

## **Analysis of User Acceptance of E-Learning at SMP NEGERI 10 PENAJAM PASER UTARA Using the UTAUT 2 Model**

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### **ABSTRACT**

The rapid development of information and communication technology has encouraged the use of electronic media in education, giving rise to a new paradigm in learning through e-learning. E-learning provides benefits such as access to various learning resources and improving the quality of student-centered learning. This research analyzes the factors that influence student satisfaction in using e-learning by adopting the UTAUT (Unified Theory of Acceptance and Use of Technology) model and evaluates their intention to continue using this technology. The research was conducted at SMP Negeri 10 Penajam Paser Utara using a Moodle-based Learning Management System (LMS). Data was collected through an online survey with Google Forms from a sample of active students using e-learning in 2023. The results of the analysis show that the research model has good validity and reliability. Research findings indicate that habitual factors have a significant influence on usage intentions, which in turn influence usage behavior. Performance expectations also influence the intention to use e-learning.

*Keywords: e-learning, UTAUT, Learning Management System, Learning, Students*

### **INTRODUCTION**

Developments in the world of information technology and rapidly developing communications (ICT) have caused electronic media to be used to disseminate various information. In the field of education, the development of information technology has given rise to a new paradigm in the learning process where the process is not only limited to face-to-face learning activities in the classroom but can also be carried out online. This learning system is known as electronic learning (e-learning) (Jakkaew & Hemrungrote, 2017). E-learning has a number of important benefits for students, including access to learning tools and resources such as text, audio, video, online discussions, and evaluation results. This is a very useful tool to improve the quality of learning. The presence of e-learning not only increases the speed of knowledge transfer, but in this method, teaching and learning activities shift from a teacher-centered form of delivery to a student-centered form of delivery. E-learning is emerging as an important strategy to provide broad and easy access to high-quality education (Dewi Puspitasari & Fatianto Suyatno). Since 2000, the role of information technology in learning activities to support e-learning has begun to be created by universities. In Indonesia, the e-learning concept is usually applied in universities to support learning activities and student administration, especially when the world is experiencing the Covid-19 pandemic, the use of e-learning for learning processes without physical meetings is increasingly being used. SMP Negeri 10 North Penajam Paser, which is one of the first state schools in Indonesia, also uses e-learning in the teaching and learning process. The e-learning used is a Moodle-based learning management system (LMS) (Saragih & Septamia). This e-learning can be accessed via the page <https://e-learning.smpn10ppu.sch.id> and mobile applications. The problem that arises is whether students are satisfied (satisfaction) and intend to use (use behavior). This research aims to analyze the factors that influence the level of satisfaction by adopting the UTAUT (Unified Theory of Acceptance and Use of Technology) model and see the influence of user satisfaction with the intention to continue using a new technology (e-learning).

### **LITERATURE REVIEW**

#### **User Acceptance Concept**

The concept of user acceptance is that the greater the level of acceptance of a new system, the greater a person's desire to spend their time using a new system. Meanwhile, another definition states that user acceptance is a desire that can be proven in a customer group that uses information technology designed to support customer activities. Another definition states that user acceptance is the willingness of a group of people to apply information technology to support their work. A low level of customer acceptance is an essential problem for the successful implementation of a new information system. In fact, users often don't want to use the information system that has been provided, even though users will get benefits if they want to use it. Therefore, user acceptance has been seen as

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one of the main parameters in determining the success of an information systems project (Hidayat, Aini, & Fetrina, 2020).

## e-learning

Distance learning activities or in a more general context are called electronic learning (e-learning) of course has also had implications for the increasing displacement of traditional learning methods by learning that is more based on digital technology (Witt & Gloerfeld, 2018). In this case, e-learning is interpreted as learning that focuses on the use of electronic devices and the internet to access learning materials, interact with teachers, or also with fellow students without being limited by space and time. (Kurnia, 2020).

## UTAUT Model 2

The UTAUT model was adopted in this research because it has a useful measurement tool for policy makers to assess the possibility of successful introduction of new technology. UTAUT has also been widely implemented in academic environments by many researchers. UTAUT is a model based on previous technology acceptance models such as the Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Task-Technology Fit Theory, and especially the Technology Acceptance Model (TAM). (Aloyshima Haris, Soedijono, & Nasiri, 2019). UTAUT aims to explain user interest in using information systems and subsequent user behavior. This theory argues that six main factors (performance expectancy, effort expectancy, social influence, and facilitating conditions, hedonic motivation, price value) are direct determinants of usage intentions and behavior. (Herina, Alawiah, Wahidin, & BK, 2024). The explanation of each variable used is as follows:

1. *Performance expectancy* Showing one's confidence in e-learning really helps the work done.
2. *Effort expectancy* is the number of attempts to use e-learning.
3. *Social influence* shows that someone can use e-learning because they are influenced by other people.
4. *Facilitating conditions* states that users can be confident that the infrastructure is available and can practically support the use of e-learning.
5. *Hedonic Motivation* is the feeling of pleasure that a person feels when using e-learning.
6. *Price value* namely the user's sacrifice of the costs incurred in e-learning with the benefits obtained.
7. *Habit* shows that someone can carry out behavior using e-learning automatically because they have learned that behavior.
8. *Behavioral intention* stating the user's hopes or desires to implement a new system, namely e-learning, is influenced by the user and the people who use it realize its usefulness.
9. *Use behavior* shows usage measured by the actual frequency of using e-learning.

## METHOD

Data collection in this research was carried out using a survey method, namely in the form of an online questionnaire using Google Forms. The research sample was taken based on a purposive sampling technique. The samples needed in this research are students of SMP Negeri 10 Penajam Paser Utara who use E-LEARNING SMPN 10 PPU on the page <https://e-learning.smpn10ppu.sch.id>. Prospective respondents are SMPN 10 PPU e-learning users who will actively use it in 2023. Then manually send a Google Forms link sent to potential respondents via direct message on the student WhatsApp group. This message contains a brief introduction, research objectives, a request to complete the questionnaire and a link to Google Forms to access the questionnaire.

## Measurement Method

Questionnaires are designed to collect the required information from respondents for research purposes. The questionnaire is divided into three main aspects which have been modified from previous research, namely information about the respondent's background, information about the respondent's experience in using SMPN 10 PPU e-learning, and information based on the research model. For the questionnaire measurement scale, questions were created using a 5-point Likert scale, namely 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

## Data Analysis Methods

The questionnaires obtained were then processed further. Valid data from the questionnaire was processed using IBM Spss Amos 26. The structural model of this research can be seen in Figure 1. Data analysis in this research was carried out in three stages, namely outer model analysis, inner model, and hypothesis testing.

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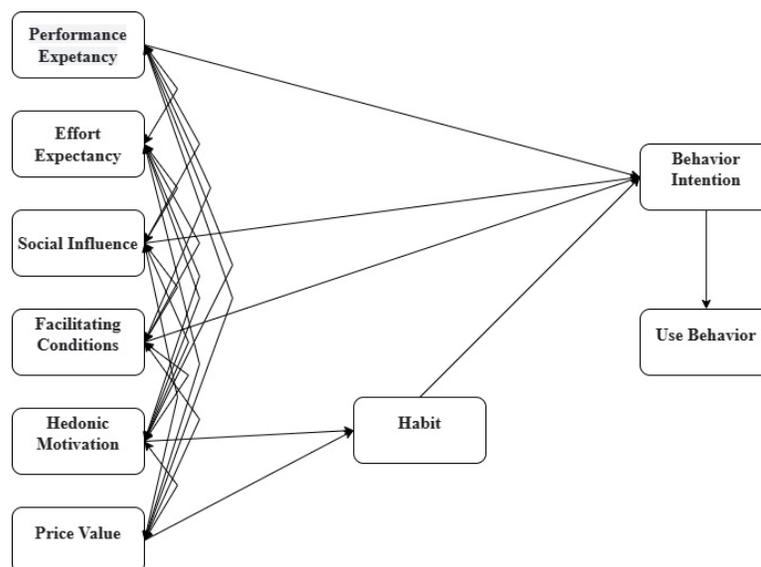


Figure 1. Structural Model

- H1. Performance Expectancy has a positive and significant effect on Behavior Intention.
- H2. Effort Expectancy has a positive and significant effect on Behavior Intention.
- H3. Social Influence has a positive and significant effect on Behavior Intention.
- H4. Facilitating Conditions have a positive and significant effect on Behavior Intention.
- H5. Hedonic Motivation has a positive and significant effect on Behavior Intention.
- H6. Price Value has a positive and significant effect on Behavior Intention.
- H7. Habit has a positive and significant effect on Behavior Intention.
- H8. Behavior Intention has a positive and significant effect on Use Behavior.

## RESULTS

### Respondent Profile

The number of respondents who filled out the questionnaire on Google Forms was 100 students. Brief demographics of the respondents can be seen in Table 1.

Demographics	Category	Respondent
Gender	Man	64 People
	Woman	36 People
Age	12 years old	22 People
	13 years old	21 People
	14 years	24 People
	15 years	26 People
	48 Years	6 people
	49 Years	2 persons
	50 years	3 people
51 Years	2 persons	

Table 1. Respondent Profile

### Outer Model Analysis

Outer model analysis is carried out to ensure that the measurements taken are feasible, valid and reliable by determining the relationship between latent variables and their indicators. At this stage we look for convergent validity and discriminant validity values. The convergent validity value is the loading factor value on the latent variable

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(construct) and its indicators. The indicator is declared convergently valid if the loading factor value ( $\lambda$ ) is  $\geq 0.5$ . Table 2 shows that the research model has a loading factor value for each indicator  $\geq 0.5$ . Therefore, the measures demonstrated adequate convergent validity.

Indicator	Loading Factor	Information
Performance Expectancy 1 (PE1)	0.731	Valid
Performance Expectancy 2 (PE2)	0.632	Valid
Performance Expectancy 3 (PE3)	0.735	Valid
Performance Expectancy 4 (PE4)	0.71	Valid
Effort Expectancy 1 (EE1)	0.733	Valid
Effort Expectancy 2 (EE2)	0.759	Valid
Effort Expectancy 3 (EE3)	0.651	Valid
Social Influence 1 (SI1)	0.647	Valid
Social Influence 2 (SI2)	0.734	Valid
Social Influence 3 (SI3)	0.798	Valid
Facilitating Conditions 1 (FC1)	0.741	Valid
Facilitating Conditions 2 (FC2)	0.65	Valid
Facilitating Conditions 3 (FC3)	0.663	Valid
Hedonic Motivation 1 (HM1)	0.82	Valid
Hedonic Motivation 2 (HM2)	0.557	Valid
Hedonic Motivation 3 (HM3)	0.787	Valid
Price Value 1 (PV1)	0.626	Valid
Price Value 2 (PV2)	0.706	Valid
Price Value 3 (PV3)	0.819	Valid
Habit 1 (H1)	0.852	Valid
Habit 2 (H2)	0.791	Valid
Habit 3 (H3)	0.815	Valid
Behavioral Intention 1 (BI1)	0.706	Valid

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Behavioral Intention 2 (BI2)	0.756	Valid
Behavioral Intention 3 (BI3)	0.673	Valid
Use Behavior 1 (UB1)	0.865	Valid
Use Behavior 2 (UB2)	0.631	Valid
Use Behavior 3 (UB3)	0.801	Valid

Table 2. Validity Test

Apart from the loading factor value, convergent validity can also be seen from the Average Variance Extracted (AVE) value. A good model has an AVE value for each construct of more than 0.5 as shown in Table 3. In this study, the AVE value for each construct is above 0.5, so there is no convergent validity problem in the model being tested. Then compare the square root of average variance extracted (AVE root) value for each construct with the correlation between that construct and the other constructs in the model. If the AVE root value of a construct is greater than the correlation value of the construct with other constructs, it can be concluded that the construct has a good discriminant validity value and vice versa. Table 3 shows that there are no problems with discriminant validity in this research model.

Construct	AVE	Conclusion
P.E	0.62	Valid
EE	0.57	Valid
SI	0.65	Valid
FC	0.58	Valid
HM	0.62	Valid
PV	0.55	Valid
H	0.76	Valid
BI	0.62	Valid
UB	0.70	Valid

Table 3. AVE Validity Test

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Construct	Composite Reliability
P.E	0.87
EE	0.86
SI	0.83
FC	0.80
HM	0.84
PV	0.77
H	0.90
BI	0.82
UB	0.87

Table 4. Composite Reliability Test

Next, a reliability test was carried out to test the consistency of the respondents' answers. Reliability testing is carried out using the Composite Reliability indicator. Table 4 shows that all constructs have Composite Reliability (CR) ranging between 0.77 and 0.87. It can be concluded that the five scales have acceptable internal consistency based on the threshold value of 0.70 from Nunnally (1978). Table 4 also shows that all factors have a Composite Reliability of at least 0.77, which is higher than the threshold value of 0.70. It can be concluded that there are no problems with reliability in the model.

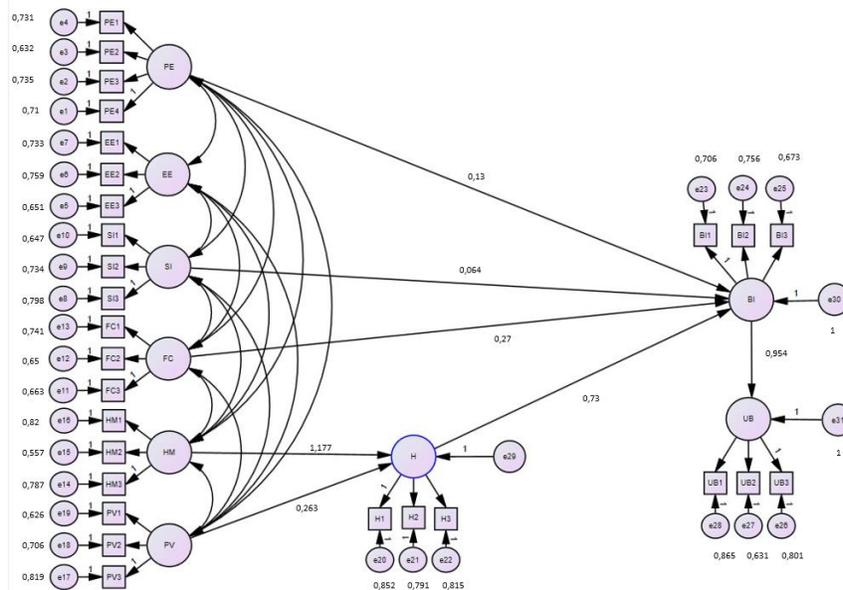


Figure 2. Outer model

**DISCUSSION**

**The influence of performance expectancy on e-learning behavioral intention**

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It is known that the t-statistic value for the influence of PE on BI in each group is smaller than 1.96 (0.13), this indicates that in the sample, Performance Expectancy does not have a significant influence on Behavioral Intention. This finding is as stated by the results of research conducted by Sutanto, Ghozali & Handayani (2018), but contradicts research conducted by (Nguyen, Nguyen & Cao (2014); Merhi (2015); Chu & Chen (2016); El-Masri & Tarhini, (2017) who stated that Performance Expectancy is the most influential predictor of Behavioral Intention.

This insignificant influence is thought to be because students, both pupils and students, do not fully believe that the use of e-learning can provide benefits in learning effectiveness when learning at school is stopped. This is confirmed by the latest data which states that 69 million Indonesian students have the potential to lose their learning program. (“APPLICATION OF THE UTAUT2 MODEL TO EXPLAIN INTEREST AND BEHAVIOR IN USING MOBILE BANKING IN DENPASAR CITY”). For developing countries, especially in Indonesia, the lack of understanding regarding the use and benefits of e-learning is still understandable, considering that the use of e-learning before the Covid-19 outbreak was still relatively rare. Apart from that, the infrastructure that supports the use of e-learning is still not evenly distributed, this is confirmed by research reports which state that only 40% of Indonesians have internet access to support e-learning (“EVALUATION OF THE ACCEPTANCE OF THE USE OF THE JAMBI UNIVERSITY ACADEMIC INFORMATION SYSTEM (SIKAD) USING THE UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)”). Apart from that, if you look closely at the campaign and the massive use of e-learning that has just been carried out on a massive scale after Covid-19, Indonesian students are a little surprised by the new policy so that the use of e-learning is more encouraged due to situational and conditional factors. So many people still consider e-learning to be a boring and ineffective learning activity.

#### **The influence of social influence on e-learning behavioral intention**

The influence of Social Influence on Behavioral Intention shows a significant relationship for the sample group of high school students ( $3.639 > 1.96$ ) with an effect size level ( $f^2$ ) of 0.108 or in the low category. In addition, the effect of Social Influence on Behavioral Intention in the student sample was not significant ( $0.879 < 1.96$ ). The most logical explanation for these different results is probably related to the research subjects' attitudes towards the social influences around them. It is reasonable to suspect that high school students have a more sensitive attitude towards social influences around them, while students are relatively independent in making decisions.

However, the allegations mentioned above also need to be investigated further, because they are basically instructions for use e-learning is issued by the central government for all levels of education including high school and tertiary institutions, this means that it should be good and at the high school level or at the student level both have the same Social Influence in the formation of Behavioral Intention.

#### **Influence of Habit on Behavioral intention e-learning**

The influence of Habit on Behavioral Intention in both samples showed significant results with an effect size ( $f^2$ ) of 0.73 (low) for the student sample. This finding is consistent with the results of research conducted by Venkatesh, Thong & Xu (2012); Lewis et al., (2013); El-Masri & Tarhini (2017); Mehta et al., (2019); Gunasinghe et al., (2020). The findings regarding the influence of Habit on Behavioral Intention indicate that when students have good habits, then students' intentions in using elearning will improve, this is because basically Habit or habits are the most important predictor in forming intentions. (“EVALUATION OF THE ACCEPTANCE OF THE USE OF THE JAMBI UNIVERSITY ACADEMIC INFORMATION SYSTEM (SIKAD) USING THE UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)”).

#### **Influence of Behavioral Intention on e-learning Use Behavior**

The influence of Behavioral Intention on Behavioral Use is the most interesting finding where the results of data analysis for the two samples show different findings. In the user sample, the results show a significant influence with an effect size ( $f^2$ ) value of 0.954 (low). The findings in the user sample are consistent with many studies, including research from Dwivedi et al., (2017); Salloum & Shaalan (2018). Apart from that, these findings also support the Theory of Reasoned Action (TRA), the Theory of Planned Behavior which suggests that intention is the strongest predictor of behavior (Fishbein & Ajzen, 1975; Shimp & Kavas, 1984; Ajzen, 1991), and also support the Unified Theory of Acceptance, and Use of Technology 2 (UTAUT 2) proposed by (Andrianto, 2020).

An interesting finding is the results obtained from a sample group of students, where the results of data analysis show that Behavioral Intention does not have a significant influence on Use Behavior. The findings in this student sample group certainly contradict the findings from previous empirical research which stated that intention is

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the strongest predictor of behavior. This finding is supported by research from Agudo-peregrina, Hernández-garcía and Pascual-miguel (2014), however there is no detailed explanation regarding the insignificant relationship between Behavioral Intention and Behavioral Use.

Apart from that, if you carefully observe the campaign and massive use of e-learning that has just been carried out on a massive scale after Covid-19, Indonesian students are a little surprised by the new policy so that the use of e-learning is more encouraged due to situational factors and conditions so that many people still consider e-learning - learning as a learning activity that is boring and ineffective.

### CONCLUSION

Based on the results of research that has been carried out regarding the analysis of the level of acceptance of the implementation of the SMPN 10 PPU Learning Management System using UTAUT 2, it can be concluded that the results of research from 100 respondents using the SMPN 10 PPU Learning Management System show that the respondents are quite satisfied with the existence of the learning management system. Apart from that, respondents also provided quite good feedback and had an influence on the use of technology. This research aims to analyze the factors that influence the level of satisfaction by adopting the UTAUT (Unified Theory of Acceptance and Use of Technology) model and see the influence of user satisfaction with the intention to continue using a new technology (e-learning). Factors that can influence the level of acceptance of the SMPN 10 PPU Learning Management System are social influence and habits. From the calculations carried out, it shows that the most significant influence is had by habit on Behavioral Intention, followed by Behavioral intentions on Use behavior. And for behavior intention, the most significant influence is performance expectancy.

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