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Customer Satisfaction Analysis on IT-Based Service Quality in Digital Banking: A Case Study at Bank Jago Using the DeLone and McLean

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Abstract— *This study explores the influence of system quality, information quality, and service quality on system use, user satisfaction, and net benefits in the context of Bank Jago's digital banking application. The research applies the DeLone and McLean Information Systems Success Model and uses Structural Equation Modeling (SEM) with AMOS to analyze survey data. The methodology included instrument development, pre-testing, validity and reliability testing, and hypothesis testing. According to the results, information quality has no effect on system usage, but system and service quality do. Both system usage and user happiness have a beneficial impact on net benefits. The study contributes to theoretical understanding of IS success and provides practical implications for improving digital banking services.*

Keywords— *Digital Banking, Information Systems Success, System Quality, Service Quality, User Satisfaction, SEM.*

I. Introduction

In Indonesia, digital banks such as Bank Jago have emerged as key innovators in the financial sector, offering fully mobile-based services designed to meet the needs of a growing digital-savvy population. These services provide users with flexibility, efficiency, and accessibility, allowing them to perform various banking transactions anytime and anywhere without the need to visit a physical branch. The rise of digital banking is aligned with broader global trends in financial technology (fintech), where convenience, personalization, and seamless integration with users' lifestyles have become crucial competitive factors.

However, the success and sustainability of digital banking services are not guaranteed. The long-term adoption of these platforms depends on several critical factors, including system reliability, the quality and accuracy of information provided, and the level of service support. These factors collectively shape users' perceptions, influence their satisfaction, and ultimately determine whether they continue to use the platform. System failures, security issues, or poor customer service can negatively affect user trust and lead to dissatisfaction, abandonment, or migration to competing services.

Research on digital banking adoption emphasizes that understanding user satisfaction and actual usage behavior is essential for maintaining competitive advantage. When users perceive a system to be reliable, easy to navigate, and supported by responsive customer service, they are more likely to adopt and continue using the platform. Conversely, negative user experiences can quickly lead to loss of trust and decreased engagement.

This study applies the DeLone and McLean Information Systems Success Model as a theoretical framework to analyze the determinants of system use, user satisfaction, and net benefits in the context of Bank Jago's mobile banking application. The effectiveness of digital banking services may be assessed via the model's six dimensions: system quality, information quality, service quality, system use, user satisfaction, and net benefits.

By empirically testing these relationships, the research contributes to the growing body of literature on information systems success in digital banking, particularly in the Indonesian context. The findings are expected to provide both theoretical insights by validating the applicability of the model in fintech settings and practical recommendations for improving digital banking service quality, enhancing user experience, and strengthening customer engagement.

II. Literature Review

One of the most often utilized frameworks for assessing the efficacy of information systems is the DeLone and McLean (1992, updated 2003) Information Systems (IS) Success Model. The model proposes six interrelated dimensions that collectively define IS success:

1. *System Quality*
   Refers to the system's positive features, such as its reliability, usability, response time, and adaptability. High system quality ensures that users can interact with the application efficiently and without technical issues.
2. *Information Quality*
   Measures the quality of information produced by the system, focusing on aspects such as accuracy, relevance, timeliness, and completeness. Information quality is crucial in decision-making and influences user trust.
3. *Service Quality*
   Captures the overall support provided to users by the service provider, including responsiveness, assurance, and empathy. In digital banking, this refers to the effectiveness of customer support in resolving issues and providing assistance.
4. *Use*
   Represents the degree and manner in which users interact with the system, including the frequency and purpose of use.
5. *User Satisfaction*
   Reflects users' overall attitude and feelings toward the system, based on their experiences and expectations.
6. *Net Benefits*
   Shows the beneficial effects of using the system, such as greater productivity, efficiency, better decision-making, and general user value.

The model suggests that system quality, information quality, and service quality influence both system use and user

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satisfaction, which in turn affect net benefits. It has been widely applied in various contexts, including e-commerce, e-government, and digital banking, due to its holistic approach to assessing IS effectiveness.

A. Prior Research in Digital Banking and IS Success

Several studies have applied the DeLone and McLean model to digital services, showing that system quality and service quality are strong predictors of system use. For instance, research in mobile banking contexts highlights that ease of navigation, reliability, and customer support significantly enhance user adoption. Conversely, the effect of information quality varies depending on user expectations. In digital banking, customers may assume that financial information is inherently accurate, placing greater emphasis on convenience and security.

Other studies have explored additional factors that influence user behavior, such as trust, perceived risk, and user experience. For example, perceived security and trustworthiness are found to be critical in determining whether users continue using digital banking applications. Furthermore, studies indicate that frequent usage and positive experiences contribute to greater net benefits, including improved financial management and efficiency.

B. Research Gap

While numerous studies have examined IS success in various digital contexts, research specifically focusing on Indonesian digital banks remains limited. Most prior studies were conducted in developed countries or in contexts where digital banking infrastructure is more mature. Given Indonesia's rapid adoption of fintech solutions and the unique characteristics of its digital banking users, it is essential to validate the applicability of the DeLone and McLean model in this setting.

This study addresses the research gap by applying the model to evaluate the relationships among system quality, information quality, service quality, system use, user satisfaction, and net benefits in the context of Bank Jago, a leading digital bank in Indonesia. The findings aim to enrich the literature on IS success in emerging markets and provide practical recommendations for improving digital banking services.

III. METHODOLOGY

This research aims to provide a comprehensive understanding of how active users of the Bank Jago mobile banking application in Indonesia perceive the success of the system. The study adopts the DeLone and McLean (2003) IS Success Model, a well-established framework for evaluating information system effectiveness across six interconnected dimensions: system quality, information quality, service quality, system use, user satisfaction, and net benefits. By applying this model, the research not only assesses the technical and service aspects of the application but also explores how these elements collectively influence user experiences, behavioral intentions, and the tangible value derived from using the system.

The methodological approach was carefully designed to ensure rigor, validity, and relevance. The process began with an extensive preparation phase involving a thorough literature review to establish a strong theoretical foundation. From this, the constructs were defined and operationalized into measurable indicators, distinguishing between exogenous variables system quality, information quality, and service quality and endogenous variables system use, user satisfaction, and net benefits. A structured questionnaire was then developed, consisting of demographic questions and statements designed to measure user perceptions of each construct. The instrument used a four-point Likert scale without a neutral option to encourage decisive responses and reduce the likelihood of central tendency bias. A pilot test was conducted to ensure clarity, reliability, and appropriateness of the questions before full deployment.

Data collection was conducted entirely online to maximize accessibility for respondents across Indonesia. The questionnaire, hosted on Google Forms, was distributed via social media platforms and relevant online communities frequented by digital banking users. The research population consisted of approximately 14.1 million Bank Jago users. With a 5% margin of error, Slovin's formula was used to calculate the minimum sample size, which came out to be at least 400 people. The sampling approach applied was simple random sampling to ensure that each user had an equal chance of selection, thereby improving the representativeness of the data.

The research used structural equation modeling (SEM) in the AMOS program for data analysis. SEM was selected because it allows for simultaneous testing of complex relationships among multiple latent variables, making it highly suitable for the research objectives. The analysis process included measurement model evaluation through Confirmatory Factor Analysis (CFA) to assess convergent and discriminant validity. Constructs were considered valid if factor loadings exceeded 0.70, composite reliability was greater than 0.80, and average variance extracted (AVE) values were above 0.50. Reliability was further evaluated using Cronbach's Alpha and Composite Reliability, with acceptable thresholds set at 0.70 or higher. Model fit was assessed using indices such as Chi-Square, RMSEA, GFI, TLI, and CFI to ensure that the hypothesized model adequately represented the data.

The dimensions of the DeLone and McLean model were directly reflected in the questionnaire constructs. System quality was measured by characteristics like reliability, usability, and response time. Information quality focused on accuracy, relevance, completeness, and timeliness of the information provided. Service quality encompassed responsiveness, accessibility, and the quality of technical support offered. The extent to which the application fulfilled or surpassed user expectations was measured by user satisfaction. System use measured both the frequency and intensity of mobile banking usage, while net benefits reflected the overall value gained, including time savings, convenience, improved financial management, and enhanced user efficiency.

Hypotheses were tested through SEM regression analysis to examine the relationships among these constructs. Statistical significance was determined based on a critical ratio (C.R.) of at least 1.96 and a p-value below 0.05. This methodological framework ensures that the study captures not only individual relationships between variables but also the broader, systemic

interactions that define user perceptions of digital banking success. By integrating rigorous quantitative analysis with a validated theoretical model, the research offers insights that are both empirically robust and practically relevant for enhancing digital banking services in Indonesia.

This holistic methodology goes beyond examining isolated variables. It integrates technical quality, information relevance, service effectiveness, user behavior, and perceived benefits into a single comprehensive model. The approach ensures that the findings reflect the multi-dimensional nature of digital banking success, providing valuable implications for academics, practitioners, and policymakers seeking to improve the design, delivery, and impact of mobile banking systems.

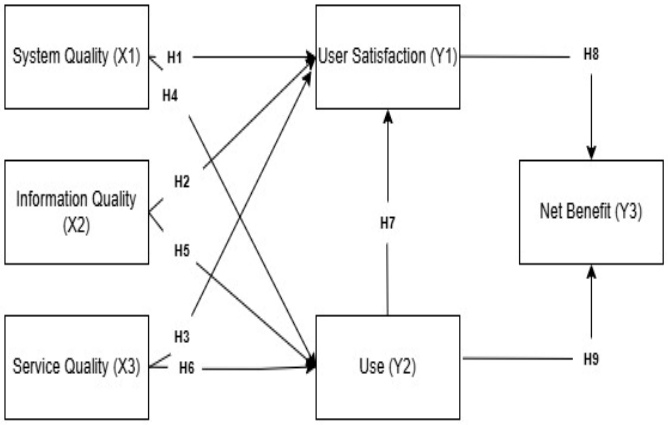

Figure 1: Conceptual Framework

Based on the conceptual model, the following hypotheses were proposed:

H1: System Quality positively influences System Use.
H2: Information Quality positively influences System Use.
H3: Service Quality positively influences System Use.
H4: System Quality positively influences User Satisfaction.
H5: Information Quality positively influences User Satisfaction.
H6: Service Quality positively influences User Satisfaction.
H7: System Use positively influences User Satisfaction.
H8: User Satisfaction positively influences Net Benefits.
H9: System Use positively influences Net Benefits.

Hypothesis testing was performed using SEM regression analysis. A hypothesis was accepted if the critical ratio (C.R.) was ≥ 1.96 and the p-value was < 0.05, indicating a statistically significant relationship. This methodological framework ensures that the study captures both the direct and indirect effects among variables, providing a holistic view of how system quality, information quality, and service quality contribute to user satisfaction, system use, and the overall benefits perceived by users.

IV. Result

This chapter presents the findings of the study based on data collected from 400 valid respondents who are active users of the Bank Jago mobile banking application. The analysis is structured to provide a comprehensive view of user demographics, descriptive statistics of each research variable, validity and reliability testing, model fit evaluation, and hypothesis testing using Structural Equation Modeling (SEM). The discussion integrates the empirical results with the theoretical framework to explain the relationships among the studied variables and to derive meaningful implications.

TABLE 1. Respondent By Age

Age	Amount	%
17-20	34	8.5 %
21-25	165	41.3 %
26-30	154	38.5 %
31-40	31	7.8 %
> 40	16	4 %

The demographic analysis reveals that the majority of Bank Jago users are young adults between the ages of 21 and 30, representing the generation most familiar with digital technologies.

TABLE 2. Respondent By Education

Education	Amount	%
SLTA	135	33.8 %
D3	24	6.0 %
S1	205	51.3 %
S2	31	7.8 %
S3	5	1.3 %

Most respondents hold at least a bachelor's degree, which reflects a relatively high level of education among the users.

TABLE 3. Respondent By Jobs

Job	Amount	%
Civil Worker	65	16.3 %
Private Sectors	253	63.3 %
Student	48	12.0 %
Entrepreneur	34	8.5 %

Employment status indicates that private-sector employees dominate the user base, followed by government employees, students, and entrepreneurs.

TABLE 4. Respondent By Income

Income	Amount	%
< 5.000.000	94	23.5 %
5.000.000 - 10.000.000	244	61.0 %
10.000.001 – 20.000.000	44	11.0 %
20.000.001 - 50.000.000	13	3.3 %
> 50.000.000	5	1.3 %

Income distribution shows that the largest proportion of users earn between IDR 5,000,000 and IDR 10,000,000 per month, indicating that Bank Jago appeals primarily to middle-income groups. These characteristics suggest that the bank successfully targets young, educated, and digitally literate individuals who are more likely to adopt and use mobile banking services frequently.

Descriptive statistics for each construct demonstrate that users generally perceive Bank Jago positively. For System Quality, respondents strongly agreed that the application is reliable, easy to use, and provides fast responses. Similarly, Information Quality received favorable evaluations, with users agreeing that the information provided is clear, accurate, relevant, and delivered in real time. Service Quality was also rated positively, as users believed that Bank Jago provides

responsive support, attention to customer needs, and accessible contact channels.

The responses related to User Satisfaction reveal that users are satisfied with the application because it provides necessary information, saves time, facilitates transactions efficiently, and is enjoyable to use. Furthermore, Net Benefits were perceived as substantial, with users reporting improvements in efficiency, productivity, quality of work, and overall convenience in financial management. These findings indicate that Bank Jago has been successful in delivering digital banking services that meet functional needs while also creating a positive user experience.

Validity and reliability tests confirm that all measurement items are both valid and reliable. The results of Confirmatory Factor Analysis (CFA) indicate that all factor loadings exceed the recommended threshold of 0.70, confirming strong convergent validity.

TABLE 5. Validity Test

Variable	Item	Lambda Value	Validity
System Quality (SQ)	SQ1	0.709	Valid
	SQ2	0.826	Valid
	SQ3	0.814	Valid
	SQ4	0.808	Valid
Information Quality (IQ)	IQ1	0.713	Valid
	IQ2	0.756	Valid
	IQ3	0.822	Valid
	IQ4	0.826	Valid
	IQ5	0.777	Valid
Service Quality (SrQ)	SrQ1	0.763	Valid
	SrQ2	0.801	Valid
	SrQ3	0.836	Valid
	SrQ4	0.875	Valid
	SrQ5	0.778	Valid
User Satisfaction (US)	US1	0.777	Valid
	US2	0.805	Valid
	US3	0.811	Valid
	US4	0.799	Valid
Net Benefit (NB)	NB1	0.791	Valid
	NB2	0.727	Valid
	NB3	0.804	Valid
	NB4	0.837	Valid

TABLE 6. Reliability Test

Variable	*Cronbach's alpha*	Information
System Quality (SQ)	0.868	Good
Information Quality (IQ)	0.884	Good
Service Quality (SrQ)	0.878	Good
User Satisfaction (US)	0.855	Good
Net Benefit (NB)	0.869	Good

Reliability tests show Cronbach's Alpha values above 0.85 for all constructs, reflecting high internal consistency.

TABLE 7. *Goodness-of-fit* Model

Goodness-of-fit-indices	Expected Value	Results	Model Evaluation
Chi-square (x	Expected to be small	567,807	In accordance
df	> 0	218	In accordance
Significance Probability (p)	≥ 0.05	0,000	It is not in accordance with
CMIN/DF	≤ 3.0	2,605	In accordance
GFI	≥ 0.85	0,883	In accordance
AGFI	≥ 0.85	0,852	In accordance
TLI	≥ 0.9	0,927	In accordance
CFI	≥ 0.9	0,937	In accordance
RMSEA	≤ 0.08	0,065	In accordance

The overall model fit indices further support the appropriateness of the structural model, with values of GFI = 0.883, CFI = 0.937, TLI = 0.927, RMSEA = 0.065, and CMIN/DF = 2.605, all of which fall within acceptable ranges. Although the Chi-square significance value is below 0.05, this is a common occurrence in studies with large sample sizes and does not necessarily indicate poor model fit.

TABLE 8. Standardized Regression Weights

			Estimate
U	<---	SQ	,302
U	<---	SRQ	,648
U	<---	IQ	,270
US	<---	SRQ	-,517
US	<---	U	,1299
US	<---	IQ	,039
US	<---	SQ	-,293
NB	<---	U	,343
NB	<---	PUS	,410

TABLE 9. Regression Weights

			Estimate	S.E.	C.R.	P	Label
U	<---	SQ	,087	,043	2,044	,041	par_10
U	<---	SRQ	,186	,045	4,112	***	par_27
U	<---	IQ	,090	,053	1,683	,092	par_28
US	<---	SRQ	-,515	4,514	-,114	,909	par_20
US	<---	U	4,520	24,308	,186	,852	par_21
US	<---	IQ	,045	2,185	,021	,984	par_25
US	<---	SQ	-,295	2,135	-,138	,890	par_26
NB	<---	U	1,192	,315	3,784	***	par_8
NB	<---	PUS	,410	,098	4,169	***	par_29

The hypothesis testing results provide deeper insights into the relationships among the variables. The findings show that System Quality (SQ), Information Quality (IQ), and Service Quality (SRQ) all have a positive impact on System Use (U), with Service Quality exerting the strongest effect (β = 0.648). This suggests that responsive and reliable service plays a central role in encouraging users to engage with the application more frequently. Both System Quality (β = 0.302) and Information Quality (β = 0.270) also contribute positively to system use, confirming that users value an intuitive interface and accurate, relevant information.

When predicting User Satisfaction (US), however, the results are more nuanced. System Use (U) has the largest positive influence on satisfaction (β = 1.299), highlighting that actual usage is a key driver of perceived satisfaction. Surprisingly, Service Quality (SRQ) (β = –0.517) and System Quality (SQ) (β = –0.293) show negative coefficients, suggesting that improvements in these dimensions do not necessarily translate into higher satisfaction and may even reduce it. This finding may indicate a gap between user expectations and the actual experience delivered by the application. It is possible that while the system and service are objectively strong, users have high expectations that are not fully met, leading to lower satisfaction. Information Quality (IQ) shows only a small positive effect (β = 0.039), implying that although accurate and timely information is important, it is not a primary factor in determining satisfaction compared to system use.

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For Net Benefits (NB), the results confirm that both System Use (β = 0.343) and User Satisfaction (β = 0.410) positively affect the perceived benefits. This indicates that frequent and meaningful engagement with the application, combined with overall satisfaction, leads to tangible improvements in efficiency, productivity, and quality of financial management for users.

Overall, the findings validate most of the proposed hypotheses. The study confirms that Service Quality is the most influential factor in driving system use, while System Use is the strongest predictor of User Satisfaction. However, the negative coefficients from System Quality and Service Quality to User Satisfaction deviate from theoretical expectations, suggesting that there may be areas where users' expectations exceed their actual experience.

These results highlight several important implications. First, improving user engagement with the application should remain a priority, as usage is the strongest predictor of satisfaction and benefits. Second, while technical and service quality are essential for promoting usage, Bank Jago should also focus on aligning user expectations with the actual service experience, possibly through better communication, personalized features, and user education. Finally, the strong link between usage, satisfaction, and perceived benefits reinforces the importance of developing user-centered features and ensuring continuous improvements to maintain customer loyalty in the competitive digital banking landscape.

By integrating these findings with the DeLone and McLean IS Success Model, the study confirms the model's applicability in the context of digital banking in Indonesia while also revealing unique patterns of user perception and behavior. These insights provide both theoretical contributions to information systems research and practical guidance for improving digital banking services to enhance customer satisfaction and long-term value creation.

V. Conclusion And Recommendations

A. Conclusion

Using the DeLone and McLean (2003) IS Success Model, this research looked at the variables that contribute to the success of the Bank Jago mobile banking app. The findings indicate that system quality significantly influences system use, highlighting that reliability, ease of navigation, speed, and technical performance play a major role in encouraging users to actively engage with the application. In contrast, information quality does not significantly affect system use, suggesting that accurate and relevant information is considered a basic expectation rather than a differentiating factor.

Service quality has a strong and significant impact on system use, demonstrating that responsiveness, friendliness, and effective technical support are essential in encouraging users to continue using the application. However, system quality, information quality, and service quality were found to have no significant effect on user satisfaction. These results suggest that while users value a well-functioning system and good service, these factors alone are not sufficient to create a sense of satisfaction. Instead, users may expect a more personalized or emotionally engaging experience.

Similarly, system use does not directly influence user satisfaction, implying that the frequency of use alone does not guarantee satisfaction. Instead, satisfaction is shaped by the quality of the experience rather than the quantity of interactions. On the other hand, user satisfaction has a strong positive effect on net benefits, confirming that satisfied users are more likely to perceive tangible advantages such as improved efficiency, better financial management, and convenience. System use also significantly influences net benefits, meaning that more active engagement with the application leads to greater perceived value.

Overall, the study highlights that system use and user satisfaction are the two most critical factors influencing net benefits. While system, service, and information quality are important in driving use, they are not sufficient to ensure satisfaction. These findings underline the need for digital banking providers to not only focus on technical excellence but also enhance user experience, personalization, and emotional connection to strengthen satisfaction and long-term value.

B. Suggestion

Based on the findings and limitations of this research, future studies should consider expanding the sample size and including respondents from various regions in Indonesia to improve statistical validity and generalizability. A larger and more diverse sample would provide a better representation of the overall population of digital banking users. Additionally, researchers should adapt questionnaires to account for user characteristics such as age, digital literacy, and prior experience with mobile banking, which would help capture more nuanced differences in user perceptions and behaviors across different segments.

Future research could also incorporate additional mediating variables such as trust, user experience, perceived usefulness, and perceived ease of use to better explain the relationships between system quality, service quality, information quality, and user satisfaction. Several hypotheses in this study were found to be insignificant, indicating the need for a more comprehensive model that captures psychological and behavioral aspects of technology adoption. Moreover, since this study focused exclusively on Bank Jago, future studies could compare multiple digital banking platforms to highlight differences in user behavior and system effectiveness in different service ecosystems.

Finally, methodological improvements could include the use of mixed-methods approaches by combining quantitative analysis with qualitative techniques such as interviews or focus group discussions to gain deeper insights into user perceptions. Future studies could also use a longitudinal research design to observe changes in user satisfaction, system use, and net benefits over time. With the rapid growth of technologies such as artificial intelligence, open banking, and digital identity systems, researchers are encouraged to explore how these innovations impact user perceptions and experiences. Implementing these recommendations would produce richer, more actionable insights for academics, practitioners, and policymakers, ultimately helping to develop more user-centered and effective digital banking solutions.

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