



Analysis of E-Learning User Acceptance Factors UPN Veteran Jatim

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Abstract

The utilization of Information and Communication Technology (ICT) has an important role in the field of education during the COVID-19 pandemic. Online learning by utilizing e-learning media is an educational solution for the implementation of learning during pandemics. UPN Veteran Jatim utilizes information and communication technology in teaching and learning by using e-learning (Interactive Learning Management of UPN Jatim). This study aims to analyze the factors that affect user acceptance of UPN Veteran Jatim e-learning . The study used the Unified Theory of Acceptance and Use of Technology (UTAUT) research model. Data sampling was conducted online with a total of 387 respondents. The research data was analyzed using SEM with WarpPLS software. The results showed that performance expectancy, effort expectancy, social influence had a positive and significant effect on students' intentions in using UPN Veteran Jatim e-learning. In addition, facilitating conditions and behavioral intentions also positively affect the behavior of students using UPN Veteran Jatim.

Keywords: e-learning , UTAUT, SEM, WarpPLS

1. INTRODUCTION

The utilization of Information and Communication Technology (ICT) has an important role in the field of education during pandemic times. In the field of ict utilization education is an absolute factor that must be utilized to deal with the Covid-19 pandemic. The use of ICT in the field of education can help in breaking the chain of spread of Covid-19 by conducting online learning. Online learning by utilizing e-learning media is an educational solution for the implementation of logging during pandemics.

The Ministry of Education, Culture, Research, and Technology (Kemendikbud Ristek) issued circular No.15 of 2020 on Guidelines for the Implementation of Learning from Home During the COVID-19 Disaster Emergency in Indonesia.



The circular aims to break the chain of spread of the virus and maintain the safety and health of both learners and educators. Universities that previously conducted face-to-face learning, must switch to applying the online learning model [3]. Online learning provides benefits for lecturers and students [4]. For students, online learning emerges as one of the alternative methods of learning that does not require being present in the classroom. As for lecturers online learning methods are present to change conventional teaching styles that will indirectly have an impact on work professionalism [4].

UPN Veteran Jatim as a public university that utilizes information and communication technology in teaching and learning by using e-learning (Interactive Learning Management of UPN Jatim) to support the learning process from during the Covid-19 pandemic. E-learning UPN Veteran Jatim can be accessed through the domain address <http://.upnjatim.ac.id> which has been developed for approximately 5 years. This study aims to analyze the e-learning factors of UPN Jatim Veteran using the UTAUT model. Data sampling was conducted online with a total of 387 respondents. The research data was analyzed using SEM with WarpPLS software.

UTAUT (Unified Theory of Acceptance and Use Of Technology) was developed by Venkatesh (2003) [5]. UTAUT is a theory that explains user behavior towards information technology. The variables in the UTAUT model used are Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioral Intention, and Use Behaviour. These variables are used as a model of analysis of e-learning of UPN Veteran Jatim. The UTAUT model was shown to have a higher success rate than other technology acceptance models [6]. There has been previous research on the UTAUT method under the title "Applying the UTAUT to Understand Factors Affecting the Use of English". The research aims to explore the needs of Taiwanese students on English e-learning sites. In this study, performance expectancy, effort expectancy, social influence, facilitating conditions have a positive influence on behavioral intentions. Behavioral intentions also have a positive influence on use behavior e-learning in Taiwan.

2. METHODOLOGY OF RESEARCH

2.1 Conceptual Model

The concept model for this study uses the UTAUT model developed by Tan (2013) [7] under the title Applying the UTAUT to understand factors affecting the use of English e-learning in Taiwan. In this study, we used this model as a reference. The variables used in this study include Performance Expectancy,

Effort Expectancy, Social Influence, Facilitating Condition, Behavioral Intention, Use Behavior as in Figure 1.

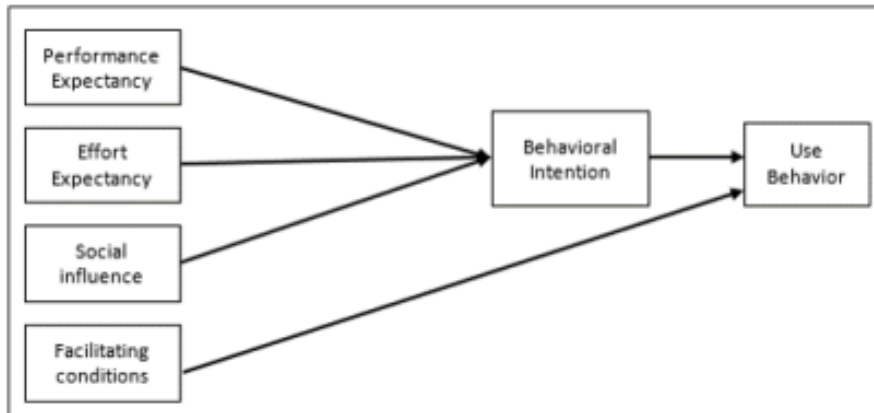


Figure 1. Research Model

2.2 Research Hypothesis

Based on the model developed by [7], the hypothesis to be tested is as follows.

- H1: Performance Expectancy positively affects Behavioral Intention to use e-learning UPN Veteran Jatim.
- H2: Expectancy efforts positively affect behavioral intentions to use e-learning UPN Veteran Jatim.
- H3: Social Influence positively affects Behavioral Intention to use e-learning UPN Veteran Jatim.
- H4: Facilitating Conditions positively affect Use behavior to use UPN Veteran Jatim e-learning.
- H5: Behavioral Intention positively affects Use Behavior to use e-learning UPN Jatim.

2.3 Population and Sample

Population is a generalization of objects / subjects that have a certain quantity and characteristics. This study used the student population of UPN Jatim e-learning users. Based on data from upn veteran jatim active students amounted to 12,386 students. This penlitian uses the Slovin technique with the level of accuracy used is 95% with an error of 5%. The study used a 5-level likert scale. The results of the calculation of Slovin techniques resulted in a sample of 387 students with divisions as in Table 1.

Table 1. Sample of Each Study Program and Force

Study Program	Sampel	2017	2018	2019	2020
S1 Teknologi Pangan	10	2	2	3	3
S1 Teknik Lingkungan	10	2	2	3	3
S1 Teknik Sipil	11	2	2	4	3
S1 Teknik Mesin	1				1
S1 Administrasi Negara	23	4	5	6	8
S1 Administrasi Bisnis	23	4	5	6	8
S1 Komunikasi	29	5	7	8	9
S1 Hubungan Internasional	13	2	2	4	5
S1 Pariwisata	3				3
S1 Arsitektur	10	2	3	2	3
S1 Desain Komunikasi Visual	9	1	2	2	4
S1 Hukum	28	5	6	8	10
S1 Teknik Informatika	22	3	5	6	8
S1 Sistem Informasi	15	3	2	4	6
S1 Sains Data	1				1

2.4 Question Instrument

The question instrument in this study was taken based on a literature study related to the UTAUT model as in Table 2.

Table 2. Statement Instruments

No.	Variabel	Sumber	Code	Statement Instruments
1	Performance Expectancy	[5][6]	PE1	The use of UPN Jatim e-learning will improve my work performance
			PE2	The use of UPN Jatim e-learning increased my productivity
			PE3	Using UPN Jatim e-learning allows me to complete faster tasks
			PE4	Using UPN Jatim e-learning motivates me to work better.

2	Effort Expectancy	[7]	EE1	My interaction and e-learning UPN Jatim is easy to understand
			EE2	It's easy for me to using UPN Jatim e-learning
			EE3	e-learning UPN Jatim is easy to use
			EE4	Learning to operate UPN Jatim e-learning is easy for me
3	Social Influence	[5][7]	SI1	Friends support in the use of e-learning UPN Jatim
			SI2	Lecturers support in the use of e-learning UPN Jatim
			SI3	The important people for me to support in the use of e-learning UPN Jatim
			SI4	University leadership support in the use of e-learning UPN Jatim
			SI5	In general, the University has been supportive in the use of UPN Jatim e-learning.
4	Facilitating Conditions	[7]	FC1	I have the necessary resources in using UPN Jatim e-learning. (For example: Computers, laptops, internet)
			FC2	I have the necessary knowledge in using UPN Jatim e-learning

			FC3	UPN Jatim is compatible with the system I use (For example: UPN Jatim e-learning can be accessed on the top, or on a smartphone)
			FC4	A specific person or group is available to help if I have difficulty using UPN Jatim e-learning
5	Behavioral Intention	[5][7][8]	BI1	I use UPN Jatim e-learning more often in the teaching and learning process.
			BI2	I continue to use the UPN Jatim e-learning website as a learning medium in the next semester.
			BI3	I like to use UPN Jatim e-learning services to get learning information
6	Use Behavior	[9]	S1	I often use UPN Jatim e-learning
			S2	I used to monitor the development of academic activities through UPN Jatim e-learning.
			S3	I prefer to use UPN Jatim e-learning rather than having to go to / contact the campus.
			S4	I use UPN Jatim e-learning with duration as needed

2.5 Data Collection and Data Analysis Techniques

The study used descriptive and inferential statistical analysis. Descriptive statistical analysis is statistical analysis that is used to analyze data by describing or describing data that has been collected while inference statistics are analysis of conclusion drawdown and making decisions based on the analysis that has been done. Inferential analysis in this study was conducted in several stages. The first stage is to evaluate the measurement model or outer model and the second stage is to evaluate the structural model or inner model. After getting descriptive and inferential results, it is continued by conducting a hypothesis test.

3. RESULTS AND DISCUSSIONS

The results and discussion of this study include outer model analysis, inner model, and hypothesis testing.

3.1 Inferential Analysis

a) Outer Model

Outer models are used to test the validity of variables and the reliability of the instrument. Reflective indicators will be evaluated through convergent validity, discriminant validity, cronbach's alpha, and composite reliability. The results of the outer model measurement can be seen in Table 3.

Table 3. Outer Model

Variabel	Indikator	Loading Factor	AVE	Discriminant Validity	Composite Reliability	Cronbach's Alpha
Performance Expectancy	PE1	0.870	0.733	0.856	0.916	0.878
	PE2	0.904				
	PE3	0.804				
	PE4	0.842				
Effort Expectancy	EE1	0.832	0.730	0.855	0.915	0.877
	EE2	0.881				
	EE3	0.858				
	EE4	0.847				
Social Influence	SI1	0.826	0.513	0.716	0.805	0.676
	SI3	0.630				

	SI4	0.601				
	SI5	0.781				
Facilitating Conditions	FC1	0.790	0.617	0.786	0.864	0.787
	FC2	0.874				
	FC3	0.842				
	FC4	0.610				
Behavioral Intention	BI1	0.839	0.721	0.849	0.886	0.806
	BI2	0.863				
	BI3	0.845				
Use Behavior	UB1	0.857	0.648	0.805	0.879	0.814
	UB2	0.776				
	UB3	0.903				
	UB4	0.663				

The loading factor value used as a condition of validity is >0.6 and the average variance extracted (AVE) value >0.5 . Discriminant Validity shows the correlation coefficient between latent variables and their significance. The value of discriminant validity is derived from the square root of AVE. Composite reliability has a value of >0.6 as a condition of reliability.

b) Inner Model

The inner model aims to predict relationships between latent variables. The results of the inner test of the model are viewed based on R-Square and Q-Square as in table 4.

Table 4. Inner Model

Variabel	R-Square	Q-Square
Behavioral Intention	0.512	0.510
Use Behavior	0.551	0.550

Based on the above values it can be interpreted that the variability of the Behavioral Intention (BI) construct that can be explained by the variability of the Construct performance expectancy (PE), effort expectancy (EE), social influence (SI) of 51.2% while 48.8% is explained by other variables outside the model. Then for the use behavior (UB) construct variability that can be explained by the variability of construct facilitating conditions (FC) and behavioral intention (BI) of 55.1%, while 44.9% is explained by other variables outside the model. Based on

the above values also obtained Q-Square predictive values relevant variable Behavioral Intention and Use Behavior of 0.510 and 0.550, the value is greater than zero. This shows the model has good predictive validity. This suggests that the model has predictive relevance that can explain the model by 51.0% and 55.0%.

3.2 Hypothesis Testing

The results of hypothesis testing using WarpPLS 6.0 software can be seen in Figure 2.

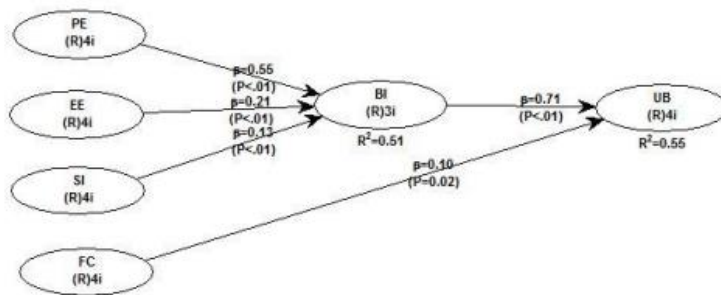


Figure 2. Hasil Test Hypothesis

Path coefficient testing results show that the path coefficient of the values P values <0.05 of all variables has a positive and significant effect, so the entire hypothesis is accepted as in Table 5.

Tabel 5. Path Coefficient

	Path Coefficient	P values	Information
PE – BI	0.55	<0.001	Significant
EE - BI	0.21	<0.001	Significant
SI – BI	0.13	0.006	Significant
FC – UB	0.10	0.018	Significant
BI - UB	0.71	<0.001	Significant

4. CONCLUSION

Factors that affect the use of UPN Jatim e-learning consists of Performance Expectancy, Effort Expectancy, and Social Influence which each have a significant effect (P values < 0.05) on the intention of use (Behavioral Intention) e-learning UPN Jatim. In addition, Facilitating Conditions, Behavioral Intention also has a significant effect on the behavior of using e-learning UPN Jatim. The factor that most influences users in the acceptance of UPN Jatim e-learning is Behavioral Intention because it has a path coefficient value of 0.71 compared to others.

REFERENCE

- [1] Fitriyani, Y., Fauzi, I., & Sari, M. Z, Motivasi Belajar Mahasiswa Pada Pembelajaran Daring Selama Pandemi Covid-19, *Profesi Pendidikan Dasar*, 7(1), 121–132, 2020, <https://doi.org/10.23917/ppd.v7i1.10973>
- [2] Kemendikbud, “Surat Edaran Sekretaris Jenderal No.15 Tahun 2020 Pedoman Pelaksanaan Belajar Dari Rumah Selama Darurat Bencana COVID-19 di Indonesia,” *Sekr. Nas. SPAB (Satuan Pendidik. Aman Bencana)*, no. 15, 2020.
- [3] Y. Fitriyani, I. Fauzi, and M. Z. Sari, “Motivasi Belajar Mahasiswa Pada Pembelajaran Daring Selama Pandemi Covid-19,” *Profesi Pendidikan Dasar*, vol. 7, no. 1, pp. 121–132, 2020, doi: 10.23917/ppd.v7i1.10973.
- [4] N. H. Zhafira, Y. Ertika, and Chairiyaton, “Persepsi Mahasiswa Terhadap Perkuliahan Daring Sebagai Sarana Pembelajaran Selama Masa Karantina Covid-19,” *J. Bisnis dan Kaji. Strateg. Manaj.*, vol. 4, pp. 37–45, 2020.
- [5] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, “User acceptance of information technology: Toward a unified view,” *MIS Q. Manag. Inf. Syst.*, vol. 27, no. 3, pp. 425–478, 2003, doi: 10.2307/30036540.
- [6] S. Rahmah and N. Dalimunthe, “ANALISIS PERILAKU PENGGUNA E-LEARNING SCHOODOLOGY MENGGUNAKAN MODEL UTAUT (Studi Kasus : SMAS Babussalam Pekanbaru),” *Rekayasa Dan Manaj. Sist. Inf.*, vol. 2, no. 2, 2016.
- [7] P. J. B. Tan, “Applying the UTAUT to understand factors affecting the use of english e-learning websites in Taiwan,” *SAGE Open*, vol. 3, no. 4, 2013, doi: 10.1177/2158244013503837.
- [8] M. O. Ahmad, J. Markkula, and M. Oivo, “Factors affecting e-government adoption in Pakistan: A citizen’s perspective,” *Transform. Gov. People, Process Policy*, vol. 7, no. 2, pp. 225–239, 2013, doi: 10.1108/17506161311325378.
- [9] N. A. Ainul Bashir, “Penerapan Model UTAUT 2 Untuk Mengetahui Faktor-Faktor Yang Memengaruhi Penggunaan SIORTU,” *Elinvo (Electronics, Informatics, Vocat. Educ.)*, vol. 5, no. 1, pp. 42–51, 2020, doi: 10.21831/elinvo.v5i1.30636.10] B. S. Santoso and M. F. Anwar, “Analisis Kualitas Menggunakan Metode Webqual dan Importance-Performance Analysis (IPA) Pada Situs Kaskus,” *Natl. Conf. Inf. Technol. Tech. Eng.*, no. September, pp. 1–8, 2015, [Online]. Available: <https://www.researchgate.net/publication/281497362> Diakses tanggal 1 Novemver 2019.
- [10] M. Sholihin and D. Ratmana, *Analisis SEM-PLS dengan WarpPLS 3.0. YOGYAKARTA*, 2013.