



The Influence Of Quality Dimension On Success M-Banking System: A Case Study Of Bws Mobile

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ABSTRACT

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Mobile banking (m-banking) is the result of digitizing the banking process that allows customers to perform banking transactions using only their mobile phones. Research in the field of m-banking has attracted the attention of researchers, this study aims to evaluate the success of the application of m-banking by considering the dimensions of the quality of its application. Respondents are woori Saudara bank customers who use banking using the BWS Mobile m-banking application for their banking transactions. The number of respondents in this study was 125 customers with reference to the Ferdinandan (2000) sampling theory using the likelihood estimation method. The results of the study indicate that by increasing the quality dimensions such as system quality, service quality and information quality, it can affect customers' satisfaction in using m-banking and also affect the use of mobile banking for each of their banking transactions.

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1. Introduction

Digitalization in the banking sector with modern information technology has developed over time [1]. Social trends, shifting market needs and competition are the main triggers for digitalization in the banking sector. digitalization in the banking sector has changed the way financial transactions are carried out by leading to service quality, information quality and system quality to provide customer experience by making banking easier, faster, more convenient and more affordable [2], This makes it an efficient way to sell banking products and services to customers [3]. The digitalization of the banking sector is marked by the emergence of new trends in the use of alternative banking transactions such as internet banking services, Automated Teller Machines (ATM), or the use of mobile banking or M-Banking [4]

In the last few decades, since the COVID-19 pandemic, the use of M-Banking has grown rapidly from just banking via smartphones to become a very strong necessity because the government has implemented a lockdown policy in several areas. This relates to the needs of those who need financial transactions without having to leave the house [5]. In providing services that provide a good experience for banking customers, banks compete in creating quality services, both in terms of system quality, information quality and service quality [6] must be improved in order to provide satisfaction in the use of banking services and will have an impact on the intensity of the use of mobile banking, so that banks can attract more income from each banking transaction, and this can attract investors to invest in the bank.

Bank Woori Saudara (BWS) is a limited liability bank or PT engaged in banking financial services, in improving banking services, BWS bank presents mobile banking to answer the needs of its customers in banking transactions using mobile under the name "BWS Mobile", in the application it can financial transactions such as transfers, bill payments, credit cards etc., as well as non-financial transactions such as balance checks, mutations, etc. are carried out. To improve banking services through BWS mobile, it is necessary to carry out further analysis to measure the success of the BWS Mobile information system by considering system quality, information quality and service quality which will have an impact on user satisfaction in conducting transactions on BWS mobile and expected with user satisfaction. become routine use of the bws mobile.



In evaluating the success of information systems, previous studies have proposed many models of information system success by Delone and McLean such as [7] [8] [9] [10] and [11]. In the Delone and McLean information system success model, it evaluates success at the individual and organizational levels [12]. In evaluating the success of information systems, the Delone and Clean model uses six dimensions such as system quality, information quality, service quality, usage, user satisfaction and net benefits.

Mobile banking or what is often called M-Banking is a facility provided by banks that allows customers to perform banking transactions through their mobile device applications [13], the transactions carried out are financial transactions such as payment transactions, transfers etc., as well as non-financial transactions such as changing pins, service activation etc [14]. Mobile banking is more widely used by banking customers because of its convenience in transacting compared to using sms banking where customers have to remember the sms format to make transactions and internet banking where customers need to use other devices to activate their tokens [15].

Based on other literature, based on customers' habits of using m - banking, the quality dimension greatly affects user satisfaction and intensive use [16]. Based on this research, it is necessary to have an evaluation to measure the level of user satisfaction with the system that has been created.

Model Delone and Mclean (Model D&M), The Delone and McLean model is a useful framework for evaluating the success of information systems [17], this model has been proposed by many researchers in understanding and measuring the success of information systems. The Delone and McLean model proposes 6 measurement dimensions such as the dimensions of system quality, information quality, service quality, user satisfaction, usage and net benefits. The D&M model, which was first introduced in 1992, underwent changes, until in 2003 the D&M model was updated as shown in Figure 1.

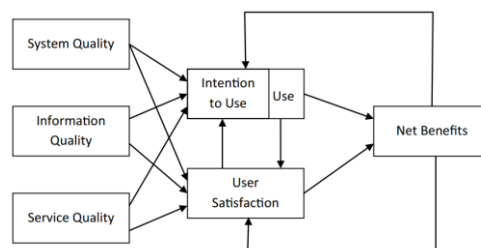


Figure 1. The 2003 updated Delone and McLean model

2. Methods

2.1 Measurement

The items or indicators in each survey variable were adapted from previous research, this was done to ensure the validity of each variable. Measurement indicators for quality dimension variables were taken from research [9] [8] and [16], to evaluate user satisfaction variables were taken from research [6] [22] and [21]. The indicator is measured using a five-point Likert scale such as “strongly disagree” to “strongly agree”. These indicators can be explained in the Table 1

2.2 Data collection

In determining the number of samples in this study using the Maximum Likelihood Estimation (MLE) method, the recommended sample size is 100-200, the data is collected from the branch of the Woori Saudara bank in the city of Sukabumi, West Java. The sample was selected based on customers who have used BWS Mobile for their banking services, using a questionnaire, the survey was collected within 1 week in February 2022, permission to interview customers more closely had been previously requested by the branch manager. Only customers who have used the BWS mobile application can take the survey, selected customers will be asked to fill out an online questionnaire using a google form and an award is given to those who have completed the survey well. A total of 215 respondents answered the survey, among them 45% were male and 55% were female. For age, age over 30 is 39 percent and age under 30 is 71 percent. In addition, for the education of the respondents, 75% of the respondents are university graduates. Their experience using mobile BWS is more than 2 years as much as 73%.

2.3 Data analysis

This study uses partial least squares (PLS) based on SEM using SmartPLS 3.0 software to analyze the hypothesis [23], PLS-SEM consists of two sub-analyses, namely the analysis of the outer model which determines the latent variables and their indicators, and analysis inner model that analyzes the relationship between endogenous variables (the dependent variable) and exogenous (the independent variable).

3. Result and Discussion

3.1 Data analysis and interpretation

Systematically , the PLS-SEM analysis technique consists of two stages, namely Outer measurement model analysis is an evaluation of testing the relationship between construct variables (indicators) and latent variables [24]. The evaluation approach is carried out in two ways, namely the validity and reliability test approaches.

Table 1.
Result summary of outer measurement model

Latent Variable	Indikator		Outer Loading	Indikator Reliability	AVE	Composite Reliability	Cronbach Alpha
System Quality	Functionality	SysQ1	0,829	0,910	0,590	0,992	0,899
	Reliability	SysQ2	0,831	0,912			
	Utility	SysQ3	0,713	0,844			
	Accessibility	SysQ4	0,71	0,843			
	Flexibility	SysQ5	0,765	0,875			
	Response Time	SysQ6	0,752	0,867			
Information Quality	Accuracy	InfoQ1	0,895	0,946	0,665	0,908	0,874
	Timeliness	InfoQ2	0,807	0,898			
	Relevance	InfoQ3	0,721	0,849			
	Precision	InfoQ4	0,84	0,917			
	Informativeness	InfoQ5	0,879	0,938			
	Format	InfoQ6	0,735	0,857			
Service Quality	Reliability	ServQ1	0,764	0,874	0,665	0,896	0,861
	Service	ServQ2	0,788	0,888			
	Response	ServQ3	0,82	0,906			
	Guarantee	ServQ4	0,905	0,951			
	Empathy	ServQ5	0,792	0,890			
User Satisfaction	Product stability	US1	0,816	0,903	0,740	0,907	0,847
	Familiarity in using a product	US2	0,862	0,928			
	Product recommendation	US3	0,885	0,941			
	Ease of use of the product	US4	0,914	0,956			
	Meeting expectation	US5	0,821	0,906			
Use	Daily Used Time	U1	0,947	0,973	0,768	0,934	0,912
	Frequency of Use	U2	0,948	0,974			
	Nature of Use	U3	0,714	0,845			

The indicator validity test approach aims to assess whether the indicator can describe its latent variable or not. By looking at the outer loading, it can be seen that the indicator is declared valid or not in describing the latent variable. The outer loading value must be more than 0.70 which indicates that the indicator can explain more than 70% of the variance of the latent variable [25]. In Table 1 it can be seen that the loading value has met the requirements, which is more than 0.70 and it has been said that all indicators are said to be valid.

Internal Consistency Reliability test to measure how capable the indicator can measure its Latin construct [26]. The assessment indicator of the Internal Consistency Reliability test is the value of

composite reliability and Cronbach's alpha. The recommended value for composite reliability is 0.6-0.7 which is considered good for the reliability of the variable and for Cronbach's alpha it is also 0.7 [25]. Based on Table 1, the results show that the value of composite reliability and Cronbach's alpha is greater than 0.70. Thus it can be concluded that the questionnaire used is consistent and has good reliability.

The Convergent Validity Test can be evaluated with average variance extracted (AVE), the recommended value is more than 0.5 which can explain 50% or more of the item variation [27]. From Table 1, it can be seen that the AVE value is more than 0.5, in other words that all constructs are valid or it can be said that the construct can explain the variance of the item

3.2 Inner structural model analysis

Testing the structural model or inner model is to evaluate the existence of collinearity between constructs and the predictive ability of the model [27]. There are several ways to measure the structural model including the coefficient of determination (R²) and the path coefficient or path coefficient..

Table 2.
Value of R Square

Variabel	R Square
Use	0.463
User Satisfaction	0.747

The coefficient of determination (R²) is a way to assess how endogenous constructs can be explained by exogenous constructs . The recommended value for R2 is that it can be seen that the use variable indicates the research value is moderate and user satisfaction is strong, in other words research on user satisfaction is very strong or very important to do. Between 0 and 1. Value R² = 0,75 ((strong model) R² = 0,50 (moderate model) dan R² =0,25 (weak mode) [27]. Based on Table 2 it can be seen that the variable use indicates the research value is moderate and user satisfaction is strong, in other words research on user satisfaction is very strong or very important to do. The R-square value for use is 0.463 which means that the presentation of the magnitude of the influence of system quality, information quality and service quality is 46.3% while the remaining 74.7% is influenced by user satisfaction, in other words user satisfaction greatly affects the research this.

Table 3.
Value of Path Coefficients

Variabel	Use	User Satisfaction
Information Quality	0.006	0.436
Service Quality	0.227	0.432
Sistem Quality	0.482	0.041

Path Coefficients or path coefficients to see the significance and strength of the relationship and also to test the hypothesis [28]. The recommended values are in the range of -1 and +1, the closer the construct is to +1, the stronger the relationship is and vice versa, the closer to -1, the weaker the relationship between the constructs . In Table 3 it can be seen the relationship between the constructs , the value ranges from -1 to +1, the closer to +1, the stronger the relationship between constructs , the closer to -1, the more negative the relationship between constructs . From Table 3 it can be concluded that the relationship of information quality has little effect on usage.

3.3 Findings and managerial implementation

The bootstrapping procedure generates t-statistical values for each relationship path used to test the hypothesis. The t-statistic value is compared with the t-table. The t-table value can be determined based on the level of confidence in the study, 90% or 95% or 99%. If using the 95% level, then the precision or the inaccuracy limit (α) = 5% or 0.05. The criteria for drawing conclusions are

- a. If the value of t-statistics is less than the value of t-table (T-statistics < T-table) then the hypothesis H0 is accepted and H1 is rejected .
- b. If the value of t-statistics is greater than the value of t-table (T-statistics > T-table) then the hypothesis H0 is rejected and H1 is accepted.

To test the hypothesis in this study, the t-statistic value was used, then for =5% the t-statistic value used was 1.96. So that the criteria for accepting or rejecting the hypothesis are that Ha is accepted and H0 is



rejected when the t-statistic > 1.96. Hypothesis testing is done by looking at the output *path coefficient from the bootstrap resampling results* as follows:

Table 4.
value of path coefficient

Variabel Konstruk	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
Sistem Quality -> Use	0.482	0.479	0.162	2.971	0.003
Sistem Quality -> User Satisfaction	0.041	0.050	0.112	0.371	0.711
Information Quality -> Use	0.006	0.008	0.180	0.033	0.974
Information Quality -> User Satisfaction	0.436	0.445	0.073	5.937	0.000
Service Quality -> Use	0.227	0.224	0.142	1.597	0.111
Service Quality -> User Satisfaction	0.432	0.417	0.079	5.484	0.000

H1a System Quality Affects the Use of Mobile BWS

Based on Table 4, the influence of system quality on usage gives a path coefficient value of 0.482 and has a p-value of 0.003 and a T-statistic value of 2.971 (T-statistics > T-table 1.96). Showing that, the quality of the system affects the use of Mobile BWS, it can be stated that hypothesis 5 is supported. Because the value of T-statistics meets the requirements, namely T-statistics > T-table 1.96.

H1b System Quality Affects BWS Mobile User Satisfaction

Based on Table 4 the effect of System Quality on User Satisfaction, gives a path coefficient value of 0.041 and has a p-value of 0.711 and a T-statistic value of 0.371 (T-statistic < T table 1.96). Showing that, system quality has no effect on BWS Mobile User Satisfaction, it can be stated that hypothesis 6 is not supported. Because the value of T-statistics does not meet the requirements, namely T-statistics > T-table 1.96.

H2a Information Quality Affects BWS Mobile User Satisfaction

Based on Table 4 the effect of Information Quality on User Satisfaction, gives a path coefficient value of 0.436 and has a p-value of 0.000 and a T-statistical value of 5.937 (T-statistics > T-table 1.96). Showing that the quality of information has no effect on BWS Mobile User Satisfaction, it can be stated that hypothesis 2 is supported. Because the value of T-statistics meets the requirements, namely T-statistics > T-table 1.96.

H2b Information Quality Affects the Use of Mobile BWS

Based on Table 4 the effect of Information Quality on Usage, gives a path coefficient value of 0.006 and has a p-value of 0.974 and a T-statistical value of 0.033 (T-statistic < T table 1.96). Showing that, the quality of information does not affect the satisfaction of Mobile BWS users, it can be stated that hypothesis 1 is not supported. Because the value of T-statistics does not meet the requirements, namely T-statistics > T-table 1.96.

H3a Service Quality Affects the Use of Mobile BWS

Based on Table 4 the effect of Service Quality on Usage, gives a path coefficient value of 0.227 and has a p-value of 0.111 and a T-statistic value of 1.597 (T-statistic < T table 1.96). Showing that service quality has no effect on the use of Mobile BWS, it can be stated that hypothesis 3 is not supported. Because the value of T-statistics does not meet the requirements, namely T-statistics > T-table 1.96.

H3b Service Quality Affects BWS Mobile User Satisfaction

Based on Table 4 the effect of Service Quality on User Satisfaction, gives a path coefficient value of 0.432 and has a p-value of 0.000 and a T-statistical value of 5.484 (T-statistics > T table 1.96). Showing that, service quality has an effect on BWS Mobile User Satisfaction, it can be stated that hypothesis 4 is supported. Because the value of T-statistics meets the requirements, namely T-statistics > T-table 1.96.

4. Conclusion

This study evaluates the factors that affect the use and satisfaction of users, Bank Woori Saudara has improved the quality of the system from the mobile BWS, from the results of the analysis it turns out that increasing quality greatly affects user use and satisfaction. From the results of the analysis of the quality of information is very influential on user satisfaction but not on usage. This shows that improving the quality of information is not a strong predictor of the use and quality of information the more complete, relevant, accurate, up to date, and with good information presentation will have a significant impact on user satisfaction. Service quality is proven to have an effect on usage and affect user satisfaction. The quality of

service has met the expectations of users and meet the needs and desires of users. So that users are satisfied with the quality of service produced by Mobile BWS. System quality is proven to have an effect on usage and not proven to have an effect on user satisfaction. Users can fully understand the quality of the system generated by Mobile BWS. Users feel that the quality of the system that has been used so far is sufficient for all the needs needed by the user, so that the quality of the system produced by Mobile BWS provides user satisfaction. System quality is proven to have an effect on usage and not proven to have an effect on user satisfaction. Users can fully understand the quality of the system generated by Mobile BWS. Users feel that the quality of the system that has been used so far is sufficient for all the needs needed by the user, so that the quality of the system produced by Mobile BWS provides user satisfaction. System quality is proven to have an effect on usage and not proven to have an effect on user satisfaction. Users can fully understand the quality of the system generated by Mobile BWS. Users feel that the quality of the system that has been used so far is sufficient for all the needs needed by the user, so that the quality of the system produced by Mobile BWS provides user satisfaction.

References

- [1] A. Massie, J. Lapian, M. V. J. Tielung, A. Massie, J. Lapian, and M. V. J. Tielung, "Factors Influencing Consumer Acceptance of Mobile Banking At Sam Ratulangi University Students Faktor-Faktor Yang Mempengaruhi Penerimaan Konsumen Terhadap," *J. EMBA*, vol. 7, no. 4, pp. 4959–4967, 2019.
- [2] C. Tam and T. Oliveira, "Literature review of mobile banking and individual performance," *Int. J. Bank Mark.*, vol. 35, no. 7, pp. 1044–1067, Jan. 2017.
- [3] H. Hoehle and S. Huff, "Advancing Task-Technology Fit Theory: A formative measurement approach to determining task-channel fit for electronic banking channels," *Inf. Syst. Found. Theory Build. Inf. Syst.*, pp. 133–169, 2012.
- [4] L. Sakala and J. Phiri, "Factors Affecting Adoption and Use of Mobile Banking Services in Zambia Based on TAM Model," *Open J. Bus. Manag.*, vol. 07, no. 03, pp. 1380–1394, 2019.
- [5] M. N. Khatun, S. Mitra, and M. N. I. Sarker, "Mobile banking during COVID-19 pandemic in Bangladesh: A novel mechanism to change and accelerate people's financial access," *Green Financ.*, vol. 3, no. 3, pp. 253–267, 2021.
- [6] A. Rahman, M. Hasan, and A. Mia, "Mobile Banking Service Quality and Customer Satisfaction in Bangladesh : An Analysis," *Cost Manag.*, vol. 45, no. 2, pp. 25–32, 2017.
- [7] M. Damabi, M. Firoozbakht, and A. Ahmadyan, "A Model for Customers Satisfaction and Trust for Mobile Banking Using DeLone and McLean Model of Information Systems Success," *J. Soft Comput. Decis. Support Syst.*, vol. 5, no. 3, pp. 21–28, 2018.
- [8] A. A. Purwati, Z. Mustafa, and M. M. Deli, "Management Information System in Evaluation of BCA Mobile Banking Using DeLone and McLean Model," *J. Appl. Eng. Technol. Sci.*, vol. 2, no. 2, pp. 70–77, 2021.
- [9] Q. N. Azizah, T. Hidayat, D. Riana, T. Dwianto, Suhardoyo, and S. Fitriana, "Understanding Impact of M-banking on Individual Performance of the DeLone & McLean Method and TTF Perspective," *J. Phys. Conf. Ser.*, vol. 1641, no. 1, p. 12009, 2020.
- [10] S. Rahi and M. Abd.Ghani, "Integration of DeLone and McLean and self-determination theory in internet banking continuance intention context," *Int. J. Account. Inf. Manag.*, vol. 27, no. 3, pp. 512–528, Jan. 2019.
- [11] J. K. Watat and M. Madina, "Towards an Integrated Theoretical Model for Assessing Mobile Banking Acceptance Among Consumers in Low Income African Economies BT - Information Systems," 2020, pp. 165–178.
- [12] S. Petter, W. DeLone, and E. McLean, "Measuring information systems success: Models, dimensions, measures, and interrelationships," *Eur. J. Inf. Syst.*, vol. 17, no. 3, pp. 236–263, 2008.
- [13] B. Nicoletti, *Mobile Banking. Evolution or Revolution?* 2014.
- [14] T. Laukkanen, "Mobile banking," *Int. J. Bank Mark.*, vol. 35, no. 7, pp. 1042–1043, Jan. 2017.
- [15] C. Z. Maulana, Y. Suryana, D. Kartini, and E. Febrian, "Influencing Factors on the Actual Usage of Mobile Phone Banking in the Shari'ah Banks: A Survey in Palembang City, Indonesia," *Glob. Rev. Islam. Econ. Business*, vol. 07, no. 1, pp. 01–19, 2019.
- [16] C. Tam and T. Oliveira, "Understanding the impact of m-banking on individual performance: DeLone & McLean and TTF perspective," *Comput. Human Behav.*, vol. 61, pp. 233–244, 2016.
- [17] W. H. DeLone and E. R. McLean, *Information Systems Success Measurement*. 2013.



- [18] A. Aldholay, O. Isaac, Z. Abdullah, R. Abdulsalam, and A. H. Al-Shibami, "An extension of Delone and McLean IS success model with self-efficacy: Online learning usage in Yemen," *Int. J. Inf. Learn. Technol.*, vol. 35, no. 4, pp. 285–304, 2018.
- [19] Q. N. Azizah, T. Hidayat, D. Riana, T. Dwiantoro, Suhardoyo, and S. Fitriana, "Understanding Impact of M-banking on Individual Performance of the DeLone & McLean Method and TTF Perspective," *J. Phys. Conf. Ser.*, vol. 1641, no. 1, 2020.
- [20] A. I. Alzahrani, I. Mahmud, T. Ramayah, O. Alfarraj, and N. Alalwan, "Modelling digital library success using the DeLone and McLean information system success model," *J. Librariansh. Inf. Sci.*, vol. 51, no. 2, pp. 291–306, Aug. 2017.
- [21] K. C. Lee and N. Chung, "Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective," *Interact. Comput.*, vol. 21, no. 5–6, pp. 385–392, Dec. 2009.
- [22] B. Mohammed Al-Ghazali, A. Md Rasli, R. Md Yusoff, and A. Yahya Mutahar, "International Journal of Economics and Financial Issues Antecedents of Continuous Usage Intention of Mobile Banking Services from the Perspective of DeLone and McLean Model of Information System Success," *Int. J. Econ. Financ. Issues*, vol. 5, no. 5, pp. 10–11, 2015.
- [23] A. Leguina, "A primer on partial least squares structural equation modeling (PLS-SEM)," *Int. J. Res. Method Educ.*, vol. 38, no. 2, pp. 220–221, Apr. 2015.
- [24] Syahrir, Danial, E. Yulinda, and M. Yusuf, *Aplikasi Metode SEM-PLS dalam Pengelolaan Sumberdaya Pesisir dan Lautan*. Bogor: PT Penerbit IPB Press, 2020.
- [25] J. F. Hair, T. Hult, C. Ringle, and M. Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd edition. 2016.
- [26] M. A. Memon, H. Ting, T. Ramayah, F. Chuah, and J.-H. Cheah, "a Review of the Methodological Misconceptions and Guidelines Related To the Application of Structural Equation Modeling: a Malaysian Scenario," *J. Appl. Struct. Equ. Model.*, vol. 1, no. August, pp. i–xiii, 2017.
- [27] M. Sarstedt, C. M. Ringle, and J. F. Hair, *Handbook of Market Research*, no. September. 2020.
- [28] I. Ghozali and H. Latan, *Partial Least Square Konsep, Teknik dan Aplikasi menggunakan program SmartPLS 3.0*. Semarang: Badan Penerbit Universitas Diponegoro, 2015.