

The Investigation of the Acceptance of Students Against Microsoft Teams Learning with the SEM-PLS Approach

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ARTICLE INFO	ABSTRACT
<p>Article History</p> <p>Received : 4 Oct 2022</p> <p>Revised : 24 Dec 2022</p> <p>Accepted : 11 Feb 2023</p> <p>Available : 15 Feb 2023</p> <p>Online</p> <hr/> <p>Keywords:</p> <p>Online Learning</p> <p>Microsoft Teams</p> <p>ECM</p> <p>TAM</p> <p>SEM-PLS</p> <hr/> <p>Please cite this article APA style as:</p> <p>Nurdiansyah, D. (2023). The Investigation of The Acceptance of Students Against Teams Learning with The SEM-PLS Approach. <i>Vygotsky: Jurnal Pendidikan Matematika dan Matematika</i>, 5(1), pp. 13-28.</p>	<p>The study aims to determine the accuracy of the expectation-confirmation model and social influence integrated technological acceptance model in predicting the acceptance of student-related online learning with Microsoft Teams. The research design is quantitative research modeling the acceptance of students with SEM-PLS using WarpPLS software. Used primary data collected using a random sampling technique from an online questionnaire for UNUGIRI Statistics students using Microsoft Team until the end of August 2022, using the Likert scale for item questions for the online questionnaire. The result is that obtained implementation of SEM-PLS well with the conclusion that satisfaction, perceived usefulness, and expectation-confirmation significantly affect actual use and continuous intention. In contrast, social influence and perceived ease of use are not significant.</p>

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1. Introduction

Online learning has been used as a substitute for education in Indonesia during the COVID-19 pandemic. E-learning and mobile learning have revolutionised teaching information and communication technology of learning (ICT), converting an electronic lesson into a face-to-face class (Almaiah et al., 2022). The online platforms available for education are Microsoft Teams, Google Meet, Zoom, and Cisco Webex (Dash et al., 2022). One of the applications online that are widely used in Microsoft Teams because this application quickly downloads and has a light and user-friendly gauge for teaching and learning. Not far different than other applications such as google classroom used by some universities and the force in

helping strategic perception, teachers to deal with understanding, the practical teaching students in some type (Al-Marroof & Al-Emran, 2018).

Like other online learning, Microsoft Teams also provides a choices menu for online college learning, assignment, sharing teaching materials, online attendance, etc. The study of electronic learning would be crucial to interpreting using the perspective of satisfaction, expectation-confirmation, and social influence (Alshurideh et al., 2020). Stress levels, anxiety, and depression, three psychological factors, affect people's quality of life during the COVID-19 epidemic (Nugraha et al., 2020). Aspects of the digital divide in developing countries like India mean that the MS Teams platform does not affect usability (Pal & Vanijja, 2020). Student acceptance elsewhere of online learning with MS Teams may differ and show optimistic results on its usefulness (Jehad et al., 2020). Online learning has the potential to reduce carbon emissions. Still, mental health suffers due to self-isolation and decreased academic performance leading to mental anxiety and depression. The use of electronic devices for learning causes eye strain and neck muscles which are bad for physical health (Agarwal et al., 2021). After the recovery covid-19 case, online learning was used by some universities; post-covid-19 was affected just like the surge in a student who is not following increasing the class capacity. The new space provision is now being delivered to address these problems after the requisite evaluation of online learning utilizing the Microsoft Team application.

Several institutions have employed online evaluation utilizing the technology model (TAM) to evaluate the efficacy of information systems (Hardyanto et al., 2019). The TAM suggests that students' behavioural intention to receive and use e-learning in developing countries is significantly influenced by perception, ease of use of perception, quality of life, and influence of social and practical consequences, which need to be examined theoretically (Vululleh, 2018). TAM was also used to investigate factors influencing the intensity of the application of e-government programs in Surabaya service (Putra & Samopa, 2018). SEM is usually conducted with the help of AMOS software that produces external factors evaluation that provides information about the behavior of college students when using e-learning (Tick, 2019). The narrow concluded the marketing of software such as AMOS, SPSS, SmartPLS, and WarpPLS produces a conclusion that does not like one rung up (Purwanto et al., 2021). However, in practice, this method is always constrained by the distribution multivariate to normality, so they neglect the imposition methods. Another alternative approach is a free distribution of the SEM-PLS variant (Hair et al., 2017).

SEM is a statistical method that combines multivariate solid linear regression analysis, idolatry, and confirmatory factor analysis, specifically covariance-based SEM and approach variants. All of these estimates were made simultaneously to examine the relationship between variables latent in a model with the approach covariance: Variance SEM or SEM-PLS (Mohamad et al., 2019). SEM-PLS is used when the data was not meet the parametric distribution normality and measures at most minuscule a multivariate sample. SEM-PLS to the advertising in the research SMS as one of the marketing phone instruments to know the aspects that influence consumer advertising attitudes SMS (Shuhaiber & Al Khasawneh, 2018). In addition, to evaluate the application or system, SEM-PLS can be used to ascertain the relations between the place the dependence on the conversion of dust shall change or not (Prayitno et al., 2021). SEM-PLS can also be used to evaluate

the effectiveness of company performance. This makes it useful for major small and medium-sized enterprises (SMEs) that need help understanding the principles and practices of entrepreneurship to develop SME human resources (Nasution et al., 2020). SEM-PLS can also be used to examine construction parameters and determine why the Omani construction industry delays (Suleiman Al Maktoumi et al., 2020). In this study, the SEM-PLS application was conducted using the software WarpPLS assistance. This software gives user features a larger area than all other software, and explicitly software is also overcome nonlinear function that is latent in the relationship between variables in all, especially when all parameters are in a model (Kock, 2022). A good model will be evaluated based on the size of the whole match, measurements, and structure. In research, this study investigates taking reception given students to the learning Microsoft Team with SEM-PLS approach. The novelty provided was the model TAM with ECM and social influence with the software WarpPLS.

The purpose of this research is to know the frequency distribution of demographic questions/respondents and items related to statements about student learning online with Microsoft Teams at Universitas Nahdlatul Ulama Sunan Giri (UNUGIRI) to develop combination modelling of social influence, ECM and TAM using SEM-PLS, and investigate the projected revenue of students for online learning with Microsoft Teams. This study benefit UNUGIRI Bojonegoro through knowledge input in the formulation related SEM-PLS students about learning online with Microsoft Team so created learning programs and policies more effective and efficient in evaluation for learning online after COVID-19. The benefit gained by the community is the understanding and awareness of the need to pay more attention to teaching students when running online at home.

Online learning has become the strategy and lecturer teaching style, but evaluating the success and studying sustainable continuous supervision. SEM-PLS analysis contains a picture of evaluation learning online, and the students in the large about PEOU (perceived ease of use), PU (perceived usefulness), SAT (satisfaction), EC (expectation-confirmation), SI (social influence), dan CI (continuous intention) against AU (actual use) from Microsoft Teams application. It needs special attention to control and handling learning online could be effective and efficient. Thus need to propose this study entitled "The Investigation of The Acceptance of Students Against Microsoft Teams Learning With The SEM-PLS Approach".

2. Method

2.1. Research Design

Design namely research quantitative research modelling students about Microsoft Teams learning with SEM-PLS approach, which is free distribution using WarpPLS software. The study to see a mount of predictions about SAT, PU, PEOU, SI, EC, dan CI against AU from the output Microsoft Teams application. They were given goodness-of-fit into a measurement model fit, structural model fit, and overall model fit that be visualization into the output of WarpPLS software. That formed modelling of learning about Microsoft Teams with the SEM-PLS approach for inputs knowledge in the form of structural model equations or prediction for the evaluation of demand in actual their experiences online with Microsoft Teams.

2.2. Population and Sample

Given the course of study, the student population is statistics UNUGIRI in the

Bojonegoro district. At the same time, the sample taken from respondents experienced students who were using Microsoft Team until the end of august 2022.

2.3. Sampling Technique

Used sampling techniques are random sampling with random samples for each student to respond regarding statements through the questionnaire online.

2.4. Research Hypothesis

The study is given to research ECM and social influence, which combined TAM to predict au from the application of Microsoft Teams. The general TAM model loading variables as SAT, PU, PEOU, CI, dan AU. Given variables derived from the research used based on the study of tam with social influence and ECM (Alshurideh et al., 2020):

1. Social influence (SI) is the extent to which individuals are considered essential to exert an influence they need to use learning. Hypothesis research is developed into:

H₁: SI will influence PEOU from the Microsoft Teams application.

H₂: SI will influence PU from the Microsoft Teams application.

2. Expectation-confirmation (EC) is the user's perception between the information systems' hope and the truth's performance. The hypothesis is research proposed:

H₃: EC will influence PU from the Microsoft Teams application.

H₄: EC will influence SAT from the Microsoft Teams application.

3. Perceived ease of use (PEOU) is the extent to which believers use learning free of business. Hypothesis research is developed into:

H₅: PEOU will influence CI from the Microsoft Teams application.

4. Perceived usefulness (PU) is the extent to which people believe learning will increase their work performance. The hypothesis is research proposed:

H₆: PU will influence CI from the Microsoft Teams application.

5. Satisfaction (SAT) is effective in learning to the end user directly interact with learning. The hypothesis research used is:

H₇: SAT will influence CI from the Microsoft Teams application.

6. Continuous intention (CI) is intent on a user to keep learning, whereas actual use (AU) is understood as demand in actuality. The hypothesis research used is:

H₈: CI will influence AU from the Microsoft Teams application.

Variables of the research and research of the hypothesis-produced model follow Figure 1.

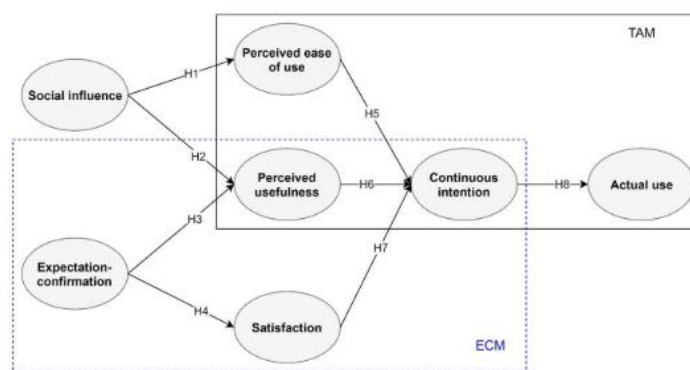


Figure 1. Path model W ECM and social influence combination.

2.5. Respondent

The data research is primary data collected through the answer to a questionnaire online for the student course statistics UNUGIRI in Bojonegoro district versed using Microsoft Teams until the end of August 2022. Obtained 60 respondents, which can still be modeled with SEM-PLS. Used Likert scales assumed intervals to all indicators or item questions/statements in the online questionnaire. According to the Likert scale, the values for each category are 5 for strongly agreeing (SA), 4 for agreeing (A), 3 for partially agreeing (PA), 2 for disagreeing (D), and 1 for severely disagreeing (SD). The definition is given for each variable research in summary Table 1. Constructs used measured by indicators or item questions based on research conducted by Alshurideh et al. (2020).

Table 1. Summary-related research on the variable definition.

Construct	Indicator or items question/statement
Social influence	SI1: Individuals influence my life think that I have to use online learning with Microsoft Team. SI2: Individuals that I think essential thought that I must use online learning with Microsoft Teams. SI3: Management university had help and support in the use of online learning with Microsoft Teams.
Expectation-confirmation	EXP1: My experience with Microsoft Team's online learning was more optimistic than anticipated. EXP2: I needed to prepare for the degree of service that online training with Microsoft Teams offers. EXP3: Overall, I'd like to use Microsoft Teams for verified online learning.
Perceived ease of use	PEOU1: Online learning with Microsoft Teams is easy to use it. PEOU2: A straightforward and understandable interaction with online learning using Microsoft Team. PEOU3: Online learning with Microsoft Team is comfortable and user-friendly.
Perceived usefulness	PU1: Online learning with Microsoft Teams improved my efficiency. PU2: Online learning with Microsoft Teams make I can reach faster. PU3: Online learning with Microsoft Team improved my performance.
Satisfaction	SAT1: I am happy with using the online learning teams in Microsoft Teams as study resources. SAT2: I am happy with how well Microsoft Teams' online learning platform works. SAT3: The multimedia instruction has satisfied me.
Continuous intention	CI1: I will keep utilizing Microsoft Teams for online learning before I stop using it. CI2: I will keep utilizing Microsoft Team as a better online learning tool than others. CI3: I want to keep utilizing Microsoft Teams for online learning.

Construct	Indicator or items question/statement
Actual use	AU1: Every day, I utilize Microsoft Teams for online study.
	AU2: I frequently utilize Microsoft Teams with an online learning system.
	AU3: Every college I attend uses a Microsoft Teams-based online learning platform.

2.6. Data Analysis Techniques

Data analysis given first features a frequency distribution of demographic respondents students (covering: sex and age) and questions the statement with items online, the TAM modelling with ECM and social influence using SEM-PLS. The following analysis evaluates the SEM-PLS model, namely measurement model fit, structural model fit, and overall model fit, and then investigates the prediction of the projected revenue of student learning online with Microsoft Teams in the study statistics UNUGIRI in Bojonegoro district.

The analysis to research is given to the TAM model with social influence and ECM with the help of software using SPSS and SEM-PLS as follows:

1. Showing the respondent's distribution demographic students (covering: sex and age) and the items question/statement online using SPSS software,
2. Making the project model of SEM-PLS with variable latent given in the model in the form of a circle or oval (Y_1 until Y_4). However, indicators or manifest variables can be directly quantified using raw data, which the given in the model line in a rectangular form (X_1 until X_{10}). The path model (PLS) is divided into two parts; the subjects of a structural model in SEM-PLS, also called the inner model, regarding the matters of measurements in SEM-PLS, also known as the outer model. The inner model provides the relationship between the construct and other constructs. In contrast, the associations between the construct and its indicators are formulated in the outer model in figure 2.

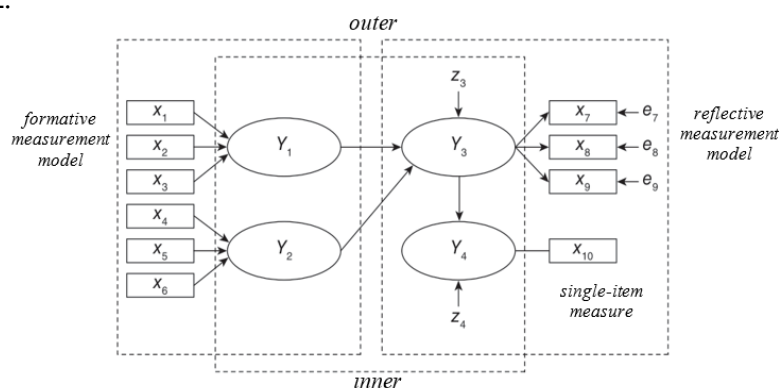


Figure 2. Path model for SEM-PLS.

3. Estimate the TAM model with social influence and ECM with the SEM-PLS approach using the WarpPLS software.
4. Display the output of WarpPLS software for the evaluation and interpretation model.
5. Evaluate the goodness-of-fit of SEM-PLS by measuring measurement model fit, structural model fit, dan overall model fit. The overall model fit is given in summary Table 2 with the measurement as:

Table 2. Measurement fit for evaluating the overall model.

Classic Indices	The requirement for good models
Average path coefficient (APC)	P-value < 0.05
Average R-squared (ARS)	P-value < 0.05
Average adjusted R-squared (AARS)	P-value < 0.05
Average block VIF (AVIF)	accepted if ≤ 5 , ideal ≤ 3.3
Average full collinearity VIF (AFVIF)	accepted if ≤ 5 , ideal ≤ 3.3
Tenenhaus GoF (GoF)	poor ≥ 0.1 , averages ≥ 0.25 , good ≥ 0.36
Sympson's paradox ratio (SPR)	accepted if ≥ 0.7 , ideal = 1
R-squared contribution ratio (RSCR)	accepted if ≥ 0.9 , ideal = 1
Statistical suppression ratio (SSR)	accepted if ≥ 0.7
Nonlinear bivariate causality directun ratio (NLBCDR)	accepted if ≥ 0.7
Additional Indices	The requirement for good models
Standardized root mean squared residual (SRMR)	accepted if ≤ 0.1
Standardized mean absolute residual (SMAR)	accepted if ≤ 0.1
Standardized chi-square with 252 degrees of freedom (SChS)	P-value < 0.05
Standardized threshold difference count ratio (STDCR)	accepted if ≥ 0.7 , ideal = 1
Standardized threshold difference sum ratio (STDCR)	accepted if ≥ 0.7 , ideal = 1

Given the following measurement for the measurement model fit as:

- Internal consistency expressed fulfilled if Cronbach's alpha (α) is greater than 0.60, and composite reliability (CR) is greater than 0.70,
- Validity converging expressed fulfilled if Average Variance Extracted (AVE) above 0.50 and outer loading (OL) above 0.50,
- Validity discriminant expressed fulfilled if Cross Loading (L) greater than other Loading (L_{others}) and the criterion of Fornell Lacker ($\sqrt{AVEY_i}$) is greater than the correlation between Y_i and Y_j .

Measurement for the structural model fit is given by R-square (R^2) and the path's significance (coefficients path).

- Predict the number of acceptance of students to online learning with Microsoft Team good big the influence of indirect directly and influence between constructs.

3. Results and Discussion

From this primary data source in research, observation obtained students course of study sample statistics UNUGIRI in Bojonegoro district as many as 60 respondents. But, its use at the minimum sample is a recall excess of SEM-PLS.

3.1. Description of The Sample

Descriptive statistics in the table show a frequency distribution outlined in Table 3.

Table 3. Summary of frequency distribution for demographic and research variables.

Gender	Male	Female	Total			
	12 (20%)	48 (80%)	60 (100%)			
Age	<= 20 year	21-22 year	23-24 year	>= 25 year	Total	
	32 (53.3%)	24 (40%)	2 (3.3%)	2 (3.3%)	60 (100%)	
Social	SD	D	PA	A	SA	Total

Influence						
SI1	0 (0%)	8 (13.3)	12 (20%)	30 (50%)	10 (16.7%)	60 (100%)
SI2	0 (0%)	6 (10%)	16 (26.7%)	30 (50%)	8 (13.3%)	60 (100%)
SI3	0 (0%)	4 (6.7%)	8 (13.3%)	24 (40%)	24 (40%)	60 (100%)
SI	0 (0%)	4 (6.7%)	14 (23.3%)	34 (56.7%)	8 (13.3%)	60 (100%)
Expectation-Confirmation						
	SD	D	PA	A	SA	Total
EXP1	0 (0%)	4 (6.7%)	12 (20%)	34 (56.7%)	10 (16.7%)	60 (100%)
EXP2	0 (0%)	6 (10%)	12 (20%)	30 (50%)	12 (20%)	60 (100%)
EXP3	0 (0%)	8 (13.3%)	12 (20%)	26 (43.3%)	14 (23.3%)	60 (100%)
EXP	0 (0%)	6 (10%)	12 (20%)	32 (53.3%)	10 (16.7%)	60 (100%)
Perceived Ease of Use						
	SD	D	PA	A	SA	Total
PEOU1	0 (0%)	2 (3.3%)	8 (13.3%)	18 (30%)	32 (53.3%)	60 (100%)
PEOU2	4 (6.7%)	4 (6.7%)	8 (13.3%)	28 (46.7%)	16 (26.7%)	60 (100%)
PEOU3	2 (3.3%)	8 (13.3%)	10 (16.7%)	20 (33.3%)	20 (33.3%)	60 (100%)
PEOU	0 (0%)	8 (13.3%)	8 (13.3%)	24 (40%)	20 (33.3%)	60 (100%)
Perceived Usefulness						
	SD	D	PA	A	SA	Total
PU1	2 (3.3%)	6 (10%)	8 (13.3%)	24 (40%)	20 (33.3%)	60 (100%)
PU2	0 (0%)	4 (6.7%)	12 (20%)	32 (53.3%)	12 (20%)	60 (100%)
PU3	0 (0%)	8 (13.3%)	6 (10%)	32 (53.3%)	14 (23.3%)	60 (100%)
PU	0 (0%)	6 (10%)	8 (13.3%)	36 (60%)	10 (16.7%)	60 (100%)
Satisfaction						
	SD	D	PA	A	SA	Total
SAT1	0 (0%)	2 (3.3%)	14 (23.3%)	28 (46.7%)	16 (26.7%)	60 (100%)
SAT2	0 (0%)	4 (6.7%)	14 (23.3%)	22 (36.7%)	20 (33.3%)	60 (100%)
SAT3	0 (0%)	0 (0%)	18 (30%)	36 (60%)	6 (10%)	60 (100%)
SAT	0 (0%)	0 (0%)	16 (26.7%)	32 (53.3%)	12 (20%)	60 (100%)
Continuous Intention						
	SD	D	PA	A	SA	Total
CI1	4 (6.7%)	4 (6.7%)	14 (23.3%)	24 (40%)	14 (23.3%)	60 (100%)
CI2	0 (0%)	4 (6.7%)	12 (20%)	28 (46.7%)	16 (26.7%)	60 (100%)
CI3	0 (0%)	10 (16.7%)	14 (23.3%)	22 (36.7%)	14 (23.3%)	60 (100%)
CI	0 (0%)	6 (10%)	16 (26.7%)	24 (40%)	14 (23.3%)	60 (100%)
Actual Use						
	SD	D	PA	A	SA	Total
AU1	4 (6.7%)	6 (10%)	20 (33.3%)	22 (36.7%)	8 (13.3%)	60 (100%)
AU2	0 (0%)	2 (3.3%)	12 (20%)	32 (53.3%)	14 (23.3%)	60 (100%)
AU3	0 (0%)	4 (6.7%)	12 (20%)	18 (30%)	26 (43.3%)	60 (100%)
AU	0 (0%)	2 (3.3%)	18 (30%)	28 (46.7%)	12 (20%)	60 (100%)

The majority of respondents are female students of 80% of respondents. Half the respondents were under 20 years (53.3 %); in the second place, 21-22 % were 40 years old. Most of the respondents agree with statements related to SAT, PU, PEOU, SI, EC, CI, and AU. It is shown each of the response SI (56.7%), EXP (53.3%), PEOU (40%), PU (60%), SAT (53,3%), CI (40%), and AU (46.7%) variables.

3.2. Evaluation of SEM-PLS

In research, evaluation SEM-PLS gave in measurement fit as measurement model fit, structural model fit, and overall model fit. Evaluation SEM-PLS has first presented in the overall model fit in Table 4.

Table 4. Summary of measurement for overall model fit.

Classic Indices	Value	The requirement for good models	Conclusion
Average path coefficient (APC)	<0.001	P-value < 0.05	ideal
Average R-squared (ARS)	<0.001	P-value < 0.05	ideal
Average adjusted R-squared (AARS)	<0.001	P-value < 0.05	ideal
Average block VIF (AVIF)	2.118	accepted if ≤ 5 , ideal ≤ 3.3	ideal
Average full collinearity VIF (AFVIF)	4.413	accepted if ≤ 5 , ideal ≤ 3.3	accepted
Tenenhaus GoF (GoF)	0.656	poor ≥ 0.1 , averages ≥ 0.25 , good ≥ 0.36	ideal
Sympson's paradox ratio (SPR)	1.000	accepted if ≥ 0.7 , ideal = 1	ideal
R-squared contribution ratio (RSCR)	1.000	accepted if ≥ 0.9 , ideal = 1	ideal
Statistical suppression ratio (SSR)	1.000	accepted if ≥ 0.7	ideal
Nonlinear bivariate causality directun ratio (NLBCDR)	1.000	accepted if ≥ 0.7	ideal
Additional Indices	Value	The requirement for good models	Conclusion
Standardized root mean squared residual (SRMR)	0.142	accepted if ≤ 0.1	not accepted
Standardized mean absolute residual (SMAR)	0.114	accepted if ≤ 0.1	not accepted
Standardized chi-square with 252 degrees of freedom (SChS)	<0.001	P-value < 0.05	ideal
Standardized threshold difference count ratio (STDCR)	0.857	accepted if ≥ 0.7 , ideal = 1	accepted
Standardized threshold difference sum ratio (STDCR)	0.662	accepted if ≥ 0.7 , ideal = 1	not accepted

From 15 testing or the index of a good model, the results for the 12 tests are reasonable (80% good). In other words, The SEM-PLS model is being used. And given the match size in Table 5, Table 6, and Table 7. A summary of the measure of validity and reliability for all constructs is given here:

Table 5. Measurement of validity and reliability for all construct

Description Item	Outer Loading	CR	Cronbach's Alpha	AVE
SI1	0.867	0.880	0.795	0.710
SI2	0.849			
SI3	0.811			
EXP1	0.914	0.925	0.878	0.804
EXP2	0.914			
EXP3	0.861			
PEOU1	0.749	0.905	0.839	0.762
PEOU2	0.912			
PEOU3	0.945			
PU1	0.863	0.895	0.824	0.740
PU2	0.853			
PU3	0.865			
SAT1	0.900	0.871	0.774	0.696
SAT2	0.904			
SAT3	0.679			
CI1	0.934	0.927	0.882	0.810
CI2	0.850			
CI3	0.914			
AU1	0.845	0.881	0.798	0.713

Description Item	Outer Loading	CR	Cronbach's Alpha	AVE
AU2	0.863			
AU3	0.825			

Table 5 obtained the value of outer loading, Cronbach's alpha, AVE, and CR were very satisfied to model SEM-PLS. In other words, internal consistency and validity converging criteria have been met. All Cronbach's alpha values are over 0.60, all AVE values are larger than 0.50, and all CR values are above 0.70. The outer loadings are still above 0.50.

Table 6. Result of testing cross loading

	SI	EXP	PEOU	PU	SAT	CI	AU	Measurement Type
SI1	(0.867)	-0.026	-0.178	0.418	-0.138	-0.635	0.490	Formatif
SI2	(0.849)	-0.657	0.349	0.266	-0.200	0.302	0.015	Formatif
SI3	(0.811)	0.715	-0.175	-0.725	0.356	0.363	-0.539	Formatif
EXP1	0.107	(0.914)	-0.180	-0.072	-0.028	0.089	0.078	Formatif
EXP2	-0.002	(0.914)	0.144	-0.135	-0.105	-0.349	0.022	Formatif
EXP3	-0.111	(0.861)	0.038	0.22	0.141	0.276	-0.106	Formatif
PEOU1	0.002	0.656	(0.749)	-0.268	0.479	-0.821	-0.223	Formatif
PEOU2	-0.011	-0.137	(0.912)	0.214	-0.194	0.350	0.093	Formatif
PEOU3	0.010	-0.388	(0.945)	0.006	-0.192	0.314	0.087	Formatif
PU1	0.279	-0.403	0.133	(0.863)	0.375	0.525	-0.263	Formatif
PU2	-0.235	0.706	-0.563	(0.853)	-0.172	-0.849	0.381	Formatif
PU3	-0.046	-0.295	0.423	(0.865)	-0.205	0.313	-0.112	Formatif
SAT1	0.025	0.184	-0.447	0.254	(0.900)	0.137	-0.198	Formatif
SAT2	0.063	-0.343	0.460	-0.378	(0.904)	0.642	-0.230	Formatif
SAT3	-0.116	0.212	-0.019	0.165	(0.679)	-1.035	0.568	Formatif
CI1	0.038	-0.418	0.084	0.305	0.060	(0.934)	-0.013	Reflektif
CI2	0.051	0.159	0.270	-0.456	-0.072	(0.850)	0.153	Reflektif
CI3	-0.086	0.279	-0.337	0.112	0.006	(0.914)	-0.129	Reflektif
AU1	-0.099	0.116	-0.466	0.790	0.062	-0.650	(0.845)	Reflektif
AU2	0.305	-0.082	0.027	-0.317	-0.303	0.827	(0.863)	Reflektif
AU3	-0.217	-0.033	0.449	-0.478	0.252	-0.200	(0.825)	Reflektif

In Table 6, any outer loading in the specified construct has a value greater than outer loading in other constructs. It is concluded that the validity of the discriminant SEM-PLS is fulfilled.

Table 7. Result of the correlation matrix for Fornell Lacker criteria

	SI	EXP	PEOU	PU	SAT	CI	AU
SI	(0.842)	0.591	0.380	0.486	0.425	0.425	0.603
EXP	0.591	(0.897)	0.805	0.802	0.647	0.747	0.681
PEOU	0.380	0.805	(0.873)	0.763	0.589	0.582	0.460
PU	0.486	0.802	0.763	(0.860)	0.716	0.704	0.521
SAT	0.425	0.647	0.589	0.716	(0.834)	0.740	0.709
CI	0.425	0.747	0.582	0.704	0.740	(0.900)	0.822
AU	0.603	0.681	0.460	0.521	0.709	0.822	(0.844)

Table 7 shows that each line produced the matrix of the AVE constructs having a value greater than values the correlates of two different constructs. It is also concluded that the validity of discriminant SEM-PLS is fulfilled.

Evaluation SEM-PLS next is the measurement for structural model fit with a determination coefficient (R^2) and the size and significance of the coefficients path.

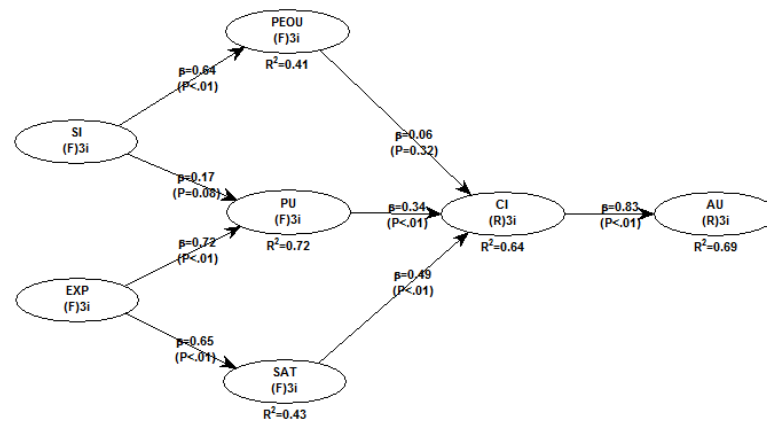


Figure 3. Path model with path coefficient dan R-squared values.

Figure 3, given the path diagram, measures the relationship between the construct in the structural model. It contains parameters like path coefficients, p-value, and R-Square, summarized in Table 8. The findings of evaluating the hypothesis for the direct relationship between constructs are shown in Table 8. All hypotheses from a formed hypothesis were deemed significant if the p-value was below 0.05.

Table 8. Relationship path between construct and other constructs.

Hypothesized Path	Estimation	P-value	Conclusion
H ₁ : SI -> PEOU	0.641	<0.001***	significant
H ₂ : SI -> PU	0.170	0.083*	significant
H ₃ : EXP -> PU	0.719	<0.001***	significant
H ₄ : EXP -> SAT	0.653	<0.001***	significant
H ₅ : PEOU -> CI	0.059	0.320	not significant
H ₆ : PU -> CI	0.336	0.002***	significant
H ₇ : SAT -> CI	0.490	<0.001***	significant
H ₈ : CI -> AU	0.828	<0.001***	significant

Note: ***, **, and * Signifying statistically significant two directions, respectively amounting to 1%, 5%, and 10%.

$$AU = 0.828 CI + e_1, R^2 = 0.685$$

$$CI = 0.059 PEOU + 0.336 PU + 0.490 SAT + e_2, R^2 = 0.640$$

$$PEOU = 0.641 SI + e_3, R^2 = 0.411$$

$$PU = 0.170 SI + 0.719 EXP + e_2, R^2 = 0.719$$

$$SAT = 0.653 EXP + e_3, R^2 = 0.427$$

The coefficient determination (R-square, R^2) obtained is good value, interpreted that diversity constructs AU course capable of being described by construct CI was 68.5 % and 31.5 % described by constructs others which will be represented by structural error. This construct provides the other construct that there are still many unknowns but should be included in the model for the development of further research. On similarities structural, testing gets results and the conclusion that:

1. Obtained a direct impact SI which was significant to PEOU of 0.641. The higher the value of social influence (SI), the higher the value of perceived ease

- of use (PEOU); in contrast, the lower the value of social influence (SI), the lower the value of perceived ease of use (PEOU).
2. Obtained a direct impact SI which was significant to PU of 0.170. The higher the value of social influence (SI), the higher the value of perceived usefulness (PU); in contrast, the lower the value of social influence (SI), the lower the value of perceived usefulness (PU).
 3. Obtained a direct impact EXP which was significant to PU of 0.719. The higher the value of expectation-confirmation (EXP), the higher the value of perceived usefulness (PU); in contrast, the lower the value of expectation-confirmation (EXP), the lower the value of perceived usefulness (PU).
 4. Obtained a direct impact EXP which was significant to SAT of 0.653. The higher the value of expectation-confirmation (EXP), the higher the value of satisfaction (SAT); in contrast, the lower the value of expectation-confirmation (EXP), the lower the value of satisfaction (SAT).
 5. Obtained a direct impact PEOU which was insignificant to CI of 0.059. The higher or lower the value of perceived ease of use (PEOU), the constant value of continuous intention (CI).
 6. Obtained a direct impact PU which was significant to CI of 0.336. The higher the value of perceived usefulness (PU), the higher the value of continuous intention (CI); in contrast, the lower the value of perceived usefulness (PU), the lower the value of continuous intention (CI).
 7. Obtained a direct impact SAT which was significant to CI of 0.490. The higher the value of satisfaction (SAT), the higher the value of continuous intention (CI); in contrast, the lower the value of satisfaction (SAT), the lower the value of continuous intention (CI).
 8. Obtained a direct impact CI which was significant to AU of 0.828. The higher the value of continuous intention (CI), the higher the value of actual use (AU); in contrast, the lower the value of continuous intention (CI), the lower the value of actual use (AU).

3.3. Prediction with SEM-PLS

The prediction model was given to determine how large a direct impact and influence an indirect impact for each exogenous variable, such as SI, EC, PEOU, PU, and SAT, against endogenous variables, namely CI and AU. Based on Figure 3 and Table 8, obtained summary table below:

Table 9. Prediction of SEM-PLS.

Predicted Paths	Estimation	P-value	Conclusion
P ₁ : SI -> CI	0.095	0.224	not significant
P ₂ : SI -> AU	0.079	0.222	not significant
P ₃ : EXP -> CI	0.562	<0.001***	significant
P ₄ : EXP -> AU	0.465	<0.001***	significant
P ₅ : PEOU -> CI	0.059	0.320	not significant
P ₆ : PEOU -> AU	0.049	0.293	not significant
P ₇ : PU -> CI	0.336	0.002***	significant
P ₈ : PU -> AU	0.278	<0.001***	significant
P ₉ : SAT -> CI	0.490	<0.001***	significant
P ₁₀ : SAT -> AU	0.406	<0.001***	significant

Note: ***, **, and * Signifying statistically significant two directions, respectively amounting to 1%, 5%, and 10%.

In the SEM-PLS model, testing gets the indirect influence and the conclusion that:

1. Obtained an indirect impact SI which was insignificant to CI of 0.095. The higher or lower the value of social influence (SI), the constant value of continuous intention (CI).
2. Obtained an indirect impact SI which was insignificant to AU of 0.079. The higher or lower the value of social influence (SI), the constant value of actual use (AU).
3. Obtained an indirect impact EXP which was significant to CI of 0.562. The higher the value of expectation-confirmation (EXP), The higher the value of continuous intention (CI); in contrast, the lower the value of expectation-confirmation (EXP), the lower the value of continuous intention (CI).
4. Obtained an indirect impact EXP which was significant to AU of 0.465. The higher the value of expectation-confirmation (EXP), The higher the value of actual use (AU); in contrast, the lower the value of expectation-confirmation (EXP), the lower the value of actual use (AU).
5. Obtained a direct impact PEOU which was insignificant to CI of 0.095. The higher or lower the value of perceived ease of use (PEOU), the constant value of continuous intention (CI).
6. Obtained an indirect impact PEOU which was insignificant to AU of 0.079. The higher or lower the value of perceived ease of use (PEOU), the constant value of actual use (AU).
7. Obtained a direct impact PU which was significant to CI of 0.336. The higher the value of perceived usefulness (PU), The higher the value of continuous intention (CI); in contrast, the lower the value of perceived usefulness (PU), the lower the value of continuous intention (CI).
8. Obtained an indirect impact PU which was significant to AU of 0.278. The higher the value of perceived usefulness (PU), The higher the value of actual use (AU); in contrast, the lower the value of perceived usefulness (PU), the lower the value of actual use (AU).
9. Obtained a direct impact SAT which was significant to CI of 0.490. The higher the value of satisfaction (SAT), The higher the value of continuous intention (CI); in contrast, the lower the value of satisfaction (SAT), the lower the value of continuous intention (CI).
10. Obtained an indirect impact SAT which was significant to AU of 0.406. The higher the value of satisfaction (SAT), The higher the value of actual use (AU); in contrast, the lower the value of satisfaction (SAT), the lower the value of actual use (AU).

4. Conclusions

Study inquiry on the receipt of students learning to Microsoft Teams can be applied to SEM-PLS and obtain a comprehensive evaluation of the good models based on measurement fit of the whole match, like the measurement model fit, structural model fit, and overall model fit. From the hypothesis, all the channels between constructs' significant deals except perceived ease of use and continuous intention are insignificant. On the other side, the results predicted that satisfaction, perceived usefulness, and expectation-confirmation significantly affect actual use and continuous intention, while social perceived influence and ease of use are not statistically significant.

In the structural model, there is still an R-Square value that is below 50%, so adding other latent variables that affect endogenous variables is recommended.

Each population may produce different significance tests, so it is recommended to try testing on samples where online learning with MS Teams needs to be provided or not in the post-COVID-19 pandemic.

Author Contributions

The author contributed to the research's design and implementation, the results analysis, and the manuscript's writing.

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Declaration of Competing Interest

The author declares that it has no conflicts of interest.

References

- Agarwal, A., Sharma, S., Kumar, V., & Kaur, M. (2021). Effect of E-learning on Public Health and Environment during COVID-19 Lockdown. *Big Data Mining and Analytics*, 4(2), 104-115. <https://doi.org/10.26599/BDMA.2020.9020014>
- Al-Marouf, R. A. S., & Al-Emran, M. (2018). Students Acceptance of Google Classroom: An Exploratory Study using PLS-SEM Approach. *International Journal of Emerging Technologies in Learning (IJET)*, 13(6), 112-123. <https://doi.org/10.3991/ijet.v13i06.8275>
- Almaiah, M. A., Al-Otaibi, S., Lutfi, A., Almomani, O., Awajan, A., Alsaaidah, A., Alrawad, M., & Awad, A. B. (2022). Employing the TAM Model to Investigate the Readiness of M-Learning System Usage Using SEM Technique. *Electronics*, 11(8), 1259. <https://doi.org/10.3390/electronics11081259>
- Alshurideh, M., Al Kurdi, B., Salloum, S. A., Arpaci, I., & Al-Emran, M. (2020). Predicting the actual use of m-learning systems: a comparative approach using PLS-SEM and machine learning algorithms. *Interactive Learning Environments*, 1-15. <https://doi.org/10.1080/10494820.2020.1826982>
- Dash, S., Samadder, S., Srivastava, A., Meena, R., & Ranjan, P. (2022). Review of Online Teaching Platforms in the Current Period of COVID-19 Pandemic. *Indian Journal of Surgery*, 84(S1), 12-17. <https://doi.org/10.1007/s12262-021-02962-4>
- Hair, J. F., Hult, G. T., Ringle, C., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (Second). SAGE.
- Hardyanto, W., Sugiyanto, S., Purwinarko, A., & Adhi, A. (2019). Research on Academic Information System Unnes Using Technology Acceptance Model (TAM). *KnE Social Sciences*, 2019, 21-28. <https://doi.org/10.18502/kss.v3i18.4694>
- Jehad, A., Raja, M., Elham, H., Haifa, B. I., & Hussam, N. F. (2020). Students' Perceptions of E-learning platforms (Moodle, Microsoft Teams and Zoom platforms) in The University of Jordan Education and its Relation to self-study and Academic Achievement During COVID-19 pandemic. *Advanced*

Research & Studies Journal, 11(5), 21–33.

- Kock, N. (2022). *WarpPLS user manual : Version 8.0*. ScriptWarp Systems.
- Mohamad, M., Afthanorhan, A., Awang, Z., & Mohammad, M. (2019). Comparison Between CB-SEM and PLS-SEM: Testing and Confirming the Maqasid Syariah Quality of Life Measurement Model. *The Journal of Social Sciences Research*, 5(53), 608–614. <https://doi.org/10.32861/jssr.53.608.614>
- Nasution, M. I., Fahmi, M., Jufrizen, Muslih, & Prayogi, M. A. (2020). The Quality of Small and Medium Enterprises Performance Using the Structural Equation Model-Part Least Square (SEM-PLS). *Journal of Physics: Conference Series*, 1477(5), 052052. <https://doi.org/10.1088/1742-6596/1477/5/052052>
- Nugraha, D. Y., Jufri, M., Nurdiansyah, D., Suardi, & Nasruddin, D. (2020). Psychological Factors Associated with Quality of Life during the Coronavirus Disease (COVID-19) Pandemic: A Sem Analysis in an Context Employee. *Journal of Advanced Research in Dynamical and Control Systems*, 12(SP7), 826–844. <https://doi.org/10.5373/JARDCS/V12SP7/20202174>
- Pal, D., & Vanijja, V. (2020). Perceived Usability Evaluation of Microsoft Teams as an Online Learning Platform during COVID-19 Using System Usability Scale and Technology Acceptance Nodel in India. *Children and Youth Services Review*, 119, 105535. <https://doi.org/10.1016/j.childyouth.2020.105535>
- Prayitno, G., Ahari, M. I., & Rukmi, W. I. (2021). Structural equation model with partial least square (SEM-PLS) of place dependence with land used change. *Journal of International Studies*, 14(1), 153–171. <https://doi.org/10.14254/2071-8330.2021/14-1/11>
- Purwanto, A., Asbari, M., & Santoso, T. I. (2021). Analisis Data Penelitian Marketing: Perbandingan Hasil antara Amos, SmartPLS, WarpPLS, dan SPSS untuk Jumlah Sampel Besar. *Journal of Industrial Engineering & Management Research (JIEMAR)*, 2(4), 216–227.
- Putra, R. D., & Samopa, F. (2018). Analysis of Factors Affecting The Acceptance of Surabaya E-Government Service Using Technology Acceptance Model (TAM) 3: A Case Study of E-Lampid. *Proceedings of the Mathematics, Informatics, Science, and Education International Conference (MISEIC 2018)*, 157(Miseic), 122–126. <https://doi.org/10.2991/miseic-18.2018.30>
- Shuhaiber, A., & Al Khasawneh, M. H. (2018). Developing and validating a comprehensive model of factors influencing consumer acceptance of SMS advertising: empirical evidence using SEM-PLS. *International Journal of Business Information Systems*, 27(3), 298. <https://doi.org/10.1504/ijbis.2018.10010583>
- Suleiman Al Maktoumi, I., Rahman Khan, F., & Rashid Suwied Al Maktoumi, A. (2020). Assessing the Factors Causing Project Completion Delays in the Construction Sector of Oman Using Sem-Pls. *Humanities & Social Sciences Reviews*, 8(3), 900–912. <https://doi.org/10.18510/hssr.2020.8394>
- Tick, A. (2019). An extended TAM model, for evaluating elearning acceptance, digital learning and smart tool usage. *Acta Polytechnica Hungarica*, 16(9), 213–233. <https://doi.org/10.12700/APH.16.9.2019.9.12>
- Vululleh, P. (2018). Determinants of students' e-learning acceptance in developing countries: An approach based on Structural Equation Modeling (SEM). *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, 14(1), 141–151.

