USING THE TECHNOLOGY ACCEPTANCE MODEL TO ANALYZE INFORMATION SYSTEM PERFORMANCE

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Abstract

This article analyzes user perceptions of information systems. The DIY provincial government agency conducted the research. The analysis is based on the Technology Acceptance Model (TAM). Information system performance is associated with perceived usefulness (POU) and perceived ease of use (PEU). Based on the technology acceptance model, the user will be able to accept the information system if the user's information system has a perception that the information system is helpful for the user and easy to use. This article analyzes whether user perceptions of the usefulness and ease of use of information systems affect user perceptions of information system performance. The study was conducted on SIPKD users in the DIY provincial government. The regional financial management information system is one of the systems used by the DIY provincial government. SIPKD is a system that all local government work units must use. SIPKD operators are appointed with a regional head decree. The research data was obtained by distributing questionnaires to 100 SIPKD operators. Data were analyzed by moderating regression analysis. Data processing results show that POU and PEU affect user perceptions of information system performance. The proven task complexity variable serves as a moderating variable between POU and PEU with information system performance.

Keywords: Perceived Ease of Use, Perceived of Usefulness, Technology Acceptance Model.

I. INTRODUCTION

A framework for bureaucratic transformation in the direction of good governance in Indonesia is the establishment of a new paradigm of New Public Management. This paradigm serves as the foundation for the need for good governance, which has today become the operative word in formulating all reforming policy objectives [1]. The Indonesian government is encouraged to improve its financial management performance under New Public Management. Creation of a better-organized bureaucracy that combines the three pillars of good regional governance with the management of government funds. According to Bhatta [2], good corporate governance is defined by a high degree of accountability, transparency, openness, and the rule of law.

By issuing Government Regulation No. 56 of 2005 concerning Regional Financial Information Systems and Regulation of the Minister of Finance No. 46 of 2006 concerning Procedures for Submission of Regional Financial Information, the central government supports the accountability process for Regional Government Finance. The Regional Financial Management Information System (SIPKD) foundation, development, and coordination are covered in Circular No. SE.900/122/BAKD, which details the two rules. The Regional Government must provide the Central Government with regional funding data and information. The Regional Financial Management Information System (SIPKD) is used for data and information submission. To gather, process, present, reference, and communicate regional financial data/information, SIPKD was built on the foundation of information technology.

Financial managers in each SKPD are sort of required to use the Regional Financial Management Information System (SIPKD) following these numerous regulations. For the regional financial administration process to run well, each SKPD's financial manager must be well-versed in SIPKD. The elements influencing SIPKD adoption in the environment of DIY government will be examined in this study. The Theory Acceptance Model (TAM) provides the foundation for the analysis. The Theory of Reasoned Action (TRA), put forward by Ajzen and Fishbein [3], is the foundation of TAM. Adopting technology will ultimately depend on how information technology (IT) users react to and perceive the world around them. The fundamental goal of TAM is to explain how information systems are generally accepted and to explain user behavior or attitudes in society [4]. According to TAM, behavioral intention to use is influenced by two beliefs. The first is perceived usefulness, defined as how much a person thinks utilizing the system will enhance his performance. The second is perceived ease of use which a person thinks utilizing the system is simple and appropriate in describing how users see it.

This study uses the TAM (Technology Acceptance Model) approach to investigate the factors that affect SIPKD users' acceptance of the software in the context of the DIY government. SIPKD is a system for managing financial transactions in government institutions, so this research is crucial. It will be simple for the local government to carry out the socialization and training process for using SIPKD if they know the variables that affect SIPKD adoption. A crucial stage in implementing an information technology system is a condition when the presence of

the system is accepted or rejected by potential users, according to Compeau and Higgins [5], who researched this condition. The tendency for varied assessments of the advantages and usability of the new technology causes this delay in the adaption process. Users' impressions of how well their use will influence information system function. The user's assessment of the information system's value is based on its performance. Therefore, the information system performance variable will be the dependent variable in this study. This study will provide a solution to the research issue of whether perceived usefulness, ease of use, and task complexity impact users' acceptance and performance of SIPKD.

II. LITERATURE REVIEW AND HYPOTHESIS

A. Technology Acceptance Models

Users of the system will employ the technology acceptance model, also known as TAM, which is a model for accepting information technology systems. Davis [4] created the Technology Acceptance Model (TAM), which was based on Fishbe's Theory of Reasoned Action [6]. Because individuals' acceptance of information system technology is a planned activity that can be predicted and explained by their behavioral intentions, the TRA model can be used [7]. However, the TAM extends the TRA paradigm, and it is impossible to say that such systems are successful [7]. Four metrics can be used to assess an information system's effectiveness, including user happiness, system utilization, decision performance, and organizational performance. As Hartwick did, this study uses user happiness and information system utilization to assess the effectiveness of information systems [8]. Utilization of technology or information systems refers to a person's choice to utilize or refrain from using such tools to carry out several duties [9].

User satisfaction with the information system is a good indicator of information system performance. The user's comfort level and the advantages they experience define how well the information system performs. The benefits of the produced product also demonstrate how well the information system is performing.

B. Theory of Reasoned Action and Moral Behavior

This theory was formulated by Ajzen and Fishbein [3]. Their investigation in 1980 yielded the proposed view. According to this theory, normative and behavioral beliefs influence a person's decisions. Outcome evaluation and motivation to comply are therefore encouraged by these elements. Thus, a person's attitude and personal norms will motivate them to behave (Subjective Norms). The presence of attitudes and subjective norms will influence how focused and attentive people are in their actions (behavior intention). The purpose will ultimately impact a person's actions (behavior). In a nutshell, it is depicted in figure 1.

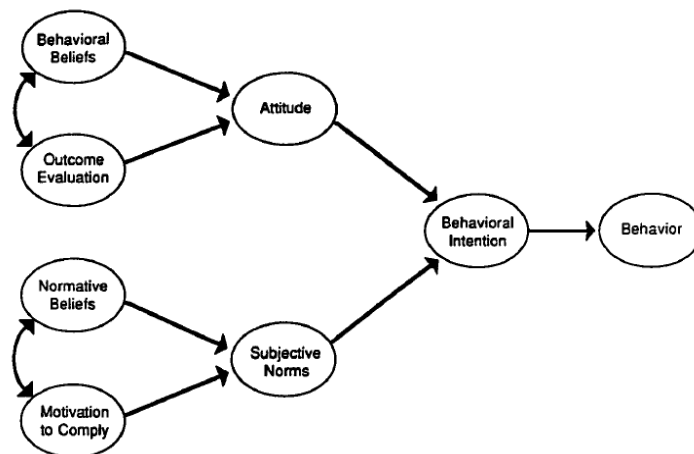THE THEORY OF REASONED ACTION AND MORAL BEHAVIOR

Figure 1.   TRA

Perceptions of perceived technology utility (perceived usefulness) and perceptions of technology usability (perceived ease of use) are the two key constructs. According to Jogiyanto [7], TAM contends that these two constructs. The TAM was created by Davis [4] to investigate the determinant factor of "*yam a*" that influence how users use "*yam a*" information resources. The findings of this study suggest that interest in using informational media influences intention and that perception of the usefulness of technology and their perceived usability influence perceptions of their perceived usability.

Sanjaya [10] researched how usefulness and ease influence students' behavioral intentions. The findings of his study indicate that Perceived Usefulness can influence someone in using the internet. In contrast, Perceived Ease

International Journal of Business, Education, Humanities and Social Sciences
e-ISSN: 2685-0931 | p-ISSN: 1550205894
Vol 4 No 2 (2022)

of Use cannot control how someone uses the internet; perceived utility does. In [11], Kartika conducted research on behalf of PT. Bank Negara Indonesia Tbk in Semarang on the analysis of the acceptance process for the iCons information system using the technology acceptance model. According to the study, self-efficacy and benefits associated with using the information on iCons positively correlate with perceived 5yam aka5s. It suggests that how well an employee can tolerate 5yam will affect how positively they view the advantages of utilizing iCons 5yam. According to Muntianah [12] that examines TAM in student learning activities, the perception of IT's usability affects that technology's perceived usefulness in the sense that if an IT user finds it simple to use, he will also believe that it is functional. If IT users feel that their use of IT is valuable, they will be interested in doing so.

Meanwhile, perceptions of usefulness have an impact on interest in using IT. The subsequent outcome is that IT utilization depends on the good in using it. Furthermore, Handayani & Harsono [13] demonstrates that user attitudes influence judgments of usefulness and convenience. Therefore, the perceived ease of use and perceived value impact students' interest in utilizing the internet.

C. Perceived Usefulness of Technology

The degree to which a person thinks employing technology will help them perform better at work is perceived usefulness (PU). PU is a belief about the decision-making process, as is clear from its term. As a result, if a person uses an information system because he thinks it's valuable, it must be helpful. Conversely, people will not use an information system if they believe it is less valuable [7]. The system's advantages for users are described in terms of productivity, task performance, effectiveness, the significance of a job, and overall usefulness [4].

D. Perceived Ease of Technology Use

The degree to which a person thinks utilizing a technology would be effortless is known as perceived ease of use (PEOU). It is clear from its definition that this PEOU also includes a belief about how decisions are made. For example, a person will use an information system if he thinks it is simple. On the other hand, if someone feels the information system is challenging to use, he will not use it [7]. This idea encompasses making information systems clear and straightforward to use to achieve the user's goals [4].

E. Performance of Information System

According to Utami Budi W. and Pardanawati Laksmi S. [14], the effectiveness of information services is an evaluation of how well a company has implemented the information services it uses to provide accurate and timely information with corporate objectives. Information system performance is described by Nurhayati [15] as an accomplishment or work that results from significant efforts of a group of community elements made up of (data, information, human resources, etc.). Those are integrated with gathering, recording, processing, and becoming information related to meeting user needs as a foundation for decision-making. Numerous factors affect the performance of information systems. Based on several earlier research, it is clear that the user's technological aptitude, contentment with the system's ease of use, benefits experienced by the user, and training received by the user all affect the system's performance.

F. Conceptual Framework and Hypothesis

According to TAM, IT users will adopt particular applications if they believe they would be simple to use and beneficial to their jobs. If users believe SIPKD is practical and straightforward, they may be interested in utilizing it. The effectiveness of SIPKD is also influenced by perceived convenience and utility. Suppose the user believes that SIPKD is simple and practical at work. Users will believe that SIPKD performs well. A range of actions by SIPKD users contributes to the task's complexity. If SIPKD users have the perception that SIPKD is easy to use and makes it easier for them to complete work, then users have the perception that SIPK has good performance. The proposed hypothesis is:

H1: The perceived ease of use has a positive effect on the performance of SIPKD.

If SIPKD users perceive that SIPKD helps complete their work, then they perceive that SIPKD has good performance. Therefore, the following is the hypothesis proposed:

H2: Perceived usefulness has a positive effect on the performance of SIPKD.

Users of SIPKD have a wide range of diverse jobs. The user's various positions will impact how intensely they use SIPKD. The interface with SIPKD is predicted to alter as user tasks become more diversified. The user's perception of the performance of SIPKD may change due to changes in interaction. It is anticipated that the user's work difficulty will impact how the usability and convenience factors relate to the acceptance and performance of SIPKD. The hypothesis put forth is:

H3: Task complexity affects the relationship between Perceived usefulness and the perceived ease of use with SIPKD performance.

III. RESEARCH METHODS

A. *Analysis Method*

The respondents whose data were acquired were SIPKD users in the SKPD environment in the DIY region. The data was obtained by performing direct research on the object of study using the questionnaire method. The participants in this study received their surveys through Google Forms and research assistants who visited them on-site. The respondents will receive a questionnaire from the research assistant, who will then schedule a time to collect it.

B. *Data Quality Test*

Testing is carried out by determining the validity and reliability of each research question used to measure the study variables. The validity test was conducted by calculating the correlation between the scores of each variable. The correlation results were then compared with the critical value at significant levels of 0.05 and 0.01. Testing for reliability is performed to gauge how consistently respondents' responses are given. Cronbach Alpha was used to test the test requirements (CA). The SPSS for Windows version 15.0 application was used to conduct this prerequisite test.

C. *Hypothesis Test*

Multiple regression analysis will be used to examine the stated hypothesis. This analysis examines the impact of several independent variables on the dependent variable, each of which has a ratio/interval scale [12]. The multiple regression equations in this study are:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_1X_3 + \beta_5X_2X_3 + \varepsilon \tag{1}$$

Where:
Y = Performance of SIPKD
$X1$ = Perceived Usefulness
$X2$ = Perceived Ease of Use
$X3$ = Task Complexity
α = Constanta
β = Regression Coefficient
ε = error

Model testing, a simultaneous test known as the F test, and a t-test made up of multiple regression analysis (individual test). When evaluating a model, the output of numerous regression processing is examined, specifically the coefficient of determination R^2 (Goodness of Fit Model). This test is necessary to ascertain how well the variation in the independent variable utilized in the study can account for the variation in the dependent variable. The F test (simultaneous test) was used to determine if the independent factors' combined impact on the dependent variable was statistically significant. It refers to the question of whether it can be demonstrated in this study that the system acceptance variable is significantly influenced by the usability and convenience variables taken combined (Behavior Intention to Use). Finally, the impact of each independent variable on the dependent variable was investigated using the t-test (individual test). The t-test will examine the relationship between usability and convenience variables and their impact on the acceptance and convenience variables.

IV. RESULTS AND DISCUSSION

The survey approach was used to carry out this study. The questionnaires were distributed to SIPKD users working for government organizations in the Special Region of Yogyakarta. Eighty questionnaires were given out. Up to 64 questionnaires can be handled from returned surveys.

Analyzing data starts by determining its quality. Then, validity and reliability tests are used to evaluate the data's quality. Utilizing Spearman correlation to test validity because the correlation coefficient value is more than 0.5 for all variables, the validity test results demonstrate that all variables are legitimate. Testing for reliability employs Cronbach's alpha. All variables have a Cronbach alpha value greater than 0.6. It proves the accuracy of all data. The results of the regression analysis are in the table 1.

Based on the table I, the writers obtained the following equation:

$$Y = 2.354 + 1.405X1 + 1.642X2 + 0.653X3 + 0.496X1X3 + 0.432X2X3 + \varepsilon \tag{2}$$

TABLE I.   RESULTS OF ANALYSIS

Keterangan	Koefisien Regresi	Nilai t	Sig
(Constant)	2.354	-2.377	.021
Perceived of Usefulness	1.405	-2.856	.006
Perceived Ease of use	1.642	3.739	.000
Task Complexity	.653	3.068	.003
PEUxKT	.496	-3.462	.001
POUxKT	.432	3.008	.004
Nilai F 2,6958 Sig 0,000			
R^2 0,699			

Based on the equation, the independent variable positively affects the dependent variable. Therefore, the regression coefficient shows a positive number. It means that each independent variable positively affects the dependent variable. A detailed explanation of the t value is as follows.

The Perceived Usefulness (POU) variable's t value is -0.856. It indicates that POU has a detrimental impact on the functionality of information systems. 0.006 significance given that the significance level is less than 0.05, POU impact on the information system's performance is considerable. This adverse effect is enormous; thus, if the information system offers more advantages, its performance will suffer. These findings disprove the hypothesis that POU enhances the functionality of information systems. The reasoning behind this conclusion is that performance will suffer if the user believes the information system offers more significant advantages. Therefore, there is a chance that an information system with various benefits will fall short in providing help for some functions. It contradicts the user's perception, who believes the system is impervious to failure. The findings of this study corroborate those of Tangke's research [16]. This finding disproves the suggested hypothesis 1.

The perceived ease of use t score is 3.379, and the sig is 0.000. As a result, the information system's performance is positively and significantly impacted by the perceived ease of use (PEU). The user will believe that the system's performance improves as it becomes more straightforward. The research undertaken by Fernanda [1] and Handayani [13] aligns with this study. Therefore, the findings support the second proposed hypothesis.

The task complexity variable's t-value is 3.068, and its sig value is 0.003. It demonstrates that the information system performs better when the task complexity is high. The task complexity theory is opposed to this conclusion. According to Davis [4], task complexity is a barrier to information systems' acceptability. Since the information system cannot predict uncertainty, it makes sense that system performance will suffer if task complexity is significant. The findings of this investigation, however, refute this idea. It requires more study.

The t value with a sig. of 0.001 for the interaction between the perceived ease of use and task complexity is -3.462. These findings suggest that the influence of PEU on information system performance is moderated by task complexity. Furthermore, the outcome was a negative effect, indicating that the PEU variable had an impact on the information system's functionality. However, the result was lessened when task complexity was high.

With a sig. of 0.004, the t value for the interaction between POU and task complexity is 3.008. This number suggests that the relationship between POU and task complexity impacts the performance of the information system. The task complexity variable's role as a moderating factor between POU and information system performance is also demonstrated. The moderating's nature is positive, which indicates that the more POU and task complexity interact, the better the information system performs. The conclusion supports the third proposed hypothesis. The results of this study support the results of research conducted by Hambali [17] dan Handayani [13]. The interaction between task complexity and POU shows that the more varied tasks a user performs, the user needs an information system that is easy to use. An easy-to-use information system will provide more benefits when the task complexity is very high [9]. This research is not in line with the investigation of Natalia [16] dan Wijayanti et al. [18]. both studies state that task complexity has a negative effect on the relationship between POU and information system performance.

V.   CONCLUSION

According to the data analysis findings, POU has no impact on the performance of information systems, but POU and task complexity together have a beneficial effect. PEU impacts information system effectiveness. The performance of information systems suffers from the relationship between PEU and task complexity. It has been demonstrated that POU and PEU have a more muted impact on the effectiveness of the information system when the task complexity variable is present.

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