

Determinant Factors of Success for the Village Information System in Providing Sustainable Services and Governance

Sutia Dwi Santika, Tuga Mauritsius

Information System Management Department-BINUS Graduate Program-Master of Information System Management,
Bina, Nusantara University, Jakarta 11480, Indonesia

Abstract—The Indonesian government is working to implement a digital transformation aimed at providing effective services and governance at both central and local levels, similar to other developing countries. A key strategy for achieving this digital government transformation at the local level involves the implementation of village information system, which are managed by village officials. The Ministry of Villages and Development of Disadvantaged Regions is developing a village information system to support these efforts, village laws, and the Sustainable Development Goals. However, the village information system encounters ongoing challenges, such as slow access speeds and ineffective response services. This study adopts a quantitative approach by using cross-sectional questionnaires that collected 426 valid responses. This study identified seven main factors that influence the success or failure of implementing a village information system: system quality, information quality, service quality, perceived usefulness, user satisfaction, trust, and net benefits. This study contributes to the literature by recognizing these factors within the DeLone and McLean Information System Success Model and TAM frameworks, which are still rarely addressed in e-government adoption studies, especially regarding village governments in developing countries. Data analysis revealed significant relationships system quality, information quality, and service quality significantly impact perceived usefulness. Information quality, service quality, trust, and perceived usefulness significantly impact user satisfaction, and perceived usefulness and satisfaction significantly affect net benefits. This research has practical implications for the successful adoption of the village information system as part of the ministry's efforts to improve services and overall governance.

Keywords—E-Government; System Quality; Service Quality; Delone and Mclean model; TAM

I. INTRODUCTION

The Indonesian government is making strides toward digital transformation, mirroring similar efforts in other developing nations aimed at enhancing service provision and governance. Governance plays a crucial role in the success of digital transformation within the service provision sector, addressing the continuously changing needs of society [1]. These e-government services can reduce costs, accelerate service delivery, and increase accessibility; these services focus on effective service delivery to ensure optimal use of the e-government system [2].

Indonesia implements e-government services at the central

The Ministry of Communications and Digital Aspiration Scholarship funded this research.

and local government levels. The central and local governments in Indonesia implemented the Village Information System (VIS) to improve governance and services as a key strategy for digital government transformation, similar to initiatives in other developing countries [3]. These initiatives aim to streamline administrative processes, enhance transparency, and empower citizens by providing them with easy access to information and services. The Ministry of Village and Development of Disadvantaged Regions created the village information system to track the use of village finances and provide reliable, accurate, and sustainable data for planning village development [4]. This system is crucial for enhancing village conditions by concentrating on the needs of the community, creating transparent plans and budgets, and aligning with the Sustainable Development Goals (SDGs) for village communities.

However, integrating e-government into village information system presents major challenges that impact the long-term sustainability of services. These challenges include insufficient ICT infrastructure, which complicates service delivery [5] and a lack of digital literacy, which illustrates the importance of comprehensive training in managing the village information system. Additionally, bureaucratic resistance, concerns about data privacy, and restrictive regulations can hinder the realization of the anticipated benefits [6].

The researcher conducted interviews with the Head of Information System Development at Pusdatin and operators of the village information system to gain insights into their experiences and the challenges faced during the system's implementation. The findings from these interviews reveal several quality issues with the system. For instance, the system frequently crashes during high traffic periods, and misconfigured IP addresses can occur during data display. Additionally, the system's features do not fully meet user needs. There is also a significant gap between the targets and the actual outcomes set by the Ministry of Village and Development of Disadvantaged Regions, leading to suboptimal data utilization in decision-making and errors in data entry, which result in inaccuracies. A critical factor for the success of e-government is the quality of services provided. The ineffectiveness of the services within the village information system stems from the slow response times of the village service team and the non-functional discussion forum feature. User satisfaction with the system is influenced by the employee attitude and the efficiency of service delivery, both of which

are vital factors affecting the overall user experience with the village information system.

The identification of issues occurring in the Village Information System was obtained from system improvement suggestions to ensure the system runs optimally and supports the needs of the Ministry of Village and Development of Disadvantaged Regions. Fig. 1 shows the categorization of problems, with the highest issues being system speed and server upgrades in the village information system.

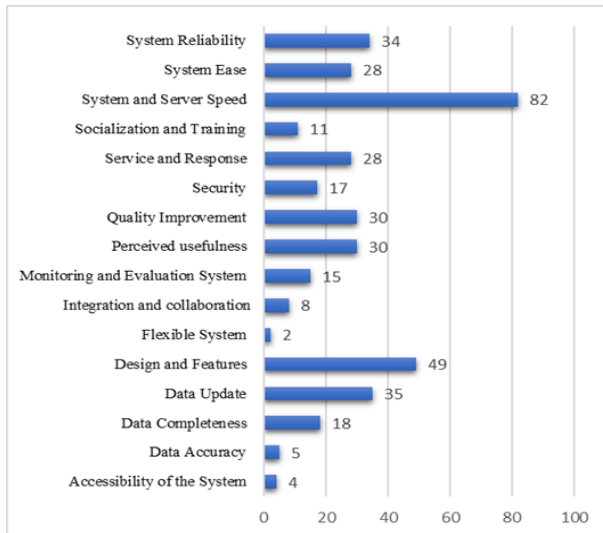


Fig. 1. Categories of issues in the village information system.

This research develops an integrated model that combines various theories, utilizing the Information System Success Model [7], [8] as the primary framework. It incorporates additional factors from the Technology Acceptance Model [9] and aspects of trust. The study tests the factors influencing the net benefits of the village information system. The findings are based on the perspectives of both employees and users within the village context, contributing to the overall success of these systems. This knowledge is valuable for the government sector, system developers, and academics, who can leverage it to enhance technology and innovation in village information system in the realm of e-government. By improving the sustainability of the village information system, the research aims to achieve better service outcomes and long-term sustainability within government organizations.

This study formulates the following research question:

RQ1: What are the factors influencing the use of village information system within e-government initiatives?

RQ2: What are the most significant factors affecting the implementation of the village information system?

The following is the structure of the article: Starting with the Introduction, Section II presents the fundamental theories underlying the proposed hypothesis and the development of the conceptual model; Section III explains the research methodology; Section IV presents the research results; Section V presents the discussion and research implications; and Section VI concludes with limitations and recommendations for future research.

II. LITERATURE REVIEW

A. Village Information System

The implementation of the village information system, especially through initiatives such as Village-Owned Enterprises, Village Funds, and the Village Development Index, has been crucial for the sustainability of services. Law No. 6 of 2014 mandates that the central and regional governments develop the Village Information System [10]. An interconnected system serves as a framework to enhance the quality of life, promote good governance, and foster sustainable development. The Village Development Index categorizes villages based on development criteria and aims to serve as a measurement tool for government entities. The Village Development Index classifies villages into categories: independent, advanced, developing, underdeveloped, and very underdeveloped [11]. The Village Development Index effectively correlates with the Sustainable Development Goals (SDGs) for sustainable village development. The village information system effectively provides the government with accessibility for the information-based decision-making process. Village funds are an important mechanism through which the government allocates funds to each village according to their needs, and the Village Development Index shows responsibility and strategic planning in utilizing funds from the village budget [12]. The proper utilization of village funds positively impacts the value. This approach realizes smart villages within the village development strategy, ensuring sustainability and efficiency in service delivery [13], [14].

B. DeLone and McLean Information System Success Model

The Information System Success Model (ISSM) is based on Delone and McLean and serves as the reference for this research. The information system success model was created to address the increasingly prevalent issues, such as the inability to measure the individual and organizational impact of information systems [7]. System quality, information quality, use, user satisfaction, individual impact, and organizational impact are the six components of information system success that were first identified during its development. Changes were made in the Delone and McLean model in 2003 by adding service quality and net benefits, replacing individual and organizational impact [8]. The model states that the performance of information systems is determined by independent variables from quality dimensions (information quality, system quality, and service quality) to influence usage, user satisfaction, and net benefits. The model provides insights into the success and net benefits of e-government.

1) *System Quality (SYQ)*: System quality is a measure of the information processing system itself [7]. System quality indicates the quality of the information processing system, and information processing is built based on the desired characteristics embedded in the system. System quality serves as a measure of the characteristics of e-government system, such as usability, ease of use, reliability, and accessibility [15]. E-government is more transparent, cost-effective, efficient, and better quality relative to conventional ways. The quality of the system affects perceived usefulness and user satisfaction in this research model. Previous studies have

shown how system quality affects perceived usefulness and user satisfaction [16], [17]. Similar results were obtained by other research in the context of e-government [18], [19], [20]. Users of high-quality information systems will experience satisfaction and perceive the system as useful. Based on these findings, it is assumed that system quality has a significant impact on perceived usefulness and user satisfaction from the perspective of information system.

2) *Information Quality (IQ)*: Information quality refers to how well the delivered information satisfies consumer needs, which may be assessed through its accurate, relevance, timeliness, and completeness in meeting the requirements of the information system [21]. The information provided through e-government is highly beneficial, particularly because many members of the public are not well acquainted with government operations. This information serves to clarify how to complete various transactions [22]. The better the content of the information, the better the perception of the information system. This study examines how information quality impacts perceived usefulness and user satisfaction. The relationship between information quality and perceived usefulness and user satisfaction has been researched by studies [18], [19], [20]. Studies consistently show a positive correlation between information quality for perceived usefulness [23], and user satisfaction [24]. The findings indicate that improving the information quality can result in higher perceived usefulness and increased satisfaction with the system.

3) *Service Quality (SQ)*: Service quality is the quality of user support from system service providers, which consists of five indicators: tangibles, reliability, responsiveness, assurance, and empathy [8]. Service quality includes support from the Information Systems Department and IT support personnel to comprehensively address user issues [19], [25] and integrates workflows from various government departments [22]. The village information system is still a mandatory system and has dedicated technical and non-technical departments to assist users, so the author believes that service quality influences perceived usefulness and user satisfaction. Service quality is a comparison between expectations and the perception received from a service [26]. Previous research has provided practical evidence of the positive impact of service quality on perceived usefulness and user satisfaction [16], [20].

4) *User Satisfaction (US)*: User satisfaction is the recipient's response to the use of the system, measuring the extent to which it creates value for the company's internal and external customers [8]. User satisfaction is a crucial factor that drives continuous interaction in e-government, which influences their sustainable usage behavior [3]. The success of an information system depends on user satisfaction, which ultimately allows the net benefits of e-government to be achieved [20], [21], [27]. Certain benefits will emerge if users have a positive experience and feel satisfied when using the information system. User satisfaction with the village

information system will greatly enhance the perceived benefits compared to the level of investment, maintenance costs, and operational costs of the ICT-based information system.

5) *Net Benefits (NB)*: Net benefits refer to the degree to which information systems impact the success of diverse stakeholders, both positively and negatively. Net benefits are assessed by analyzing the effects on individuals or organizations [28]. When the net benefits of utilizing a system are favorable, it appears to enhance user pleasure. Furthermore, the probability of increased user adoption of the system rises [8].

C. Technology Acceptance Model (TAM)

Integration between the Technology Acceptance Model (TAM) and the DeLone and McLean Information Systems Success Model (ISSM) offer a comprehensive approach for assessing user acceptance and the efficacy of information systems within e-government. The Technology Acceptance Model, first proposed by Davis [9], highlights perceived ease of use and perceived usefulness as essential factors influencing technology acceptance. Researchers have integrated the TAM with the DeLone and McLean model to assess the success of e-government, revealing that this amalgamation has offered more details about its effectiveness [22]. The conceptual model excludes the variable "ease of use" as it pertains to system quality [20]. This research incorporates the perceived usefulness variable from the TAM into the DeLone and McLean ISSM framework to develop the conceptual model.

1) *Perceived Usefulness (PU)*: Perceived usefulness is the level of individual belief that the use of a certain system will enhance work performance [22]. Perceived usefulness is included in the research model to measure the extent to which individuals accept that using the village information system can improve performance and service effectiveness for the ministry and village. Thus, a usefulness system will make the organization operate better by improving internal effectiveness and decision-making, and reducing operational costs [29], making it easier to perceive the benefits of the system investment. The authors believe that perceived usefulness has a significant influence on user satisfaction and net benefits. Prior studies have shown that perceived usefulness significantly influences user satisfaction [3], [18]. Perceived usefulness also impacts net benefits [20].

D. Trust (TR)

Trust is a continuous and long-lasting relationship between two individuals that fosters confidence in transactions, thereby reducing the risk of not obtaining future benefits [30]. Trust in the context of e-government is the user's expectation that the online system provides accurate and timely information securely without technical errors to operate consistently [18], [31]. User trust looks at psychological and social factors, while system trust is primarily concerned with reliability, efficacy, and security [32]. Higher trust will increase user satisfaction because the information system ensures privacy and transaction security [20]. Study confirmed a significant relationship between trust and user satisfaction [33], [34].

This study used the DeLone and McLean Information System Success Model. However, previous studies have shown a research gap, where the DeLone and McLean ISSM is mostly used in the context of voluntary system usage [18], [19]. This approach also addresses the issues found in previous studies without examining the human factors such as psychological and social categories that influence the determination of system success [21]. This study specifically addresses the research gap by focusing on the village information system as a mandatory system. Adding human factors like trust as an independent factor and perceived usefulness as a mediating factor to the DeLone and McLean model makes the framework work better. The research model integrates the DeLone and McLean ISSM theory with the Technology Acceptance Model to enhance understanding of how experience influences the success of village information system.

III. METHODOLOGY

A. Research Design

This research employs a quantitative approach to examine how various techniques related to the dependent variable are influenced by factors affecting the success of village information system development in the context of e-government. It considers these factors from the viewpoints of both employees and users of the village information system. As a survey-based study, it utilizes a questionnaire as the main tool for data collection. The questionnaire is crafted to gather a diverse range of responses, facilitating a thorough analysis of the perceptions and experiences of both groups. Through the analysis of the collected data, the research seeks to identify key determinants that can enhance the effectiveness of e-government initiatives in rural areas. Research model from references [20]. Research model are shown in Fig. 2.

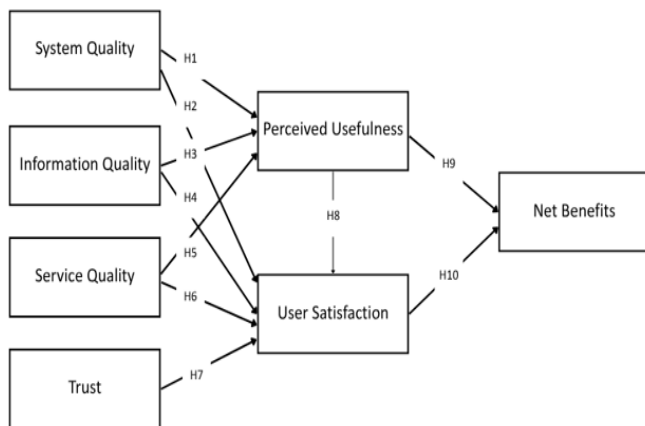


Fig. 2. Research model.

The authors created ten hypotheses (H1–H10), where the ideas about information system quality and trust are influenced by user satisfaction (US) and perceived usefulness (PU) to affect net benefit (NB). Based on the research model presented in Fig. 2, the following hypothesis is formulated in this study:

H1: System Quality has a significant impact on Perceived Usefulness.

H2: System Quality has a significant impact on User Satisfaction.

H3: Information Quality has a significant impact on Perceived Usefulness.

H4: Information Quality has a significant impact on User Satisfaction.

H5: Service Quality has a significant impact on Perceived Usefulness.

H6: Service Quality has a significant impact on User Satisfaction.

H7: Trust has a significant influence on User Satisfaction.

H8: Perceived Usefulness has a significant influence on User Satisfaction.

H9: Perceived Usefulness has a significant impact on Net Benefits.

H10: User Satisfaction has a significant impact on Net Benefits.

B. Measurement Items

This research utilized a questionnaire as the primary tool for data collection. The questions were developed through an extensive review and synthesis of relevant literature, organized into two distinct sections. Part 1 includes general information inquiries, featuring six closed-ended multiple-choice questions aimed at gathering demographic data from the respondents. Part 2 comprises 33 questions designed to assess opinions on various factors that influence the acceptance of e-government services. The questions employ a rating scale based on Likert's Scale, which ranges from 5 (mostly agree) to 1 (mostly disagree).

The questions were crafted based on insights from literature reviews and previous studies. To investigate the factors impacting the success of village information system, the study identified seven key variables: Four exogenous variables are System Quality (SYQ), Information Quality (IQ), Service Quality (SQ), and Trust (TR); two mediating variables are User Satisfaction (US) and Perceived Usefulness (PU); and one endogenous latent variable is Net Benefit (NB). Constructs and measurement items are shown in Appendix A.

C. Sample and Data Collection

Users of the village information system include all employees and village officials, who together form the population for this study. The research sample was determined using a nonprobability sampling technique, namely purposive sampling. The selection of purposive sampling is a sampling technique with specific considerations for system users who are considered to know something expected to facilitate the research. The research sample uses the Slovin formula to check validity in the equation, where a confidence level of 95% or a margin of error of 5%, which results in a minimum sample size of 370 respondents from the population.

Data collection through online questionnaires began on February 26, 2025, and ended on March 29, 2025. The research collected data using an online questionnaire. The authors then

distributed it through the correspondence application and whatsapp from all offices of the Ministry of Village and Development of Disadvantaged Regions from which 573 responses were successfully collected. Data were collected from civil servants in the Ministry of Village and Development of Disadvantaged Regions and village officials as users of the village information system from various villages in Indonesia. The authors sent 573 questionnaires to the complete research sample. We deemed 147 out of the 573 questionnaires invalid due to the absence of important information. Therefore, 426 valid responses were collected, resulting in a response rate of 74%. The data gathered from 426 responses allows for a more detailed analysis. Data supporting this study are available from the Zenodo Repository (<https://zenodo.org/records/15637404>), DOI: 10.5281/zenodo.1563740.

D. Data Analysis

Data analysis uses a three-stage approach to data analysis as follows: (1) Partial least squares (PLS) analysis with SmartPLS 4.0 is used to test the measurement model and identify seven dimensions. (2) Path analysis is used to test the direction and strength of hypothesized relationships. (3) A bootstrap approach is used to test the hypothesis of information system quality and trust mediated by perceived usefulness and user satisfaction towards net benefits.

IV. RESULT

A. Demographics

The information regarding the characteristics of the research respondents includes gender, age, education, occupation, and experience with the village information system, as presented in Table I. The demographic analysis encompasses 426 survey respondents. The findings indicate that the majority of respondents are male ($n = 336$, 78.87%), with an age range of 35-44 years ($n = 186$, 43.66%) and holding a bachelor's degree ($n = 303$, 71.13%). Additionally, most respondents have used the village information system for over three years ($n = 280$, 65.73%).

The gender demographics indicate that males represent 78.87% of the respondents, while females account for 21.13%. In terms of age distribution, 43.66% of respondents fall within the 35-44 years age range, 28.40% are aged 45-54 years, 21.83% are aged 25-34 years, 5.40% are between 55-65 years, and 0.70% are under 25 years. This finding suggests that most respondents are of an age likely to adapt to technological advancements, enabling them to utilize information systems efficiently. Regarding education, a significant majority of respondents hold a bachelor's degree (71.13%). This level of education indicates that most respondents possess adequate knowledge and skills to effectively operate technology. Job demographics include civil servants (83.57%) and village officials (16.43%). Those with over three years of experience predominantly observe user experience with the system (65.73%). This data suggests that users who are already familiar with the system are less likely to encounter significant changes and tend to continue using it.

B. Measurement Model Assessment

The measurement model integrates the construct with the structural model [35]. The measurement model analyzes the

model's fit, consisting of tests of convergent validity and discriminant validity.

TABLE I. DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

Category	Subcategory	Count (n)	Percentage
Gender	Male	336	78.87%
	Female	90	21.13%
Age	< 25 Years	3	0.70%
	25-34 Years	93	21.83%
	35-44 Years	186	43.66%
	45-54 Years	121	28.40%
	55-65 Years	23	5.40%
Last Education	High School	43	10.09%
	Associate Degree	33	7.75%
	Bachelor Degree	303	71.13%
	Master Degree	45	10.56%
	Doctoral Degree	2	0.47%
Occupation	Village Officials	356	83.57%
	Civil Servants	70	16.43%
Experience Using VIS	< 1 Year	28	6.57%
	1-3 Year	118	27.70%
	> 3 Year	280	65.73%
Location	Banten	5	1.17%
	Jakarta	37	8.69%
	Jawa	368	86.38%
	Kalimantan	5	1.17%
	Nusa Tenggara Timur	2	0.47%
	Sulawesi	5	1.17%
	Sumatra	4	0.94%

1) *Convergent validity test*: Convergent validity refers to the degree to which a construct effectively explains an item. To assess convergent validity, begin by calculating the indicator loading factor. A loading factor of ≥ 0.708 is used, as this indicates that each construct accounts for more than 50% of the indicators. Next, compute the *Average Variance Extracted* (AVE) using the loading factor values for each indicator within a construct to determine the average value. AVE values of ≥ 0.50 are deemed valid [35]. The loading factor results are in Table II.

According to the calculations in Table II, two latent variables have outer loading values ≤ 0.708 , namely SYQ2 and SYQ3. Therefore, the authors encourage testing other reflective indicators' load tests by removing SYQ2 and SYQ3 to examine changes in AVE. As identified in Table III, the AVE of SYQ increased to 0.194, respectively. So, the authors decided to leave out SYQ2 and SYQ3 from the suggested model, which led to outer loading values of 0.708 or higher for all the indicators shown in Table VI.

TABLE II. LOADING FACTOR RESULT

Construct	Indicator	Outer loadings	Parameter
System Quality	SYQ1	0.774	0.708
	SYQ2	0.611	0.708
	SYQ3	0.319	0.708
	SYQ4	0.806	0.708
	SYQ5	0.819	0.708
Information Quality	IQ1	0.794	0.708
	IQ2	0.789	0.708
	IQ3	0.834	0.708
	IQ4	0.750	0.708
	IQ5	0.778	0.708
Service Quality	SQ1	0.753	0.708
	SQ2	0.856	0.708
	SQ3	0.841	0.708
	SQ4	0.865	0.708
	SQ5	0.856	0.708
Trust	TR1	0.876	0.708
	TR2	0.866	0.708
	TR3	0.882	0.708
Perceived Usefulness	PU1	0.882	0.708
	PU2	0.902	0.708
	PU3	0.911	0.708
	PU4	0.903	0.708
	PU5	0.921	0.708
User Satisfaction	US1	0.838	0.708
	US2	0.851	0.708
	US3	0.863	0.708
	US4	0.843	0.708
	US5	0.864	0.708
Net Benefits	NB1	0.824	0.708
	NB2	0.876	0.708
	NB3	0.862	0.708
	NB4	0.880	0.708
	NB5	0.870	0.708

TABLE III. AVERAGE VARIANCE EXTRACTED (AVE)

Construct	Average Variance Extracted (AVE)		Changes
	Before	After	
SYQ	0.479	0.673	0.194
IQ	0.623	0.623	0.000
SQ	0.698	0.698	0.000
TR	0.765	0.765	0.000
US	0.725	0.725	0.000
PU	0.817	0.817	0.000
NB	0.744	0.744	0.000

2) *Discriminant validity test*: The assessment of discriminant validity is the extent to which a construct empirically differs from other constructs in the structural model. To evaluate discriminant validity using Fornell and Larcker, you need to check the Average Variance Extracted (AVE) for each construct and compare it to the squared correlation between all the constructs being measured. However, the Fornell and Larcker criterion is ineffective when the loadings of an indicator for a construct are low, such as when all the loadings of the indicators range from 0.65 to 0.85. The assessment of discriminant validity can also use HTMT based on the correlation. The HTMT value is not more than ≥ 0.90 , which indicates invalid discriminant validity. An HTMT value ≤ 0.90 is considered valid [35]. The Fornell-Larcker criterion and the heterotrait-monotrait ratio (HTMT) are the most effective metrics for assessing the discriminant validity of the model. The Fornell and Larcker criterion and HTMT results can be seen in Table IV and V.

TABLE IV. FORNELL-LARCKER CRITERION RESULT

Construct	IQ	NB	PU	SQ	SYQ	TR	US
IQ	0.789						
NB	0.670	0.863					
PU	0.660	0.785	0.904				
SQ	0.761	0.715	0.729	0.835			
SYQ	0.681	0.566	0.590	0.609	0.820		
TR	0.631	0.720	0.684	0.726	0.503	0.875	
US	0.715	0.787	0.784	0.809	0.592	0.787	0.852

TABLE V. HETEROTRAIT-MONOTRAIT RATIO (HTMT) RESULT

Construct	IQ	NB	PU	SQ	SYQ	TR	US
IQ							
NB	0.757						
PU	0.736	0.838					
SQ	0.875	0.787	0.791				
SYQ	0.847	0.677	0.697	0.741			
TR	0.743	0.816	0.762	0.835	0.628		
US	0.815	0.858	0.846	0.899	0.714	0.899	

3) *Reliability test*: Reliability assessment involves the use of composite reliability and Cronbach's alpha. Reliability values ranging from 0.70 to 0.90 are considered satisfactory to good.

Reliability value of ≥ 0.95 suggests the presence of an indicator error, implying that all indicators are measuring the same construct [35]. The reliability results in the Table VI.

TABLE VI. RELIABILITY, AND CONVERGENT VALIDITY RESULT

Construct	Indicator	Outer loadings	Result	Cronbach's alpha	Composite reliability	AVE	Result
System Quality	SYQ1	0.796	Valid	0.756	0.761	0.673	Reliable
	SYQ4	0.808	Valid				
	SYQ5	0.856	Valid				
Information Quality	IQ1	0.793	Valid	0.848	0.850	0.623	Reliable
	IQ2	0.790	Valid				
	IQ3	0.834	Valid				
	IQ4	0.750	Valid				
	IQ5	0.778	Valid				
Service Quality	SQ1	0.753	Valid	0.891	0.896	0.698	Reliable
	SQ2	0.856	Valid				
	SQ3	0.841	Valid				
	SQ4	0.865	Valid				
	SQ5	0.856	Valid				
Trust	TR1	0.876	Valid	0.847	0.847	0.765	Reliable
	TR2	0.866	Valid				
	TR3	0.882	Valid				
Perceived Usefulness	PU1	0.906	Valid	0.944	0.945	0.817	Reliable
	PU2	0.917	Valid				
	PU3	0.913	Valid				
	PU4	0.903	Valid				
	PU5	0.921	Valid				
User Satisfaction	US1	0.838	Valid	0.905	0.906	0.725	Reliable
	US2	0.851	Valid				
	US3	0.863	Valid				
	US4	0.843	Valid				
	US5	0.864	Valid				
Net Benefits	NB1	0.824	Valid	0.914	0.919	0.744	Reliable
	NB2	0.876	Valid				
	NB3	0.862	Valid				
	NB4	0.880	Valid				
	NB5	0.870	Valid				

C. Structural Model Assessment

The structural equation modeling (SEM) method was applied to analyze the hypotheses of the structural model. The standard evaluation criteria to consider include the coefficient of determination (R^2), F-square (F^2), and the statistical significance and relevance of the path coefficients [35]. It is crucial to examine for collinearity before evaluating the structural relationships to avoid bias in the regression results.

1) *Collinearity*: The collinearity value is determined by calculating the Variance Inflation Factor (VIF). A VIF value exceeding 5 suggests a potential collinearity issue among predictor constructs; however, collinearity problems can also arise at lower VIF values ranging from 3 to 5. Ideally, the VIF value should be close to or below 3. Appendix B presents the

VIF statistics from the inner model, indicating that all VIFs are above the recommended thresholds.

2) *Coefficient of determination (R^2) and F-square (F^2)*: The coefficient of determination (R^2) is measured by the endogenous construct and serves as an indicator of the sample's predictive power. R^2 values of 0.75, 0.50, and 0.25 are classified as substantial, moderate, and weak, respectively [35]. In addition, the F-square (F^2) values of 0.02, 0.15, and 0.35 correspond to small, medium, and large effect sizes, respectively [35]. The F-square and R^2 results can be seen in Table VII. Table VII indicates that both the perceived usefulness and net benefit variables have a moderate impact. Specifically, perceived usefulness accounts for 57.4% of the variance, while net benefit explains 69.3% of it. The user

satisfaction variable shows the highest R^2 value, substantially impacting the analysis in the amount of 78.4% of the variance.

D. Hypothesis Testing

The bootstrapping output results present hypothesis testing for the relationship between variables. In this study, the hypothesis testing requires the t-statistic value to reach 1.96 at a significance level of 5% (0.05).

As shown in Table VII, most of the hypotheses proposed in this study are supported, except H2. Specifically, system quality significantly and positively affects perceived usefulness (t-value = 3.264, $p < 0.05$), which confirms H1. The effect of system quality on user satisfaction, however, is not significant (t-value = 0.938, $p < 0.05$), thereby rejecting H2. The effect of information quality on perceived usefulness is significant and positive (t-value = 2.302, $p < 0.05$) and user satisfaction is

significant and positive (t-value = 2.099, $p < 0.05$), which confirms H3 and H4. As predicted, service quality is positively associated with perceived usefulness (t-value = 7.514, $p < 0.05$) and user satisfaction (t-value = 5.743, $p < 0.05$), confirming H5 and H6. In addition, trust has a positive and significant effect on user satisfaction (t-value = 6.389, $p < 0.05$), and perceived usefulness has a positive and significant effect on user satisfaction (t-value = 5.655, $p < 0.05$), supporting H7 and H8. Perceived usefulness (t-value = 7.523, $p < 0.05$) and user satisfaction (t-value = 7.547, $p < 0.05$) also significantly and positively affect net benefits; therefore, H9 and H10 are confirmed. The research model accounts for 69.3% of the variance in the net benefits of using the village information system. The findings suggest that enhancing perceived usefulness and user satisfaction should be prioritized to maximize the net benefits derived from the village information system.

TABLE VII. HYPOTHESIS TESTING RESULT

Construct	R2	F2	Hypothesis	Path description	Path coefficient	T-value	P values	Result
Perceived Usefulness	0.574	0.038	H1	SYQ $\rightarrow$ PU	0.178	3.264	0.001	Supported
		0.021	H3	IQ $\rightarrow$ PU	0.159	2.302	0.021	Supported
		0.237	H5	SQ $\rightarrow$ PU	0.500	7.514	0.000	Supported
User Satisfaction	0.784	0.002	H2	SYQ $\rightarrow$ US	0.031	0.938	0.348	Not Supported
		0.013	H4	IQ $\rightarrow$ US	0.090	2.099	0.036	Supported
		0.112	H6	SQ $\rightarrow$ US	0.290	5.743	0.000	Supported
		0.187	H7	TR $\rightarrow$ US	0.311	6.389	0.000	Supported
		0.142	H8	PU $\rightarrow$ US	0.281	5.655	0.000	Supported
Net Benefits	0.693	0.240	H9	PU $\rightarrow$ NB	0.438	7.523	0.000	Supported
		0.247	H10	US $\rightarrow$ NB	0.444	7.547	0.000	Supported

V. RESULT

The findings of this study offer detailed insights into the factors that impact the success of information system in implementing village information system, achieved through the integration of the ISSM and TAM model. The study establishes seven research variables using a total of thirty-three proposed indicators. However, two indicators were excluded based on the loading factor assessment, resulting in a valid construct for further evaluation. The remaining thirty-one indicators support the reliability and validity assessment through both convergent and discriminant validity tests. The hypothesis is tested at a significance level of 5%. Additionally, the author evaluates the structural model by examining the f-square and R^2 values to determine the model's predictive power.

This section presents the validation of findings related to each research hypothesis from Table VII. This study shows that hypothesis 1 (H1), which states that system quality (SYQ) has a significant impact on perceived usefulness (PU), is consistent with previous research [19], [20]. This study shows that the village information system provides utility among village officials and civil servants who use it. Routine tasks require full functionality of the village information system. A technically adequate village information system proves their ability to complete tasks in collecting and managing village data as well as supporting services. However, the system quality derived from the village information system does not

affect user satisfaction (US) with the system (H2). This finding differs from previous studies [3], [21], [36] that identified system quality as an important construct influencing user satisfaction. The quality of the system is not sufficient to make users satisfied with the village information system. First, the village information system does not adequately meet user needs because the system is not adaptive to the actual work processes required and the features are insufficient. Second, the village information system is mandatory, so the output or work outcomes have a bigger effect on user satisfaction than the system's technical quality. To make user satisfaction, it's important to make the system more flexible, complete the features and ensure it meets their individual demands.

The information quality (IQ) from the village information system has a significant relationship to perceived usefulness (PU) and user satisfaction (US), which supports hypothesis 3 (H3) and hypothesis 4 (H4), similar to what studies [18], [19], [20] found. This research proves that the village information system provides complete, relevant information according to user needs, timely, easy to understand, and accurate. The information available in the village information system has been shown to enhance and facilitate user performance in terms of productivity and decision-making.

The service quality (SQ) of the village information system demonstrates a positive correlation with perceived usefulness (PU) and user satisfaction (US), with hypotheses H5 and H6

further reinforcing findings from studies [18], [19], [20]. This research proves that the technical and non-technical support from the village greeting team, as well as the service provider of the village information system, is capable of solving user or system operator problems very well, thereby increasing user satisfaction. The evidence also indicates that users of the village information system perceive it positively in terms of responsive and reliable support for their work processes and productivity, making the service useful.

Trust (TR) significantly predicts user satisfaction; therefore, hypothesis H7 is supported. These results are similar to the findings of studies [20], [33]. The village information system is used by village officials and civil servants of the Ministry of Village and Development of Disadvantaged Regions to build trust. H7 shows that system users trust and feel safe when completing tasks and submitting data using the village information system. User trust in the system increases its usage. As a result, fostering trust increases individual satisfaction and drives overall organizational efficiency.

The perceived usefulness significantly affects user satisfaction, supporting hypothesis H8. These results are similar to the findings of [3], [20]. The village information system improves performance effectiveness, work quality, and productivity and facilitates task execution. These results indicate that users or system operators believe that the village information system helps complete daily tasks and facilitates the management of village-related data and services.

Our results confirm that perceived usefulness (PU) and user satisfaction (US) are two main determinants of net benefits (NB). PU and US have a positive impact on NB, supporting hypotheses H9 and H10. These results support previous research [17], [20], [29]. These findings indicate that the net benefits of the village information system demonstrate that this system provides utility and a positive experience when used, which will ultimately lead to perceived usefulness and user satisfaction. The use of village information system is beneficial in daily tasks related to village data management. Village information system enable users to complete tasks efficiently and provide information as needed, which in turn enhances organizational performance and decision-making. Improvements in decision-making not only simplify operations but also encourage a more engaged community. This leads to a more informed and responsive village governance structure. As a result, the village is better prepared to adapt to changing circumstances and improve service delivery.

RQ1: What are the factors influencing the use of village information system within e-government initiatives?

We identified two main factors that influence the success of adopting a village information system: (1) the ISSM Model, which includes the quality of the village information system (system quality, information quality, and service quality), proving hypotheses 1-6 (H1-H6), and (2) trust, which proves hypothesis 7 (H7). These main factors will be mediated by perceived usefulness and user satisfaction, ultimately resulting in net benefits supporting hypotheses 8-10 (H8-H10). The ISSM Model and the TAM Model serve as ideal frameworks for village information system. Therefore, this research adds to existing knowledge by focusing on these factors using the

DeLone and McLean ISSM Model and the TAM, which are not often covered in studies about e-government adoption, particularly in village governance in developing countries. The gap in the literature indicates that there is a deeper understanding of how these factors interact and influence user acceptance of information systems in rural areas. By integrating insights from both models, this research aims to provide a comprehensive framework that can guide policymakers and practitioners in successfully implementing the village information system.

RQ2: What are the most significant factors affecting the implementation of the village information system?

The most factor affecting the implementation of the village information system is service quality, which positively influences perceived usefulness, referred to as hypothesis H5. Additionally, user satisfaction acts as a mediating factor that significantly influences net benefits, as outlined in hypothesis H10. Net benefits are essential for determining the overall success of the village information system, as they directly affect user engagement and the willingness to adopt the system's information. It is essential to prioritize improving service quality and perceived usefulness to fully realize the system's benefits.

A. Theoretical Implications

This study contributes to the progression of the theoretical foundation related to investigate the implementation of the village information system as a form of e-government in Indonesia, which provides a more in-depth understanding of governance and government services. This understanding can help identify the strengths and weaknesses of current practices, ultimately leading to more effective policies and improved service delivery to the community.

This study aims to analyze the factors influencing success in the village information system managed by the Ministry of Village and Development of Disadvantaged Regions, specifically by identifying the main influences on these factors. The study utilizes the DeLone and McLean model for information system success [7], [8], as well as the Technology Acceptance Model (TAM) [9], modifying it to assess perceptions of usefulness and user satisfaction. The variables examined in this research include system quality, information quality, service quality, trust, perceived usefulness, user satisfaction, and net benefits. Furthermore, the study's research model remains valid and applicable to other studies across various sectors.

B. Theoretical Implications

This study presents several practical implications for government decision-makers. It advocates for the use of information systems to enhance perceived usefulness and user satisfaction in the operation of village information system by integrating the ISSM and TAM frameworks. The main practical findings of the research are as follows:

1) Designing a system that meets user needs is essential, as user satisfaction has a direct impact on overall net benefits. This process involves automating routine tasks to enhance effectiveness, information satisfaction, and enjoyment.

Additionally, it is important to meet user expectations by utilizing digital signatures to streamline processes for administrative reports, as well as by incorporating an interactive dashboard powered by artificial intelligence. This dashboard should provide real-time analytics and insights, enabling users to make informed decisions promptly.

2) Developing features and functions that deliver valuable services to users is critical because the service quality directly influences perceived usefulness, particularly in automating routine tasks to enhance performance. This may include notifications regarding system maintenance and downtime, as well as features like discussion forums. Such functionalities can cultivate a sense of community among users to exchange insights and solutions.

3) Ministries and government agencies stand to gain net benefits from integrated e-government by adopting village information system. Consequently, it is crucial for adopters to prioritize user satisfaction, as they will be the ones operating the system regularly.

4) Decision-makers need to consider the resources and knowledge available to system users and ensure compatibility with other technologies.

VI. CONCLUSION

This study aims to identify the factors that contribute to the success of integrated village information system. The authors outline two main objectives: (1) to investigate the factors influencing the use of village information system within e-government initiatives and (2) to examine the most significant factors affecting the implementation of these systems. By integrating the Information Systems Success Model (ISSM) and the Technology Acceptance Model (TAM), this study addresses both the success factors of village information system and user acceptance through the measurement of seven latent variables: System Quality (SYQ), Information Quality (IQ), Service Quality (SQ), Perceived Usefulness (PU), Trust (TR), User Satisfaction (US), and Net Benefits (NB). The authors propose thirty-three hypotheses to achieve the study's objectives. The findings from this study are expected to offer helpful knowledge about how these factors interact and influence the overall effectiveness of village information system. By testing the proposed hypotheses, the research aims to contribute to the existing literature on information system success and enhance our understanding of user behavior in adopting technologies.

The identified hypotheses offer clues about the research objectives. The accepted factors include system quality, information quality, and service quality, which significantly influence perceived usefulness. Information quality, service quality, trust, and perceived usefulness also significantly affect user satisfaction. Additionally, perceived usefulness and user satisfaction have a significant impact on net benefits. The factor with the highest direct influence on net benefits is user satisfaction, and service quality also significantly influences perceived usefulness. However, system quality does not significantly affect user satisfaction. This suggests that while

system quality is important, it may not directly enhance the user experience as much as service quality and information quality do. Therefore, organizations should prioritize improving service and information quality to increase user satisfaction and ultimately drive better net benefits.

A. Limitations and Recommendations

This study has several limitations, the first being its dependence on a small sample size. Indonesia, as a developing country, faces challenges in the adoption of e-government, which can lead to variability in the data collected. As a result, these findings may not accurately represent the broader population. Therefore, the results of this study may not apply to regions with more advanced e-government initiatives. Further research should use a larger and more diverse sample to ensure more accurate analysis results. Additionally, including more villages from Indonesia in the sample will provide a more holistic view of how successful the village information system is. Secondly, we should integrate additional factors like training quality, task characteristics, technology, and cybersecurity. Furthermore, we should categorize trust based on both technology and e-government factors. Further research can also use other methods to investigate our model.

Recommendations for future research include considering additional factors that influence the success of e-government implementation in village information system. Furthermore, future studies should involve in-depth interviews with officials and experts regarding the village information system to better understand user experiences. These experiences can provide useful perspectives on the practical challenges and benefits associated with implementing these systems. A limitation of this research is that the conceptual model does not account for the indirect factors included in the ISSM and TAM model.

Recommendations for the Ministry of Village and Development of Disadvantaged Regions suggest that the research findings can serve as a guideline for decision-making regarding the development of the Village Information System. The ministry should conduct regular feature development, focusing on enhancing both system quality and information quality. Additionally, it is essential to provide training for civil servants and Village Officials within the Ministry. This training will enable them to operate the Village Information System more effectively and efficiently.

AUTHORS' CONTRIBUTION

Author contributions: Sutia Dwi Santika: Conceptualization, Methodology, Formal Analysis, Investigation, Writing – Original Draft. Tuga Mauritsius: Supervision, Project administration, Funding acquisition, Writing-Review & Editing.

ACKNOWLEDGMENT

The Ministry of Communications and Digital Aspiration Scholarship funded this research. The authors thank the Ministry of Village and Development of Disadvantaged Regions and all respondent participants for their useful research assistance.

REFERENCES

- [1] D. Mutiarin, M. Yusuf, M. Lega, and A. Habibullah, "Agile bureaucracy in the digital age: assessing the public service delivery in Jambi City," *International Journal of Public Administration in the Digital Age*, vol. 11, no. 1, pp. 1–17, Jan. 2024, doi: 10.4018/IJPADA.356405.
- [2] G. Chandrachoodan, R. Rajendran, and R. P. Rajendran, "Conceptual framework for project management for e-governance service development," *International Journal of Professional Business Review*, vol. 7, no. 4, pp. 1–17, Nov. 2022, doi: 10.26668/businessreview/2022.v7i4.e754.
- [3] D. Kala, D. S. Chaubey, R. K. Meet, and A. S. Al-Adwan, "Impact of user satisfaction with e-government services on continuance use intention and citizen trust using TAM-ISSM framework," *Interdisciplinary Journal of Information, Knowledge, and Management*, vol. 19, pp. 1–22, 2024, doi: 10.28945/5248.
- [4] J. N. Shofa, "Support the achievement of the SDGs, the Ministry of Village develops village information systems / Dukung pencapaian SDGS, Kemdes kembangkan sistem informasi desa." Accessed: Oct. 17, 2024. [Online]. Available: <https://www.beritasatu.com/news/697595/dukung-pencapaian-sdgs-kemdes-kembangkan-sistem-informasi-desa>
- [5] M. Hafel, J. Jamil, M. Umasugi, and Anfas, "Challenges of e-government implementation in the region archipelago characteristics," *Jurnal Analisis Kebijakan dan Pelayanan Publik*, vol. 8, no. 1, pp. 44–58, 2022.
- [6] B. Pramono Rusadi and A. Fitri Rahmadany, "Analyzing supporting and inhibiting factors in the optimization of e-government in Pontianak city," *Journal of Computer Science and Technology Studies*, pp. 22–31, Oct. 2023, doi: 10.32996/jcsts.
- [7] W. H. DeLone and E. R. McLean, "Information Systems Success: The Quest for the Dependent Variable," *Information Systems Research*, vol. 3, no. 1, pp. 60–95, 1992, doi: 10.1287/isre.3.1.60.
- [8] W. H. DeLone and E. R. McLean, "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update," in *Journal of Management Information Systems*, M.E. Sharpe Inc., 2003, pp. 9–30, doi: 10.1080/07421222.2003.11045748.
- [9] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Q*, vol. 13, no. 3, pp. 319–339, 1989, doi: 10.2307/249008.
- [10] President of Indonesia, "Law of the Republic of Indonesia Number 6 of 2014 / Undang-Undang Republik Indonesia Nomor 6 Tahun 2014," Art. no. UU Nomor 6 Tahun 2014, Jan. 2014.
- [11] F. Wijayanto and A. Ridwan, "Improvement of the Village Development Index (VDI) through community-based rural development programs / Peningkatan Indeks Desa Membangun (IDM) melalui program pembangunan pedesaan berbasis komunitas," *Jurnal Pengabdian West Science*, vol. 03, no. 02, pp. 209–219, Feb. 2024.
- [12] A. E. Ifitah and P. Wibowo, "The influence of village funds, village fund allocation, and village original income on the building village index in Gowa regency / Pengaruh dana desa, alokasi dana desa, dan pendapatan asli desa terhadap indeks desa membangun di kabupaten Gowa," *Jurnal Ilmu Pemerintahan Widya Praja*, vol. 48, no. 1, pp. 17–36, Jun. 2022, doi: 10.33701/jipwp.v48i1.2331.
- [13] D. A. Rochman and I. U. Choiriyah, "The impact of local governance on the development of smart villages in Indonesia / dampak tata kelola lokal terhadap pengembangan desa pintar di Indonesia," *Jurnal Pemberdayaan Ekonomi dan Masyarakat*, vol. 1, no. 1, p. 17, Jun. 2024, doi: 10.47134/jpem.v1i1.321.
- [14] A. P. E. Susilowati, R. Rachmawati, and R. Rijanta, "Smart village concept in Indonesia: ICT as determining factor," *Heliyon*, vol. 11, no. 1, pp. 1–18, Jan. 2025, doi: 10.1016/j.heliyon.2025.e41657.
- [15] Y. Li and H. Shang, "Service quality, perceived value, and citizens continuous-use intention regarding e-government: empirical evidence from China," *Information and Management*, vol. 57, no. 3, pp. 1–15, Apr. 2020, doi: 10.1016/j.im.2019.103197.
- [16] Rulinawaty et al., "Investigating the influence of the updated DeLone and McLean information system (IS) success model on the effectiveness of learning management system (LMS) implementation," *Cogent Education*, vol. 11, no. 1, pp. 1–16, 2024, doi: 10.1080/2331186X.2024.2365611.
- [17] D. Al-Fraihat, M. Joy, R. Masa'deh, and J. Sinclair, "Evaluating e-learning systems success: An empirical study," *Comput Human Behav*, vol. 102, pp. 67–86, Jan. 2020, doi: 10.1016/j.chb.2019.08.004.
- [18] M. Al-Okaily, M. Al-Kofahi, F. S. Shiyab, and A. Al-Okaily, "Determinants of user satisfaction with financial information systems in the digital transformation era: insights from emerging markets," *Global Knowledge, Memory and Communication*, 2023, doi: 10.1108/GKMC-12-2022-0285.
- [19] A. Al-Okaily, M. Al-Okaily, T. Ai Ping, H. Al-Mawali, and H. Zaidan, "An empirical investigation of enterprise system user satisfaction antecedents in Jordanian commercial banks," *Cogent Business and Management*, vol. 8, no. 1, 2021, doi: 10.1080/23311975.2021.1918847.
- [20] I. Hidayat Ur Rehman, J. Ali Turi, J. Rosak-Szyrocka, M. N. Alam, and L. Pilař, "The role of awareness in appraising the success of e-government systems," *Cogent Business and Management*, vol. 10, no. 1, pp. 1–18, Mar. 2023, doi: 10.1080/23311975.2023.2186739.
- [21] D. Ariyanto, A. A. Dewi, H. T. Hasibuan, and R. B. Paramadani, "The success of information systems and sustainable information society: Measuring the implementation of a village financial system," *Sustainability (Switzerland)*, vol. 14, no. 7, pp. 1–18, Apr. 2022, doi: 10.3390/su14073851.
- [22] W. M. Al-Rahmi et al., "Validation of an integrated IS success model in the study of e-government," *Mobile Information Systems*, vol. 2022, pp. 1–16, 2022, doi: 10.1155/2022/8909724.
- [23] H. Jo and D. H. Park, "Mechanisms for successful management of enterprise resource planning from user information processing and system quality perspective," *Sci Rep*, vol. 13, no. 1, Dec. 2023, doi: 10.1038/s41598-023-39787-y.
- [24] A. K. Abdulkareem and R. M. Ramli, "Does digital literacy predict e-government performance an extension of delone & mclean information system success model," *Electronic Government, an International Journal*, vol. 17, no. 1, pp. 466–493, 2021, doi: 10.1504/eg.2021.10034963.
- [25] W. Setiawan Wibowo, A. Fadhil, D. Indra Sensuse, S. Lusa, P. Adi Wibowo Putro, and A. Yulfitri, "Pinpointing Factors in the Success of Integrated Information System Toward Open Government Data Initiative: A Perspective from Employees," *IJACSA) International Journal of Advanced Computer Science and Applications*, vol. 14, no. 1, pp. 94–109, 2023, doi: 10.14569/IJACSA.2023.0140111.
- [26] S. Nookhao and S. Kiattisin, "Achieving a successful e-government: Determinants of behavioral intention from Thai citizens perspective," *Heliyon*, vol. 9, no. 8, pp. 1–21, Aug. 2023, doi: 10.1016/j.heliyon.2023.e18944.
- [27] N. M. M. Anggreni, D. Ariyanto, H. B. Suprasto, and A. A. N. B. Dwirandra, "Successful adoption of the village's financial system," *Accounting*, vol. 6, no. 6, pp. 1129–1138, 2020, doi: 10.5267/j.ac.2020.7.005.
- [28] K. Celik and A. Ayaz, "Validation of the Delone and McLean information systems success model: a study on student information system," *Educ Inf Technol (Dordr)*, vol. 27, no. 4, pp. 4709–4727, May 2022, doi: 10.1007/s10639-021-10798-4.
- [29] V. Genia, I. Eitiveni, M. R. Tirtayasa, W. S. Wibowo, T. F. Nugraha, and T. Nabarian, "Unraveling the key factors of successful ERP post implementation in the Indonesian construction context," *Interdisciplinary Journal of Information, Knowledge, and Management*, vol. 18, pp. 513–545, 2023, doi: 10.28945/5177.
- [30] Y. Li and J. Wang, "Evaluating the impact of information system quality on continuance intention toward cloud financial information system," *Front Psychol*, vol. 12, pp. 1–12, Aug. 2021, doi: 10.3389/fpsyg.2021.713353.
- [31] A. I. Alkrajji, "Citizen satisfaction with mandatory e-government services: a conceptual framework and an empirical validation," *IEEE Access*, vol. 8, pp. 117253–117265, 2020, doi: 10.1109/ACCESS.2020.3004541.
- [32] J. C. Valencia, D. F. Morante, R. Santa, and T. Tegethoff, "Does trust have an impact on system and operational effectiveness? The implementation of e-government in Colombia," *Electronic Government*,

- an International Journal, vol. 15, no. 1, pp. 241–260, Jan. 2019, doi: 10.1504/eg.2019.10016082.
- [33] S. K. Sharma and M. Sharma, “Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation,” *Int J Inf Manage*, vol. 44, pp. 65–75, Feb. 2019, doi: 10.1016/j.ijinfomgt.2018.09.013.
- [34] T. Althinayyan and M. Alojail, “Enhancing user experience and sustainability in open banking using PLS-SEM,” *Sustainability* (Switzerland), vol. 16, no. 22, Nov. 2024, doi: 10.3390/su16229656.
- [35] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, “When to use and how to report the results of PLS-SEM,” Jan. 14, 2019, Emerald Group Publishing Ltd. doi: 10.1108/EBR-11-2018-0203.
- [36] J. N. Amanda, W. A. Winarno, and A. T. Agustini, “Assessing the success of village asset management systems: An employee perspective,” *The Electronic Journal of Knowledge Management*, vol. 21, no. 3, pp. 174–190, 2023, [Online]. Available: www.ejkm.com
- [37] J. Wang, W. Zhang, P. Jiang, S. Zhao, and R. Evans, “The role of mGovernment applications in building trust during public crises: evidence from the covid-19 epidemic,” *Heliyon*, vol. 10, no. 12, pp. 1–16, Jun. 2024, doi: 10.1016/j.heliyon.2024.e32476.
- [38] S. Laumer, C. Maier, and T. Weitzel, “Information quality, user satisfaction, and the manifestation of workarounds: a qualitative and quantitative study of enterprise content management system users,” *European Journal of Information Systems*, vol. 26, no. 4, pp. 333–360, Jul. 2017, doi: 10.1057/s41303-016-0029-7.
- [39] A. A. Pane and F. A. Simanjuntak, “Factors influencing Taxpayers intention to use online tax filing system (E-filing): a study of Indonesian Taxpayers,” *Journal of Tax Reform*, vol. 10, no. 2, pp. 228–239, 2024, doi: 10.15826/jtr.2024.10.2.166.
- [40] S. B. Surya, S. K. Gurung, S. B. Jung Bahadur Rana, and B. R. Dhungana, “E-governance, citizen satisfaction and net benefits: the moderating effect of digital divide,” *Cogent Business and Management*, vol. 11, no. 1, pp. 1–22, 2024, doi: 10.1080/23311975.2024.2402512.

APPENDIX

APPENDIX A: MEASUREMENT ITEMS

Constructs and Source Measures	Items	Measured
System Quality; [7], [8], [21], [26], [37] Easy To Use; Reliability; Response time; Interactivity; Flexibility.	SYQ1	The village information system is easy to use.
	SYQ2	The village information system is reliable.
	SYQ3	The village information system providing a quick response time.
	SYQ4	The village information system is interactive.
	SYQ5	The village information system is flexible.
Information Quality; [7], [8], [21], [38] Completeness; Relevance; Timeliness; Understandability; Accuracy.	IQ1	The information in the village information system is complete.
	IQ2	The information in the village information system is relevant to my needs and work.
	IQ3	The information in the village information system is current and timely.
	IQ4	The information in the village information system is easy to understand.
	IQ5	The information in the village information system is accurate.
Service Quality; [8], [26], [38] Assurance; Reliability; Tangible; Responsiveness; Empathy.	SQ1	The services provided of the village information system has staff who have good knowledge.
	SQ2	The services provided of the village information system is reliable.
	SQ3	The services provided of the village information system is Tangible.
	SQ4	The services provided of the village information system can quickly address my needs.
	SQ5	The services provided of the village information system is empathy.
Trust; [21], [27], [39] Safe; Convenience; Trusted.	TR1	I believe the village information system can provide data security.
	TR2	I believe that using the village information system can provide convenience in transactions.
	TR3	The village information system can be trusted.
Perceived Usefulness; [9], [19], [31] Job Effectiveness; Quality of Work; Productivity; Addresses My Needs; Makes Job Easier.	PU1	The use of the village information system improves my performance.
	PU2	The use of the village information system improves the quality of my work.
	PU3	The use of the village information system makes my work faster.
	PU4	The use of the village information system meets my needs.
	PU5	The use of the village information system makes my work easier.
User Satisfaction; [7], [8], [15], [21] Effectiveness; Information Satisfaction; Enjoyment; Meet the expectations; Overall satisfaction.	US1	I feel that the village information system effectively meets the needs.
	US2	I feel that the village information system delivers satisfactory information.
	US3	I feel that the village information system is enjoyable to use.
	US4	I feel that the village information system meets my expectations.
	US5	Overall, I am satisfied with the village information system.
Net Benefits; [8], [21], [38], [40]. Cost-Saving; Time savings; Enhancement of communication and collaboration; Information Retrieval; Job Performance.	NB1	The village information system saves costs.
	NB2	The village information system saves time.
	NB3	The village information system enables easy and efficient communication.
	NB4	The village information system facilitates information retrieval.
	NB5	The village information system provides comfort in carrying out my work.

APPENDIX B: VARIANCE INFLATION FACTOR (VIF)

Construct	IQ	NB	PU	SQ	SYQ	TR	US
IQ			2.890				2.982
NB							
PU		2.594					2.575
SQ			2.468				3.483
SYQ			1.935				2.009
TR							2.398
US		2.594					