Original Article

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Analysis of Factors Affecting Students' Intention in Using Learning Management System Applications in the Senior High School Environment

Agri Adriel Bororing✉
Information Systems Department, School of Information Systems, Bina Nusantara University, Indonesia
agri.bororing@binus.ac.id✉

Abstract:

In today's digital era, mobile applications play a crucial role in supporting students' academic activities. Many high schools have introduced their own Learning Management System (LMS) applications to enhance accessibility to academic resources. However, the adoption of these applications remains limited. This study seeks to examine the factors influencing students' intention to use LMS applications by applying the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The examined variables include Effort Expectancy, Performance Expectancy, Social Influence, Satisfaction, and Trust. The findings indicate that Social Influence, Satisfaction, and Trust significantly impact students' intention to use LMS applications, whereas Effort Expectancy and Performance Expectancy do not show a notable effect to student intention to use LMS.

Keywords: UTAUT, e-learning, evaluation, behavioural intention, high school students, LMS

Introduction

The advancement of digital technology has changed the way the world of education works, especially through the integration of Learning Management Systems (LMS) in schools. The role of LMS has become increasingly important, especially after the COVID-19 pandemic, which forced the transition from traditional classroom learning to online-based education. During the pandemic, LMS applications served as the primary medium for delivering learning materials, conducting assessments, and facilitating interactions between students and teachers.

Even after the pandemic subsided, the reliance on LMS remained, making the app an essential component of modern education. Schools now continue to integrate LMS into their daily operations to improve accessibility, flexibility, and efficiency in learning. Despite these advances, LMS adoption among students is still inconsistent, raising concerns about factors influencing their willingness to utilize the platform.

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This study aims to identify the factors that determine students' intentions in using LMS applications using the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. This study examined five main variables, namely: Effort Expectancy, Performance Expectancy, Social Influence, Satisfaction, and Trust. A better understanding of these factors can help teachers in policy-making and designing effective strategies to increase LMS adoption and maximize its benefits in the education sector.

Theoretical Foundations

Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT is a research method developed by Venkatesh (2003) with the aim of finding out what factors influence users to accept a technology or system (Venkatesh, Morris, Davis, & Davis, 2003). This research model includes four main variables studied, namely: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. In this study, Facilitating Conditions was not included because the study focused on the intention of using the application.

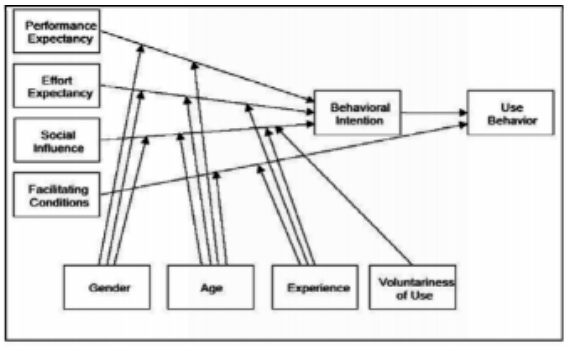

Figure 1. UTAUT Model

1. Performance Expectancy

Performance Expectancy refers to how far a user is confident that if they use a system then their performance will improve (Venkatesh et al., 2003). From the results of the research conducted by him, it supports the view that Performance Expectancy affects the Behavioral Intention of a user.

2. Effort Expectancy

Effort Expectancy refers to the level of ease of use of a system (Venkatesh et al., 2003). Intuitive and easy-to-use systems tend to increase the performance of users, so users are more likely to have high intentions to adopt and implement the system. Research conducted by Venkatesh (2003) shows that Effort Expectancy has an influence and contributes to Behavioural Intention (Venkatesh et al., 2003).

3. Social Influence

Social influence refers to the extent to which users feel influenced by the people around them in deciding whether to use the system or not (Venkatesh et al., 2003). The study conducted by him Venkatesh (2003) shows that Social Influence has an impact that affects the Behavioural Intention of users (Venkatesh et al., 2003).

4. Facilitating Condition

Facilitating condition is a factor to describe the extent to which users believe that there is adequate organizational support and infrastructure to facilitate the use of the

system (Venkatesh et al., 2003). A study conducted by him (2003) shows that Facilitating Condition affects Use Behavior.

5. Behavioural Intention

Behavioral Intention refers to an individual's desire to use a system, which is based on their understanding of the benefits and advantages that can be obtained through its use (Venkatesh et al., 2003). Individuals who know that their colleagues gain ease in their work by using the system will be more likely to have the intention to use the same system as their colleagues. Research conducted by him Venkatesh (2003) supports the statement that Behavioural intention has a strong influence on Use Behaviour (Venkatesh et al., 2003).

6. Use Behavior

Use Behavior describes the actual behavior of the user in using the technology including how often the user uses the technology and in what context the system is used (Venkatesh et al., 2003). User confidence in a system that can increase productivity and work efficiency will encourage an increase in the frequency of its use. In addition, the availability of supporting facilities also contributes to the use of the system. Research conducted by Venkatesh in 2003 showed that Facilitating Condition has an influence on Use Behavior. In addition, Venkatesh's (2003) research also confirmed that Behavioral Intention plays a role in influencing Use Behavior (Venkatesh et al., 2003).

In a previous study conducted by Chao (2019) researching what factors affect students' behavioral intentions towards Mobile-Learning (M-Learning), he added external factors in his research, namely Satisfaction, Trust, Mobile Self-Efficacy, Perceived Enjoyment and Perceived Risk Moderator (Chao, 2019). The results shown are that Satisfaction and Trust have a positive and significant effect on Behavior Intention, therefore the researcher added these 2 factors to be tested in this study. Previous research from Zhou (2011) showed that Performance Expectancy, Effort Expectancy and Social Influence have a positive and significant impact on Intetion (Behavior Intention), therefore the researcher still uses 3 main variables from UTAUT to measure the Behavior Intention factor (Zhou, 2011).

E-Learning and Mobile Applications

E-learning is a learning method that allows the teaching and learning process to be easier and more flexible by utilizing electronic media, such as computers and the internet. Through e-learning, students can access materials and gain knowledge actively and independently. Previously, the learning process was more oriented towards a teacher-centered approach, where teachers were the main source of information. However, with the development of technology and wide internet access, the learning model has now shifted to student-centered. This approach emphasizes more on students' abilities, needs, interests, and learning styles, while the role of teachers transforms into facilitators, motivators, and supporters in the learning process. Previous research has shown that LMS can improve student learning outcomes and engagement if implemented properly (Al-Samarraie & Saeed, 2018).

Mobile applications such as LMS aim to enhance students' academic experience by providing quick access to important information (DeLone & McLean, 2016).

Methods

In our research, we use a quantitative approach with a survey method. The questionnaire was distributed to active high school students through Google Forms. The data collected was analyzed using SmartPLS version 3.0 to test the validity, reliability, and influence between variables.

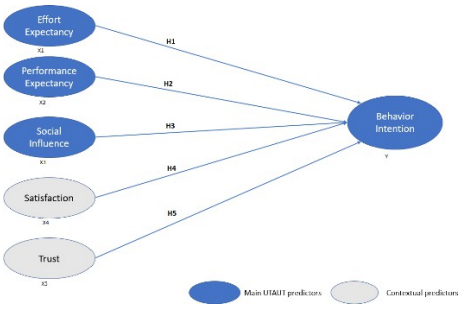

Figure 2. The UTAUT model to be used

The variables used were variables that were selected and have been tested by previous studies which showed that the variables Effort Expectancy, Performance Expectancy, Social Influence, Satisfaction and Trust significantly affected Behavior Intention. Meanwhile, the aspects included are aspects that the researcher thinks are relevant to the environment where the research takes place.

Research Hypothesis

Based on figure 2 above, it can be concluded that there are 5 hypotheses that we will raise, namely:

H1: Does Effort Expectancy affect students' Behaviour Intention in using LMS applications.

H2: Does Performance Expectancy affect students' Behaviour Intention in using LMS applications

H3: Does Social Influence affect students' Behavior Intention in using LMS applications.

H4: Does Satisfaction affect students' Behaviour Intention in using LMS applications.

H5: Does Trust affect students' Behavior Intent in using LMS applications.

Results

Sub 1 Respondent Description

A total of 100 valid data were analyzed. Respondents consisted of 60% males and 40% females.

This study uses Regression analysis and SmartPLS version 3.0 application, which is carried out by making path diagrams, evaluating measurements and conducting structural evaluations and conducting hypothesis tests. Evaluation of the Measurement Model (Outer model) is carried out by a convergent validity test, a discriminant validity test and a reliability test.

Sub 2 Regression Analysis with SmartPLS

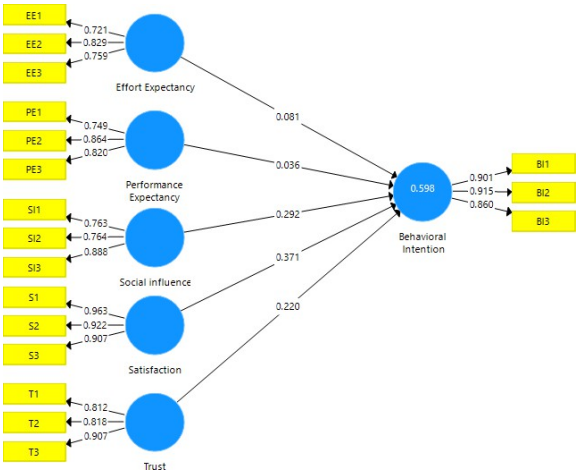

Figure 1. Path Diagram Results

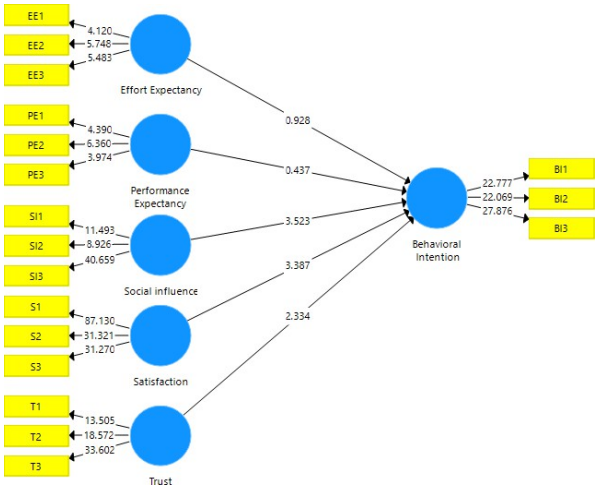

Figure 2. Path diagram results (Bootstrapping)

Table 1. Loading factor table

Variable	Indicators	Loading Factor	Information
Effort Expectancy	EE1	0.721	Valid
	EE2	0.829	Valid
	EE3	0.759	Valid
Performance Expectancy	PE1	0.749	Valid
	PE2	0.864	Valid
	PE3	0.820	Valid
Social Influence	SI1	0.763	Valid
	SI2	0.764	Valid
	SI3	0.888	Valid
Satisfaction	S1	0.963	Valid

	S2	0.922	Valid
	S3	0.907	Valid
	T1	0.812	Valid
Trust	T2	0.818	Valid
	T3	0.907	Valid
	BI1	0.901	Valid
Behavioral Intention	BI2	0.915	Valid
	BI3	0.860	Valid

Table 2. Cross Loading Table

Variable	Indicator r	Cross Loadin g	Description n
Effort Expectancy	EE1	0.721	Valid
	EE2	0.829	Valid
	EE3	0.759	Valid
Performanc and Expectancy	PE1	0.749	Valid
	PE2	0.864	Valid
	PE3	0.820	Valid
Social Influence	SI1	0.763	Valid
	SI2	0.764	Valid
	SI3	0.888	Valid
Satisfaction	S1	0.963	Valid
	S2	0.922	Valid
	S3	0.907	Valid
Trust	T1	0.812	Valid
	T2	0.818	Valid
	T3	0.907	Valid
Behavioral Intention	BI1	0.901	Valid
	BI2	0.915	Valid
	BI3	0.860	Valid

Table 3. Average Variance Extracted (AVE) Table

Variable	AVE	Information
Effort Expectancy	0.595	Valid
Performance Expectancy	0.660	Valid
Social Influence	0.651	Valid
Satisfaction	0.867	Valid
Trust	0.718	Valid
Behavioral Intention	0.796	Valid

Table 4. Average Variance Extracted (AVE) Table

Variable	Composi te Reliabilit y	Cronbach's Alpha	Description of an
Effort Expectanc y	0.815	0.665	Reliable
Perform this Expectanc and	0.853	0.750	Reliable

Social Influence	0.848	0.735	Reliable
Satisfactory	0.951	0.923	Reliable
Trust	0.884	0.806	Reliable
Behavioral Intention	0.921	0.873	Reliable

Table 5. Table Output path Coefficient

Path Coefficients	Original Sample (O)	Sample Mean (M)	Path Coefficients	Original Sample (O)	Sample Mean (M)	Path Coeff icients
EE →BI	0.081	0.090	0.087	0.928	0.353	Rejected
PE →BI	0.036	0.035	0.081	0.437	0.662	Rejected
S →BI	0.371	0.342	0.109	3.387	0.001	Accepted
THE →BI	0.292	0.281	0.083	3.523	0.000	Accepted
T →BI	0.220	0.240	0.094	2.334	0.020	Accepted

EE= Effort Expectancy
PE= Performance Expectancy S= Satisfaction
SI= Social Influence T= Trust

Evaluation of the outer model shows that all indicators are valid and reliable. The results of the hypothesis test showed that Social Influence (T-statistic = 3,523, p-value < 0.01), Satisfaction (T-statistic = 3,387, p-value < 0.01), and Trust (T-statistic = 2,334, p-value < 0.05) had a significant effect on Behavior Intention. However, Effort Expectancy (T-statistic = 0.928, p-value = 0.353) and Performance Expectancy (T-statistic = 0.437, p-value = 0.662) did not have a significant effect.

Implications of Research Results

These results show that social factors, user satisfaction, and the level of trust in the application determine students' intentions in using it rather than ease of use or performance expectations. Therefore, schools need to improve their application marketing strategies and increase students' features and trust in LMS applications.

Further, these findings suggest that students are more likely to use apps if they get encouragement from peers or lecturers. In addition, satisfaction with the app's performance is a key factor in increasing adoption rates. If the app experiences delays or technical issues, users tend to ignore it and look for other alternatives.

Trust in the application also plays an important role. If students feel that their personal data is secure and that the app provides accurate and reliable information, they are more likely to use it on an ongoing basis. Therefore, app developers need to improve security and transparency features related to user data management.

Conclusion

This study reveals that Social Influence, Satisfaction, and Trust are the main factors that affect students' intentions in using LMS. Effort Expectancy and Performance Expectancy have no significant effect on the intention of use. Therefore, to increase application adoption, schools are advised to increase promotion through students' social environments, increase student satisfaction with more functional features, and build student trust in this application.

Some suggestions that can be applied to improve the use of this application include:

- Awareness and Promotion Campaign: Hold workshops or seminars for students to introduce the features of the app and how to use it.
- App Quality Improvements: Added new features such as integration with other e-learning platforms or notification systems for assignments and exams.
- Improved Security and Trust: Improve data encryption systems and provide users with information about how their data is managed.

Suggestion

Based on the results of this study, it is recommended that schools focus on enhancing the social influence surrounding the use of LMS applications. This can be achieved by promoting the application through student communities, encouraging peer usage, and gaining support from teachers. Improving student satisfaction with the application is also crucial, and this can be done by adding more useful features that cater to students' needs, such as better notification systems for assignments and exams. Lastly, to increase students' trust in the LMS, it is important to ensure the security of personal data and provide transparent information about how user data is managed. These strategies will likely improve students' behavioral intention to adopt LMS applications.

References

Al-Samarraie, H., & Saeed, N. (2018). A systematic review of cloud computing tools for collaborative learning: Opportunities and challenges to the blended-learning environment. *Computers & Education*, *124*, 77–91.

Chao, C.-M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of the UTAUT model. *Frontiers in Psychology*, *10*, 1652.

DeLone, W. H., & McLean, E. R. (2016). Information systems success measurement. *Foundations and Trends® in Information Systems*, *2*(1), 1–116.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425–478.

Zhou, T. (2011). The effect of initial trust on user adoption of mobile payment. *Information Development*, *27*(4), 290–300.