Adopting an enterprise resource planning system in village government

Arnold Restu¹, Rindu Rika Gamayuni², Yuliansyah Yuliansyah³ Lampung University, Indonesia^{1,2&3}

Yuliansyah@feb.unila.ac.id



Article History

Received on 23 January 2024 1st Revision on 9 February 2024 2nd Revision on 30 February 2024 Accepted on 4 March 2024

Abstract

Purpose: The obligation of the Village Government to realize accountability and transparency of rural funds "forced" the village to use the ERP system. This study investigates the characteristics of technologies, individuals, and organizations that influence user decisions to adopt systems that will impact their performance.

Research methodology: The technology acceptance model (TAM) was used to understand the factors that influence the adoption of the system and its impact on user performance. Data obtained from 72 users spread in Lampung Province.

Results: The results showed that the compatibility of the system significantly influence the perceived usefulness. Facilitating conditions has a significant effect on perceived ease of use. Perceived usefulness and perceived ease of use has positive effect on symbolic adoption. Symbolic adoption significantly affects the user's performance positively.

Implementation: The implementation of this study involves a mixed-methods approach, including a survey and interviews with users and stakeholders, as well as a case study analysis of successful ERP implementations in village governments.

Contribution: The contribution of this research is the identification of factors that contribute to successful ERP implementation in village governments, which can inform future adoption decisions and improve user performance.

Keywords: Enterprise resource planning (ERP); Technology acceptance model (TAM); Individual performance; rural fund **How to Cite:** Restu, A., Gamayuni, R. R., & Yuliansyah, Y. (2024). Adopting an enterprise resource planning system in village government. Journal of Governance and Accountability Studies, 4(1), 1-17.

1. Introduction

Advances in information technology have made organizations around the world develop and apply the use of technology to produce various kinds of information to third parties and decision making by management (Tan & Kim, 2015). The implementation of information technology in organizations will provide benefits in the form of time efficiency and increase flexibility and accessibility (Hayes, 2008). The implementation of information technology not only affects technical matters but also affects user behavior or habits (Skok & Döringer, 2002).

Enterprise Resource Planning (ERP) system is software that aims to integrate business functions and processes in order to produce comprehensive business information with the support of information technology (Klaus, 2000). ERP system is the essence of a company or agency (Costa, Ferreira, Bento, & Aparicio, 2016). In this era of information technology, ERP systems are used to accelerate the distribution of information between departments and aim to improve the operational performance of the organization (Shen, Chen, & Wang, 2016).

The level of acceptance of information systems greatly affects the success of system implementation (Goodhue & Thompson, 1995). In implementing the system, the organization must make a system work

in appropriate conditions and make users want to work with existing information systems (Davis, 1989). According to Nah, Tan, and Teh (2004) in his research on the impact of ERP system implementation on end users, user resistance in adopting or using a system is one of the reasons for implementation failure and must be considered by organizations. Lack of acceptance will cause users to feel forced to use the system and fail to use the system reliably, and give a sense of dissatisfaction with the system. This will result in not getting the benefits of the system which will indirectly lead to implementation failure (Amaranti, 2006).

Research on the relationship between information system usage and user performance produces varied conclusions. For example, Venkatesh and Davis (2000) concluded that there is a positive relationship between the use of information systems and user performance, while Millman and Hartwick (1987) concluded that there is no relationship at all between individual performance and the use of information systems. Rajan and Baral (2015) in his research on the impact of ERP system adoption on end users stated, "while little research exists to study the impact at the individual level, this study also seeks to find the impact of usage of ERP systems on the end user". This statement indicates that research on the impact of ERP system adoption on end users is still rare. In addition, according to the researcher's knowledge, research on the adoption of mandatory ERP systems in Indonesia is still very little. Therefore, researchers consider research on the impact of using ERP systems on user performance an interesting theme.

Since 2015, the Village Financial Information System developed by BPKP (Siskeudes BPKP) has been socialized to all Village Governments in order to create good village governance (BPKP, 2017). However, as of this writing, not all Village Governments have adopted Siskeudes BPKP. In fact, the Corruption Eradication Commission (KPK) has made an official appeal letter Number: B.7508/01-16/08/2016 dated August 31, 2016 to all village heads to use Siskeudes BPKP related to village financial management (BPKP, 2017).

Referring to the research background, researchers want to test the impact of the adoption of Siskeudes BPKP on end-user performance using a modified Technology Acceptance Model (TAM) acceptance model.

This research is expected to provide information related to the adoption of Siskeudes BPKP as a tool in achieving the principles of good village governance as well as information regarding the impact of system use on individual user performance so that the Village Government and system developers can take the right steps related to system implementation. In addition, this research is expected to provide input regarding the impact of adopting Siskeudes BPKP on user performance so that the Village Government and system developers can determine policies towards system implementation.

2. Literature review

2.1 Enterprise Resource Planning Systems (ERPs)

Enterprise Resource Planning (ERP) systems are defined as software that aims to integrate business functions and processes in order to produce comprehensive business information with the support of information technology (Klaus, 2000). ERP system is the essence of a company (Costa et al., 2016). In this era of information technology, ERP systems are used to accelerate the distribution of information between departments and aim to improve the operational performance of organizations (Shen et al., 2016; Siahaan, 2022).

Various studies have been conducted to identify the factors that influence the success of ERP system implementation. Motwani, Subramanian, and Gopalakrishna (2005) conducted a case study to compare successful and unsuccessful ERP system implementations. Motwani found that the factors behind success are vigilance, change, bureaucratic reform, network or relationship development, and mental readiness to use the system. In addition, Yen and Sheu (2004) also conducted a case study with direct observation and interview methods for five American and Taiwanese manufacturing companies. Yen and Sheu (2004) research concluded that the successful implementation of an ERP system can be achieved if the ERP system is in line with the company's strategy.

The implementation of ERP systems in organizations is usually caused by changes in the way the organization works (Kallunki, Laitinen, & Silvola, 2011). ERP system implementation in developing countries tends to be more difficult than in developed countries (Xue, Liang, Boulton, & Snyder, 2005). This shows that information technology and management practices must be modified according to the needs of each organization.

ERP system research in the aspect of business processes has been widely carried out while research that focuses on individual employees or the process of adopting the system by employees and its impact on system users is still very little Tarafdar and Vaidya (2006); Venkatesh (2006) argues, in line with developments and changes in the business environment, further research is needed on the impact of system adoption on organizations.

2.2 Technology Acceptance Model (TAM)

One of the research models for ERP system adoption is the Technology Acceptance Model (TAM). The TAM model is based on the principles of the Theory of Reasoned Action (TRA) which explains and predicts individual habits in organizations with specific situations. According to Fishbein and Ajen (1975), TRA identifies two main factors that explain individual intentions and behavior, namely "attitude" and "subjective norm". Attitude is a consequence of striking beliefs and perceptions of individual evaluation results. Meanwhile, subjective norm influences individual intention and behavior which is explained by individual normative beliefs and individual motivation (Vallerand, Deshaies, Cuerrier, Pelletier, & Mongeau, 1992).

The TRA psychological theory was successfully adapted to the adoption of information systems by Davis. Davis (1989) introduced TAM as an instrument to predict the tendency to adopt new technology in groups or organizations (Handayani et al., 2017). According to Davis (1989), many variables can explain the adoption of information technology. However, in his research, Davis identified the two most important constructs, namely perceived usefulness (PU) and perceived ease of use (PEOU). Therefore, in the case of adopting an information system, external variables do not directly affect the attitude towards using the system but rather pass through or influence the PU and PEOU variables first.

Davis (1989) defines perceived usefulness as the degree to which a person believes that using the system will improve his performance. Perceived usefulness for individuals is a manifestation of improved performance and motivation for the system (Robey, 1982). Further studies concluded that perceived usefulness has a positive effect on system use (Thompson, Higgins, & Howell, 1991).

Perceived ease of use is defined as the degree to which a person believes that the system will ease his workload (Davis, 1989). Judging from the TAM model, the perceived usefulness of the system is influenced by the perceived ease of use of the system, or in other words, the easier a system is to use, the more useful it will be (Robey, 1982).

TAM suggests that intention and behavior are the main determinants of system usage behavior so that other external factors only indirectly affect intention and behavior (Davis, 1989). However, TAM only assumes that the user has complete freedom in choosing the system he wants to use. This is in stark contrast to the mandatory nature of ERP systems (Pozzebon, 2000). In other words, users cannot refuse not to use the system and must still accept it even if they feel forced (Nah et al., 2004).

Specifically, TAM has a good ability to explain the intentions and behavior of information system users. TAM explains about 40% of the variation in system user intentions and behavior (Venkatesh & Davis, 2000). However, the TAM model alone is not sufficient to explain user acceptance in the context of ERP. ERP systems are systems that are implemented in organizations and are very complicated to use (Nah et al., 2004). Some researchers (Brown, Massey, Montoya-Weiss, & Burkman, 2002; Dalcher & Shine, 2003; Legris, Ingham, & Collerette, 2003; Rawstorne, Jayasuriya, & Caputi, 1998) suggest that

the TAM model needs to be extended or modified to be able to explain the acceptance of information technology by end users.

2.3 Individual Performance

The rapid use of computers as a tool is believed by academics and practitioners to be a measure of the impact of system use on user performance (Ngai, Poon, & Chan, 2007). Users will adopt a system if they have the perception that the system used will improve their performance (Amoako-Gyampah & Salam, 2004). Goodhue and Thompson (1995) argue that information systems will have a positive impact on individual performance if the system can work in accordance with the duties and functions of the user.

Research on the relationship between information system usage and user performance produces varied conclusions. For example, Venkatesh and Davis (2000) concluded that there is a positive relationship between the use of information systems and user performance, while Millman and Hartwick (1987) concluded that there is no relationship at all between individual performance and the use of information systems.

2.4 Previous Research

2.4.1 TAM Modification Nah (2004)

Nah et al. (2004) conducted research on the implementation of a mandatory ERP system. In his research, Nah modified the TAM model by replacing behavioral intention to use with symbolic adoption as the main variable in the adoption of ERP systems. According to Klonglan and Coward (1970), the purpose of symbolic adoption refers to a person's psychological condition in accepting an innovation. In addition, Nah added the variables perceived fit and perceived compatibility. Nah et al. (2004) research model has not been able to describe the point of view of the individual and organizational context. Govindaraju, Indriany, and de Bruijn (2007) research improved the shortcomings of Nah's model by adding individual context and organizational context.

2.4.2 Modified TAM Chomchalao (2013)

There have been many studies on the adoption of ERP systems. However, to the best of the researchers' knowledge, there is still very little research on the adoption of ERP systems in the public sector. One of the studies on the adoption of ERP systems in the public sector was conducted by Chomchalao and Chomchalao and Naenna (2013) to analyze the factors that influence the willingness of Thai citizens to use e-government facilities. The TAM model was modified by adding external variables grouped into system context (system traits) consisting of system quality, information quality, and service quality, and individual context (personal traits) consisting of social influences, facilitating conditions, self-efficacy, and personal innovativeness in IT. The results of Chomchalao and Naenna's research concluded that personal innovativeness in IT and facilitating conditions have a positive and significant effect on perceived usefulness and perceived ease of use which affects the level of interest in using a system.

2.4.3 Modified TAM Rajan and Baral (2015)

According to Rajan and Baral (2015), the adoption of ERP systems can be influenced by three characteristics, namely technological characteristics, individual characteristics, and organizational characteristics. Technological characteristics are the characteristics possessed by the system that users will use. Rajan classifies technological characteristics in the form of complexity and compatibility.

Individual characteristics are the characteristics possessed by users of a new information system. Rajan uses the computer self-efficacy variable to describe the individual's desire to use a computer as a work tool. Meanwhile, the organizational characteristics used by Rajan are organizational support and training.

The results of Rajan and Baral (2015) research concluded that computer self-efficacy, organizational support, training, and compatibility have a significant positive effect on perceived ease of use and perceived usefulness which will ultimately affect interest in using an ERP system (intention to use) and

will affect the use of ERP systems (usage of ERP) so that it has a significant positive effect on individual performance and panoptic empowerment.

2.4.4 Research Framework

Based on the results of previous research, I propose the following reseach framework:

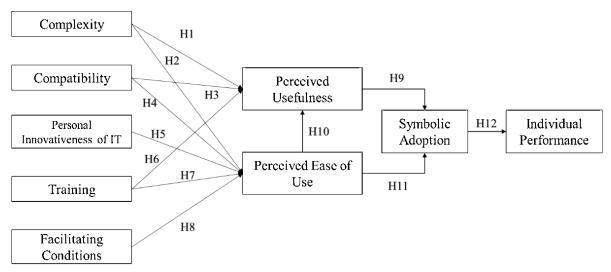


Figure 1. Research Framework

2.5 Hypothesis Development

2.5.1 Effect of complexity on perceived usefulness and perceived ease of use

Information and management systems are often perceived as very complicated Aiman-Smith and Green (2002); Xue et al. (2005) defines technological complexity as the degree of difficulty in using new technology compared to past technology. Tornatzky and Klein (1982) research concluded that the more complex an innovation is, the lower the level of use. Thompson et al. (1991) concluded that there is a significant negative effect between complexity and user acceptance. The lower the level of difficulty, the higher the level of user acceptance and vice versa. Sokol (1994) also strengthens the conclusions of previous research. Sokol argues that the higher the complexity of a system, the higher the workload and stress felt by users. In other words, perceived complexity can negatively affect perceived ease and perceived usefulness in using the system (Basoglu, Daim, & Kerimoglu, 2007; Chang, Cheung, Cheng, & Yeung, 2008). From these studies, the researcher proposes two hypotheses as follows:

H1: Perceived complexity negatively affects perceived usefulness

H2: Perceived complexity negatively affects perceived ease of use

2.5.2 Effect of compatibility on perceived usefulness and perceived ease of use

One of the problems commonly faced in the development and implementation of ERP systems is the compatibility of the system with business processes (Chen, Chen, & Tsai, 2009). Rogers (1995) defines compatibility as the degree to which an innovation is perceived to be consistent in producing value, needs, and in accordance with past experiences of perceived usefulness and ease of use.

Procedural and data compatibility are very important in the acceptance of information systems by users (Soh, Kien, & Tay-Yap, 2000). Technology mismatch will negatively affect system productivity, efficiency, user satisfaction, commitment, and system user motivation (Claire Erensal & Esra Albayrak, 2008). Karahanna, Agarwal, and Angst (2006) concluded that compatibility technology characteristics positively affect the level of use of information systems. The higher the suitability of a technology, the higher the perceived ease and usefulness of a system which will be followed by a higher user desire to blend and adopt the system Cooper and Zmud (1990) From the results of this study, the researcher proposes two hypotheses as follows:

H3: perceived compatibility has a positive effect on perceived usefulness

H4: perceived compatibility has a positive effect on perceived ease of use

2.5.3 The effect of personal innovativeness of IT on perceived ease of use

Agarwal and Prasad (1998) define personal innovativeness as the level of personal interest or risk that the individual is willing to take. The individual is happy to take the opportunity to try new things and is able to overcome high levels of uncertainty (Thakur, Angriawan, & Summey, 2016). Someone with a high level of interest in technology will have more confidence in an information system (Lewis, Agarwal, & Sambamurthy, 2003). In addition, it has been empirically proven by Chomchalao and Naenna (2013) that the variable determinant with the highest value that positively affects perceived ease of use is personal innovativeness of IT. Therefore, the hypothesis that researchers propose is:

H5: personal innovativeness of IT has a positive effect on perceived ease of use

2.5.4 Effect of training on perceived usefulness and perceived ease of use

Yusuf, Gunasekaran, and Abthorpe (2004) defines education and training as a supporting process for management and employees to understand the concepts and logic of a system as a whole. Complex systems require training as an important factor in implementation (Bingi, Sharma, & Godla, 1999). Lack of training gives a tendency to fail a system implementation (Somers & Nelson, 2001). Various studies have proven that training variables have a direct influence on perceived usefulness (Bradley, 2008; Rajan & Baral, 2015; Youngberg, Olsen, & Hauser, 2009)

A perfect understanding of a system from the right training process will significantly increase users' perceived ease of use Amoako-Gyampah and Salam (2004); Ruivo, Oliveira, and Neto (2014) also found strong evidence that training variables significantly affect the perceived ease of use of the system. In addition, education and training will reduce system user anxiety and stress Gist (1987); (Lee, Lee, Olson, & Hwan Chung, 2010) added that training can increase user confidence and ability to use a system. From this description, the author proposes two hypotheses as follows:

H6: training has a positive effect on perceived usefulness

H7: training has a positive effect on perceived ease of use

2.5.6 The effect of facilitating conditions on perceived ease of use

Taylor and Todd (1995) define facilitating conditions as a personal opinion about the possibility of a system being used in an organization if the organization facilitates the operation of the information system. In other words, facilitating conditions describe the level of user confidence that technical and organizational infrastructure supports the use of information systems (Ventakesh, 2003). Research by Escobar-Rodríguez and Carvajal-Trujillo (2013); (Lai, 2015); San Martín and Herrero (2012); (Wu, Chiu, Yang, & Li, 2011), resulted in similar conclusions, namely facilitating conditions have a positive effect on the perceived ease of the system so that users have the intention and behavior to adopt a system. From the results of this study, the researcher proposes a hypothesis in the research model as follows:

H8: facilitating conditions have a positive effect on perceived ease of use

2.5.7 The effect of perceived usefulness on symbolic adoption

Davis (1989) defines usefulness as the degree of a person's belief that using a system or technology will improve his performance. Research on perceived system usefulness in various parts of the world has concluded that perceived usefulness has a significant effect on system adoption (Anandarajan, Igbaria, & Anakwe, 2002; Rajan & Baral, 2015; Youngberg et al., 2009). However, there are not a few conflicting conclusions, including the opinion of Fusilier and Durlabhji (2005) which concludes that the perceived usefulness of the system does not have a significant effect on the adoption of ERP systems. In the context of ERP system acceptance in the public sector, perceived usefulness still requires further research. Based on this description, researchers believe that perceived system usability positively influences the adoption of information systems. The researcher proposes a hypothesis, namely:

H9: perceived usefulness has a positive effect on symbolic adoption

2.5.8 The effect of perceived ease of use on perceived usefulness

Davis (1989) demonstrated in his research model that perceived ease of use directly affects perceived usefulness. In other words, Perceived ease of use has a positive effect on perceived usefulness. A more

comprehensive study conducted by Venkatesh and Davis (2000) confirmed that the effect of perceived ease of use is very significant on the perceived usefulness of the system. Empirically, research by (Pedersen, 2005); Rajan and Baral (2015); (Sun & Zhang, 2006) has proven that perceived ease of use significantly affects perceived usefulness. The results of research by Sternad and Bobek (2013); (Youngberg et al., 2009) also strengthen this conclusion. From this description, the researcher proposes the following hypothesis:

H10: perceived ease of use has a positive effect on perceived usefulness

2.5.9 The effect of perceived ease of use on symbolic adoption

Perceived system ease is defined by Davis (1989) as the degree of user confidence that using the system will ease his workload. According to Petter, DeLone, and McLean (2008), the effect of perceived ease of use on the system is smaller than the perceived usefulness of the system. Even so, perceived ease is still quite significant in influencing system adoption (Venkatesh & Davis, 2000). This conclusion is supported by recent studies conducted by Costa et al. (2016); (Rajan & Baral, 2015). From this description, the researcher proposes a hypothesis as follows:

H11: perceived ease of use has a positive effect on symbolic adoption

2.5.10 The effect of symbolic adoption on individual performance

Klonglan and Coward (1970) defines symbolic adoption as a person's psychological condition in accepting an innovation. The rapid use of computers as a tool is believed by academics and practitioners to be a measure of the impact of system use on user performance (Ngai et al., 2007). Users will adopt a system if they have the perception that the system used will improve their performance (Amoako-Gyampah & Salam, 2004). Goodhue and Thompson (1995) argue that information systems will have a positive impact on individual performance if the system can work in accordance with the duties and functions of the user.

Research on the impact of system adoption on individual user performance is still very rare. Venkatesh and Davis (2000) research on the effect of ERP systems on individual productivity concluded a positive relationship between the use of information systems and user performance. In addition, Rajan and Baral (2015) also concluded that the use of ERP systems will significantly improve end user performance. From this description, the researcher proposes a hypothesis as follows:

H12: symbolic adoption has a positive effect on individual performance.

3. Research Methodology

3.1 Types and Sources of Data

The types of data used in this study are primary data from questionnaires distributed to Siskeudes BPKP users in Lampung Province and qualitative data from direct interviews with Siskeudes BPKP users. The population in this study were all Siskeudes BPKP users in Lampung Province. Researchers took a sample of Siskeudes BPKP users located in all districts using the random sampling method.

3.3 Research Variables

The study used nine variables consisting of perceived complexity/CX (perceived complexity), perceived compatibility/COMP (perceived compatibility), individual interest in using information technology/PIIT (personal innovativeness of IT), user confidence in the facilitating conditions of the organization/FC (facilitating conditions), and training education/TR (training) as independent variables, perceived usefulness of the system/PU (perceived usefulness), perceived ease of use of the system/PEOU (perceived ease of use), and system adoption/SA (symbolic adoption) as intervening variables, and individual performance/IP (individual performance) as the dependent variable.

Variables are rated with a Likert scale Strongly Disagree (STS) with a value of 1, Disagree (TS) with a value of 2, Undecided (RR) with a value of 3, Agree (S) with a value of 4, and Strongly Agree (SS) with a value of 5.

3.4 Analysis Method

The analysis method used in this research is Structural Equation Modeling (SEM) or commonly referred to as Partial Least Squares (PLS). PLS is a statistical analysis technique developed by Herman (Suharto, Japlani, & Ali, 2021; Supriadi, Suharto, & Sigalingging, 2022; Wold, 1982). According to Wold, PLS involves two stages of assessment, namely measurement model assessment and structural model assessment. The use of PLS is considered sufficient to test the measurement model and validate the causal relationships in the research model structure (Costa et al., 2016). PLS minimizes the residual variance of the constructs and requires a smaller sample Joe F Hair, Ringle, and Sarstedt (2011); (Henseler & Chin, 2010) data obtained from the questionnaire will be processed with SmartPLS 3.0 and Microsoft Excel tools.

4. Results and Discussions

From the results of distributing 200 questionnaires, 72 questionnaires were valid, 22 questionnaires were invalid because they came from areas that had not been implemented, and 106 questionnaires were still empty.

Table 1. Characteristics of Respondents

Characteristics of Respondents		n	%
Gender	Laki-Laki	66	91,67
	Perempuan	6	8,33
	Dibawah 30	10	13,89
A	31-40	28	38,89
Age	41-50	31	43,06
	Diatas 50	3	4,17
	SD	0	-
	SMP	0	-
Recent	SMA	55	76,39
Education	Diploma	11	15,28
	S1	6	8,33
	Lainnya	0	-
Position	Kepala Desa	24	33,33
	Sekretaris Desa	19	26,39
	Bendahara Desa	17	23,61
	Aparatur Desa	12	16,67

According to Gefen, Straub, and Boudreau (2000), a good Outer Loading value has a value above 0.7. However, if this value is not achieved, the Outer Loadings value above 0.5 is still acceptable. From table 5, the outer loadings obtained are above 0.7 except for the PU4 indicator which has a value of 0.688 but is still acceptable in the research model. Therefore, for the outer loadings analysis, all indicators are declared valid, appropriate, and accepted in the research model.

Construct reliability that will be tested consists of Composite Reliability, Cronbach's Alpha, and Average Variance Extracted (AVE). According to Joseph F Hair, Black, Babin, Anderson, and Tatham (2006), a model can be considered valid and reliable if it has a Composite Reliability value above 0.7. According to Fornell and Larcker (1981), valid and reliable constructs have an AVE value above 0.5

and according to George, valid and reliable constructs will have a Cronbach's Alpha value above 0.7. Table 6 shows that all constructs have met the criteria for the minimum value of reliability and validity.

Based on Table 2, it can be seen that almost all constructs are valid because they have a root AVE value greater than the correlation value between constructs. The correlation value of COMP \rightarrow PU (0.984) is greater than the AVE root of COMP (0.771) and the correlation value of FC \rightarrow PEOU (0.987) is greater than the AVE root of FC (0.812). This indicates that the PU construct does not need to be explained by the COMP construct and also the PEOU construct does not need to be explained by the FC construct. However, in this study, researchers considered continuing to use the COMP and FC constructs.

Table 2. Construct Reliability and Validity

Construct	Composite Reliability	Cronbach's Alpha	Average Variance Extracted (AVE)	
CX	0.919	0.881	0.739	
COMP	0.854	0.771	0.594	
PIIT	0.878	0.795	0.707	
TR	0.925	0.898	0.713	
FC	0.886	0.827	0.660	
PU	0.849	0.762	0.584	
PEOU	0.896	0.845	0.685	
SA	0.876	0.787	0.704	
IP	0.966	0.931	0.935	

Based on Table 3, it can be seen that almost all constructs are valid because they have a root AVE value greater than the correlation value between constructs. The correlation value of COMP \rightarrow PU (0.984) is greater than the AVE root of COMP (0.771) and the correlation value of FC \rightarrow PEOU (0.987) is greater than the AVE root of FC (0.812). This indicates that the PU construct does not need to be explained by the COMP construct and also the PEOU construct does not need to be explained by the FC construct. However, in this study, researchers considered continuing to use the COMP and FC constructs.

Tabel 3. Fornell-Larcker Criterion

Construct	CX	COMP	PIIT	TR	FC	PU	PEOU	SA	IP
CX	0.860								
COMP	-0.032	0.771							
PIIT	-0.428	0.289	0.841						
TR	-0.640	0.153	0.420	0.844					
FC	-0.629	0.301	0.492	0.801	0.812				
PU	-0.084	0.984	0.301	0.209	0.348	0.764			
PEOU	-0.618	0.283	0.469	0.822	0.987	0.343	0.828		
SA	-0.567	0.255	0.361	0.508	0.617	0.313	0.622	0.839	
IP	0.083	0.083	0.457	0.524	0.551	0.161	0.560	0.669	0.967

Construct reliability that will be tested consists of Composite Reliability, Cronbach's Alpha, and Average Variance Extracted (AVE). According to Joseph F Hair et al. (2006), a model can be considered valid and reliable if it has a Composite Reliability value above 0.7. According to Fornell and Larcker (1981), valid and reliable constructs have an AVE value above 0.5 and according to

George, valid and reliable constructs will have a Cronbach's Alpha value above 0.7. Table 2 shows that all constructs have met the criteria for the minimum value of reliability and validity.

Based on Table 3, it can be seen that almost all constructs are valid because they have a root AVE value greater than the correlation value between constructs. The correlation value of COMP \rightarrow PU (0.984) is greater than the AVE root of COMP (0.771) and the correlation value of FC \rightarrow PEOU (0.987) is greater than the AVE root of FC (0.812). This indicates that the PU construct does not need to be explained by the COMP construct and also the PEOU construct does not need to be explained by the FC construct. However, in this study, researchers considered continuing to use the COMP and FC constructs.

According to Farrar and Glauber (1967), the Collinearity Statistics test aims to see if there is a mutual relationship between constructs which is described by the Variance Inflation Factor (VIF) value. A model is said to be good if it does not have a reciprocal relationship. A VIF value of 0-4 indicates that the constructs have no mutual relationship, while a VIF value of 5-10 indicates that there is multicollinearity in the indicators in the construct (Diamantopoulos & Siguaw, 2006; Gujarati & Porter, 2009). Table 3 shows that in the research model there is no reciprocal relationship in each construct.

Table 4. R-Square

Construct	R Square
PU	0.973
PEOU	0.979
SA	0.398
IP	0.448

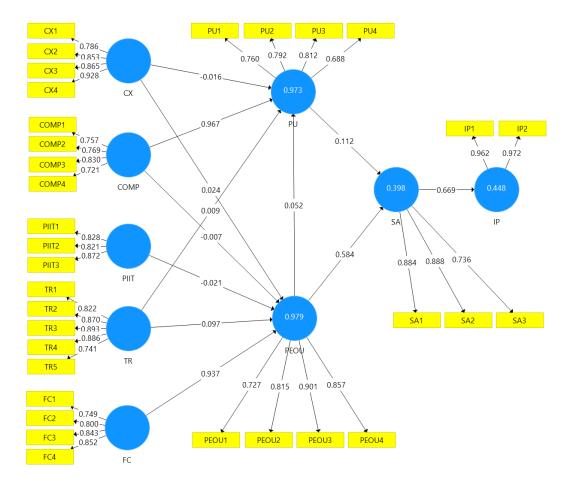


Figure 2. PLS Algorithm Calculation Results

4.1 Structural Model

R-Square or commonly referred to as the coefficient of determination is used to assess how much influence the independent variable has on the dependent variable. According to Chin (1998), an R-Square value above 0.67 indicates that the model is categorized as good. In this study, the PU construct has an R-square value of 0.973, which means that the CX, COMP, TR, and PEOU variables are able to explain 97.3% of the variance in the PU variable. Likewise with the PEOU construct which has an R-Square value of 0.979. CX, COMP, PIIT, TR, and FC variables are able to explain 97.9% of the PEOU variable variance (See Figure 2).

The SA and IP constructs have R-Square values smaller than 0.67, namely 0.398 and 0.448 or can be categorized as moderate or moderate. This illustrates that PU and PEOU constructs are able to explain 39.8% of the variance in SA variables and SA constructs are able to explain 44.8% of the variance in IP variables. The moderate R-square results for the SA and IP constructs indicate that there are still other variables that affect the SA and IP constructs that are not in this study.

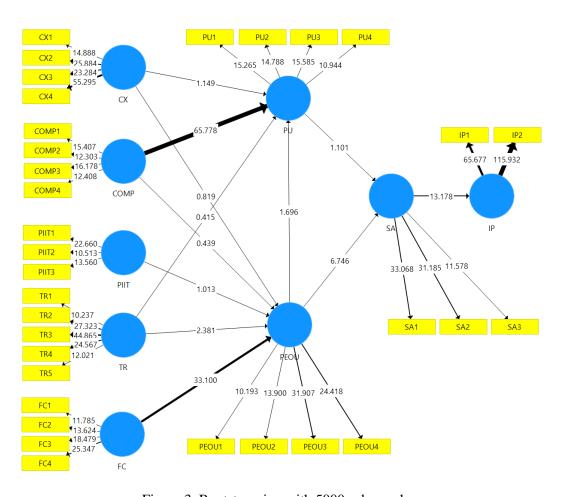


Figure 3. Bootstrapping with 5000 subsamples

Table 5. Hypothesis Test

Relationship between constructs	Path Coefficient (β)	t-statistics	Hipotesis	Signifikan?
$CX \rightarrow PU$	-0.024	1.149	H1	Tidak
$CX \rightarrow PEOU$	-0.016	0.819	H2	Tidak
$COMP \rightarrow PU$	0.967	65.778	Н3	Ya

Relationship between constructs	Path Coefficient (β)	t-statistics	Hipotesis	Signifikan?
$COMP \rightarrow PEOU$	-0.007	0.439	H4	Tidak
$PIIT \rightarrow PEOU$	-0.021	1.013	H5	Tidak
$TR \rightarrow PU$	0.009	0.415	Н6	Tidak
$TR \rightarrow PEOU$	0.097	2.381	H7	Ya
$FC \rightarrow PEOU$	0.937	33.100	Н8	Ya
$PU \rightarrow SA$	0.112	1.101	Н9	Tidak
$PEOU \rightarrow PU$	0.052	1.696	H10	Tidak
$PEOU \rightarrow SA$	0.584	6.746	H11	Ya
$SA \rightarrow IP$	0.669	13.178	H12	Ya

5. Conclusion

This study aims to determine the impact of adopting the enterprise resource planning system "Siskeudes BPKP" in the Village Government on end-user performance. User performance (IP) is influenced by the level of system adoption (SA). The level of system adoption is influenced by perceived usefulness (PU) and perceived system ease (PEOU), each of which is influenced by technological characteristics consisting of perceived complexity (CX) and perceived suitability (COMP), individual characteristics in the form of individual interest in using information technology (PIIT), and organizational characteristics consisting of education and training (TR) and the level of user confidence in organizational infrastructure (FC).

From the results of the study, it can be concluded that the adoption of the ERP system in the Village Government has a positive impact on the performance of system users. However, the implementation that has been carried out is still not optimal because there is still an insignificant relationship between these variables. In addition, the ability of the independent and intervening variables has not been able to explain the level of ERP system adoption properly. Therefore, research on system adoption in the Village Government must still be further developed.

5.1 Implications

The results of the study concluded that ERP system adoption has a significant positive effect on end user performance. This is in line with research by Rajan and Baral (2015); (Venkatesh & Davis, 2000). Every individual who uses an ERP system will feel the impact on their performance (Sun & Zhang, 2006). Users will adopt an ERP system if the system can help improve their performance (Amoako-Gyampah & Salam, 2004).

In addition, this research can provide implications for Local Government, Village Government, and BPKP policies in implementing village financial systems to create good village governance. From the research results, the Local Government should evaluate the education and training that has been conducted by the Village Community Empowerment Agency (BPMD) because it does not have a significant impact on the usefulness and ease of the system. In addition, the perception of system complexity is still at an insignificant level or in other words, users still feel difficulties when using the system. This can be an input for developers (BPKP and MoHA) to make system updates that are easier to use.

5.2 Research Limitations

The limitations faced by the author in this study are as follows:

- 1. Time and cost limitations that resulted in a small number of questionnaire respondents. The distance between villages is very far and requires travel time and a lot of money.
- 2. This research model proposes deeper research on the variables that influence the adoption of ERP systems in the Village Government. Perceived system usefulness and system convenience are only

- able to explain system adoption by 39.8% or a moderate level. This requires further analysis of the factors that influence symbolic adoption.
- 3. The research model has not been able to measure the level of system user satisfaction and only stops at performance measurement. This opens up opportunities for further research on the impact of ERP system adoption on system end users.

5.3 Suggestions

Based on the conclusions, implications, and limitations of the study, the researcher would like to make the following suggestions:

- 1. To the Head of BPMD of all districts in Lampung Province to further improve the quality of human resources, especially the BPKP Siskeudes Task Force who transfers knowledge to the village apparatus so that the education and training conducted by the village apparatus has a significant impact on the adoption of the system by users.
- 2. To the Coordinator of the Regional Financial Accountability Division of the Financial and Development Supervisory Agency of Lampung Province Representative to always supervise and train the BPKP Siskeudes Task Force whose task is to spearhead the implementation of BPKP Siskeudes in the Village Government.
- 3. To all Village Heads in Lampung Province to recruit employees who understand and are interested in using information technology so that the absorption and adoption of the system is accepted quickly.
- 4. To ERP system developers to always develop systems that are more user friendly, less complicated and in accordance with new regulations.
- 5. To academics to explore this research more deeply, especially in analyzing the factors that influence the level of adoption of ERP systems in the Village Government other than perceptions of system usefulness and system convenience. If you want to do the same research, it is recommended to increase the number of samples in order to obtain more accurate conclusions. In addition, it would be even better if an assessment was made of the level of user satisfaction with the adoption of the ERP system.

References

- Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information systems research*, 9(2), 204-215.
- Aiman-Smith, L., & Green, S. G. (2002). Implementing new manufacturing technology: The related effects of technology characteristics and user learning activities. *Academy of management journal*, 45(2), 421-430.
- Amaranti, R. (2006). Faktor Kritis Dalam Proyek Implementasi ERP dan Pengaruhnya terhadap Perubahan dalam Organisasi.
- Amoako-Gyampah, K., & Salam, A. F. (2004). An extension of the technology acceptance model in an ERP implementation environment. *Information & management*, 41(6), 731-745.
- Anandarajan, M., Igbaria, M., & Anakwe, U. P. (2002). IT acceptance in a less-developed country: a motivational factor perspective. *International Journal of Information Management*, 22(1), 47-65.
- Basoglu, N., Daim, T., & Kerimoglu, O. (2007). Organizational adoption of enterprise resource planning systems: A conceptual framework. *The Journal of High Technology Management Research*, 18(1), 73-97.
- Bingi, P., Sharma, M. K., & Godla, J. K. (1999). Critical issues affecting an ERP implementation. *Inf. Syst. Manag.*, 16(3), 7-14.
- Bradley, J. (2008). Management based critical success factors in the implementation of Enterprise Resource Planning systems. *International Journal of Accounting Information Systems*, 9(3), 175-200.
- Brown, S. A., Massey, A. P., Montoya-Weiss, M. M., & Burkman, J. R. (2002). Do I really have to? User acceptance of mandated technology. *European journal of information systems*, 11(4), 283-295.

- Chang, M.-K., Cheung, W., Cheng, C.-H., & Yeung, J. H. (2008). Understanding ERP system adoption from the user's perspective. *International Journal of Production Economics*, 113(2), 928-942.
- Chen, H.-H., Chen, S.-C., & Tsai, L.-H. (2009). A study of successful ERP–from the organization fit perspective. *Journal of Systemics, Cybernetics and Informatics*, 7(4), 8-16.
- Chomchalao, S., & Naenna, T. (2013). Influence of system traits and personal traits on the acceptance of e-government service.
- Claire Erensal, Y., & Esra Albayrak, Y. (2008). Transferring appropriate manufacturing technologies for developing countries. *Journal of Manufacturing Technology Management*, 19(2), 158-171.
- Cooper, R. B., & Zmud, R. W. (1990). Information technology implementation research: a technological diffusion approach. *Management science*, 36(2), 123-139.
- Costa, C. J., Ferreira, E., Bento, F., & Aparicio, M. (2016). Enterprise resource planning adoption and satisfaction determinants. *Computers in Human Behavior*, 63, 659-671.
- Dalcher, I., & Shine, J. (2003). Extending the new technology acceptance model to measure the end user information systems satisfaction in a mandatory environment: A bank's treasury. *Technology analysis & strategic management*, 15(4), 441-455.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- Diamantopoulos, A., & Siguaw, J. A. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British journal of management*, 17(4), 263-282.
- Escobar-Rodríguez, T., & Carvajal-Trujillo, E. (2013). Online drivers of consumer purchase of website airline tickets. *Journal of Air Transport Management*, 32, 58-64.
- Farrar, D. E., & Glauber, R. R. (1967). Multicollinearity in regression analysis: the problem revisited. *The Review of Economic and Statistics*, 92-107.
- Fishbein, M., & Ajen, I. (1975). Belief, Attitude, Intention, and Behaviors: An Introduction to Theory and Research. Boston, MA: Adison: Wesley Publishing Co, Inc.
- Fusilier, M., & Durlabhji, S. (2005). An exploration of student internet use in India: the technology acceptance model and the theory of planned behaviour. *Campus-Wide Information Systems*, 22(4), 233-246.
- Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information systems*, 4(1), 7.
- George, D. dan Mallery, P.(2003). SPSS For Windows Step By Step: A Simple Guide And Application, 11.0 Update.
- Gist, M. E. (1987). Self-efficacy: Implications for organizational behavior and human resource management. *Academy of management review*, 12(3), 472-485.
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS quarterly*, 213-236.
- Govindaraju, R., Indriany, N., & de Bruijn, E.-J. (2007). Studi Mengenai Penerimaan istem ERP: Enhancement Terhadap Model Penerimaan Sistem ERP Berbasis Technology Acceptance Model. Paper presented at the 4th National Industrial Engineering Conference, NIEC 2007.
- Gujarati, D., & Porter, D. C. (2009). Basic Econometrics. 5th Edition. Edited by AE Hilbert.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis 6th Edition: Pearson Prentice Hall. New Jersey. humans: Critique and reformulation
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Handayani, P. W., Hidayanto, A. N., Pinem, A. A., Hapsari, I. C., Sandhyaduhita, P. I., & Budi, I. (2017). Acceptance model of a hospital information system. *International journal of medical informatics*, 99, 11-28.
- Henseler, J., & Chin, W. W. (2010). A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. *Structural equation modeling*, 17(1), 82-109.

- Kallunki, J.-P., Laitinen, E. K., & Silvola, H. (2011). Impact of enterprise resource planning systems on management control systems and firm performance. *International Journal of Accounting Information Systems*, 12(1), 20-39.
- Karahanna, E., Agarwal, R., & Angst, C. M. (2006). Reconceptualizing compatibility beliefs in technology acceptance research. *MIS quarterly*, 781-804.
- Klaus, H., Rosemann, M., dan Gable, G. G. (2000). What is ERP?" Information Systems Frontier. 2(2), 41-162.
- Klonglan, G. E., & Coward, E. W. (1970). The concept of symbolic adoption: A suggested interpretation. *Rural sociology*, 35(1), 77.
- Lai, I. K. (2015). Traveler acceptance of an app-based mobile tour guide. *Journal of Hospitality & Tourism Research*, 39(3), 401-432.
- Lee, D., Lee, S. M., Olson, D. L., & Hwan Chung, S. (2010). The effect of organizational support on ERP implementation. *Industrial management & data systems*, 110(2), 269-283.
- Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & management*, 40(3), 191-204.
- Lewis, W., Agarwal, R., & Sambamurthy, V. (2003). Sources of influence on beliefs about information technology use: An empirical study of knowledge workers. *MIS quarterly*, 657-678.
- Millman, Z., & Hartwick, J. (1987). The impact of automated office systems on middle managers and their work. *MIS quarterly*, 479-491.
- Motwani, J., Subramanian, R., & Gopalakrishna, P. (2005). Critical factors for successful ERP implementation: Exploratory findings from four case studies. *Computers in industry*, 56(6), 529-544.
- Nah, F. F.-H., Tan, X., & Teh, S. H. (2004). An empirical investigation on end-users' acceptance of enterprise systems. *Information Resources Management Journal (IRMJ)*, 17(3), 32-53.
- Ngai, E. W., Poon, J., & Chan, Y. H. (2007). Empirical examination of the adoption of WebCT using TAM. *Computers & education*, 48(2), 250-267.
- Pedersen, P. E. (2005). Adoption of mobile Internet services: An exploratory study of mobile commerce early adopters. *Journal of organizational computing and electronic commerce*, 15(3), 203-222.
- Petter, S., DeLone, W., & McLean, E. (2008). Measuring information systems success: models, dimensions, measures, and interrelationships. *European journal of information systems*, 17, 236-263.
- Pozzebon, M. (2000). Combining a structuration approach with a behavioral-based model to investigate ERP usage. *AMCIS 2000 Proceedings*, 124.
- Rajan, C. A., & Baral, R. (2015). Adoption of ERP system: An empirical study of factors influencing the usage of ERP and its impact on end user. *IIMB Management Review*, 27(2), 105-117.
- Rawstorne, P., Jayasuriya, R., & Caputi, P. (1998). An integrative model of information systems use in mandatory environments. *ICIS 1998 Proceedings*, 32.
- Robey, D., dan Farrow, D. (1982). User involvement in information system development: a conflict model and empirical test." Management Science. 28, No. 1, 28, No. 21, pp. 73-85.
- Rogers, E. (1995). Diffusion of innovations–5th edition Free Press. New York.
- Ruivo, P., Oliveira, T., & Neto, M. (2014). Examine ERP post-implementation stages of use and value: Empirical evidence from Portuguese SMEs. *International Journal of Accounting Information Systems*, 15(2), 166-184.
- San Martín, H., & Herrero, Á. (2012). Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. *Tourism management*, 33(2), 341-350.
- Shen, Y.-C., Chen, P.-S., & Wang, C.-H. (2016). A study of enterprise resource planning (ERP) system performance measurement using the quantitative balanced scorecard approach. *Computers in industry*, 75, 127-139.
- Siahaan, M. (2022). Dampak Pelaksanaan Tanggung Jawab Sosial terhadap Masyarakat, Lingkungan dan Pemerintah. *Studi Akuntansi, Keuangan, dan Manajemen*, 1(2), 113-125.
- Skok, W., & Döringer, H. (2002). Potential impact of cultural differences on enterprise resource planning (ERP) projects. *The Electronic Journal of Information Systems in Developing Countries*, 7(1), 1-8.

- Soh, C., Kien, S. S., & Tay-Yap, J. (2000). Enterprise resource planning: cultural fits and misfits: is ERP a universal solution? *Communications of the ACM*, 43(4), 47-51.
- Sokol, M. B. (1994). Adaptation to difficult designs: Facilitating use of new technology. *Journal of Business and Psychology*, 8, 277-296.
- Somers, T. M., & Nelson, K. (2001). *The impact of critical success factors across the stages of enterprise resource planning implementations*. Paper presented at the Proceedings of the 34th annual Hawaii international conference on system sciences.
- Sternad, S., & Bobek, S. (2013). Impacts of TAM-based external factors on ERP acceptance. *Procedia Technology*, 9, 33-42.
- Suharto, S., Japlani, A., & Ali, K. (2021). Pengukuran Minat Berwirausaha Menggunakan Self Efficacy, Lingkungan Dan Pendidikan Kewirausahaan Pada Mahasiswa Feb Universitas Muhammadiyah Metro. *Jurnal Bisnis Darmajaya*, 7(1), 52-69.
- Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International journal of human-computer studies*, 64(2), 53-78.
- Supriadi, S., Suharto, S., & Sigalingging, M. (2022). Analisis Pengaruh Lingkungan Kerja Dan Komitmen Organisasi Terhadap Kepuasan Kerja Pegawai Di Kantor Kepala Kampung Negeri Kepayungan Kecamatan Pubian Kabupaten Lampung Tengah. *Derivatif: Jurnal Manajemen*, 16(1), 110-119.
- Tan, X., & Kim, Y. (2015). User acceptance of SaaS-based collaboration tools: a case of Google Docs. *Journal of Enterprise Information Management*, 28(3), 423-442.
- Tarafdar, M., & Vaidya, S. D. (2006). Challenges in the adoption of E-Commerce technologies in India: The role of organizational factors. *International Journal of Information Management*, 26(6), 428-441.
- Taylor, S., & Todd, P. (1995). Assessing IT usage: The role of prior experience. *MIS quarterly*, 561-570.
- Thakur, R., Angriawan, A., & Summey, J. H. (2016). Technological opinion leadership: The role of personal innovativeness, gadget love, and technological innovativeness. *Journal of business research*, 69(8), 2764-2773.
- Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: Toward a conceptual model of utilization. *MIS quarterly*, 125-143.
- Tornatzky, L. G., & Klein, K. J. (1982). Innovation characteristics and innovation adoption-implementation: A meta-analysis of findings. *IEEE transactions on engineering management*(1), 28-45.
- Vallerand, R. J., Deshaies, P., Cuerrier, J.-P., Pelletier, L. G., & Mongeau, C. (1992). Ajzen and Fishbein's theory of reasoned action as applied to moral behavior: A confirmatory analysis. *Journal of personality and social psychology*, 62(1), 98.
- Venkatesh, V. (2006). Where to go from here? Thoughts on future directions for research on individual-level technology adoption with a focus on decision making. *Decision sciences*, 37(4), 497-518.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.
- Wold, H. (1982). Systems under indirect observation using PLS. A second generation of multivariate analysis: Methods.
- Wu, Y.-L., Chiu, C.-Y., Yang, P.-C., & Li, C.-P. (2011). Impact of web usability on user acceptance using tourism website. *Journal of Statistics and Management Systems*, 14(6), 1007-1025.
- Xue, Y., Liang, H., Boulton, W. R., & Snyder, C. A. (2005). ERP implementation failures in China: Case studies with implications for ERP vendors. *International Journal of production economics*, 97(3), 279-295.
- Yen, H. R., & Sheu, C. (2004). Aligning ERP implementation with competitive priorities of manufacturing firms: An exploratory study. *International Journal of production economics*, 92(3), 207-220.
- Youngberg, E., Olsen, D., & Hauser, K. (2009). Determinants of professionally autonomous end user acceptance in an enterprise resource planning system environment. *International Journal of Information Management*, 29(2), 138-144.

Yusuf, Y., Gunasekaran, A., & Abthorpe, M. S. (2004). Enterprise information systems project implementation:: A case study of ERP in Rolls-Royce. *International Journal of Production Economics*, 87(3), 251-266.