid
	IQ5	0.931	Valid
Service Quality (SQ)	SEQ1	0.958	Valid
	SEQ2	0.915	Valid
	SEQ3	0.942	Valid
Use (U)	U1	0.871	Valid
	U2	0.905	Valid
User Satisfaction (US)	US1	0.968	Valid
	US2	0.968	Valid
Net Benefits (NB)	NB1	0.939	Valid
	NB2	0.949	Valid
	NB3	0.962	Valid

TABLE 1. CONVERGENT VALIDITY TESTING RESULT

AVERAGE VARIANCE EXTRACTED (AVE) TEST

After conducting the tests, we can conclude that all variables exhibit a construct validity level exceeding 0.50.

COMPOSITE RELIABILITY TESTING

The test results show that each variable has a value above 0.60. The results mean that the variables in this study are very reliable. These results confirm that the data collected is consistent and reliable. Therefore, the analysis carried out has a high level of confidence. The reliability of the variables also shows that the measurements and indicators used are suitable. In other words, these results support that the measuring instrument used in this study effectively measures the concept in question.

RESULTS AND DISCUSSION

DISCRIMINANT VALIDITY TESTING

The results of the Cross Loading test show that the indicators have a higher correlation with the construct itself than with other constructs. The results indicate that each indicator is part of the appropriate construct. Furthermore, when looking at Fornell-Lacker's Cross Loading value, the test results show that the AVE root of each construct is more significant than its correlation with other constructs.

Correlation (Relationship)	Path Coefficient (β)
System Quality → User Satisfaction	0,527
Use → Net Benefits	0,042
Use → User Satisfaction	0,341
User Satisfaction → Net Benefits	0,641

TABLE 2. DISCRIMINANT VALIDITY TESTING RESULT

STRUCTURAL MODEL TESTING (INNER MODEL ANALYSIS)

PATH COEFFICIENT TESTING (β)

Based on the following table (right), out of 9 paths in the research model, four paths are without statistical significance because the values are below the threshold of 0.1. These results show that the relationship between these paths is not significant. Special attention is needed to understand why and what factors influence its significance.

Correlation (Relationship)	Path Coefficient (β)
Information Quality → Use	-0,055
Information Quality → User Satisfaction	0,014
Service Quality → Use	0,471
Service Quality → User Satisfaction	0,083
System Quality → Use	0,164
System Quality → User Satisfaction	0,527
Use → Net Benefits	0,042
Use → User Satisfaction	0,341
User Satisfaction → Net Benefits	0,641

TABLE 3. PATH COEFFICIENT TESTING RESULT

TESTING THE COEFFICIENT OF DETERMINATION (R-SQUARE)

Based on the data in table (right), the results show that the research model used has a moderate level.

Component Variable	R Square	Results
Net Benefits	0,447	Moderate
Use	0,311	Moderate
User Satisfaction	0,690	Good

TABLE 4. R-SQUARE TESTING RESULT

TESTING THE T-TEST (T-STATISTICS)

Based on the results, this study only obtains the accepted hypothesis path Y from 9 existing hypotheses. The path has been rejected as the T-test value falls below the threshold of 1.96.

Hypothesis	T Statistics (OSTDEV)	Analysis
H1 System Quality → Use	1,339	Rejected
H2 System Quality → User Satisfaction	4,321	Accepted
H3 Information Quality → Use	0,413	Rejected
H4 Information Quality → User Satisfaction	0,122	Rejected
H5 Service Quality → Use	3,051	Accepted
H6 Service Quality → User Satisfaction	0,645	Rejected
H7 Use → User Satisfaction	3,294	Accepted

TABLE 5. T-TEST RESULT

EFFECT SIZE TEST (f^2)

Based on the test results, it was found that User Satisfaction has the most considerable effect size value on the hypothetical path of Net Benefits, with a value of 0.431. System Quality and Use both have a medium effect on User Satisfaction. The remaining hypotheses have little effect on the model structure, with an effect size value (f^2) below 0.15.

PREDICTIVE RELEVANCE TESTING (Q^2)

This testing process uses the blindfolding method. Where the results obtained show that the Q^2 value of the dependent variable has a value above zero, these results can be interpreted that these variables have a predictive relationship.

HYPOTHESIS TESTING RESULTS

- H1: System Quality has a positive influence on Use.
- H2: System quality (System Quality) has a positive influence on user satisfaction (User Satisfaction)
- H3: The quality of information (Information Quality) has a positive influence on the use (Use)
- H4: The quality of information (Information Quality) positively influences user satisfaction (User Satisfaction)
- H5: Service Quality has a positive influence on Use
- H6: Service quality has a positive influence on user satisfaction
- H7: Use has a positive influence on User Satisfaction
- H8: Use has a positive effect on Net Benefits
- H9: User Satisfaction has a positive influence on Net Benefits

CONCLUSION

The data analysis on implementing digital signature and stamp features in the PEN Guarantee Application System suggests that the DeLone and McLean information system success model requires empirical validation. Among nine proposed hypotheses, only four were confirmed, indicating correlations between system quality, service quality, usage, and user satisfaction with net benefits. These results emphasize that the model's outcomes may vary depending on the context and characteristics of the application studied in future research.

SUGGESTIONS

This research offers suggestions for enhancing the implementation of digital signatures and stamps in the PEN Guarantee Application System and guides for future research:

- The study indicates that the DeLone and McLean information system success model can partly assess the effective use of digital signatures and stamps in the PEN Guarantee Application System. Thus, prioritizing system quality and user satisfaction is crucial for developing these features and enhancing users' benefits.
- The study acknowledges limitations regarding variables and questionnaire design, suggesting opportunities for future research to explore deeper correlations between variables. Expanding variable scope and employing more detailed questionnaires could offer a more comprehensive understanding of relationships in this context.
- The findings are consistent with DeLone and McLean's success model, suggesting potential adjustments for future research. Further testing on specific entities or systems with distinct contexts could enrich the model's applicability.