How To Drive Satisfaction Of Simulator Software Users?

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Abstract

Summary - This study aims to examine the role of the Technology Acceptance Model (TAM) on the satisfaction of users of oscilloscope simulator software at the Vocation School of Engineering in Jakarta. This study uses an explanatory research design with quantitative methods. The population in this study were users of the Oscilloscope simulator at the Jakarta Vocational School. The number of samples in this study was 100 respondents. The results of the study indicate that there is a positive and significant effect of perceived ease of use and perceived usefulness on Attitude Toward Using, and Attitude Toward Using has a positive and significant effect on user satisfaction, while perceived ease of use and perceived usefulness have a positive but insignificant effect on user satisfaction. Perceived ease of use not significant on user satisfaction. Also perceived usefulness have not significant on user satisfaction. The path that states the strongest influence relationship is perceived ease of use has a positive effect on perceived usefulness

Keywords : Technology Acceptance Model (TAM), *Perceived easy of use,* perceived usefulness, Attitude Toward Using, simulator Oscilloscope, and user satisfaction

INTRODUCTION

Technology at this time has developed very rapidly, and affects almost all aspects of human life, also affecting human activities and activities, in essence, technology is found indeed to facilitate and benefit human life. We believe that technology should be created for the human world (de Visser et al., 2018). This also happens in the oscilloscope simulator program, where the oscilloscope plays a very important role in the field of technological development. Oscilloscopes can be used to observe high-speed and large-volume signals (Li et al., 2023). This electronic measuring instrument helps students, students and researchers in the field of electronics and mechanical engineering, but the oscilloscope is a measuring instrument that is not cheap and the tool is very sensitive to damage. This is an obstacle for people who work and study in the field of electronics, especially waves.

On the other hand, the real conditions in the field show that there is a mismatch between the development of science and technology in schools and the industrial world. It is common knowledge that most SMKs have practical equipment that is far behind compared to the equipment and technology applied by the industrial world so the knowledge learned by SMK students today is not synchronized with the demands of the industrial world. So that the parties involved in the world of education must be able to keep up with and keep up with these technological advances and keep up with these technological advances (Effendi & Wahidy, 2019). So this is the background of making an oscilloscope simulator as one of the solutions to these problems. However, However, usually products are difficult to implement in the early phases of product development due to the lack of the required level of information (Kono et al., 2018). So product development is needed based on the characteristics of the product which is still in the growth phase.

Nowadays, attention to customer satisfaction and dissatisfaction has been growing. Customer satisfaction is more related to the short-term out- comes of the customer's experience with products and services (Alalwan, 2020). Many companies or agencies have begun to develop

and pay special attention to information technology as a source that facilitates the collection and use of information effectively, with the level of user satisfaction as the reference in evaluating the quality and service of information technology product development. In besides defining products and services provided by the company to enhance communication and reach customers as part of its marketing manifestation (Penttilä, 2019).

SMK Negeri 35 & 53 Jakarta is one of the state vocational schools with A accreditation status in Jakarta which uses the oscilloscope simulator program in the learning process in school practicum activities, especially for Audio Video engineering majors. Practicum activities can be a solution to meet basic student competencies (Shalahuddin et al., 2021). In an effort to find out how much convenience and benefits the user of the oscilloscope simulator program is and how satisfied the user is in using the oscilloscope simulator program. then an analysis can be carried out on it, where the analysis is carried out using the Technology Acceptance Model method by measuring the effect of TAM on user satisfaction with technology. TAM is the most widely used research model to examine user behaviour in accepting. The TAM model believes that perceived ease of use and perceived usefulness are the key factors for individuals to accept information technology (Xu et al., 2022).

RESEARCH METHOD

This research uses the causal analysis method. The population of this research is Students & Facilitators or practicum teachers of vocation school in Jakarta, , who have used the oscilloscope simulator program. The sample in this study was taken from as many as 100 respondents using the purposive sampling method. Data were obtained through a questionnaire with a 1-5 Linkert scale which has been widely used as an ordinal scale. The data were analyzed using the SPSS-17 program package and Partial Last Square with the Smart PLS-3 software application program. The reason for using this analysis tool is because of the suitability of the software to the needs of data processing. Submissions were made to instruments related to the Structural Equation Model (SEM) to see the suitability of the model used. Hypothesis submission is carried out using the PLS-3 program mentioned.

RESULTS AND DISCUSSIONS

The number of male and female respondents was relatively equal. The ratio is 44% for men and 56.% for women. This relatively equal number represents that the search for information through the questionnaire provided can be accessed by both men and women.

Of the 100 respondents presented, the research subjects aged 15-18 years amounted to 98 (98%). Respondents of this age describe audio video engineering students of vocation school in Jakarta as having an active tendency to try various new things and (2%) are at the age of >21 and are facilitators or teachers.

Causal analysis was used to determine the influence relationship between the variables described above. Based on the proposed model, three equations were obtained which are depicted in Figure 1:

1) Attitude Toward Using = 0.221 Perceived usefulness + 0.384 Perceived Ease of Use; R^2 = 0.286.
2) User satisfaction = 0.467 Attitude Toward Using + 0.052 Perceived usefulness + 0.119 Perceived ease of use R^2 =0.385.
3) Perceived Use Fullness = 0.528 Perceived ease of use; R^2 = 0.279.

Based on the three equations above, it can be seen that the coefficient of determination of each equation is as follows: equation (1) shows that Attitude Toward Using can describe the

variation of Perceived ease of use and Perceived usefulness partially from the model by 28.6%. Equation (2) shows that User satisfaction can partially be described by Perceived ease of use, Perceived usefulness and Attitude Toward Using from the model by 38.5%, and equation (3) shows that the diversity of Perceived Usefullnes can partially be described by Perceived ease of use from the model by 27.9%. In the Structural Equation Modeling (SEM) model as a whole, the measure of goodness of fit can be assessed through the Q^2 value, and can be calculated as follows:

$$Q^2 = 1 - (1 - R1^2)(1 - R2^2)(1- R3^2)$$
$$= 1-(1-0.286)(1-0.385)(1-0.279)$$
$$= 0.683$$

Outer and Inner Model Test

The outer model explains the relationship between indicators and variables while the inner model explains the relationship between research variables. Each variable indicator that is depicted, has a loading must have a value> 0.50 for construct validity requirements. The processed results show that only one indicator of Brand Image with the smallest loading value of 0.507. This finding shows that the variable indicators have representative construct validity, this is called a good outer model.

Apart from being seen from the factor loading value, convergent validity can also be seen from the Average Variance Extracted (AVE) value where the value of each construct has met the criteria because it has met the AVE value> 0.50. and when viewed from the Composite Reliability and Cronbach's Alpha tests, it shows a satisfactory value, namely all latent variable values have a value> 0.70 So it can be interpreted that the construct has good reliability or the questionnaire used as a tool in this research is reliable or consistent.
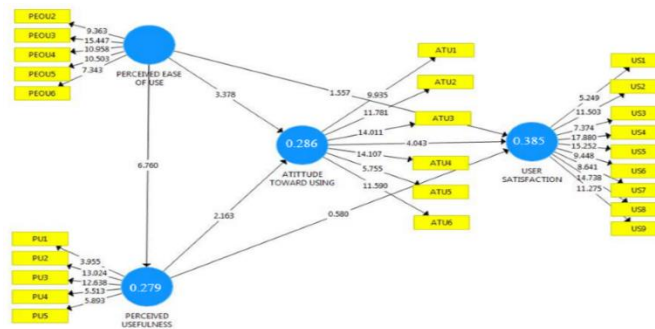

Figure 3 Relationship Model Between Variables
Source : Primary Data (2023)

Tabel 1. Result of Validity and Reliability Testing

Variabel	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	Information
Perceived Ease of Use	0.756	0.837	0.511	Valid & Realibel
Perceived Usefulness	0.759	0.837	0.508	Valid & Realibel
User Satisfaction	0.864	0.901	0.507	Valid & Realibel
Atittude Toward Using	0.818	0.867	0.523	Valid & Realibel

Source: Primary Data (2023)

Likewise, the inner model describes the influence relationship between research variables. The results of the inner model can be seen in Table 1, it is known that there is a positive influence of Perceived ease of use on Attitude Toward Using and on User satisfaction. Perceived usefulness is also seen to have a positive influence on Attitude Toward Using and User satisfaction. Likewise, the Attitude Toward Using a variable is also seen to have a positive influence on User satisfaction.

Research Hypothesis Testing

Hypothesis testing in this study is to prove the effect of each variable on other variables. The test is based on the t-value with the provision that if the t-value> 1.960 then the influence of the variable on other variables is declared significant. Table 1 shows the results of testing the research hypothesis.

Perceived ease of use is proven to have a positive and significant effect on Attitude Toward Using. With a t-statistic value of 3.387 (> 1.96) and p-values of 0.01 (< 0.005) and the original sample, an estimate is positive 0.384. These results indicate that the better the user's perception of the ease formed, the more confident the user's attitude will be to use the oscilloscope simulator program. The results that are in line with this research are Seprina and Sobri (2014) on measuring user satisfaction with the application of information technology in the Bina Darma University HRIS system and Kurniawan et.al (2013) regarding Customer Acceptance of Mobile Banking Services.

Perceived usefulness is proven to have a positive and significant effect on Attitude Toward Using. With a t-statistic value of 2.163 (>1.96) and a p-value of 0.31 (<0.005) and the original sample estimate is positive 0.221 These results indicate that the higher the user's perception of the benefits received, the more confident the user's attitude is to use the oscilloscope simulator program. The results of this study are in line with the results of research from Bangkara & Mimba (2015) regarding interest in using internet banking in the future with attitude towards as an intervening variable, as well as Chauhan's research (2015) on Acceptance of mobile money by poor citizens of India.

Attitude Toward Using is proven to have a positive and significant effect on User satisfaction. with a t-statistic value of 4.043 (>1.96) and p-values of 0.00 (<0.005) and the original sample estimate is positive 0.467. These results indicate that an attitude toward using the oscilloscope simulator program which is influenced by the ease and benefits of this technology will have a positive impact on user satisfaction with the oscilloscope simulator program. This research supports the findings of Lee et.al (2014) regarding mobile application services in the life insurance industry.

Perceived ease of use is proven to not affect user satisfaction. The t-statistic value is 1.557 (<1.96) and the p-value is 0.120 (<0.005) and the original sample estimate is positive 0.199. These results indicate that user perceptions about the ease of use of the program do not have a strong enough direct role to create user satisfaction with the oscilloscope simulator program. Where from the results of this study there is some evidence that there are several other factors that cause perceived ease of use to have an insignificant correlation with user satisfaction with the oscilloscope simulator program at vocation school in Jakarta majoring in audio video engineering. These factors are program users feel that among users do not feel the oscilloscope simulator program has good accuracy and the ability of the oscilloscope simulator program has not provided information following the required format. In addition, the ability of the oscilloscope simulator program to produce up-to-date information that users feel is not yet capable, so it has an impact on the satisfaction of program users where users think the oscilloscope simulator program has not provided the convenience they want. The results of this

study are not in line with Solechan's research (2012) where perceived ease of use affects user satisfaction with information technology users.

Hong et.al's research (2006) proves that perceived ease of use affects user satisfaction with mobile internet. When compared with previous research, there are differences in research results, namely in the perceived ease of use variable. In this study, perceived ease of use did not have a significant effect. In other words, the effect of the relationship between the variable perceived ease of use on user satisfaction is not constant.

Perceived usefulness is proven to have a positive and insignificant effect on user satisfaction. With a t-statistic value of 0.580 (>1.96) and p-values of 0.562 (<0.005) and the original sample, an estimate is positive 0.052. These results indicate that user perceptions about the benefits received in using the program do not have a direct role that is sufficient to create user satisfaction with the oscilloscope simulator program. The results of this study are not in line with the research of Rukmiyati and Budhiartha (2016) on the effect of information system quality, information quality and perceived usefulness on end-user satisfaction of accounting software at star hotels in Bali but in line with the research of Pramesthi and Haryanto (2013) The effect of perceived ease of use and confirmation on antecedents of online repurchase intention and Hong et al (2006) who examined the utility of three prospective models for understanding the continued IT usage behaviour in the context of mobile internet.

Perceived Ease of use is proven to have a positive and significant effect on Perceived usefulness. With a t-statistic value of 6.760 (>1.96) and p values of 0.00 (<0.005) and the original sample estimate is positive 0.528. These results indicate that the better the user's perception of the ease formed, the better the user's perception of the benefits he receives in using the oscilloscope simulator program. The results that support this research are Seprina and Sobri (2014) regarding the measurement of user satisfaction with the application of information technology in the Bina Darma University HRIS system and Sari and Hermanto (2016) regarding factors in the use of E-bill with the TAM approach.

Tabel 2 Hypothesis Testing

Variabel	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Hypothesis Test
Perceived Ease of Use -> Atittude Toward Using	0.384	0.338	0.144	3.378	0.001	Support
Perceived Usefulness -> Atittude Toward Using	0.221	0.230	0.102	2.163	0.031	Support
Atittude Toward Using -> User satisfaction	0.467	0.480	0.115	4.043	0.000	Support
Perceived Ease of Use -> User satisfaction	0.119	0.198	0.128	1.557	0.120	Not Support
Perceived Usefulness -> User satisfaction	0.052	0.057	0.090	0.580	0.562	Not Support
Perceived Ease of Use -> Perceived Usefulness	0.528	0.537	0.078	6.760	0.000	Support

Source: Primary Data (2023)

CONCLUSIONS

Based on the results of research and discussion of the Role of Attitude Toward Using in Mediating the Effect of Perceived Use Fullness and Perceived Ease of Use on User Satisfaction Oscilloscope Simulator, the following conclusions can be obtained:

1) Perceived Ease of Use has a positive and significant influence on Attitude Toward Using oscilloscope simulator users. This proves that the creation of a respondent's attitude to continue using the oscilloscope simulator program depends on the convenience provided so that the respondent feels that the oscilloscope simulator program relieves his tasks.

2) Perceived Usefulness has a positive and significant influence on Attitude Toward Using oscilloscope simulator users. This proves that the higher the benefits obtained or received, it will lead to a positive attitude from users that using the oscilloscope simulator program is beneficial and beneficial, such as improving student achievement at school and improving the performance of facilitators in teaching and learning activities.

3) 3Attitude Toward Using has a positive and significant influence on User Satisfaction. This proves that there is a positive attitude of students and facilitators who believe and believe that the use of the oscilloscope simulator program is very satisfying because it helps students to learn and do their practicum assignments without fear of being damaged like they were when using the original oscilloscope tool.

4) Perceived Ease of Use has an insignificant effect on User Satisfaction. Where from the results of this study there is evidence that program users feel that the oscilloscope simulator program is not following their needs. Users do not feel that the oscilloscope simulator program has good accuracy and the ability of the oscilloscope simulator program to provide information that matches the format needed. In addition, the ability of the oscilloscope simulator program to produce up-to-date information is felt by users who have not been able to understand it properly. So that it has an impact on the satisfaction of program users who think the ease of the oscilloscope simulator program is not following what they need.

5) Perceived Usefulness has an insignificant effect on User satisfaction. The results of this study illustrate that respondents feel that the oscilloscope simulator program has not been able to improve their performance in practicum activities at school. This is because the facilities and capabilities of the program are currently not needed in their practice.

6) Perceived Ease of Use has a positive and significant effect on Perceived Usefulness. This proves that the ease of using the oscilloscope simulator program will affect the user's attitude in viewing the benefits which are also based on the ease of using the oscilloscope simulator program, in other words, users will judge the oscilloscope simulator as useful if it is easy to use it (user friendly).

LIMITATIONS AND FUTURE WORKS

Based on the results of the research conducted, the researcher provides the following suggestions:

1) The government should also facilitate the use of the oscilloscope simulator program in SMK schools with the intended majors and also provide a stimulus to want to learn and use the oscilloscope simulator program for teaching and learning activities, to equip skills following the objectives of SMK education.

2) The scope for further research can be expanded so that the level of generalization to the population can be wider such as students majoring in electricity or machinery.

3) Future research should increase the number of variables that can be included in the TAM method, even external variables so that the results of subsequent research can be seen and
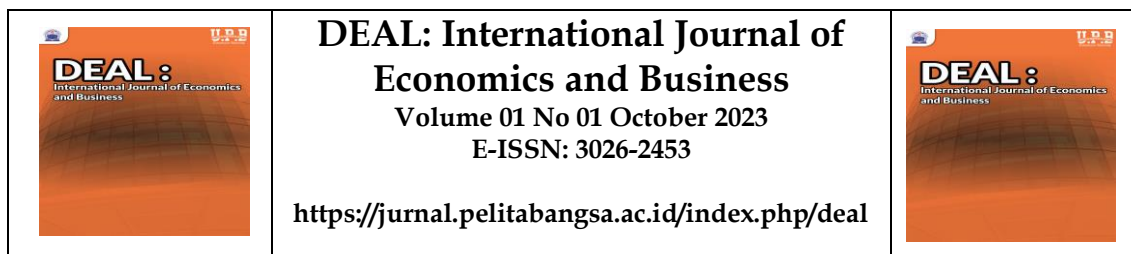
started from a broader perspective so that later it can help the development of the oscilloscope simulator program in obtaining information.

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