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MEASURING MARKETPLACE SUCCESS APPROACH DELONE & MCLEAN IS SUCCESS MODEL: A STUDY AMONG STUDENTS

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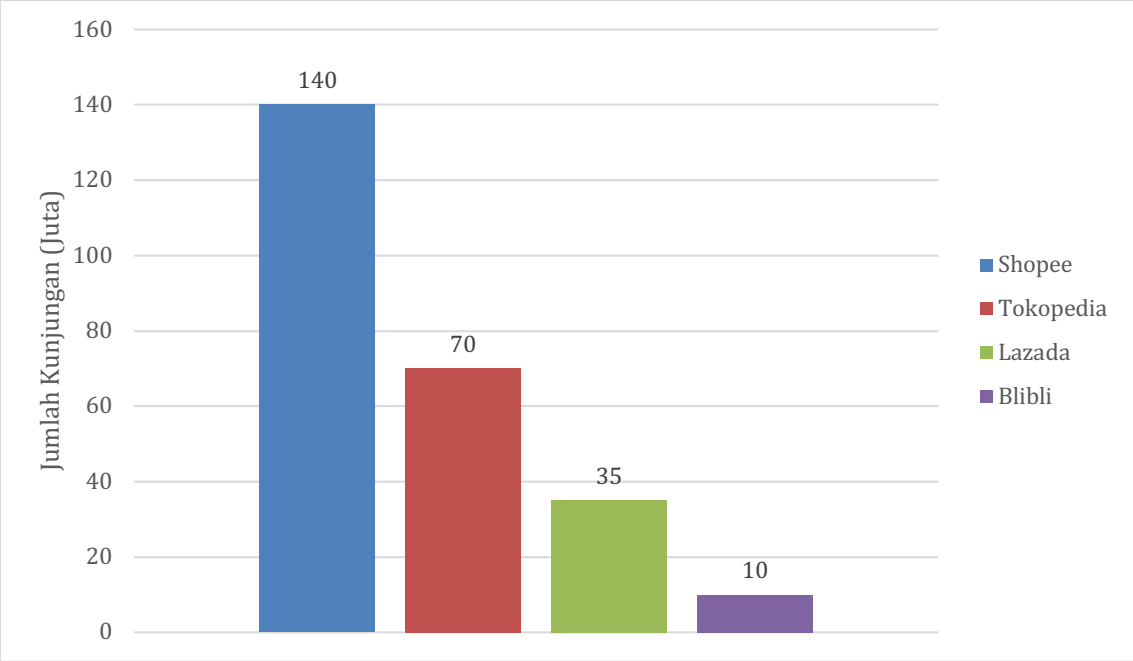
Abstract

This study aims to analyze the success of marketplace applications using the Delone & McLean model for undergraduate students of Accounting, Faculty of Economics and Business, University of North Sumatra. The variables used are system quality, information quality, and service quality, which are related to the success of marketplace applications, as measured by user satisfaction. This study used a quantitative method with data from 301 respondents analyzed using multiple linear regression. The results showed that simultaneously and partially, all three variables had a positive and significant effect on the success of marketplace applications. This indicates that improving system quality, information quality, and service quality can increase user satisfaction.

Keywords: *Marketplace*, *System Quality*, *Information Quality*, *Service Quality*

INTRODUCTION

Changes in consumer behavior are now very evident in the modern era of fast-paced and highly mobile, triggered by the development of the internet (Risanty, Kesuma, Muda, & Maulida, 2020). The internet has become the ideal solution in information and communication technology to support many companies worldwide (Risanty, Kesuma, Agustrisna, & Bilqis, 2021). The development of marketplaces is currently increasingly rapid, supported by advances in people's behavior in using the internet (Risanty et al., 2020). A marketplace is defined as the process of buying and selling goods, services, or information through the internet (Tam, Loureiro, & Oliveira, 2020). Marketplaces help reach new consumers and offer a variety of products with a broad market reach (Loe, Tasia, Indra, & Mani, 2022). The use of marketplaces in the United States is very intensive, where companies are more focused on marketplace drivers (Fomin, King, Lyytinen, & McGann, 2005). According to a 2023 databoks report, marketplace usage in Southeast Asian countries like Vietnam and Thailand reached US$114.6 billion, a 15% increase compared to US$99.5 billion the previous year (Annur, 2023). Marketplace growth in Indonesia increased by 78% in 2018 and is predicted to grow by 31.3% in 2019, with potential profits reaching US$3.8 billion (Mahendra et al., 2020). Graph 1.1 shows statistical data on marketplace visitors in Indonesia that shows a significant increase in 2025.



Source: *databoks.katadata.co.id*, 2025

Figure 1.1 Most Marketplace Visitors in Indonesia in 2025

Marketplace usage is highly influential among the younger generation, especially college students aged 18-20, who tend to be more familiar with marketplace shopping (Kesuma, Risanty, Nasution, & Epriel, 2020). Marketplace use has become a lifestyle for students because they find it easy to find information about products, promotions, and compare prices (Risanty et al., 2020). They even actively recommend their favorite marketplaces or online stores to their friends (Mahendra et al., 2020). To measure the success of marketplace applications, this study uses the Delone & McLean IS Success Model, also known as the D&M ISSM (2003). According to the D&M ISSM theory, there are six variables that influence the success of e-commerce, namely, System Quality (SyQ), Information Quality (IQ), Service Quality (SQ), Use, User Satisfaction (US), and Net Benefit (NB) (Angelina, Herman, & Suroso, 2019). D&M ISSM (2003) is a theory to measure the success of IS through the variables of SyQ, IQ, SQ. Based on this research gap, this study aims to measure the influence of system quality, information quality, and service quality on the success of marketplace applications among undergraduate students of Accounting, FEB USU

LITERATURE REVIEW

Marketplace Application Success

Marketplace application success is the dependent variable in this study. Marketplace application success is a person's response after using the application (Mahendra et al., 2020). Marketplace application success can be measured through user satisfaction indicators (Loe, Tasia, Indra, & Mani, 2022). Currently, user satisfaction is a crucial factor in determining the success of a system. A system that successfully achieves user satisfaction can be interpreted as a successful service (Loe et al., 2022). The dependent variable, marketplace application success, uses indicators of experience, repeat purchases, and interaction with the system (Loe et al., 2022).

Delone & McLean's Theory of Success Model

The D&M ISSM theory is a successful and valid theory for measuring IS success (DeLone & McLean, 2003). According to research by Nugroho and Prasetyo (2018), SyQ, IQ, and SQ are the main factors that support users when shopping in marketplaces. The greatest impact on users in achieving the best experience is satisfaction, especially if an application or system provides good facilities in terms of SyQ, IQ, and SQ (Nugroho & Prasetyo, 2018).

Conceptual Framework and Hypothesis

Based on the ISSM's D&M theory and previous research, this research's conceptual framework positions the three aspects of system quality, information quality, and service quality as independent variables that influence the success of a marketplace application as the dependent variable. SyQ is the overall system performance and expectations that align with customer needs (Ali et al., 2018). IQ is defined as the appropriateness of the information

provided to consumers (Ogunmola & Kumar, 2023). SQ can be defined as the decision made by customers by evaluating the excellence and quality of the electronic services offered (Ogunmola & Kumar, 2023). Previous research on marketplace success has been conducted, but the results have been inconsistent. For example, research by Wang (2008) and Kesuma, Muda, and Maulida (2020) found that SyQ, IQ, and SQ influence marketplace success. Furthermore, Mahendra, Sulistianto, Mulyan, Wiyatno, and Rosanto (2020) and Madinah, Putra, and Kesuma (2024) stated that SyQ, IQ, and SQ influence marketplace success. Research by Cui, Mou, Cohen, and Liu (2019) also found that SyQ, IQ, and SQ influence marketplace success. However, Baraka and El-Gamily (2013) stated that SyQ does not influence marketplace success. Ilham and Fajar (2020) also stated that SyQ does not influence marketplace success. The relationship between variables can be seen in the conceptual framework in Figure 2.1.

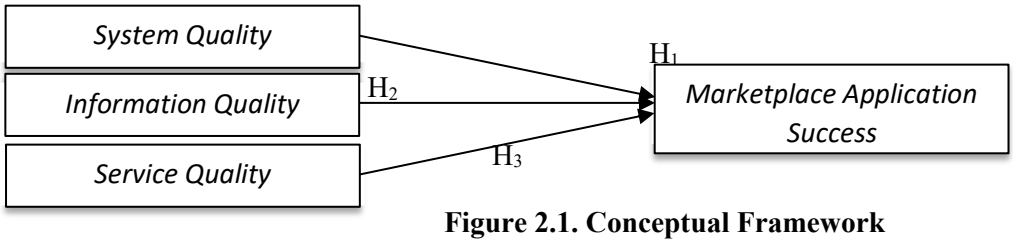


Figure 2.1. Conceptual Framework

The proposed hypotheses are:
H1: System Quality has a positive effect on the success of marketplace applications.
H2: Information Quality has a positive effect on the success of marketplace applications.
H3: Service Quality has a positive effect on the success of marketplace applications.

METHOD

This research is included in quantitative research using survey methods. The population of this study is active undergraduate students of Accounting FEB USU. On the website alamat.usu.ac.id (2025), it is known that active undergraduate students of Accounting FEB USU number 1,125 people. The population of this study includes students who are active in the Bachelor of Accounting FEB USU Strata 1 (S1) namely the class of 2019 to the class of 2025. The variables in this study were measured using a 5 (five) Likert measurement scale. The success of the marketplace application (Y) was measured using a positive value scale. System quality (X1), information quality (X2), and service quality (X3) were measured with 4 indicators (Sugiyono, 2019). Data were analyzed using IBM SPSS Statistics version 26.

RESULTS AND DISCUSSION (TNR, 12 BOLD)

Respondent Characteristics

Respondents were predominantly female (74.8%), followed by male (25.2%), aged 17-21 (77.7%), and from the Class of 2025 (34.2%).

Data Quality Test

The validity test showed that all statement items in each variable had a calculated r-value > r-table (0.113), thus being declared valid. The reliability test showed Cronbach's Alpha values for the marketplace application success variable (0.870), system quality (0.845), information quality (0.850), and service quality (0.892), all of which were >0.70, thus being declared reliable.

Classical Assumption Test

The Kolmogorov-Smirnov normality test yielded a significance value of 0.095 (> 0.05), indicating a normal distribution of the data. The multicollinearity test showed a Tolerance value > 0.1 and a VIF < 10, indicating no multicollinearity. The heteroscedasticity test using a scatterplot graph shows that the points are spread randomly without any particular pattern, meaning that heteroscedasticity does not occur. A summary of the heteroscedasticity test results can be seen in Figure 4.1.

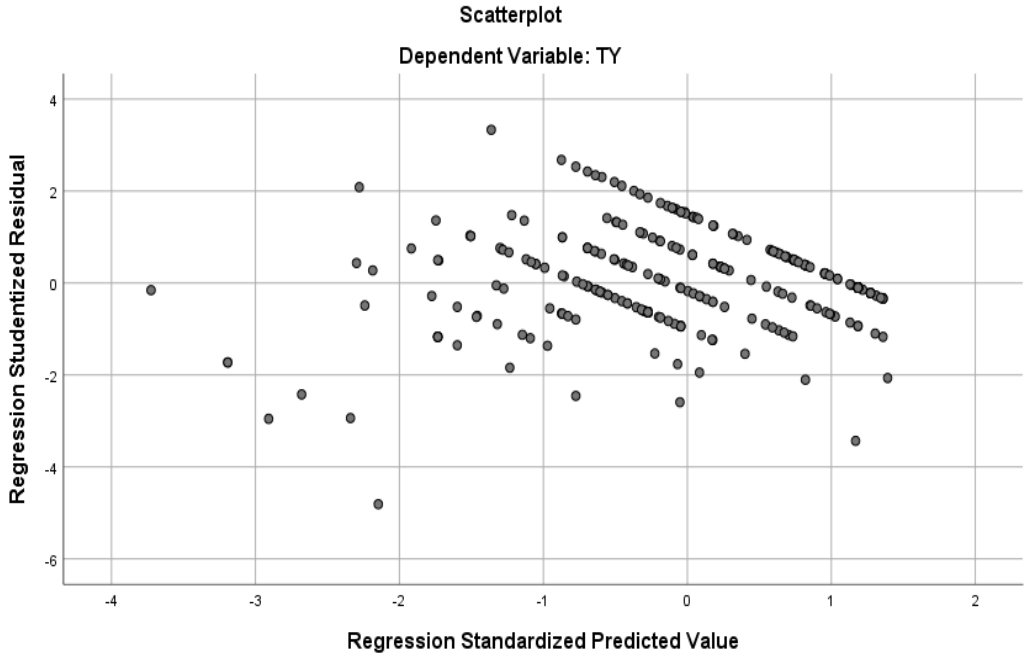


Figure 4.1 Heteroscedasticity Test Results

Multiple Regression Analysis

The results of the multiple linear regression analysis yield the following equation:

$$Y=3.324 + 0,371X_1 + 0,141\ X_2 + 0,360X_3$$

This equation can be interpreted as follows:

1. Constant 2.169: if X1, X2, and X3 are 0, then Y is 3.324.
2. Coefficient X1 (0.371): every one-unit increase in system quality increases Y by 37.1.
3. Coefficient X2 (0.141): every one-unit increase in information quality increases Y by 14.1.
4. Coefficient X3 (0.360): every one-unit increase in service quality increases Y by 36.

Hypothesis Test

Simultanous Test

The results of the F test show an F-value of 7.537 with a significance level of 0.000, meaning that the three independent variables together have a significant effect on marketplace success. The results of the F-test are presented in Table 4.1.

Table 4.1 Simultanous Test (F Test)

Model	F	Sig.	Criteria Decision	Conclusion
SyQ (X1), IQ (X2), dan SQ (X3).	7,537.	0,000	$F_{hitung} > F_{tabel}$ and *alpha* < 0,05	Significant

Coefficient of Determination (R2) Test

The R-square value is 0.569 (Adjusted R-square 0.567), meaning the independent variable can explain 36% of the variation in the dependent variable. The R2 test results are shown in Table 4.2.

Table 4.2 Results of the Coefficient of Determination (R2) Test

R	R *Square*	Adjusted R *Square*
0,754	0,569	0,567

Uji Parsial (t)

The t-test was conducted to examine the partial influence of each independent variable. Decision-making characteristics: a variable has a significant influence if t count > t table (2.018) or significance < 0.05. The partial test results in this study are presented in Table 4.3.

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Table 4.3 Partial Test (T Test)

Model	t	sig	Criteria Decision	Conclusion
SyQ (X1)	3,032	0,004	$t_{hitung} > t_{tabel}$ and significant value < 0,05	Significant
IQ (X2)	0,069	0,945	$t_{hitung} < t_{tabel}$ and significant value > 0,05	Not Significant
SQ (X3)	1,002	0,323	$t_{hitung} < t_{tabel}$ and significant value > 0,05	Not Significant

CONCLUSION

Based on the analysis and discussion, this study concludes that the three ISSM D&M variables, namely system quality, information quality, and service quality, partially and simultaneously have a positive and significant effect on the success of the marketplace among undergraduate Accounting students of the Faculty of Economics and Business, University of North Sumatra. Among these three factors, system quality has the most dominant influence (coefficient 0.371), followed by service quality (coefficient 0.360), and information quality (coefficient 0.141). This finding indicates that system quality, information quality, and service quality synergistically increase the success of the marketplace application among undergraduate Accounting students of the Faculty of Economics and Business, University of North Sumatra.

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