



Determinant of System Use and Its Effect on the Performance of Government Organizations

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Abstract

This research aimed to determine the determinants of the use of IT-based AIS (Accounting Information System) and its effect on the performance of the government organization. This research modified the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Task Technology Fit (TTF), and IS Success Model by integrating individual, social, and system aspects. This research used a survey method and took samples of financial employees who worked in the Regional Device Organization (OPD) in Jember Regency consisting of 103 respondents. Partial Least Square (PLS) was used to test the research data. The results showed that the constructs of perceived usefulness, perceived ease of use, subjective norms, task technology fit, and collaboration quality has a positive effect on the behavior intention. Subjective norms are the most influential constructs to behavior intention. Furthermore, behavior intention has a positive effect on individual behavior to use IT-based AIS. The results of this research also showed that the behavior of using IT-based AIS can affect the performance of the government organization. The findings in this research can be used as consideration for government organizations in using IT-based AIS that can be accepted by the users and can produce good organizational performance.

Keywords: System Utilization; Organization Performance; Technology Acceptance Model; Theory of Planned Behavior; Task Technology Fit; IS Success Model

Introduction

The development of e-government in government organizations is very diverse. Based on Wang and Liao's (2008) statement, there are three types of e-government services in general, namely government to government (G2G), government to citizens (G2C), and government to businesses (G2B). This research raised the issue of the implementation of IT-based AIS (Accounting Information System) that is included in G2G, namely the application of information systems owned by the local government to compile Local Government Financial Statements (LKPD). The application is used to facilitate the financial reporting process carried out by accounting staff. The existing data and transactions were input into the application and processed to produce financial statements as the output.

Based on the global point of view, the United Nations (UN) conducted an assessment of the implementation of e-government in several countries, called the E-Government Development Index (EGDI). The assessment includes 3 dimensions, namely the Online Service Index (OSI), Telecommunication Infrastructure Index (TII), and the Human Capital Index (HCI). Indonesia's ranking in 2016 was 116. It dropped over 10 rankings compared to that of 2014. In addition, the ranking position is still far compared to other Southeast Asian countries such as Malaysia (ranked 60), the Philippines (ranked 71), and Brunei Darussalam (ranked 83). In detail, the assessment of OSI and TII in Indonesia has a value that can be said to be below average in the Southeast Asia region, namely OSI with the number of 0.3623 and TII with the number of 0.306. As for HCI assessment, Indonesia has been able to get above the average in Southeast Asian region with a value of 0.6796 (Widowati., 2016). Through the EGDI, Indonesia still needs more efforts to improve the implementation of e-government.

Efforts to develop the implementation of e-government in Indonesia have been carried out for a long time since the publication of Presidential Instruction number 3 in 2003 (Masyhur., 2017). However, efforts to develop e-government in Indonesia are still experiencing several obstacles. In several surveys conducted, it was stated that around 70% of information technology was declared to have failed to be implemented because of poor technical quality (Usnodo., 2010: 20). However, after the information technology was improved, in fact it still failed to be implemented (Usnodo., 2010: 23). In addition, several studies said that the adoption of IT in e-government did not run optimally due to minimal user acceptance. For example, in Electronic Procurement System (EPS) in Malaysia in 2000 until the end of 2008, of the 2559 units available, only 1800 used the system. In addition, the presentation of transactions using EPS is only around 40% (Sambasivan, Wemyss and Rose, 2010). Fu, Farn, and Chao (2006) also stated that despite the availability of tax software (eTax) and the promotion carried out by the government, only 40% of taxpayers in Taiwan use eTax. Most of them have no desire to leave their paper forms. Through this elaboration, it can be said that although the quality of information technology has been improved, the failure of the application of information technology is still happening. The studies that have been conducted showed that the failure of the application of information technology systems is more due to the matters relating to individual behavioral aspects (Ajzen., 1991; Lam., Cho and Qu., 2007; Lee, Lee., Yen and Huang., 2010).

The issue of IT acceptance/rejection is still a challenging topic to discuss (Fu et al., 2006; Venkatesh., Morris., Davis and Davis., 2003). It can also be linked to the organization's decision to make IT investments. With the existence of IT investment, it is hoped that it can help individuals to complete their works more effectively and efficiently. Hung, et al (2006) stated that many governments have invested heavily in e-government services to connect government networks and to develop various infrastructure services to improve efficiency and productivity. In addition, the results of Zuhri's research (2010) showed that empirically, almost 75% of companies in Indonesia believe that investment in technology in modern infrastructure used to support IT-based information systems will have a positive impact on organizational performance. However, based on the statement by Agarwal and Prasad (1997) in Hameed and Counsell (2014), IT implementation does not always produce performance gains. Venkatesh, et al (2003) also stated that assumptions that the use of technology will have a positive impact on individuals and organizations must be tested.

Based on the description above, it can be concluded that there are still obstacles to achieving successful IT implementation. Human and technological factors are important components that need to be considered in the implementation of IT-based information systems (Baridwan., 2012). Based on the previous research, there are several models that can predict the acceptance and success of IT implementation. Through the Technology Acceptance Model (TAM), there are two constructs that reflect individual aspects of perceived usefulness and perceived ease of use. The results of Pai and Huang (2011), Taylor and Todd (1995), and Yen et al (2010) found empirical evidence that perceived usefulness influences behavior intentions, while the research conducted by Nasri and Charfeddine (2012),

Sambasivan et al (2010), Park and Kim (2014), found that perceived ease of use influences behavior intention. Furthermore, the Theory of Planned Behavior (TPB) has constructs that represent social aspects, namely subjective norms. Based on the research results of Battacherjee (2000) and Lee, Brown and Beck (2016), Yadav et al (2015), it was found that subjective norms influence behavior intention. Representing technology/system aspects, Task Technology Fit (TTF), and IS Success Model have several constructs that have also been studied previously. Based on the research by Wu and Chen (2016), Diatmika et al (2016) and Lu and Yang (2014), the construct of the Task Technology Fit (TTF) influences the interest in individual behavior to use IT. Furthermore, for IS Success Model, this research applied the construct of IS Success Model developed by Urbach et al (2010) by referring to the IS Success Model introduced by DeLone and McLean (2003). Some research results show that the quality of the process and collaboration affects the behavior of IT use by individuals (Urbach et al., 2010; Chen et al., 2013).

Methodology

This research applied a survey method. The population in this research were the financial employees who worked in Jember Regency, but the numbers were unknown. They were selected using convenience sampling. The samples taken in this research were 146 financial employees taken by multiplying the number of OPD with the minimum number of financial employees in each OPD (73 OPDs x 2), so that each OPD was given two questionnaires to fill out. This research used Structural Equation Modelling (SEM) with Partial Least Square (PLS) approach in analysing the data.

Results and Discussion

a. Descriptive Statistic

Of 146 questionnaires distributed, 114 questionnaires were returned. The questionnaires that can be processed were 103. Based on the respondents' demographics, the majority of respondents were men. In addition, the majority of respondents were over 30 years old and had a final education of bachelor degree. Regarding the use of IT-based AIS, the majority of respondents have worked for more than 3 years and also used IT-based AIS for more than 3 years.

b. Model Evaluation

Model evaluation was done by testing the outer and inner models. The testing of the outer model was done to determine the validity (convergent and discriminant validity) as well as the model reliability. The inner model testing was done to predict the causal relationship between latent variables. Convergent validity is fulfilled if the value of AVE and communality is greater than 0.5. Furthermore, discriminant validity is fulfilled, if the cross-loading value is greater than 0.7. Regarding reliability, the parameter used is by fulfilling the Cronbach's alpha value and the composite reliability that must be greater than 0.7 (Abdillah and Hartono., 2015: 194-196). Table 1 shows the results of the validity and reliability tests that have been carried out.

Table 1 Overview of PLS algorithm results

Constructs	AVE	Communality	Cronbach's Alpha	Composite Reliability
PU	0.765	0.765	0.897	0.929
PEOU	0.771	0.771	0.899	0.931
SN	0.870	0.870	0.925	0.953
TTF	0.693	0.693	0.852	0.900
PQ	0.738	0.738	0.881	0.918
CQ	0.828	0.828	0.931	0.950
BI	0.850	0.850	0.911	0.944
B	0.910	0.910	0.902	0.953
OP	0.790	0.790	0.868	0.917

Table 2 Cross loading results

Constructs	PU	PEOU	SN	TTF	PQ	CQ	BI	B	OP
PU1	0.894	0.665	0.676	0.651	0.683	0.751	0.778	0.362	0.683
PU2	0.927	0.724	0.769	0.690	0.719	0.737	0.828	0.327	0.714
PU3	0.888	0.702	0.763	0.628	0.749	0.788	0.798	0.296	0.745
PU4	0.784	0.598	0.559	0.591	0.557	0.601	0.653	0.276	0.556
PEOU1	0.707	0.933	0.703	0.559	0.684	0.668	0.708	0.321	0.749
PEOU2	0.664	0.912	0.655	0.563	0.647	0.634	0.690	0.240	0.681
PEOU3	0.741	0.896	0.661	0.560	0.681	0.641	0.696	0.277	0.703
PEOU4	0.587	0.762	0.622	0.624	0.614	0.533	0.681	0.166	0.550
SN1	0.770	0.729	0.951	0.681	0.726	0.810	0.852	0.348	0.730
SN2	0.730	0.670	0.947	0.691	0.726	0.803	0.815	0.325	0.747
SN3	0.728	0.709	0.900	0.589	0.697	0.749	0.783	0.294	0.682
TTF1	0.565	0.514	0.534	0.820	0.587	0.551	0.651	-0.011	0.470
TTF2	0.577	0.506	0.518	0.798	0.574	0.612	0.604	0.031	0.517
TTF3	0.624	0.590	0.633	0.848	0.660	0.624	0.717	0.255	0.541
TTF4	0.665	0.572	0.638	0.863	0.699	0.649	0.754	0.241	0.578
PQ1	0.738	0.632	0.617	0.697	0.887	0.740	0.717	0.210	0.673
PQ2	0.581	0.616	0.613	0.541	0.817	0.641	0.647	0.358	0.575
PQ3	0.698	0.638	0.653	0.669	0.872	0.777	0.691	0.203	0.671
PQ4	0.652	0.685	0.747	0.695	0.859	0.741	0.759	0.320	0.673
CQ1	0.701	0.626	0.733	0.605	0.744	0.897	0.715	0.224	0.719
CQ2	0.735	0.591	0.715	0.643	0.754	0.922	0.740	0.264	0.704
CQ3	0.768	0.649	0.771	0.720	0.793	0.940	0.815	0.232	0.698
CQ4	0.788	0.696	0.838	0.684	0.779	0.878	0.860	0.346	0.748
BI1	0.849	0.769	0.839	0.736	0.800	0.835	0.938	0.300	0.716
BI2	0.828	0.723	0.834	0.770	0.799	0.853	0.945	0.372	0.736
BI3	0.746	0.697	0.746	0.774	0.666	0.698	0.881	0.278	0.644
B1	0.368	0.278	0.342	0.146	0.316	0.321	0.360	0.962	0.393
B2	0.317	0.270	0.317	0.172	0.286	0.237	0.293	0.946	0.344
OP1	0.766	0.724	0.780	0.615	0.767	0.815	0.768	0.399	0.968
OP2	0.509	0.492	0.450	0.522	0.515	0.426	0.464	0.192	0.729
OP3	0.746	0.778	0.755	0.572	0.700	0.772	0.731	0.389	0.949

Based on Table 1 and 2, it can be concluded that the results of the validity and reliability test have been fulfilled. Then, to test the inner model, the parameters used are by looking at the R^2 value and the path coefficient. The higher the R^2 value is, the better the prediction model will be. On the other hand, the path coefficient value was used to determine the significance of hypothesis testing. Table 3 shows the result of inner-model testing.

Table 3 R^2 values

Constructs	R Squared
BI	0.899
B	0.119
OP	0.150

Table 4 Path coefficient values

Hypotheses	Constructs	Original Sample (O)	T Statistics (O/STDEV)	P Values	Decisions
H1	Perceived Usefulness Behavior intention ->	0.261	3.451	0.000	ACCEPTED
H2	Perceived Ease of Use Behavior intention ->	0.099	2.248	0.013	ACCEPTED
H3	Subjective Norm Behavior intention ->	0.286	4.250	0.000	ACCEPTED
H4	Task Technology Fit Behavior intention ->	0.252	3.859	0.000	ACCEPTED
H5	Process Quality Behavior intention ->	0.009	0.171	0.432	REJECTED
H6	Collaboration Quality Behavior intention ->	0.145	2.176	0.015	ACCEPTED
H7	Behavior intention Behavior ->	0.345	2.943	0.002	ACCEPTED
H8	Behavior -> Organization Performance	0.388	3.450	0.000	ACCEPTED

Hypothesis testing was done by looking at the t-statistic value, p-value (α), and the original value of the sample (β). If the t-statistic value is greater than 1.64 and the value of α is lower than 0.05, the hypothesis is accepted. The value of β will indicate a positive or negative direction. Based on Table 4, it can be seen that H1, H2, H3, H4, H6, H7, H8 show significance with positive values, so the hypothesis is accepted. On one hand, H5 shows an insignificant value, then the hypothesis is rejected. In addition, by looking at the R^2 value, it can be concluded that the variation in constructs of behavior intention (BI) can be explained by constructs of perceived usefulness, perceived ease of use, subjective norms, task technology fit, process quality and collaboration quality of 89.90%, whereas the rest is explained by other constructs outside the research model. Furthermore, the variations in the construct of behavior (B) can be explained by the constructs of behavior intention (BI) of 11.90%, and the variations in constructs of organizational performance (OP) can be explained by the construct of behavior (B) of 15%.

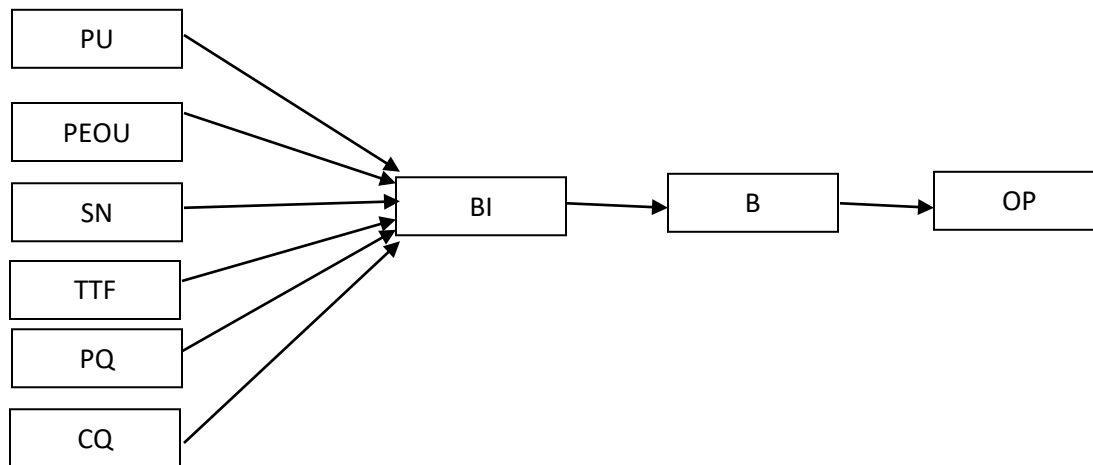


Fig. 1 Structural model of hypothesis testing

The results showed that perceived usefulness had a positive effect on individual behavior intentions to use IT-based AIS. This means that financial employees in local government organizations have a perception that the IT-based AIS (RMIS (Regional Management Information System)) used provides benefits in their work. This is one aspect or one of the factors that influences the behavior of individuals in the organization to use IT-based AIS. The results of this research support several previous studies by Venkatesh and Davis (2000), Venkatesh et al (2003), Yen et al (2010), Pai and Huang (2011), Taylor and Todd (1995), and Zhang et al (2011).

The results showed that the perceived ease of use had a positive effect on individual behavior intentions to use IT-based AIS. This can mean that financial employees in local government organizations have a perception that the IT-based AIS (RMIS) that they use is the information system that is easy to learn and use. In addition, if it is related to the demographics of the respondents in the research environment that has been described in descriptive statistics, it can be seen that the majority of financial employees are the employees of over the age of 30 years. Based on the research by Morris and Venkatesh (2000), the older age of an individual influences the ease of use of a technology that will be a determining factor to generate interest in the use of technology. The results of this research support several previous studies by Nasri and Charfeddine (2012), Sambasivan et al (2010), Park and Kim (2014).

The results showed that subjective norms had a positive effect on individual behavior intentions to use IT-based AIS. This can be interpreted as a superior financial officer, leader, or co-worker to contribute to an individual to use IT-based AIS (RMIS) in carrying out the financial reporting process. In addition, through the test results, the t-statistical value of subjective norms produced the highest value. This shows that subjective norms are the construct that most significantly influences individual behavior intentions to use IT in the context of government organizations. The results of this research support the results of the previous studies by Taylor and Todd (1995), Amin, Baba and Muhammad (2007), Battacherjee (2000) and Lee, Brown and Beck (2016), Yadav et al (2015).

The results showed that the task technology fit had a positive effect on the interest in individual behavior to use IT-based AIS. This can mean that financial employees at Jember OPD have a high level of confidence and that the IT-based AIS used is in accordance with their work needs and can facilitate them in producing more accurate financial reports. This raises the higher interest in behavior to use IT-

based AIS. The task technology fit is the second construct which has high significance after the construct of subjective norms. This can be related to the demographics of the existing respondents in which the majority of financial employees at Jember OPD are men. Based on Venkatesh et al (2003) statement, men tend to have high masculinity, so they have an orientation towards performance, and the results that will be given by the technology. In addition, the IT-based AIS (RMIS) used by the Jember government organization is an application made by BPKP (Finance and Development Supervisory Agency) and is intended specifically to assist the financial reporting process. Existing features make financial employees feel that the application can help their work as well as provide convenience and accuracy of data so that the behavior intention to use the system increases. The results of this research support the results of the previous studies by Yen et al (2010), Wu and Chen (2016), Diatmika et al (2016) and Lu and Yang (2014).

The results showed that the quality of the process does not affect the interest in individual behavior to use IT-based AIS. The failure of this research proves that the quality of the process has a positive effect on behavior intention based on several assumptions. Urbach et al (2010) explained that insignificant results were expected because even though the IT used was not required by the company, the individual/employee would still use it because some of the work and information needed could only be obtained through the use of IT. Therefore, the use of IT in a company is quasi-mandatory so that individuals or employees within the company will inevitably use IT to complete their works. In addition, in the research of Chen et al, (2013), it is also known that this construct has a weak influence compared to the construct of quality collaboration. This is because the process quality construct has many definitions that individuals feel confused to understand this dimension (Urbach et al., 2010).

The results show that the collaboration quality has a positive effect on the individual behavior intention to use IT-based AIS. This can mean that financial employees in Jember government organizations consider the IT-based AIS that is used can increase collaboration among OPDs. This can be reflected in the changes in procedures in financial reporting. Before the IT-based AIS was used based on networks, financial employees would carry out an export-import system to move financial data. After the IT-based AIS (RMIS) was used based on the network, all data could be integrated and accessed anywhere. This study supports the previous research which stated that the collaboration quality can improve individual use behavior towards IT (Urbach et al., 2010; Chen et al., 2013).

Furthermore, this study also shows that behavior intention has a positive effect on individual behavior to use IT-based AIS. This means that the higher the interest of someone to use IT is, the higher the intensity of the user will be. These results support various previous studies, including those of Wang and Shih (2009), Venkatesh and Zang (2010), Yilmaz and Ozer (2008), and Lee, Brown and Beck (2016). Through the use of IT behavior, the results of this study also prove that the use behavior has a positive effect on organizational performance. This can mean that the perception of financial employees is that the IT used can improve organizational performance. They feel that the IT used can improve productivity, coordination, and collaboration as well as overall organizational performance. Therefore, it can be concluded that IT use behavior is one of the factors that can affect organizational performance. The results of this study support the results of the previous studies by Baridwan (2012), Urbach et al (2010), and Lee-Post (2009).

Limitation and Suggestion

This research has several limitations. First, this study cannot find out the number of population i.e. the number of financial employees in each OPD of Jember Regency. In addition, the bureaucracy in the government organizations is complicated. For further research, it is suggested to do better personal

approaches so that the population data can be obtained. In addition, it is good for the researcher to be able to take into account the timing of research well related to a rather-complicated government bureaucracy.

Conclusion

The results of this study support the theory of acceptance and success of information technology used i.e. TAM, TPB, TTF, and IS Success Model. Based on the description above, it can be concluded that perceived usefulness, perceived ease of use, subjective norms, task technology fit, and collaboration quality have a positive effect on behavior intention. Furthermore, the results of the study also show that the behavior intention has a positive effect on behavior. use behavior carried out by individuals in the organization can have a positive effect on the organizational performance.

The results of this study indicate that the process quality does not affect the interest in individual behavior in using IT-based AIS. This is because the environment of government organizations has mandatory settings. Therefore, whether or not they want to, financial employees must use IT-based AIS required in carrying out the financial reporting process. The obligation to use IT-based AIS is a factor that causes this use. In addition, the definition of process quality is very diverse. This leads to confusion from individuals in interpreting this dimension.

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