Jurnal TAM (Technology Acceptance Model)
Jurnal TAM, Volume 13, Nomor 2, Desember 2022
E ISSN: 2579-4221; P ISSN: 2339-1103, pp. 99-105
Accredited SINTA 4 Number 23/E/KPT/2019
https://ojs.stmikpringsewu.ac.id/index.php/JurnalTam/index

ANALYSIS OF MICROSOFT STREAM E-LEARNING FOR AUTOMOTIVE COMPANY EMPLOYEES USING THE UTAUT MODEL

Nanang Susanto[1*], Ariyanto Adi Nugroho[2], Dwiza Riana[3], Sri Hadianti[4]
[1,2,4]Magister of Computer Science, Faculty of Information Technology, Nusa Mandiri University, Jakarta
[3]Faculty of Information Technology, Nusa Mandiri University, Jakarta
[1,2,4]Kramat Raya Steet No.18, RW.7, Kwitang, Senen, Jakarta Pusat, Jakarta
[3]Pulomas Selatan Street No.22, Kayu Putih, Pulo Gadung, Jakarta Timur, Jakarta
E-Mail: 14210248@nusamandiri.ac.id, 14210241@nusamandiri.ac.id, dwiza@nusamandiri.ac.id, sri.shv@nusamandiri.ac.id

Article history:
Received: October 31, 2022
Revised: December 9, 2022
Accepted: December 27, 2022

Corresponding authors
*14210248@nusamandiri.ac.id

Keywords:
COVID-19,
e-learning System,
UTAUT Model,
Instructor Quality,
Support System Quality

Abstract
Competence and knowledge of employees need to be improved continuously. This is in order to improve performance and increase company productivity. This performance indicator becomes difficult to achieve during the COVID-19 pandemic. Microsoft Stream e-Learning was chosen as a solution to continue carrying out competency improvement activities. This study aims to understand the factors that influence employee attitudes towards e-Learning. There were 138 employees who participated in the survey conducted by the researcher. This study applies the Unified Theory of Acceptance and Use of Technology (UTAUT) method with variables including Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioral Intention to use, Gender, Age, Instructor Quality, and Support System Quality**.** The test results from the study show a positive and significant effect on the use of Microsoft Stream e-learning with learning facilities, the quality of the instructor and the quality of the support system.

I. INTRODUCTION

Companies when facing the COVID-19 pandemic are required by the authorities to follow health protocols to suppress the spread of the virus [1]. Companies must take special steps to respond to this crisis. The government requires all companies to take preventive measures and health procedures to prevent transmission. Companies are encouraged to use digital solutions to carry out their activities [2]. When the government imposed PSBB, companies then looked for solutions to implement competency improvement through eLearning learning technology both synchronously and asynchronously [3]. The implementation of employee competency improvement must continue with adaptation on various sides. The implementation of learning with eLearning has many challenges. Challenges were experienced by both instructors and participants. Instructors must be able to compile material in digital form such as videos and power point presentations [4]. Face-to-face meetings are carried out online. Applications such as Microsoft Stream are used as learning management systems (eLearning). The government provides leniency for PSBB and face-to-face teaching can be carried out, instructors still use eLearning to deliver learning materials. The instructor understands that the use of this technology is beneficial in learning activities [2]. This study examines the acceptance and use of the learning management system by participants. The research uses a construct compiled from the Unified Theory of Acceptance and Use of Technology (UTAUT).

II. LITERATURE REVIEW

A. Microsoft Stream e-Learning

Microsoft Stream is an e-Learning tool that is part of the Microsoft Office 365 package [5]. This application is designed as a vehicle for sharing

video content in an organization that implements Microsoft Office 365. The use of this web-based application can also be integrated with Microsoft Teams and Microsoft Form [6]. The advantage of this application compared to other applications is the control over the content that is shared. Stream provides the same features as Youtube but comes with the privacy settings required by the organization.

The application can be accessed only using an email account that has been set up by the organization's IT administrator. Viewers cannot use commonly used Microsoft, Outlook, Hotmail accounts. After accessing, users can view video content that has been provided by the instructor. Instructors can upload videos through integrated Microsoft applications. These applications include Teams, Sharepoint and OneDrive [6]. Users can watch videos based on preset playlists or randomly as directed by the instructor. After the playlist is complete, participants will be presented with a quiz using features from Microsoft Forms. [7]

B. The Unified Model of Acceptance and Use Technology

Unified Theory of Acceptance and Use of Technology (UTAUT) is a research method based on psychology and sociology. UTAUT is a technology acceptance model that was developed following the models that have been commonly used in user acceptance of information technology research [8]. The UTAUT method aims to describe user intentions on the use of information technology and related usage attitudes [9].

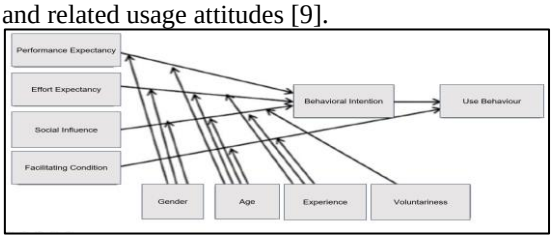

Figure 1 UTAUT Model UTAUT

UTAUT is divided into four construct concepts that can be observed and measured by emphasizing the attitude of use including Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Condition. There are also four other key moderators in the UTAUT model including gender, age, experience, and volunteerism of use.

III. CONCEPTUAL MODEL DEVELOPMENT

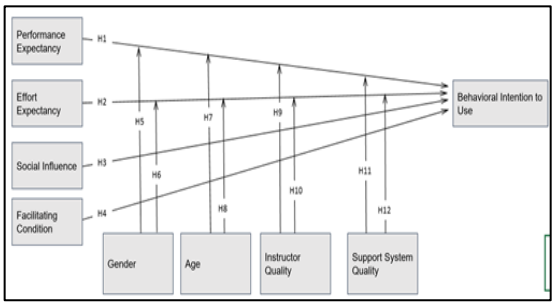

Figure 2 Proposed Model

The UTAUT model has four key variables, including:

1. Performance Expectancy,
2. Business Expectations (Effort Expectancy),
3. Social Influence (Social Influence),
4. Facility Conditions (Facilitating Conditions)

From the UTAUT Model above, in this study added variables The new model used to analyze the level of employee acceptance in using Microsoft Word, namely Gender, Age, Instructor Quality and Support System Quality, so that it becomes the proposed model as shown in Figure 2. From the model above, survey questions are then formulated in Table 1.

Table 1 List of Survey Questions

No	Questions	Code
1	I expect Microsoft Stream to be useful in my work.	PE1
2	Microsoft Stream allows me to get work done faster.	PE2
3	Microsoft Stream makes my productivity increase.	PE3
4	Microsoft Stream can increases my salary	PE4
5	My interactions with Microsoft Stream are clear and understandable.	EE1
6	Me can use of Microsoft Stream with ease.	EE2
7	I think Microsoft Stream easy to use.	EE3
8	Learning to operate Microsoft Stream is easy for me.	EE4
9	I got a recommendation to use Microsoft Stream from an influential person.	SI1
10	I got a recommendation to use Microsoft Stream from an important person.	SI2
11	Business senior management supports the use of Microsoft Stream.	SI3
12	I have the resources to use Microsoft Stream.	FC1
13	I have the knowledge to use Microsoft Stream.	FC2
14	Microsoft Stream is not compatible with other systems that I used.	FC3
15	There are support personnel available to assist in the event of a problem with Microsoft Stream.	FC4
16	I used Microsoft Stream as recommended by the instructor.	IQ1

17	My enthusiasm increases when an instructor uses Microsoft Stream.	IQ2
18	I received quick responses to questions and concerns from my instructor at Microsoft Stream.	IQ3
19	In my opinion, communicating and interacting with instructors is important and valuable in Microsoft Stream.	IQ4
20	Generally, my instructors have a positive attitude towards using Microsoft Stream.	IQ5
21	Microsoft Stream provides precise information on plagiarism issues when submitting tasks through the system.	SSQ1
22	Microsoft Stream provides information about behavioral considerations when communicating with students or with instructors.	SSQ2
23	Microsoft Stream provides information about content accessibility, permissions to view course materials, and other personal data in the system.	SSQ3
24	If optional, I still prefer to use Microsoft Stream as a support tool in the module.	SSQ4
25	I intend to access Microsoft Stream in the next 3 months.	BI1
26	I plan to access Microsoft Stream in the next 6 months	BI2
27	I estimate I will access Microsoft Stream in the next 6 months	BI3

IV. RESEARCH METHOD

Testing method in this paper using the PLS algorithm, and step by step process using below items:

1. Path Value Path coefficient between each exogenous variable to variable Endogenous
2. Outer Loading, used to measure whether the indicator is really able to represent the variables
3. Direct effect, Indirect effect, and total effect
4. R Square and R Square Adjusted to find out how many percent of exogenous variables are able to influence the endogenous variable
5. F Square to calculate the magnitude of the influence between variables with Effect Size
6. Construct Reliability and Validity, for reliability and validity tests, including Cronbach's Alpha, Composite Reliability and Corvergent validity
7. Discriminant validity, displaying the Fornell larcker criterion table Collinearity
8. Statistics, used for multicollinearity tests using VIF values (Variant ce Inflation Factor)

The next step is calculating the smartpls algorithm, bootstraping calculation is carried out, namely by assessing the level of significance or probability of direct effects, indirect effects and total effects. These values include:

1. r Square and adjusted r square
2. f square
3. outer loading and outer weight.

The research was continued by formulating the following analysis:

1. The t statistic value, which was compared with the t table value to test whether or not the exogenous variable had a significant effect on the endogenous variable.
2. The p value is compared to whether the value is below the significance level, for example below 0.05 or above 0.05 to state whether the null hypothesis or alternative hypothesis is accepted or rejected.
3. Original Sample, used as the value of the regression coefficient, to complete the regression equation.

The next step is to carry out a Blindfolding test with details:

1. The analysis is used to assess the level of relevance of predictions from a construct model.
2. The analysis process uses the value of Q Square.
3. If Q Square > 0.05, it can be concluded that a construct model is relevant.
4. That is, the exogenous variables used to predict endogenous variables are correct.

V. RESULT

A. Results Outer Model Testing Results

Convergent validity which can be accepted if the loading factor value is greater than or equal to 0.5 [10]. The model that was built was fit because all items were worth > 0.7 [11]. Indicators with results below 0.5 including FC3, FC4, PE4 are removed from the model as depicted in Figure 3.

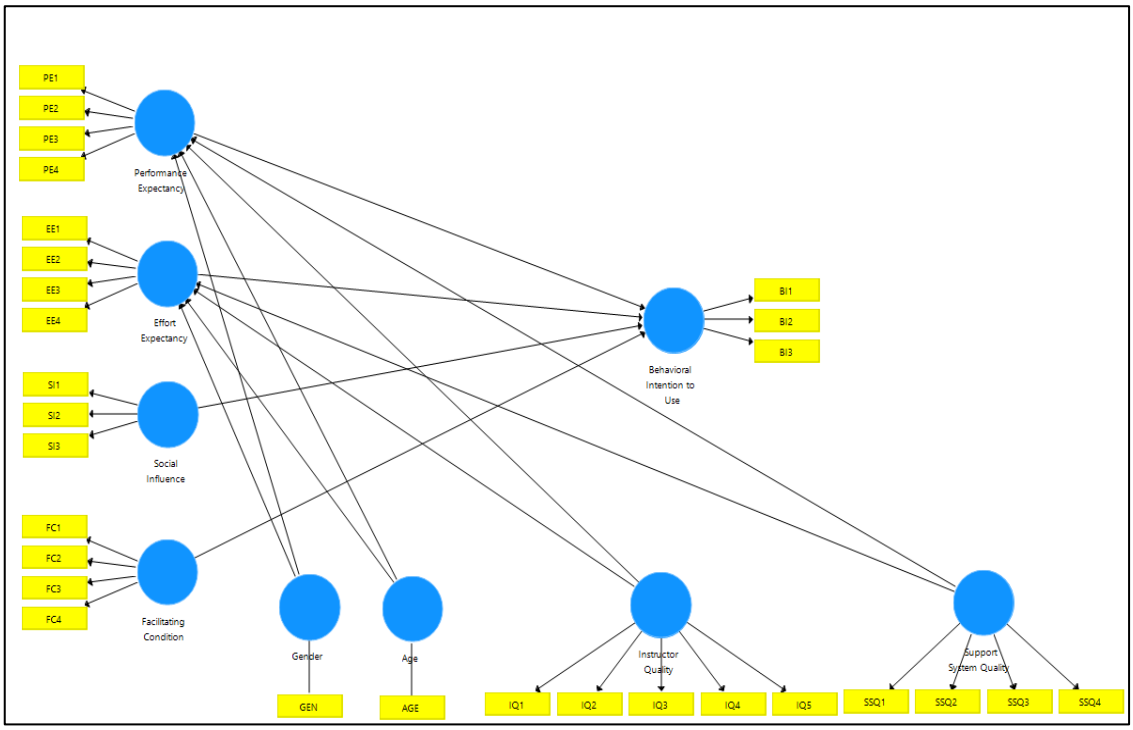

Figure 3 Proposed Model on SmartPLS

1) Discriminant

Validity Discriminant Validity is met if the Average Variance Extracted (AVE) of the extracted average variance must be more higher than the correlation involving the latent variable [12]. Discriminant validity results are presented in Table 2

Table 2 Discriminant Validity Results

	AGE	BIUS	EE	FC	GEN	IQ	PE	SI	SSQ
AGE	1								
BIUS	0.12	0.87							
EE	0.06	0.32	0.88						
FC	0.03	0.42	0.71	0.92					
GEN	-0.01	0.01	0	0.04	1				
IQ	0.01	0.32	0.66	0.62	0.06	0.84			
PE	0.1	0.32	0.71	0.51	0.08	0.66	0.85		
SI	-0.13	0.24	0.43	0.44	0.08	0.61	0.45	0.92	
SSQ	-0.11	0.22	0.61	0.49	0.04	0.7	0.66	0.53	0.8

2) Cronbach's Alpha

Research construct reliability test is needed to determine whether the research instrument items are used twice to measure the symptoms associated with the study and will provide relatively consistent measurements [13]. The Cronbach Alpha scale is grouped into very unreliable, unreliable, moderately reliable, reliable, very reliable criteria [14]. The value in the Chronbach Alpha column is between 0.81 to 1.00, so it is declared very reliable. The test results are presented in Table 3.

3) Composite Realibility

Value of Composite Realibilty ≥ 0.7, so it is considered reliable [15]. The test results are shown in Table 3.

Table 3 Results of Chronbach's Alpha Composite Realibility

No	Variable	Cronbach's Alpha	rho_A	Composite Reliability	AVE
1	Age	1,000	1,000	1,000	1,000

2	Behavioral Intention to Use	0.830	0.834	0.899	0.749
3	Effort Expectancy	0.899	0.899	0.930	0.768
4	Facilitating Condition	0.808	0.825	0.912	0.838
5	Gender	1,000	1,000	1,000	1,000
6	Instructor Quality	0.893	0.701	0.899 0.921	7
7	Performance Expectancy	0.799	0.802	0.882	0.714
8	Social Influence	0.904	0.922	0.939	0.837
9	Support System Quality	0.819	0.835	0.879	0.645

B. Inner Model Test Results

1) R- Square

R-Square is a measure of the proportion of variation the value of the affected variable (endogenous) which can be explained by the variable that influences it (exogenous). This is useful for predicting whether the model is good/bad [16].

Table 4 Test Results for R-Square

Variable	R Square	R Square Adjusted	Results
Behavioral Intention to Use	0.196	0.171	Weak
Effort Expectancy	0.486	0.471	Weak
Performance Expectancy	0.535	0.521	Moderate

2) F-square

F-Square is a measure used to assess the relative impact of an influencing variable (exogenous) on the affected variable (endogenous).

Table 5 F-Square Test Results

Variables			Results	Description
Age	→	Effort Expectancy	0.013	small
Age	→	Performance Expectancy	0.040	small
Effort Expectancy	→	Behavioral Intention to Use	0.003	small
Facilitating Condition	→	Behavioral Intention to Use	0.083	small
Gender	→	Effort Expectancy	0.002	small
Instructor Quality	→	Effort Expectancy	0.194	moderate
Performance Expectancy	→	Behavioral Intention to Use	0.018	small
Social Influence	→	Behavioral Intention to Use	0.001	small
Support System Quality	→	Effort Expectancy	0.088	small
Support System Quality	→	Performance Expectancy	0.192	moderate

3) Direct Effect

Direct Effect analysis is useful for testing the hypothesis of the direct effect of a variable that affect (exogenous) to the affected variable (endogenous).

Direct effect analysis is useful for testing the hypothesis of the direct effect of a variable that affects (exogenous) on the variable that is influenced (endogenous). The value obtained from this test is T-Statistic > 1.96. The results are declared accepted as shown in Table 7.

Table 7 Direct Effect Test Results

Tstatistic	Variable			Value	P Value	Information
H1	PE	→	BIUS	1.124	0.261	rejected
H2	EE	→	BIUS	0.373	0.709	rejected
H3	SI	→	BIUS	0.342	0.732	rejected
H4	FC	→	BIUS	2759	0.006	accepted
H5	GEN	→	PE	0.708	0.479	rejected
H6	GEN	→	EE	0.538	0.591	rejected
H7	AGE	→	PE	2.364	0.018	accepted
H8	AGE	→	EE	1.305	0.192	rejected
H9	IQ	→	PE	3.477	0.001	accepted
H10	IQ	→	EE	3.666	0.000	accepted

H11	SSQ	→	PE	3.931	0.000	accepted
H12	SSQ	→	EE	2.405	0.016	accepted

C. Hypothesis

Results Hypothesis based on null hypothesis significant testing:

H1 Performance expectations have a positive and insignificant effect on interest in using Microsoft Stream E-Learning System as seen from P Value > 0.05 (0.261 > 0.05) , and rejected because tstatistic < 1.96 (1.124 < 1.96). This means that when employee using Microsoft Stream it can't support their work faster, and also not increase productivity, and they don't increase their intensions to use it.

H2 Effort Expectations has a negative and insignificant effect on Interest in Using the Microsoft Stream E-Learning System seen from P Value > 0.05 (0.709 > 0.05), and rejected because tstatistic < 1.96 (0.373 < 1.96) . This means when employee using Microsoft Stream it not easy to understand and not increase interest to use it for working.

H3 Social factors have a positive and insignificant effect on Interest in Using Microsoft Stream E-Learning System seen from P Value > 0.05 (0.732 > 0.05), and rejected because tstatistic < 1.96 (0.342 < 1.96) . This means when employee received recommendation to use Microsoft Stream, they not increase interest to use it as work support.

H4 Facility condition has a positive and significant effect on interest in using the Microsoft Stream E-Learning System seen from P value <0.05 (0.006 < 0.05), and accepted because tstatistic > 1.96 (2.759 > 1.96). This means when employee received more facilitating conditions to use Microsoft Stream, they will use Microsoft Stream more frequently.

H5 Performance Expectations has a positive and insignificant effect on Interest in Utilizing and Using the Integrated Microsoft Stream E-Learning System Moderated by Gender as seen from P Value > 0.05 (0.479 > 0.05), and rejected because tstatistic <1.96 (0.708 < 1.96). This means when employee use Microsoft Teams with gender of male, it not increase interest to use Microsoft Stream for their work faster and increase productivity.

H6 Social factors have a negative and insignificant effect on Interest in Utilizing and Using the Microsoft Stream E-Learning System moderated by Gender as seen from P Value > 0.05 (0.591 > 0.05), and rejected because tstatistic < 1.96 (0.538 < 1 ,96). This means when employee received recommendation to use Microsoft Stream with gender male or female, it not increase interest to use Microsoft Stream as work support.

H7 Performance Expectations have a positive and significant effect on Interest in Utilizing and Using the Microsoft Stream E-Learning System moderated by Age seen from P value <0.05 (0.018 < 0.05), and accepted because tstatistic > 1.96 (2.364 > 1 ,96). This means when employee using Microsoft Stream based on their ages, it increase interest for using Microsoft Stream for support their work.

H8 Effort Expectations has a positive and insignificant effect on Interest in Using and Using the Microsoft Stream E-Learning System moderated by Age seen from P Value > 0.05 (0.192 > 0.05), and rejected because tstatistic < 1.96 (1.305 < 1.96). This means when employee using Microsoft Stream based on their ages, it not easy understandable and not increase interest to use it.

H9 Performance Expectations has a positive and significant effect on Interest in Utilizing and Using the Microsoft Stream E-Learning System moderated by Instructor Quality seen from P value <0.05 (0.001 < 0.05), and accepted because tstatistic > 1.96 (3.447 > 1.96). This means when employee has good interaction with Instructor, it will increase their work productivity and faster.

H10 Business Expectations have a positive and significant effect on Interest in Using the Microsoft Stream E-Learning System moderated by Instructor Quality seen from P value <0.05 (0.00 < 0.05), and accepted because tstatistic > 1.96 (3.66 > 1.96). This means when employee received good communication and positive attitude from Instructor, it will increase their interest to use Microsoft Stream frequently.

H11 Performance Expectations have a positive and significant effect on Interest in Utilizing and Using the Microsoft Stream E-Learning System moderated by Support System Quality seen from P value <0.05 (0.00 <0.05), and accepted because tstatistic > 1.96 (3.931 > 1.96). This means when employee understand to information of learning method and material through Microsoft Stream, it will increase their work productivity and faster.

H12 Effort Expectations has a positive and significant effect on Interest in Using the Microsoft Stream E-Learning System moderated by Support System Quality seen from P value <0.05 (0.016 < 0.05), and accepted because tstatistic > 1.96 (2.405 > 1.96). This means when employee understand to information of learning method and material through Microsoft Stream, it will easy for employee and will increase interest to use Microsoft Stream.

VI. CONCLUSION

Based on data analysis result of the study using UTAUT model, the selection of Microsoft Stream as an E-Learning program in automotive companies has the following theoretical and practical implications to use based on Facility Condition, Instructor Quality and Support System Quality, however need to improve for socialization of using this system and also utilize information to all employee to improve service interaction of Microsoft Stream E-Learning with the employee.

REFERENCES

[1] IA Elhaty, T. Elhadary, R. El Gamil , and H. Kilic, "Teaching University Practical Courses Online during COVID-19 Crisis: A Challenge for E-Learning," J. Crit. Rev., vol. 7, no. 8, pp. 2865–2873, 2020, [Online]. Available: http://creativecommons.org/licenses/by/4.0/ .

[2] ZD Mulla, V. Osland-Paton, V. Osland-Paton, MA Rodriguez, E. Vazquez, and S. Kupesic Plavsic, "Novel coronavirus, novel faculty development programs: Rapid transition to eLearning during the pandemic," J .Perinat. Med., vol. 48, no. 5, pp. 446–449, 2020, doi:10.1515/jpm-2020-0197.

[3] MPA Murphy, "COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy," Contemp. Secur. Policy, vol. 41, no. 3, pp. 492–505, 2020, doi:10.1080/13523260.2020.1761749.

[4] M. Roman and AP Plopeanu, "The effectiveness of the emergency eLearning during the COVID-19 pandemic. The case of higher education in economics in Romania," Int. Rev. econ. Educ., vol. 37, no. 54, p. 100218, 2021, doi:10.1016/j.iree.2021.100218.

[5] TD Norman, "Teaching Music Online: Using Microsoft Stream and Forms to Share Prerecorded Lessons," J. Gen. Music Education., 2021, doi: https://doi.org/10.1177/1048371321103444 0.

[6] BN Ilag, Understanding Microsoft Teams Administration. Tracy: Apress, Berkeley, CA, 2020.

[7] V. Venkatesh, JYL Thong, and X. Xu, "Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology," MIS Q. Manag . inf. syst., vol. 36, no. 1, pp. 157–178, 2012, doi: 10.2307/41410412.

[8] AS MB.Alazzam, "Review of Studies With Utaut As Conceptual Framework," Eur. science. J., vol. 10, no. 3, pp. 249–258, 2015.

[9] C. Andreas, "UTAUT and UTAUT 2: A Review and Agenda for Future Research," The Winners, vol. 13, no. 2, pp. 106–114, 2012.

[10] WC Hair Jr., JF, Anderson, RE, Tatham, RL, & Black, Multivariate Data Analysis. Upper Saddle River, NJ: Prentice Hall, 1998.

[11] S. Haryono, SEM Methods For Management Research With AMOS LISREL PLS. Jakarta: Luxima Metro Media, 2017.

[12] N. Kock and GS Lynn, "Lateral Collinearity and Misleading Results in Variance-Based SEM: An Illustration and Recommendations," J. Assoc. inf. syst., vol. 14, no. 6, pp. 225–241, 2012, doi:10.1002/ctpp.19740140604.

[13] DJ Putka and PR Sackett, Reliability and validity. Routledge/Taylor & Francis Group., 2010.

[14] MS Dahlan, Statistics for Medicine and Health. Jakarta: Epidemiology of Indonesia, 2014.

[15] J. Nunally and I. Bernstein, Psychometric theory. New York: McGraw-Hill, 1994.

[16] J. Cohen, Statistical Power Analysis for the Behavioral Sciences. Hillsdale: Lawrence Erlbaum Associates, 1988.