



# Article The Success of Information Systems and Sustainable Information Society: Measuring the Implementation of a Village Financial System

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Abstract: The purpose of this study is to advance the information society literature research by examining and developing the adoption of information systems within the Village Financial System (SISKEUDES) to improve the sustainable information society (SIS). The models include the DeLone and McLean model and trust theory, which involves eight variables: system information quality, information quality, service quality, trust in government organizations, trust in technology, usage, user satisfaction, net benefits, and sustainable information society. A survey questionnaire was used, and data was collected from SISKEUDES users in Bali, Indonesia, which were statistically analyzed using Partial Least Square (PLS) to understand the phenomena of Information System (IS) adoption and sustainable information society. The research findings reveal that system information quality, information quality, and trust in government organizations do not have such an effect. The usage and user satisfaction variables have a significant effect on net benefits, and they have a significant effect on the sustainability of the SIS. This study's findings can provide e-government practitioners with deeper insights into how to overcome problems with user satisfaction and increase trust in mandatory e-government services in realizing SIS and the "smart village".

Keywords: Delone & Mclean; trust theory; net benefits; sustainable information society

# 1. Introduction

This study aims to analyze impact of the IS Success Model and enhance a sustainable information society. The Sustainable Information Society (SIS) is a new phase of the development of the information society where advances in computer technology and communication technology (ICT) are the main levers of sustainability [1]. A sustainable society is one that is considered to be economically viable, environmentally sound, and socially responsible [2]. SIS contributes to revolutionary changes in the daily lives of individuals, businesses, services and public administration [1]. Therefore, it is necessary to take a multidimensional approach to the development of a sustainable information society in order to achieve sustainable development, both in terms of the social, economic, environmental and legal dimensions, and the governance of society, business, and government.

Studies show that governments or countries with high levels of development of a sustainable information society are countries that have high levels of social and economic growth [3]. SIS can be achieved if people consciously use ICT in carrying out their daily activities. ICT can be approached from two perspectives, namely ICT as an industry and ICT as a tool. As an industry, ICT has become an economic driver in the hardware, software, telecommunications, and consulting services sectors and helps to improve and promote environmental sustainability [4]. ICT as a tool is used to change and improve business



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**Copyright:** © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). performance, cost efficiency, and gain a positive image [5] for business and governance through e-business and e-government.

The development of e-government by creating "smart cities" and "smart villages" aims to improve public service capabilities, governance, transparency, and accountability of public administration [6,7] and participate in the global economy [8]. One way to realize a "smart village" in Indonesia is the adoption of the Village Financial System (SISKEUDES). This system is a form of e-government that refers to the use of information technology (IT) by village governments to improve access and delivery of information and services to citizens, business partners, professionals, other organizations, and management of financial reporting [9] in government through internet-based financial program applications.

The Province of Bali began introducing SISKEUDES in 2016, and it began to be implemented by districts/municipalities in the province in 2017. In the Province of Bali, the Districts of Denpasar, Badung, Gianyar, and Tabanan—known collectively as Sarbagita—are part of a national strategic region whose territory and spatial planning are prioritized because, nationally speaking, they have a very important influence on state sovereignty, state defense and security, economy, social and cultural matters, and the environment, including areas that have been designated as world heritage sites [10]. Because of the importance of the Sarbagita area, it can serve as a role model for the implementation of SISKEUDES. The adoption of SISKEUDES by utilizing ICT enables village governments to be more productive and innovative while reducing costs, improving service effectiveness, and increasing village government decision-making efficiency.

The motivation behind this research is to evaluate the success of IS adoption in SISKEUDES from the user's point of view. First, this research develops previous study of Information Systems Success Models such as [9,11–13]. The weakness of the success model of [13] sees the success of ICT adoption only in terms of individual performance and organizational performance and then modifies these into net benefits [11]. Meanwhile, other research [9] examines the success of technology adoption in terms of it having an impact on village governance. Previous research has only seen the application of ICT as contributing positively to the sustainability of business and economic processes [14] and environmental sustainability [15]. Meanwhile, reference [16] explains that sustainability comprises three dimensions, namely environmental, social, and economic performance. Measurement of the success of technology adoption should be related to the realization of the Sustainability Information Society (SIS) [1,17], which consists of four dimensions, namely ecological sustainability, economic sustainability, sociocultural sustainability, and political sustainability.

Second, the models previously widely used in the literature, such as [9,11,12] have not included trust in government and trust in technology nor the impact of successful ICT adoption in the process of realizing SIS in their research model. Modeling by including trust in government and trust in technology [18–20] and the impact of successful ICT adoption on SIS is important in order to measure the success of the adoption of SISKEUDES in Bali. Measurement of the success of ICT adoption with SIS is important for rural communities because of their communal nature and because trust is the key foundation of the community. In addition, village and neighborhood governments in Bali are regulated by traditional village rules called *pakraman* which are based on the Balinese *Tri Hita Karana* philosophy [21]. The concept of *Tri Hita Karana* is a significant factor in the realization of harmonious relationships between humans, between humans and nature, and between humans and their God [22]. Therefore, if the adoption of ICT is in accordance with the characteristics of the people in Bali, it can be used as a lever for transparency and sustainable village development.

#### 2. Literature Review and Hypotheses Development

The study of the impact of ICT on SIS is in accordance with the theoretical concepts Technology-Organization-Environment (TOE) [4], Transaction Cost Theory [23], Resource-Based View Theory [24] and Institutional Theory [25,26]. Researchers view that

the adoption of ICT can encourage the achievement of economic and environmental performance from a different perspective, referring to the perspective and theory used. When it comes to e-government, there is Public Value Theory [27] which states that public services aim to create added value for the people they serve. The creation of the benefits of public service from the economy, social values, democratic principles and human rights [28] is the added value of services with the existence of e-government. SISKEUDES is a tool to realize SIS, a step to enter society 5.0, in terms of providing data that is open to the public [29,30]. Openness of data at the village level is realized by reporting data transparently to the public to be used by the central government and other village officials in decision making, as well as increasing public trust.

Several studies have assessed the success of e-government [7,31] as many citizens demand more and better services [9,32] with internet media, so it will improve governance. Therefore, understanding which factors best assess the success of e-government is a complex endeavor [11,33], especially because government websites are designed to offer a wide variety of service areas [18–20] and the acceptance of ICT by various members of society and by varying systems.

System quality is defined as the degree to which system functions can address customer requirements easily and with minimal problems [11,33]. Examples of functions in the system including user interface consistency, ease of use, response rate, and program management can best address customer requirements. High system quality is a desirable characteristic of ICT-based information systems [9], thus enabling the government to provide better services [33,34].

The impact of system quality on usage and user satisfaction is significant if users experience a certain level of ease of navigation through the website [35,36], meeting expectations for improvement in using the system [37]. Interestingly, the effect of system quality on satisfaction will decrease if users have high proficiency and understand the internet [36,38].

SISKEUDES is used to provide added value for services and accountability for the allocation of funds from the central government to villages. The quality of the SISKEUDES information system, which has been created by the Financial and Development Supervisory Agency (Indonesian acronym: BPKP), is certainly used to create added value for services and increase accountability and transparency of village government reporting. SISKEUDES will make it easier for users and increase user satisfaction in being responsible for village finances.

#### **Hypothesis 1 (H1).** *System quality effects usage.*

#### Hypothesis 2 (H2). System quality has an effect on user satisfaction.

Information quality is defined as the extent to which the information provided best suits customer needs [35], usually based on measures of how accurate, relevant, timely, and complete the information is in terms of meeting those needs [11]. Searching for information through e-government websites is the most common reason for their use [20,33], mainly because citizens cannot physically observe and experience the transactions taking place [7,39]. The better the content, the better the perception of the website [19]. Previous studies have agreed with this definition of information quality, especially regarding how the information provided can meet user needs [40,41].

Information quality plays an important role in user satisfaction [7], depending on the user's overall goal that he or she seeks to achieve [40]. Because taxpayers must pay taxes correctly, they must ensure that all calculations are correct [38]. Therefore, if the information provided is complete, reliable, relevant [9,40], responsive, and timely [42], users will experience satisfaction with using the system because the information helps them to use the system well [39].

The SISKEUDES application was created by BPKP so that village fund reporting can be submitted to the community and the central government in an accurate, timely, transparent and relevant manner. The ICT-based SISKEUDES application will increase user usage and satisfaction:

#### **Hypothesis 3 (H3).** *Information quality has an effect on usage.*

#### **Hypothesis 4 (H4).** *Information quality has an effect on user satisfaction.*

Service quality is an important factor because of timeliness, accuracy, and reliability of responses [11] to service requests, willingness to provide services, and personal attention to services provided [9,43]. Service quality is a determinant of satisfaction because e-government is expected to provide enhanced services and simplify the handling of user problems [9,31].

The SISKEUDES application can increase responsiveness, assurance, and transparency. This of course can increase the usage by, and satisfaction of, users of the application. SISKEUDES certainly makes it easier to prepare financial reports compared to manuals.

# **Hypothesis 5 (H5).** *Service quality has an effect on usage.*

#### **Hypothesis 6 (H6).** *Service quality has an effect on user satisfaction.*

The relationship between trust and usage and user satisfaction is very important in the context of electronic data interchange (EDI) [37,44]. This is because the user is not in a position to touch, feel, and physically recognize the object being traded. This requires them to rely on detailed and clear information to decide what to do during online exchanges [39,45]. Trust in government and technology drives usage and user satisfaction [46]. The more citizens trust the e-government website, the more it will be used and the more user satisfaction will increase. Trust in e-government refers to individuals' beliefs and their expectations about e-government [47,48].

Trust in e-government includes technical aspects and government institutions and risks. Trust in the government as an application provider (BPKP), and trust in technology, affect the usage and user satisfaction of the SISKEUDES application used by village officials.

Hypothesis 7 (H7). Trust in government affects usage.

**Hypothesis 8 (H8).** *Trust in government has an effect on user satisfaction.* 

**Hypothesis 9 (H9).** *Trust in technology affects usage.* 

Hypothesis 10 (H10). Trust in technology affects user satisfaction.

The more users perceive the usability to be good, the easier it is for citizens to appreciate and justify the overall value of the online system [49], and of course, it makes it easier to see the benefits of investing in an ICT-based system. The success of e-government also depends on user satisfaction and the use of the system by its users [45,50]. In this case, satisfaction with e-government websites measures the psychological or affective state of citizens due to a cognitive assessment of their experience with the website. Certain benefits will occur if the users have a positive experience, and feel satisfaction, when using it [50,51]. Thus, positive or negative net benefits from the perspective of system stakeholders will also be influenced by user usage and satisfaction [11,52].

Intensive usage of, and user satisfaction with, the SISKEUDES program application will greatly increase the sense of benefit when compared to the level of investment, maintenance and operation costs of ICT-based information systems. SISKEUDES requires a unique design because the nature of the village government is different from that of district, municipal or provincial government and profit-oriented companies or nongovernmental organizations.

#### Hypothesis 11 (H11). Usage affects net benefits.

#### **Hypothesis 12 (H12).** User satisfaction has an effect on net benefits.

Research by [53] highlights the fact that the current phenomenon of sustainability can best be achieved with the growth of technology. References [54,55] assess the relationship between technology and sustainability as being ambivalent. Although they argue that technology adoption is considered a sustainability problem and the reason for various sustainability problems, it is also directly considered to be a solution or at least one feature of the solution of sustainability problems. Reference [56] explains that technology can be used to limit the polluting and distortion of the environment [15], but it can also create and contribute to the creation of very different threats to sustainable development. The same thing is also expressed by [57] who state that long-term adoption of Green IT can contribute to environmental performance.

This, of course, will also happen if the benefits of adopting SISKEUDES will support the creation of SIS. If SIS is realized, it will be a lever for sustainable development in the village, and a "smart village" will be formed. This is important because most areas in Indonesia, especially in Bali, are rural.

#### Hypothesis 13 (H13). The perceived net benefits have an effect on the sustainable information society.

#### 3. Materials and Methods

This study aims to examine the success of the adoption of a financial information system at the village government level named SISKEUDES. This application was developed by representatives of BPKP from West Sulawesi Province and Mamasa District as a pilot project in order to improve the quality of village financial governance [9]. On 13 July 2015, the development of SISKEUDES was taken over by the Deputy for Supervision of Regional Financial Administration at the Central BPKP (Indonesia's National Government Internal Auditor) in Jakarta [58]. The use of SISKEUDES is intended for all village governments in Indonesia, including the Province of Bali.

The research data were collected using a questionnaire. The measurement of respondents' answers about their attitudes, opinions, and perceptions was conducted using four-point Likert scale questions (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Questionnaires as a form of primary data collection were delivered directly to the respondents. This direct delivery of questionnaires was a form of appreciation and respect for village officials who promote a sense of kinship and togetherness. Research respondents were village officials in the City of Denpasar, and the Districts of Badung, Gianyar and Tabanan (collectively known as Sarbagita) in the Province of Bali in Indonesia.

The selection of only the Sarbagita area as the research sample was based on [10] which states that Sarbagita is a national strategic region whose territory and spatial planning are prioritized because it has a very important influence at the national level on sovereignty, defense, security, economy, and environmental, social and cultural matters, and it includes areas that have been designated as world heritage sites. In addition, managing large funds must be supported by the appropriate and optimal use of SISKEUDES to realize transparency and accountability in village financial management that can be accounted for by the Village Consultative Body (BPD) and the central government. Therefore, it is important to evaluate the success of using SISKEUDES in the Sarbagita area, and it is also necessary to assess the success of the adoption of the IT used by village officials and the relationship between the formation of a sustainable information society.

The measurement of latent variables using questions and statements was adopted from previous research [11,42,45,56,59] and developed by looking at other research [7,9]. The research instrument was validated in advance according to e-government research in Indonesia. The determination of research respondents refers to the Regulation of the Minister of Home Affairs of the Republic of Indonesia No. 20 of 2018 concerning Village

Financial Management. In addition, the research sample was determined using a nonprobability sampling technique, specifically purposive sampling, namely (1) SISKEUDES users including the village secretary, head of financial affairs, and SISKEUDES operators. Village financial reports, which are a form of accountability for government performance, are produced using the application by the village head, village secretary, and head of financial affairs. Meanwhile, the SISKEUDES operators are tasked with entering data as well as completing daily tasks related to village financial management. (2) The sample selected is subdistrict that receives the most village funds in the Sarbagita area. The purposive sampling resulted in 36 village governments. We select three of SISKEUDES users in each village, including the village secretary, head of financial affairs, and SISKEUDES operators. A total of 108 research samples were sent out to respondents; finally, the number of questionnaires processed was 94 respondents as served in Table 1. The 87.03% response rate is strong and meets an acceptable standard because it delivered directly to the respondents. (3) Smart PLS modeling works well with a sample size of 50 to 100 respondents [60].

Table 1. Population data and sampling.

Notes	Amount	Percentage
Size of research population	324	100%
Number of parties who do not use SISKEUDES	216	67%
Number of research samples sent who were the questionnaire	108	33%
Number of questionnaires that were not returned	4	1%
Number of questionnaires which were analyzed incompletely	10	3%
Number of questionnaires processed	94	29%
Useable response rate	87.03%	

Partial Least Square (Smart PLS) is used for hypothesis testing. Smart PLS is a variancebased structural analysis (SEM) that can simultaneously measure and test structural models [61]. Analysis using PLS is carried out three stages of testing, namely analysis of the outer model, analysis of the inner model, and hypothesis testing [62]. The analysis of the outer model is assessed by three tests, namely convergent validity, discriminant validity and composite reliability. The inner model analysis is evaluated using R<sup>2</sup> evaluation, predictive relevance, and estimation of path coefficients. The results of hypothesis testing can be seen from the t-statistical value and probability value with a significance level ( $\alpha$ ) of 5%. The steps of structural equation modeling [62] are (1) designing a measurement model (outer model), (2) structural design (inner model), (3) constructing a path diagram, and (4) converting a path diagram into a system of equations. The modeling and path diagram of the inner model can be seen in Figure 1.



**Figure 1.** Modeling and the path diagrams of the inner model. Note: \* = Sig 5% (\* p < 0.05). Exogenous Construct: SIQ = System Information Quality; IQ = Information Quality; SQ = Service Quality; TIG = Trust in Government; TIT = Trust in Technology. Endogenous Construct: U = Usage; US = User Satisfaction; NB = Net Benefits; SIS = Sustainability Information Society.

# 4. Result

The distribution of the questionnaires and their rate of return after the preliminary analysis of the tests were carried out is shown in Table 1. Table 1 shows that there were four (4) questionnaires that were not returned because employees were on leave due to the impact of COVID-19. There were ten (10) questionnaires that were returned but were incomplete and did not meet the requirements for filling them out. The characteristics of respondents consisting of the village secretary, head of financial affairs and SISKEUDES operators include gender, age and last level of education.

Information regarding the characteristics of research respondents is presented in Table 2. The characteristics of research respondents were assessed by gender, age and last level of education.

The percentage of respondents who are male (54%) is higher than female respondents (46%). There is research [63] that has obtained empirical evidence that the role cycle between jobs for men is different, where women have multiple roles. The role of women in Bali is other than career women, household obligations, and Balinese traditional obligations [64]. This reduces the involvement of women in their work, while men are more able to develop their potential for activities in building their careers.

There are 68% of the respondents who are in the 26–45 years age range, with 41% between 26 and 35 years and 27% between 36 and 45 years. This reflects that most of the respondents are of an age when people tend to follow technological advances so that they can use information systems properly and smoothly.

The last level of education of the respondents consisted of people with higher education (53%) and high school education (47%). This reflects that most respondents have a very good level of education, which indicates that respondents have good knowledge and competence to operate technology optimally.

Data processing using SmartPLS was preceded by an analysis of missing or incomplete data, selection bias, nonresponse bias, multicollinearity, and general method bias. This needed to be done to increase the validity of the research results [62]. Validity testing

was carried out by distributing 40 questionnaires to students of the Master of Accounting program. The test results are presented in Table 3. (Survey items used in this study in Appendix A).

Table 2. Characteristics of respondents.

Details	Village Secretary	Head of Financial Affairs	SISKEUDES Operator	Total	Percentage
Gender:					
Male	26	6 19		51	54%
Female	5	25	13	43	46%
Total	31	31	32	94	100%
Age:					
<26	0	1	5	6	6%
26-35	9	7	23	39	41%
36-45	15	6	4	25	27%
>45	7	17	0	24	26%
Total	31	31	32	94	100%
Last education:					
Senior High School	13	21	10	44	47%
Associate	2	1	1	4	4%
Bachelors	15	8	21	44	47%
Masters	1	1	0	2	2%
Total	31	31	32	94	100%

 Table 3. Instrument validity and reliability test results.

Constructs and Source Measures	Indicator Measures	Average Score	Correlation Item	Result	Cronbach's Alpha	Result
System Information Quality (SIQ) [9,11,50]; Accessibility; Flexible; Functionality	SIQ1 SIQ2 SIQ3	3.468 3.383 3.372	0.897 0.892 0.892	Valid Valid Valid	0.867	Reliable
Information Quality (IQ) [9,11,50]; Relevant; Accuracy; Timelines; Trusty	IQ1 IQ2 IQ3 IQ4	3.383 3.340 3.404 3.319	0.780 0.892 0.812 0.814	Valid Valid Valid Valid	0.814	Reliable
Service Quality (SQ) [9,11,50]; Functionality; Reliable; Security; Responsiveness; Interactivity	SQ1 SQ2 SQ3 SQ4 SQ5	3.415 3.362 3.404 3.351 3.404	0.697 0.803 0.781 0.741 0.733	Valid Valid Valid Valid Valid	0.797	Reliable
Trust in Government (TIG) [45]; Best interest; Truthful, honest and genuine; Competent and effective	TIG1 TIG2 TIG3 TIG4	3.309 3.404 3.404 3.340	0.752 0.876 0.874 0.874	Valid Valid Valid Valid	0.863	Reliable
Trust in Technology (TIT) [45]; Feel comfortable; Adequately protect; Safe for me; Robust and safe environment	TIT1 TIT2 TIT3 TIT4	3.383 3.351 3.394 3.394	0.924 0.848 0.873 0.886	Valid Valid Valid Valid	0.893	Reliable
Usage (U) [50,65]; Duration of use; Frequency of usage	U1 U2	3.489 3.404	0.951 0.935	Valid Valid	0.871	Reliable
User Satisfaction (US) [11,50,66]; Usefulness; Quality of information; Meet the expectations; Easy to apply; Overall satisfaction	US1 US2 US3 US4 US5	3.436 3.415 3.362 3.489 3.468	0.818 0.822 0.793 0.791 0.796	Valid Valid Valid Valid Valid	0.863	Reliable

Constructs and Source Measures	Indicator Measures	Average Score	Correlation Item	Result	Cronbach's Alpha	Result
User Caticfaction (UC) [11 50 (())	US1	3.436	0.818	Valid		
User Satisfaction (US) [11,50,66];	US2	3.415	0.822	Valid		
Usefulness; Quality of information;	US3	3.362	0.793	Valid	0.863	Reliable
Meet the expectations; Easy to apply;	US4	3.489	0.791	Valid		
Overall satisfaction	US5	3.468	0.796	Valid		
	NB1	3.362	0.868	Valid		
Net Benefits (NB) [11,50,67]; Time	NB2	3.426	0.795	Valid		
saving; Performance; Effective;	NB3	3.404	0.802	Valid	0.882	Reliable
Improving; Increased knowledge	NB4	3.340	0.766	Valid		
	NB5	3.383	0.901	Valid		
	SIS1	3.021	0.713	Valid		
	SIS2	2.968	0.712	Valid		
	SIS3	3.000	0.783	Valid		
	SIS4	3.128	0.744	Valid		
Sustainability Information Society	SIS5	3.287	0.671	Valid		
(SIS) [56] Consists of Four Dimensions	SIS6	3.149	0.623	Valid		
(515) [56], Consists of Four Dimensions:	SIS7	3.096	0.735	Valid		
Ecological sustainability (SISI-2);	SIS8	3.138	0.692	Valid	0.891	Reliable
Economic Sustainability (SIS5-6);	SIS9	3.191	0.800	Valid		
Dolitical sustainability (SIS9-13);	SIS10	3.106	0.711	Valid		
Folitical sustainability (51514-15)	SIS11	3.202	0.634	Valid		
	SIS12	3.117	0.763	Valid		
	SIS13	3.287	0.713	Valid		
	SIS14	3.149	0.793	Valid		
	SIS15	3.128	0.783	Valid		

#### Table 3. Cont.

Table 3 shows all indicators of Cronbach's Alpha value variables > 0.60 and the correlation between question or statement items > 0.5. This shows that all indicators of questions or statements in this study are reliable and feasible and so can be used as research instruments.

After re-testing the validity and reliability of the questionnaire collection, the results showed Cronbach's Alpha > 0.60, and the correlation was greater than 0.5, so they were declared valid and reliable [62]. Table 4 shows that the results of the composite reliability test (CR) and Cronbach's alpha from the indicator block that measure the variables. Variables are declared reliable if the value of composite reliability and Cronbach's alpha is above 0.70. Based on Table 4, it can be explained that all the variables in the tested model meet the discriminant validity criteria because of the correlation value. The results of descriptive statistical tests are presented in Table 4 explaining descriptive statistics, discriminant validity, and composite reliability.

Respondents' answers in Table 4 regarding SISKEUDES related to System Information Quality (SIQ), Information Quality (IQ), Service Quality (SQ), Trust in Government (TIG), Trust in Technology (TIT), Usage (U), User Satisfaction (US), Net Benefits (NB) and Sustainable Information Society (SIS), which have high mean values. This illustrates that the SISKEUDES used by the village government in the Sarbagita region is classified as good and functions according to the expectations of the central government to provide the SISKEUDES program. The results of the analysis of the empirical research model using Partial Least Square (PLS) analysis can be seen in Table 5.

Table 5 shows the results of the variable test seen from the path coefficient, p value (p value < 0.05) and t statistic value (t-statistic > 1.96). The results of the analysis show that the quality of the information system has a significant effect on the usage and satisfaction of SISKEUDES users. Another variable, namely trust in government organizations, has a significant effect on usage, while the quality of information and trust has a

significant effect on technology and has an effect on user satisfaction. Service quality has no significant effect on the usage of SISKEUDES and the satisfaction of users. Subsequent analysis proves that the usage and user satisfaction variables have a significant effect on perceived net benefits, and net benefits (NB) have a significant effect on sustainable information society.

**Table 4.** Descriptive statistic (Mean), standard deviation (SD), composite reliability (CR) and discriminant validity (DV).

<b>X</b> 7	Maria	CD	CD	Discriminant Validity							
var Mean	Mean	<b>SD</b>	CK	SIQ	IQ	SQ	TIG	TIT	U	NB	SIS
SIQ	3.407	0.694	0.941	0.905							
IQ	3.361	0.654	0.948	0.700	0.922						
SQ	3.387	0.678	0.959	0.801	0.859	0.917					
TIG	3.364	0.636	0.948	0.732	0.804	0.817	0.909				
TIT	3.380	0.691	0.956	0.186	0.305	0.205	0.313	0.719			
U	3.446	0.673	0.936	0.666	0.705	0.797	0.713	0.222	0.923		
US	3.434	0.688	0.963	0.643	0.660	0.702	0.625	0.059	0.550	0.905	
NB	3.383	0.662	0.966	0.861	0.719	0.814	0.770	0.146	0.684	0.664	0.919
SIS	3.131	0.319	0.941	0.754	0.847	0.868	0.791	0.163	0.738	0.700	0.781

Table 5. Direct effect test result.

Hypothesis	Coefitient	t-Statistic	p Value	Hypoth	esis & Result	
System Information Quality $\rightarrow$ Usage	0.200	2.177	0.032	H1	Supported	
System Information Quality $\rightarrow$ User Satisfaction	0.274	3.053	0.003	H2	Supported	
Information Quality $\rightarrow$ Usage	0.186	1.464	0.146	H3	Rejected	
Information Quality $\rightarrow$ User Satisfaction	0.243	2.499	0.014	H4	Supported	
Service Quality $\rightarrow$ Usage	0.227	1.606	0.111	H5	Rejected	
Service Quality $\rightarrow$ User Satisfaction	0.184	1.488	0.140	H6	Rejected	
Trust in Government $\rightarrow$ Usage	0.180	2.016	0.046	H7	Supported	
Trust in Government $\rightarrow$ User Satisfaction	0.120	1.647	0.103	H8	Rejected	
Trust in Technology $\rightarrow$ Usage	0.223	1.527	0.130	H9	Rejected	
Trust in Technology $\rightarrow$ User Satisfaction	0.240	2.157	0.033	H10	Supported	
$Use \rightarrow Net Benefits$	0.411	3.076	0.003	H11	Supported	
User Satisfaction $\rightarrow$ Net Benefits	0.503	3.638	0.000	H12	Supported	
Net Benefits $\rightarrow$ Sustainable Information Society	0.305	4.128	0.000	H13	Supported	
	R Square			R Sc	luare (%)	
Usage	0.768			76.8%		
User Satisfaction	0.843			84.3%		
Net Benefits	0.780			78.0%		
Sustainable Information Society	0.093			9.3%		

#### 5. Discussion

This section discusses the results from each research hypothesis. The results of this study indicate that the quality of the information system has an effect on usage and users. This is because, in today's digital era, SISKEUDES is used to account for financial reports in a responsive manner through ICT-based financial reports, so it will increase the realization of village financial management accountability. The success of the SISKEUDES application affects user satisfaction as indicated by an average value of 3.468 (Table 3 for indicators of convenience and ease of access. Users of SISKEUDES in the village government of the Sarbagita area are predominantly male, with an average age of 26–35 years, and they have a fairly good education enabling them to use SISKEUDES. It means that SISKEUDES assist the users to demonstrate their ability to complete their tasks and obligations in managing village finances. The results of this study are in line with research [9,51,68,69] which states that high system quality will increase the use and information system user satisfaction.

The high and low quality of SISKEUDES information is measured by relevance, accuracy, and timeliness. SISKEUDES has good quality, but this has no impact on usage. This is due to differences in user education levels that affect decisions to use the SISKEUDES application. A similar phenomenon has been found in a study conducted by [15,65] which states that a higher quality of information would increase usage only if the user is an experienced user. However, on the other hand, questions or information statements produced by SISKEUDES on time received the highest response with an average value of 3.404 (Table 3). This shows that SISKEUDES helps users complete village financial reports faster than they otherwise would. The results of this study are in line with studies [45,46,70] who have tested the effect of information quality on user satisfaction.

Furthermore, the quality of SISKEUDES services cannot affect the level of usage and satisfaction of the application's users in the village government of the Sarbagita area. SISKEUDES is a mandatory application and not the only one used by village governments to facilitate financial reporting, so users need other information system applications to help complete their tasks. Therefore, service quality has no impact on the intensity with which SISKEUDES is used [13,45]. In addition, the average value of the SQ4 indicator is 3.351, meaning that the quality of service is not sufficient to meet user needs as expressed [36,38,43].

In addition to the variables in the information system success model [11], this study also looks at the influence of the trust factor on the usage and satisfaction of SISKEUDES users. Trust is divided into trust in government and trust in technology [71]. The results of this study found that trust in government had an effect on usage but did not affect user satisfaction. Meanwhile, trust in technology had no effect on user usage and satisfaction of SISKEUDES, which gives the opposite result to trust in government. Trust in technology has no effect on use, but it affects user satisfaction.

In the context of electronic data interchange (EDI), the relationship between trust and usage occurs because people are not in a position where they are able to touch, feel, and physically recognize e-government information. Respondents' answers to the indicators in questions TIG2 and TIG3 (mean = 3.404) indicate that local and village governments that use the SISKEUDES behave honestly, sincerely, competently, and effectively in carrying out their obligations as community servants. This is also due to the government's proactive efforts to provide guidance to village officials about SISKSUEDES. These results are in line with research [37,72] that shows that trust in e-government refers to individual beliefs and their expectations about e-government. However, trust in the government does not affect the satisfaction of village officials using SISKEUDES. The limitations of this application in dealing with problems causes users discomfort. Findings from other research [13,45] show the same: trust in government has no impact on satisfaction levels.

Trust in government is related to trust in technology. Trust in this technology includes the trust of the community and village officials in the technology used by government institutions. The limitations of the SISKEUDES application in terms of solving every user problem do not cause the level of trust in technology to affect the usage of SISKEUDES. However, the results from the respondents' answers show a high mean value for the TIT3 and TIT4 statement indicators (score = 3.394) which indicate that users trust and feel secure when completing tasks and sending data using SISKEUDES. The results of this study are in line with previous research [13,69] that also show that trust is a factor that affects user satisfaction in using e-commerce.

The next analysis examines the effect of the usage of, and satisfaction with, SISKEUDES on Net Benefit. The definition of net benefits proposed by [11,59] is the impact felt after implementing an information system for many groups, both individual users and government. The results of the analysis show a significant value with a positive path coefficient, meaning that the high intensity of using SISKEUDES can assist users in completing existing work quickly and in an integrated manner which in turn improves organizational performance, especially in the village government of the Sarbagita area.

The usage statement (U1) received the highest response (mean = 3.489) (Table 3), which indicates that users access SISKEUDES every day. The results of this study are in accordance with [66] which states that the more often users use information systems, the higher the level of learning that will have an impact on individual performance in the organization and decision making. It has been similarly expressed by others [13,49] that the better the perceived usability, the easier it is for citizens to appreciate and justify the overall value of the online system, and of course, it makes it easier to see the benefits of investing in an ICT-based system.

Certain benefits will occur if there is a positive experience when using the application which will lead to user satisfaction [50,73,74]. Information system user satisfaction has an impact not only on individuals who use it, but also on organizations that implement information systems, namely the village government and the central government. The SISKEUDES user satisfaction perception indicator statement US3 (mean = 3.489 see Table 3) shows that SISKEUDES is able to provide information according to needs, so the benefits of the information obtained can provide user satisfaction when using SISKEUDES.

Finally, the results of hypothesis testing (H13) show that the net benefits felt by users when using SISKEUDES have been proven to have an effect on the realization of sustainable information society behavior (SIS). Indicators of sustainable information society behaviour [1,56,75] were adapted to the conditions of the village government. The behavior of the sustainable information society in the village government consists of four dimensions, namely ecological sustainability, economic sustainability, sociocultural sustainability, and political sustainability.

Based on the results of the distribution of the user perception questionnaire, namely the village government of the Sarbagita area which has implemented SISKEUDES, the average value of each indicator is close to the maximum value, which means that SISKEUDES can improve environmental performance, the quality of public administration and services, transparency, and public accountability. The highest score was 3.287 (Table 3) for the SIS5 and SIS13 indicators, namely SISKEUDES facilitating the work of village officials in managing village funds and supporting the creation of better transparency and accountability. This also provides additional information that the SIS in the village government is very strong in terms of the aspects of economic and socio-cultural sustainability (Table 3). This shows the concept of *Tri Hita Karana* which is inherent in Balinese society. Another important thing is that the adoption of technology in Balinese society does not cause environmental problems; indeed, on the contrary, ICT can support sustainable development. This opinion is in line with research by [1,56,57] that demonstrates that technology can be used to limit environmental pollution and distortion and create SIS.

# 6. Conclusions, Limitations, and Suggestion for Future Research

This study has used a well-established theoretical lens to examine e-government adoption in cultural contexts where elements of public trust are strong, thereby adding a deeper view of the implementation of e-government services in Bali. Perceptions of usability and satisfaction must clearly be seen from the user's point of view to find out the net benefits that users feel from adopting SISKEUDES. Perception of use is influenced by the quality of the information system and trust in government, which means that village officials feel the system provides significant benefits; therefore those officials use the system intensively to earn the trust of the public. Meanwhile, user satisfaction is influenced by the quality of the information system, the quality of information, and trust in technology; this is because SISKEUDES is simple and convenient to use, so it is able to provide satisfaction to village officials. Furthermore, the net benefit is felt by the individual because the system is useful and the user decides to use SISKEUDES. Therefore, the adoption of SISKEUDES is a solution that increases village financial accountability and encourages the formation of an economically viable, environmentally sound, and socially responsible community (SIS) as a means to create a "smart village". This study also has results indicating that service quality is a factor that is not able to significantly influence both perceptions—usage and user satisfaction—because of SISKEUDES. This implies that even if the user trusts the e-government website, there may still be some problems with the system. SISKEUDES can still be said to be a new system, so there are still some required functions and features, which require users to do additional work in terms of financial reporting on village funds.

This study only analyzes an adoption of Village Financial System in an Indonesian case-study of four regions/districts of Bali Province, which are Denpasar, Badung, Gianyar, Tabanan (it calls Sarbagita). It is due to the importance of the Sarbagita area, which is known as part of a national strategic region whose territory and spatial planning are prioritized because, nationally speaking, they have a very important influence on state sovereignty, state defense and security, economy, social and cultural matters, and the environment, including areas that have been designated as world heritage sites. In addition, the delivery of instruments directly to the respondents' houses as a gesture of respect for village officials faced quite a lot of obstacles due to the COVID-19 pandemic. This caused the number of respondents in this study to be small.

It is necessary to study the SISKEUDES application developers from BPKP further in order to make system improvements so that SISKEUDES is able to meet the needs of its users, especially in ensuring flexibility, assurance, accuracy, and system security. In addition, the [11] model conducts its test by adding the dimensions of the theory of trust—namely trust in government and trust in technology—as good predictors for system usage variables and user satisfaction with an entity by implementing a mandatory system. The development of further research could test the [11] model by adding this dimension of the theory of trust in an entity whose system implementation is still voluntary and by examining human factors that influence the determination of the success of the system.

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# Appendix A. Survey Item Used in This Study System Information Quality (SIQ)

SIQ1 Village financial system is accessible SIQ2 Village financial system is flexible SIQ3 Village financial system is functional

# Information Quality (IQ)

IQ1 Information provided by the village financial system is relevant IQ2 Information provided by the village financial system is accurate IQ3 Information provided by the village financial system is timely IQ4 Information provided by the village financial system is trusty

# Service Quality (SQ)

SQ1 The Service provided by the village financial system responds my requests rapidly SQ2 The Service provided by the village financial system is reliable

SQ3 The Service provided by the village financial system is secure

SQ4 The Service provided by the village financial system is capable to respond to my needs SQ5 Village financial system's service understands my requirements and provides me with solutions

# Trust in Government (TIG)

TIG1 I believe that the government agency acts in the citizen's best interest TIG2 I believe that the government agency is truthful, honest and genuine in its dealings TIG3 I believe that the government agency is competent and effective TIG4 In general, the government is reliable in meetings its obligations

# Trust in Technology (TIT)

TIT1 The village financial system has enough safeguards to make me feel comfortable using it

TIT2 I feel assured that legal and technological structures adequately protect me from problems in the village financial system

TIT3 I feel confident that encryption and other technological advances in the village financial system make it safe for me to transact

TIT4 In general, the village financial system is now a robust and safe environment in which to transact business

#### Usage (U)

U1 Every day I must access village's financial system

U2 While working in the village, the frequency of use with the village financial system is high

# **User Satisfaction (US)**

US1 I feel that the village financial system is useful US2 I feel that the village financial system used to produce quality information US3 I feel that the village financial system adequately meets my expectations US4 I feel that the village financial system is easy to access US5 Overall, I am satisfied with the village's financial system

# Net Benefits (NB)

NB1 The Village financial system is time-saving

NB2 My performance is better by using the village financial system

NB3 I work more effectively using the village financial system

NB4 The Village financial system can make it easier and improve my work completion. NB5 The Village financial system is very useful in increasing my knowledge and completing my work

Sustainability Information Society (SIS), Consists of 4 Dimensions:

# (1) Ecological sustainability (SIS1–2)

SIS1 Using the village financial system uses less energy and improves environmental protection SIS2 Using village financial system reduces the use of paper as a document and uses more files (soft copy)

# (2) Economic sustainability (SIS3-8)

SIS3 Using the village financial system reduces operating costs due to the utilization of the network and internet

SIS4 Using the village financial system opens opportunities to increase employee knowledge and understanding

SIS5 Using the village financial system makes daily work in the finance department of the village government easier

SIS6 Using the village financial system is easy to carry out financial institutional instructions quickly and efficiently

SIS7 Using the village financial system makes it easier for public services

SIS8 Using the village financial system increases the satisfaction of financial services and goods

## (3) Socio-cultural sustainability (SIS9–13)

SIS9 Using the village financial system expands the knowledge and skills of employees SIS10 Using the village financial system increases the activity of exchanging knowledge and supporting employees

SIS11 Using the village financial system is able to develop and improve their own learning and work environment

SIS12 Using the village financial system is able to increase public access, especially the dissemination and access to information

SIS13 Overall, Using the village financial system makes for better transparency and accountability

#### (4) Political sustainability (SIS14–15)

SIS14 Using village financial system increases the participation, consultation and decisionmaking of the public administration

SIS15 Using village financial system facilitates and improves access to public administration and village financial regulations

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