

Research Article

Evaluation Model of the SI-SKP Based on System Quality and User Acceptance: Integrating the DeLone & McLean Model with the Technology Acceptance Model (TAM)

Aries Dian Pratama¹, Eman Setiawan²

Universitas Narotama, Indonesia ^{1,2}
Corresponding Author, Email: ardian1728@gmail.com

Abstract

This study evaluates the performance of the Employee Performance Target Information System (SI-SKP) at the Human Resources and Personnel Agency (BKPSDM) of the Surabaya City Government by integrating the DeLone & McLean Information Systems Success Model with the Technology Acceptance Model (TAM). The main objective is to analyze how the system and information quality of SI-SKP influence perceived ease of use and perceived usefulness, as well as their impact on user satisfaction, system usage, individual benefits, and organizational impact, considering that previous evaluations often overlooked the user perspective. The findings reveal that System Quality positively affects Perceived Usefulness, while Information Quality positively affects Perceived Ease of Use, both of which significantly influence User Satisfaction. Interestingly, however, Perceived Usefulness does not affect User Satisfaction, and User Satisfaction does not significantly influence Net Benefits (organizational impact). These results, together with the low R-square values, indicate the importance of non-technical factors such as organizational support and work culture in the successful implementation of SI-SKP. This study provides a comprehensive understanding of SI-SKP from both technical and user perspectives and offers practical suggestions for improvement as well as recommendations for further research.

Keywords: SI-SKP, Information System Evaluation, DeLone & McLean, Technology



Acceptance Model, User Satisfaction.

INTRODUCTION

The implementation of the Employee Performance Target Information System (SI-SKP) represents a strategic step in Indonesia's bureaucratic reform agenda, focusing on enhancing the accountability and performance of the State Civil Apparatus (ASN). As a hub of growth and innovation, the Surabaya City Government has adopted SI-SKP across various Regional Apparatus Organizations (OPD), including the Human Resources and Personnel Agency (BKPSDM). SI-SKP is expected to streamline and improve the efficiency of the preparation, assessment, and reporting of employee performance in a transparent manner.

Although the implementation of SI-SKP at BKPSDM Surabaya City has been in place, evaluations of this information system's performance have tended to focus on technical aspects such as access speed and system reliability. In reality, the success of an information system is determined not only by its technical excellence but also by the level of user acceptance and satisfaction. A lack of in-depth understanding of the user perspective can hinder optimal system utilization and reduce the expected positive impact. Previous studies on information system evaluation in the public sector—particularly those related to employee performance—have shown a research gap in integrating technical aspects with user acceptance. Earlier research often focused exclusively on one aspect; for example, e-government studies frequently measure success based on the level of technology adoption without exploring user satisfaction (Aritonang, 2017), while user satisfaction studies rarely connect it comprehensively to organizational impact. This calls for a more holistic evaluation approach.

To address this gap, this study proposes the integration of the DeLone & McLean Information Systems Success Model (2003) and the Technology Acceptance Model (TAM) (Davis, 1989). The DeLone & McLean model provides a comprehensive framework for evaluating information system success, encompassing system quality, information quality, user satisfaction, use, individual benefits, and organizational impact (DeLone & McLean, 2003). However, it is considered less specific in explaining the factors influencing user acceptance. On the other hand, TAM specifically explains the determinants of user acceptance of information technology, focusing on Perceived Ease of Use and Perceived Usefulness (Davis, 1989). By combining these two models, the

novelty of this study lies in its effort to gain a deeper understanding of the factors influencing the successful implementation of SI-SKP in local government settings. This integrated approach is expected to produce a more holistic evaluation—not only from technical and organizational impact perspectives but also from the standpoint of user acceptance and satisfaction.

This study evaluates the SI-SKP at BKPSDM Surabaya by integrating the DeLone & McLean model with TAM, focusing on user perceptions, the influence of ease of use and usefulness on satisfaction, and the impact of satisfaction on organizational outcomes.

METHOD

Research Approach and Design

This study employs a quantitative approach with a descriptive and explanatory survey design to evaluate the success of SI-SKP implementation at BKPSDM Surabaya from the user perspective. Data were collected through structured questionnaires from system users. The evaluation framework integrates the DeLone & McLean Information Systems Success Model—which assesses system quality, information quality, service quality, use, user satisfaction, and net benefits—with the Technology Acceptance Model (TAM), focusing on perceived usefulness and perceived ease of use. This integration aims to provide a deeper understanding of the factors influencing SI-SKP performance and user acceptance.

Population and Research Sample

The study population comprises all active employees of BKPSDM Surabaya who use the SI-SKP system. Using a 95% confidence level, 5% margin of error, and an assumed proportion of 0.5, the minimum required sample is 385 respondents, adjusted with the finite population correction if the total population is known. Purposive sampling will be applied, including only active employees who have used SI-SKP for at least six months.

Data collection technique

Primary data were collected through an online questionnaire based on the integrated DeLone & McLean and TAM models, covering variables such as system

quality, information quality, perceived ease of use, perceived usefulness, service quality, user satisfaction, and net benefits. Items were measured on a 5-point Likert scale, and a pilot test was conducted with a small group of non-sample employees to ensure clarity, validity, and reliability.

Research Instruments and Variable Measurement

The main instrument was a structured questionnaire consisting of two sections: Section A collected respondents' demographic data, while Sections B–H measured perceptions of SI-SKP across seven key variables. Indicators for each variable were adapted from relevant literature, as outlined in the study's reference table.

Table 1. References for Research Variable Indicators

Variables	Indicator	Reference	Code
System Quality	SI-SKP is reliable and not easily damaged/error-prone	(Delone & McLean, 2003; livari, 2005)	SQ ₁
	SI-SKP is able to respond quickly to user requests for the information they need.	(Delone & McLean, 2003; livari, 2005)	SQ ₂
	SI-SKP is convenient to use and easy to access	(Delone & McLean, 2003; livari, 2005)	SQ ₃
	SI-SKP is easy to use	(Delone & McLean, 2003; livari, 2005)	SQ ₄
	SI-SKP can maintain the confidentiality of user data	(Delone & McLean, 2003; livari, 2005)	SQ ₅
Information Quality	SI-SKP produces complete information	(Delone & McLean, 2003; livari, 2005)	IQ ₁
	SI-SKP produces information that is easy to understand.	(Delone & McLean, 2003; livari, 2005)	IQ ₂
	SI-SKP is able to present information in a timely manner	(Delone & McLean, 2003; livari, 2005)	IQ ₃
	SI-SKP presents	(Delone & McLean, 2003; livari, 2005)	IQ ₄

	information accurately and has a very small possibility of errors.	2003; livari, 2005)	
	Presentation of information in SI-SKP is concise and clear	(Delone & McLean, 2003; livari, 2005)	IQ5
Perceived Usefulness	Using SI-SKP makes my work get done faster	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	PUF1
	Using SI-SKP improves my performance at work	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	PUF2
	Using SI-SKP makes me more productive	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	PUF3
	Using SI-SKP makes it easier to search for information.	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	PUF4
	Overall, SI-SKP contains various information that is useful for me.	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	PUF5
Perceived Ease of Use	SI-SKP is easy to learn	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	EOU1
	SI-SKP is easy to control	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	EOU2
	SI-SKP makes work more flexible	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	EOU3
	SI-SKP makes work easier	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	EOU4
	Overall SI-SKP is easy to access to use	(Davis, 1989; Walczuch dkk., 2007; Shin dkk., 2007)	EOU5
Service Quality	I feel safe in accessing or sending data via SI-SKP	(Delone & McLean, 2003; livari, 2005)	SEQ1
	SI-SKP understands user needs	(Delone & McLean, 2003; livari, 2005)	SEQ2

	When problems arise, SI-SKP providers resolve user issues quickly.	(Delone & McLean, 2003; livari, 2005)	SEQ ₃
User Satisfaction	SI-SKP meets my job needs	(A'ang Subiyakto dkk., 2016)	USA ₁
	SI-SKP is effective in its use	(A'ang Subiyakto dkk., 2016)	USA ₂
	SI-SKP is efficient in its use	(A'ang Subiyakto dkk., 2016)	USA ₃
	Overall I am satisfied with the system performance.	(A'ang Subiyakto dkk., 2016)	USA ₄
Net Benefits	The cost of using SI-SKP is affordable	(Delone & McLean, 2003; livari, 2005)	NB ₁
	The search time for employee performance information on SI-SKP is faster	(Delone & McLean, 2003; livari, 2005)	NB ₂
	SI-SKP makes user performance better	(Delone & McLean, 2003; livari, 2005)	NB ₃

Data Analysis Methods

Data from the questionnaires will be analyzed using descriptive and inferential statistics with SmartPLS 4. The process includes data screening and cleaning, descriptive analysis of respondent demographics and variable perceptions, and validity and reliability testing through CFA and Cronbach's Alpha. Inferential analysis will use PLS-SEM to examine hypothesized relationships, path coefficients, R^2 , effect sizes (f^2), and predictive relevance (Q^2). Results will be presented in tables, charts, and narratives, interpreted in relation to the research objectives and the SI-SKP implementation context at BKPSDM Surabaya.

RESULT AND DISCUSSION

Research result

This section presents the data and facts obtained from the analysis process without discussion or interpretation. The presentation includes respondent characteristics, as well as the evaluation of the measurement model (outer model) and the structural model (inner model) as part of the Partial Least Squares – Structural

Equation Modeling (PLS-SEM) analysis.

1. Data Analysis Process

Data collected from the questionnaires were analyzed using descriptive and inferential statistical techniques. A total of 221 valid questionnaires underwent data screening and cleaning to ensure completeness and validity. This process included checking for missing data, identifying invalid responses, and handling outliers to ensure data quality before further analysis.

2. Descriptive Statistics

Descriptive statistics were calculated to describe respondent characteristics and the distribution of responses for each research variable indicator.

a. Respondent Characteristics

Primary data were obtained from 221 respondents, all employees of BKPSDM Surabaya City Government who use SI-SKP. The characteristics are as follows:

- 1) Age: The majority of respondents (67% or 149 people) were over 40 years old. Those aged 30–40 years accounted for 14% (32 people), 20–30 years for 14% (30 people), and under 20 years for 5% (10 people).
- 2) Gender: Male respondents made up 52% (114 people) and female respondents 48% (107 people).
- 3) Usage Frequency: Most respondents (70% or 155 people) used SI-SKP quarterly. Daily use was reported by 19% (42 people) and monthly use by 11% (24 people). No respondents reported weekly use.
- 4) Usage Duration: The most common usage duration was over 30 minutes (28% or 62 people), followed by less than 5 minutes (25% or 56 people). Other durations included 5–10 minutes (25% or 55 people), 20–30 minutes (15% or 33 people), 10–15 minutes (6% or 14 people), and 15–20 minutes (1% or 1 person).

b. Descriptive Statistics of Research Variables

Table 2 presents the mean and standard deviation values for each latent variable and its indicators.

Table 2. Mean and Standard Deviation of Research Variables

Variable/Indicator	N	Min	Max	Mean	Std. Deviation
<i>System Quality (SQ)</i>	221	2	5	4.49	0.532
<i>SQ₁</i>	221	2	5	4.45	0.551
<i>SQ₂</i>	221	3	5	4.50	0.545
<i>SQ₃</i>	221	3	5	4.50	0.519
<i>SQ₄</i>	221	3	5	4.51	0.510
<i>SQ₅</i>	221	2	5	4.49	0.536
<i>Information Quality (IQ)</i>	221	2	5	4.51	0.527
<i>IQ₁</i>	221	3	5	4.51	0.528
<i>IQ₂</i>	221	3	5	4.51	0.528
<i>IQ₃</i>	221	2	5	4.52	0.544
<i>IQ₄</i>	221	2	5	4.50	0.536
<i>IQ₅</i>	221	4	5	4.52	0.501
<i>Ease of Use (EOU)</i>	221	2	5	4.54	0.525
<i>EOU₁</i>	221	2	5	4.55	0.534
<i>EOU₂</i>	221	2	5	4.51	0.544
<i>EOU₃</i>	221	3	5	4.52	0.518
<i>EOU₄</i>	221	3	5	4.56	0.525
<i>EOU₅</i>	221	3	5	4.58	0.503
<i>Perceived Usefulness (PUF)</i>	221	2	5	4.49	0.545
<i>PUF₁</i>	221	2	5	4.50	0.553
<i>PUF₂</i>	221	3	5	4.48	0.544
<i>PUF₃</i>	221	3	5	4.50	0.545
<i>PUF₄</i>	221	2	5	4.49	0.553
<i>PUF₅</i>	221	3	5	4.50	0.528
<i>Service Quality (SEQ)</i>	221	3	5	4.48	0.536
<i>SEQ₁</i>	221	3	5	4.48	0.536
<i>SEQ₂</i>	221	3	5	4.48	0.544
<i>SEQ₃</i>	221	3	5	4.49	0.528
<i>User Satisfaction (USA)</i>	221	2	5	4.47	0.522
<i>USA₁</i>	221	2	5	4.49	0.536
<i>USA₂</i>	221	3	5	4.45	0.517
<i>USA₃</i>	221	3	5	4.44	0.516
<i>USA₄</i>	221	3	5	4.48	0.519
<i>Net Benefits (NB)</i>	221	2	5	4.52	0.539
<i>NB₁</i>	221	2	5	4.54	0.535
<i>NB₂</i>	221	2	5	4.51	0.536
<i>NB₃</i>	221	2	5	4.51	0.545

3. Validity and Reliability Testing (Outer Model)

Convergent validity, discriminant validity, and reliability tests were

conducted to evaluate the quality of the measurement model.

a. Convergent Validity

Convergent validity was assessed using outer loading values and the Average Variance Extracted (AVE):

- 1) Outer Loading: All indicators for the seven research variables (Perceived Ease of Use, Information Quality, Net Benefits, Perceived Usefulness, Service Quality, System Quality, and User Satisfaction) had outer loading values above 0.70.
- 2) AVE: All variables had AVE values above 0.50.

b. Reliability Testing

Reliability was measured using Composite Reliability and Cronbach's Alpha:

- 1) Composite Reliability: All variables scored above 0.70.
- 2) Cronbach's Alpha: All variables had Cronbach's Alpha values above 0.70.

c. Discriminant Validity

Discriminant validity was assessed using cross-loading and the Fornell-Larcker criterion:

- 1) Cross-Loading Criterion: The loading of each indicator on its intended construct was higher than its loading on other constructs in the same row.
- 2) Fornell-Larcker Criterion: The square root of AVE for each construct was greater than its correlation with other constructs.

d. Inferential Analysis (Inner Model)

The structural model analysis was conducted to test the relationships between latent variables:

- 1) Path Coefficient and Significance (t-test): Table 3 presents the path coefficient (β), t-statistic, and p-value for each hypothesized path.

Table 3. Results of the Path Coefficient Test and the t-test

Variable	Path Coefficient (β)	T Statistics	P-Values
<i>EOU -> PUF</i>	0.082	1.112	0.267
<i>EOU -> USA</i>	0.339	5.217	0.000
<i>IQ -> EOU</i>	0.166	2.375	0.018
<i>IQ -> USA</i>	0.102	1.521	0.129
<i>PUF -> USA</i>	-0.013	0.184	0.854

<i>SEQ -> EOU</i>	0.115	1.639	0.101
<i>SQ -> EOU</i>	0.103	1.391	0.164
<i>SQ -> PUF</i>	0.328	4.986	0.000
<i>USA -> NB</i>	0.166	1.662	0.097

Based on the t-statistic value (threshold 1.96 for $p < 0.05$) and p-value, three hypotheses show a significant relationship:

- 1) Ease of Use (EOU) terhadap User Satisfaction (USA)
- 2) Information Quality (IQ) terhadap Ease of Use (EOU)
- 3) System Quality (SQ) terhadap Perceived Usefulness (PUF)

The other six hypotheses did not show a statistically significant relationship.

- 1) Coefficient of Determination (R-Square) Test

Table 4 displays the R-Square values for the endogenous variables in the model.

Table 4 Results of the Coefficient of Determination (R-Square) Test

Variable	R-Square
Ease Of Use (EOU)	0.070
Net Benefits (NB)	0.027
Perceived Usefulness (PUF)	0.122
User Satisfaction (USA)	0.139

All R-Square values are below 0.190.

- 2) Effect Size Test (f_2)

The Effect Size (f_2) values for each relationship path between variables are presented in Table 5.

Table 5. Effect Size Test Results (f_2)

Track	Original Sample (O)	T Statistics	P Values
<i>EOU -> PUF</i>	0.008	0.484	0.628
<i>EOU -> USA</i>	0.126	2.259	0.024
<i>IQ -> EOU</i>	0.028	1.085	0.278
<i>IQ -> USA</i>	0.012	0.684	0.494
<i>PUF -> USA</i>	0.000	0.022	0.983
<i>SEQ -> EOU</i>	0.013	0.758	0.448

<i>SQ -> EOU</i>	0.011	0.614	0.539
<i>SQ -> PUF</i>	0.120	2.112	0.035
<i>USA -> NB</i>	0.028	0.869	0.385

All paths in the model show f_2 values below 0.15.

3) Predictive Relevance Test (Q_2)

Table 6 displays the Predictive Relevance (Q_2) values for endogenous variables.

Table 6. Predictive Relevance Test Results (Q_2)

Variable	Q_2
EOU	0.032
NB	0.012
PUF	0.106
USA	0.023

The Q_2 values of all endogenous variables in the model are positive.

Discussion

This discussion outlines the rationale, relationships, and generalizations indicated by the research results, addressing the research questions based on empirical findings.

1. General Discussion of Respondent Characteristics

The dominance of respondents over 40 years old indicates that most SI-SKP users are senior employees, which may influence perceived ease of use due to potential differences in digital literacy across age groups. The balanced gender distribution suggests that system access and use are not gender-biased. The predominance of quarterly use reflects SI-SKP's primary function as a periodic reporting tool, potentially shaping how users interact with it compared to daily use. The variation in usage duration shows that SI-SKP serves both simple and complex tasks, requiring flexibility in system design and functionality.

2. Discussion of Measurement Model Testing

Convergent validity, discriminant validity, and reliability testing indicate that the research instrument is of high quality. High outer loading values (above 0.70)

and AVE values above 0.50 for all constructs confirm that the indicators accurately represent the constructs and that extracted variance exceeds measurement error. Fulfillment of cross-loading and Fornell-Larcker criteria confirms that each construct is empirically distinct, ensuring measurement uniqueness. Internal consistency, with Composite Reliability and Cronbach's Alpha above 0.70, further supports that items measure the same construct consistently. Overall, the measurement model meets PLS-SEM standards, allowing reliable hypothesis testing.

3. Discussion of Structural Model and Hypothesis Testing

The structural model analysis revealed causal relationships among variables, detailed below.

a. Accepted Hypotheses

Three hypotheses were supported by significant empirical evidence:

- 1) Ease of Use (EOU) → User Satisfaction (USA): Perceived Ease of Use positively and significantly influences User Satisfaction ($\beta=0.339$, $t=5.217$, $p=0.000$). The easier SI-SKP is to use, the higher the user satisfaction, aligning with TAM literature. Although the effect size is small ($f^2=0.126$), the strong statistical significance highlights its relevance.
- 2) Information Quality (IQ) → Ease of Use (EOU): Information Quality positively and significantly influences Perceived Ease of Use ($\beta=0.166$, $t=2.375$, $p=0.018$). Accurate, complete, and easily understood information facilitates ease of use, underscoring the importance of high-quality data.
- 3) System Quality (SQ) → Perceived Usefulness (PUF): System Quality positively and significantly influences Perceived Usefulness ($\beta=0.328$, $t=4.986$, $p=0.000$). Reliable, responsive, and functional systems increase perceived usefulness, despite the small effect size ($f^2=0.120$).

b. Rejected Hypotheses

Six hypotheses were not supported:

- 1) Ease of Use (EOU) → Perceived Usefulness (PUF): Not significant ($\beta=0.082$, $t=1.112$, $p=0.267$), suggesting usefulness is more influenced by features than ease of operation.
- 2) Information Quality (IQ) → User Satisfaction (USA): Not significant ($\beta=0.102$, $t=1.521$, $p=0.129$), implying other factors beyond information content may drive satisfaction.

- 3) Perceived Usefulness (PUF) → User Satisfaction (USA): Not significant ($\beta=-0.013$, $t=0.184$, $p=0.854$), indicating usefulness may be seen as a baseline expectation rather than a satisfaction driver.
- 4) Service Quality (SEQ) → Ease of Use (EOU): Not significant ($\beta=0.115$, $t=1.639$, $p=0.101$), suggesting interface design may matter more for ease of use than support services.
- 5) System Quality (SQ) → Ease of Use (EOU): Not significant ($\beta=0.103$, $t=1.391$, $p=0.164$), indicating ease of use relates more to user experience design than technical performance.
- 6) User Satisfaction (USA) → Net Benefits (NB): Not significant ($\beta=0.166$, $t=1.662$, $p=0.097$), suggesting that satisfaction does not directly translate into measurable organizational benefits.

4. Overall Model Evaluation

Low R^2 values for all endogenous variables (EOU=0.070, NB=0.027, PUF=0.122, USA=0.139) indicate weak explanatory power, suggesting other important variables outside the model may influence Ease of Use, Net Benefits, Perceived Usefulness, and User Satisfaction. Small effect sizes ($f^2<0.15$) align with these low R^2 values. However, positive Q^2 values for all endogenous variables (EOU=0.032, NB=0.012, PUF=0.106, USA=0.023) indicate that the model has relevant, albeit weak, predictive capability, showing it can reconstruct observed data and has potential for future predictive use.

CONCLUSION

This study evaluated the performance of the SI-SKP at BKPSDM Surabaya using the DeLone & McLean model enriched with TAM user acceptance dimensions. Results show that System Quality significantly influences Perceived Usefulness, while Information Quality significantly influences Ease of Use; in turn, Ease of Use positively affects User Satisfaction. However, Information Quality and Perceived Usefulness did not significantly affect satisfaction, Ease of Use did not affect usefulness, and satisfaction did not impact Net Benefits. Low R^2 values indicate limited explanatory power, suggesting the influence of external factors such as organizational support and work culture. Overall, System and Information Quality are key predictors of usability and perceived value, but non-technical factors likely play a critical role in successful SI-SKP

implementation.

Suggestions

Based on the evaluation of SI-SKP performance at BKPSDM Surabaya, several practical and research recommendations are proposed. Practically, since Information Quality significantly affects Ease of Use, and Ease of Use impacts User Satisfaction, SI-SKP's interface should be made more intuitive, simple, and responsive, while ensuring accurate and relevant data. Given the significant effect of System Quality on Perceived Usefulness, ongoing technical improvements are needed to maintain stability, speed, and functionality. To address the gap between usefulness, satisfaction, and net benefits, qualitative investigations (e.g., focus groups, interviews) should explore non-technical factors such as training, management support, policies, and work culture—especially for users over 40.

For future research, the low R^2 suggests adding variables like Organizational Support, Expectation–Performance Gap, User–Provider Interaction Quality, Incentives/Policies, or Risk Perception. Comparative studies across government agencies and mixed-method approaches could provide deeper insights, particularly into non-significant relationships, and explore mediating or moderating effects for a more nuanced understanding.

Bibliography

- A'ang Subiyakto, Ahlan, A. R., & Kartiwi, M. (2016). Assessing an Information System Project Success Model Using Mixed Methods. <https://doi.org/10.13140/RG.2.2.32243.84000>
- Aritonang, D. M. (2017). The Impact of E-Government System on Public Service Quality in Indonesia. *European Scientific Journal, ESJ*, 13(35), 99. <https://doi.org/10.19044/esj.2017.v13n35p99>
- Asyraf, W. M., & Afthanorhan, B. W. (2013). A Comparison Of Partial Least Square Structural Equation Modeling (PLS-SEM) and Covariance Based Structural Equation Modeling (CB-SEM) for Confirmatory Factor Analysis. *International Journal of Engineering Science and Innovative Technology*.
- Cho, Y. C., & Sagynov, E. (2015). Exploring Factors That Affect Usefulness, Ease Of Use, Trust, And Purchase Intention In The Online Environment. *International Journal of Management & Information Systems (IJMIS)*, 19(1), 21. <https://doi.org/10.19030/ijmis.v19i1.9086>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (Fifth edition). SAGE.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance

of Information Technology. MIS Quarterly, 13(3), 319.
<https://doi.org/10.2307/249008>

- Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM) (Third edition)*. SAGE.
- Iivari, J. (2005). An empirical test of the DeLone-McLean model of information system success. *ACM SIGMIS Database: The DATABASE for Advances in Information Systems*, 36(2), 8–27. <https://doi.org/10.1145/1066149.1066152>
- Jr, F. J. F. (2013). *Survey Research Methods*. SAGE Publications.
- Kline, R. B. (2015). *Principles and Practice of Structural Equation Modeling*.
- Laksono, H. (2017). EVALUASI KESUKSESAN SIMDA BMD PADA PEMERINTAH KABUPATEN GROBOGAN MENGGUNAKAN MODEL KOMBINASI DELONE MCLEAN DAN TECHNOLOGY ACCEPTANCE MODEL.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3. ed., [Nachdr.]). McGraw-Hill.
- Ringle, C. M., Da Silva, D., & Bido, D. D. S. (2014). Structural Equation Modeling with the Smartpls. *Revista Brasileira de Marketing*, 13(2), 56–73. <https://doi.org/10.5585/remark.v13i2.2717>
- Shin, S.-J., Lin, H.-Y., Wang, C.-L., Hsiao, P.-J., & Lin, K.-D. (2007). Response to Comment on: Lin et al. (2007) SUMO4 M55V Variant Is Associated With Diabetic Nephropathy in Type 2 Diabetes: *Diabetes* 56:1177–1180. *Diabetes*, 56(8), e12–e13. <https://doi.org/10.2337/db07-0547>
- Walczuch, R., Lemmink, J., & Streukens, S. (2007). The effect of service employees' technology readiness on technology acceptance. *Information & Management*, 44(2), 206–215. <https://doi.org/10.1016/j.im.2006.12.005>