JOURNAL OF INTERNATIONAL CONFERENCE PROCEEDINGS JICP

Analysis of Easy Perception of Use of Information System Using Technology Acceptance Model Method

Basuki Heri Winarno[1], Edy Prayitno[2], Said Teguh Samudra[3]
STMIK AKAKOM, Yogyakarta, Indonesia

ABSTRACT

Information systems are developed to improve the quality of business processes of an organization. In the use of information systems must pay attention to the ease of use by users. This study will analyze the perception of the ease of use of an information system for its users. The research was conducted using the Technology Acceptance Model method to test the user's acceptance of the information system used. Answers from users to questionnaire questions will be calculated and analyzed. As an object of research used a service clock information system that has been applied in a watch shop. The research conducted obtained results that the existing information system has provided a perception of ease of use in shop employees, with the results of the outer model values, discriminant validity (discriminant validity), construct reliability, R square, and valid T-statistic.

Keywords: easy perception of use; information system; TAM

INTRODUCTION

TAM is based on the Theory of Reasoned Action (TRA) and is used to explain the acceptance of technology by an individual through questionnaires and subsequent analysis of them (Surendran P., 2012). The TAM's model emerged with two basic constructs: perceived usefulness (PU) and perceived ease of use (PEOU). The perception of benefits occurs when someone uses technology with the aim of improving their performance, and the perception of ease of use occurs when someone thinks that the technology is easy to use (Davis, 1989).

The variables that influence the perceived ease of use are divided into two types: foundation or base (anchors) and systematisation (adjustments). In the type of foundation or base are the following variables: computer self-efficacy, perceptions of external control, computational anxiety and computer playfulness (Nobre, et al, 2011).

TAM is a model developed to predict the acceptance and use of technology, using features developed by technology and capabilities according to job requirements. (F. Munoz-Leiva, et al, 2017).

This research will be conducted to test the perceived ease of use of information systems from an office with 12 employees who use it. This is because the office is a part that uses a lot of information technology in the form of information systems. So it needs to know the extent to which the information system implemented is easy to use by its users.

METHOD

This research uses a quantitative approach with a descriptive type that aims to describe perceptions about the ease of use of information systems by its users. Information system users

were given a 5-point Likert scale questionnaire to determine their perceived ease of use in information systems. Likert surveys, on a 5-point scale, are used because respondents often feel uncomfortable giving a solid yes or no (or likes / dislikes), but likes nuances in their answers (Abhijit Gosavi, 2015).

The questionnaire submitted to respondents consisted of 6 questions related to the perceived ease of use (PEOU) website. The six questions are (1) the website is easy to use; (2) easy to become proficient in using the system; (3) learning to operate a website is very easy; (4) the website is very flexible to use; (5) interaction with the website is very clear; and (6)

interaction with the website can be done easily. Whereas 2 questions related to behavioral intentions (BI) are that I use the system to simplify my work; and I am interested in using the system as the main choice in doing my work. The answers that must be chosen by respondents using a Likert 5 scale consisting of Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree.

The data obtained will be tested for validity and reliability (Prayitno E., et al, 2019). The data obtained were analyzed using qualitative analysis interpreting the results of the questionnaire shown in the tables and figures produced by the smart PLS application so that it can be used in decision making. Whereas quantitative analysis was carried out using Partial LeastSquare (PLS). Small sample and normality assumption will not be a problem for PLS because it uses *Bootstraping* method. In quantitative analysis will be carried out by testing the measurement (outer model) and also by structural testing (inner model).

RESULT AND DISCUSSION

The research respondents were 12 employees who used the system at work, with answers to the questionnaire as shown in Table 1 below.

Table 1. Respondent Data

Respondent No	Perceived Ease of Use						Behavior Intention	
	PEOU 1	PEOU 2	PEOU 3	PEOU 4	PEOU 5	PEOU 6	BI 1	BI 2
1	5	4	4	5	4	5	5	5
2	4	4	5	4	3	3	4	5
3	5	5	4	4	4	4	5	4
4	4	4	5	4	5	5	5	5
5	5	4	5	5	4	5	4	4
6	4	5	4	4	4	4	4	5
7	4	3	5	4	3	4	5	5
8	5	5	4	4	5	4	5	4
9	4	5	5	4	4	5	4	5
10	4	4	5	5	4	4	5	4
11	4	5	5	4	3	5	4	5
12	5	5	5	3	4	5	5	5

Measurement models for construct validity and reliability tests are carried out before testing the research model. Convergence validity is measured using the indicator loading factor value for each construct. Each indicator must have a loading factor of more than 0.70 to be said to be valid. Based on these criteria, indicators with a loading value of less than 0.70 are dropped from the analysis. Fig 1 shows the initial research model as output from PLS Algorithm.

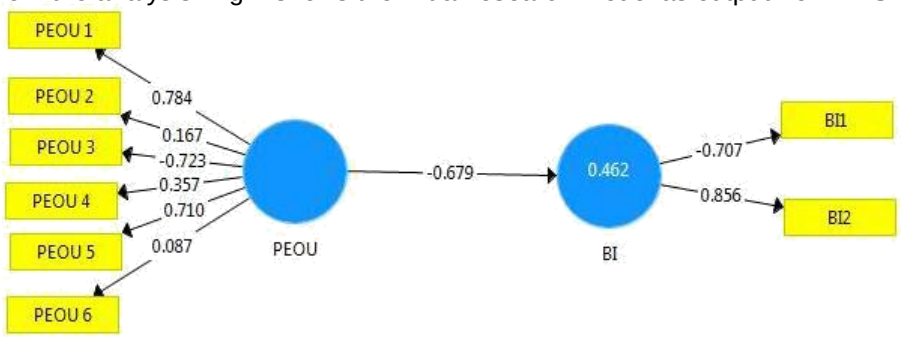

Fig 1. Output PLS Algorithm (Outer Model)

The PEOU values are PEOU1: 0.784, PEOU2: 0.167, PEOU3: -0.723, PEOU4: 0.357, PEOU15: 0.710, and PEOU6: 0.087. While the BI value consists of BI1: -0,707, BI2: 0.856.

There are still several levels of loading factor values below 0.7, namely PEOU2: 0.167, PEOU3: -0.723, PEOU4: 0.357, PEOU6: 0.087, and BI1: -0.707 which must still be removed from the model because it is not yet valid. The results of data processing with PLS after the items are removed from the model can be seen in the following Fig 2.

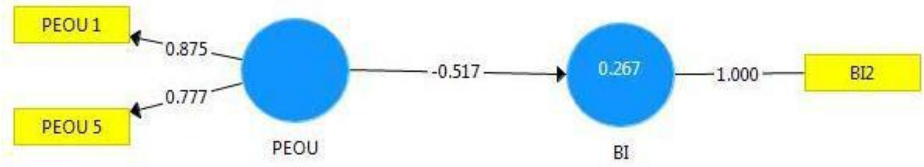

Fig 2. Outer Model - Valid

Discriminant Validity

Measuring relationship attributes that measure different attributes. Discriminant validity shows that latent constructs predict the size of their block better than the size of other blocks. Discriminatory validity can be seen from the value of cross loading, the value of the comparison of indicators to the construct (latent variable) must be greater than the value of the comparison between indicators with other constructs.

Table 2 shows the value of the indicator of the construct (latent variable) is greater than the value of the conflict between the indicator and other constructs. This shows the latent construct is able to predict the size of the block itself better than the other blocks. Thus it can be concluded that the indicators used in this study have been approved good discriminant validity.

Table 2. Validity cross loading

	BI	PEOU
BI2	**1.000**	-0.517
PEOU1	-0.478	**0.875**
PEOU5	-0.368	**0.777**

The results of construct reliability tests (BI and PEOU) are obtained from the Composite Reliability value which is the actual value of the reliability of a construct, which must be greater than 0.7. The reliability test carried out resulted in a Composite Reliability BI value: 1,000 and PEOU: 0.812.

The structural model in PLS was evaluated using R Square for independent constructs with a result of 0.267. These results indicate that the behavioral intention variable (BI) gives a value of 0.267 and a PEOU variable of 26.7% and the remaining 73.3% is explained by other variables outside this study.

From the results of statistical tests it is known that the path coefficient between PEOU and BI is -0.517 with a T-statistic value of 2.803 at a significant level of 0.05 (T-statistic> T.table 2.201), so PEOU has a positive relationship with the value of BI. This means that there is a significant influence, this is evidenced from the large t-statistic value for the PEOU construct for the BI construct is still above 2,201 which is equal to 2.803.

CONCLUSION

The information system has succeeded in giving users a perception of ease of use. With the results of the outer model value, discriminant validity, construct reliability, R square, and valid T-statistics. The reliability test of the questionnaire construct against PEOU1, PEOU2, and BI2 showed valid results. Whereas invalid questionnaires must be replaced with new questionnaires. Based on research that has been done, there are several factors of perceived ease of use (PEOU1 and PEOU5) and intention to use technology (BI2) which is an indicator of the success of the application of information systems.

ACKNOWLEDGMENT

Through this article, the author would like to thank the fellow lecturers and students at STMIK AKAKOM Yogyakarta for their cooperation and support in the implementation and publication of this research.

REFERENCES

P Surendran, (2012), Technology Acceptance Model: A Survey of Literature, *Int. J. Bus. Soc. Res.*, vol. 2, no. 4, pp. 175–178, 2012.

F. D. Davis, “Perceived usefulness, perceived ease of use, and user acceptance of information technology,” *MIS Q.*, vol. 13, no. 3, 1989

A. Nobre, A. Ramos, and T. Nascimento, “Adoção De Práticas De Gestão De Segurança Da Informação : Um Estudo Com Gestores Públicos Adoption of Security Information Management Practices : a Study With Public Managers,” pp. 95–113, 2011.

F. Munoz-Leiva S., Climent-Climent, and F. Liébana-Cabanillas (2017), Determinants of intention to use the mobile banking apps: An extension of the classic TAM model, Spanish Journal of Marketing - ESIC 21, 25---38.

Prayitno E., Iskandar E., Kurniawati D, Sari DF, and Alhusni MA., (2019), Test of Easy Factors and The Utilization of University Website in Supporting Student Learning Processes, Journal of International Conference Proceedings.

Nunes A., Portela F., and Santos M.F., (2018), Improving Pervasive Decision Support System in Critical Care by using Technology Acceptance Model, Procedia Computer Science 141 (2018) 513–518

Gosavi A. (2015) Analyzing Responses from Likert Surveys and Risk-Adjusted Ranking: A Data Analytics Perspective, Procedia Computer Science 61, 24 – 31