

STRUCTURAL EQUATION MODELING FOR ANALYZING FACTORS THAT INFLUENCE STUDENT AND WOMEN LECTURER BEHAVIOR IN USING FACEBOOK

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ABSTRACT

One of the interesting things from the Internet is it is unpredictable. Nobody expected the site google, yahoo, amazon and others grow fast like today. In other words, the success of a site can be viewed from a request (demand) market that need it. We'll see how google can beat a rival search sites, such as AltaVista. Also how can beat myspace facebook of the number of accounts. and from the image upload point of view, facebook site can only be rivaled by flickr. Therefore, the success of a site is not only based on the sophistication of technology, but other aspects need attention. One method to find the factors that affect a person utilizing a new technology is to apply the theory of Structural Equation Modelling (SEM) with the famous model called Technology Acceptance Model (TAM). In order to simplify and accelerate data processing, computer use a must. In this study we will use statistical software that is already widely known called Analysis MOment of Structural (AMOS) version 16.0.

Keywords

Structural Equation Modeling, Technology Acceptance Model, AMOS 16.0 software.

1. Introduction

The originator of globalization today is the Internet. Communication relationship between one individual with another individual who is no longer limited by geographic region. Anytime and anywhere (with mobile gadgets) we can communicate with others, even on-line.

One of the interesting things from the world of the Internet is its unpredictable. No one expected the site google, yahoo, amazon and others can be known until today. In other words, the success of a site can be seen from the request market who need them. We'll see how google could beat his rival search sites, such as Altavista. Also how can beat myspace facebook of the number of accounts. Even from the side of your uploaded images, facebook site can only be rivaled by flickr.

Therefore, the success of a site is not only based on technological sophistication, but other aspects need attention. One method to find the factors that affect a person to use a new technology is to apply the theory of Structural Equation Modelling (SEM) with the model is

well-known Technology Acceptance Model (TAM).

In order to simplify and accelerate data processing, computer use is absolutely necessary. In this study we will use statistical software that has been widely recognized that the Moment of Structural Analysis (AMOS).

Based on the background of the problem and some of the conditions mentioned above, which are at issue in this research is how to know the attitude of female students and female lecturers in Nusa Mandiri STMIK environment in the use of social networking site facebook.

Existing problems can be formulated as the following author:

- a. What are the factors that are interconnected and affect the use of facebook by female students and female lecturers in STMIK Nusa Mandiri.
- b. How to know the model of acceptance of a new information technology tangible use of social networking site www.facebook.com in interacting with others.

This study is limited by variable study consisted of two types of variables that can not be

measured directly (latent variables) that is latent exogenous variables (exogenous constructs) as an independent variable (X) and the latent endogenous variable (construct endogenous) as the dependent variable (Y). Exogenous constructs in the form of ease of use (Perceived Ease of Use), while constructs endogennya is expediency (Perceived Usefulness), Intention to use (Intention to use) and the behavior of the use of social networking sites facebook (Actual Usage Behavior).

Penelitian dilakukan dengan kuesioner atau angket yang menggunakan skala pengukuran diferensial semantic (*semantic differential scale*) dengan range 1 sampai 7 untuk jawaban sangat tidak setuju sampai sangat setuju. Model yang digunakan untuk menggambarkan hubungan faktor-faktor yang mempengaruhi penggunaan Situs jejaring sosial facebook adalah dengan menggunakan *Structural Equation Modelling* (SEM) pada perangkat lunak *Analisis of MOment Structure* (AMOS) versi 16.0.

The study was conducted by questionnaire using semantic differential measurement with a range of 1 to 7 for the answers strongly disagree to strongly agree. The model used to describe the relationship factors that influence the use of social networking site facebook is using SEM on the software Analysis of Moment Structure (AMOS) version 16.0.

Target to be achieved in the presence of this research are:

1. To know what are the factors that can affect women student and female lecturer in the use of social networking site facebook.
2. To know how to model acceptance of the use of social networking site facebook in STMIK Nusa Mandiri Jakarta.

This research is expected to help identify and enhance the role of user acceptance of the social networking site facebook. For the institute for STMIK Nusa Mandiri employees can design a web-based information system that interests our employees to use it.

1.5. Concept and Definition

On February 4, 2004, Mark Zuckerberg, a Harvard graduate and former Ardsley High School student, makes a social networking Web sites with domain names facebook. Its membership was initially restricted to students of Harvard College. In the next two months, its membership expanded to other schools in the Boston area (Boston College, Boston University, MIT, Tufts), Rochester, Stanford, NYU, Northwestern, and all schools are included in the Ivy League. Many other universities are then added in succession within one year after its

release. Finally, people who have e-mail address of a university (such as. Edu., Ac.uk, etc.) from around the world can also join this site.

Then, they developed a network for top-level schools and some large corporations. Since 11 September 2006, the person with the e-mail address to register anything on Facebook. Users can choose to join one or more networks are available, such as on senior high schools, the workplace, or geographic region.

Until July 2007, this site has the largest number of registered users among the sites that focus on schools with more than 34 million active members from around the world possesses. From September 2006 to September 2007, its ranking rose from 60th position to the position of the 7th most visited sites, and is the number one site for photos in the United States, ahead of other public sites such as Flickr, with 8.5 million photos uploaded every day [16].

SEM is a set of statistical analysis techniques that combine some aspects contained in the path analysis and confirmatory factor analysis to estimate several equations simultaneously and gradually. Relationship is simultaneously and gradually established between one or several dependent variables with one or several independent variables. Each of the dependent and independent variables to form factors or constructs that are built from several indicator variables.

SEM is a combination of two separate statistical method factor analysis which was developed in the field of psychology / psychometrics and simultaneous equations models (Simultaneous Equation Modeling), developed in the field of econometrics [5]. SEM is also a statistical technique that is able to analyze the latent variables, indicator variables and measurement error directly. SEM also has advantages over other multivariate statistical methods because of the latent variable measurement error included in the model.

Stages of structural equation modeling and analysis, or SEM, is formed in seven steps: Development of a theoretical model, set path diagram, change the path diagram into the structural equation, choose the input matrix for data analysis, model identification assess, evaluate estimation models, and interpretation of the model.

TAM is used to predict user acceptance of new technology. The model introduced by FD Davis in 1989 it is the model most widely used in information systems research because it produces a good validity.

TAM model is an adaptation of the theory developed by Fishbein Theory of Reasoned Action ie (TRA) which is a theory of action based on the assumption that one person's reaction and perception of a case will determine the attitudes and behavior. Reactions and perceptions of users of Information Technology (IT) will affect the manner in user acceptance of IT, which is one factor that can affect the user perception between usefulness and ease of use IT as a reasonable action in the context of the use of information technology so that the reason a person in seeing the benefits and ease of use of IT makes the action the person can accept the use of IT.

Fred D. Davis explained that the TAM model describes the relationship between: (a). Perceived Ease of Use (PEOU) - Indicates the level of confidence that the new technology will be easy to use and free of effort. (B). Perceived Usefulness (PU) - Expressing confidence that the use of new technologies will improve achievement. (C). Attitude Toward Using (ATU) - The attitude of the user (user) toward using new technology. (D). Behavioral Intention To Use (ITU) - the user behavior (user) toward the continued use of a new technology that is considered to provide benefits. (E). Actual System Usage (ASU) - User (user) actually using the new technology because it felt the benefits significantly.

The first study relates to the use of SEM models for TAM performed by Fred D. Davis that discussed the "Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology" The study was conducted to examine the variables that can predict the level of user acceptance of computer usage. The study showed that Perceived Usefulness and Perceived Ease of Use is a basic determinant of computer use, other than that the use of technology (usage) is influenced by the level of acceptance of technology (TAM). The following figure shows the application of technology model (TAM) developed by Davis.

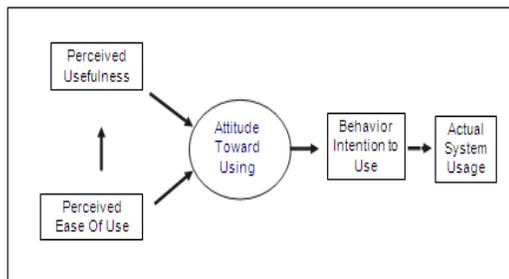


Figure 1. Technology Acceptance Model (TAM)

Some research have done relating to the acceptance of the company's Knowledge Management System in the behavior of its users are students, including research conducted by (Money and Turner, 2004) with the title of her research is "Application of Technology Acceptance Model to a Knowledge Management System". The study was conducted to examine the variables that can predict the level of acceptance Knowledge Management System to users. This study shows that Perceived Usefulness and Perceived Ease of Use is a basic determinant of the use of Knowledge Management System. The following figure shows the model developed by (Money and Turner, 2004).

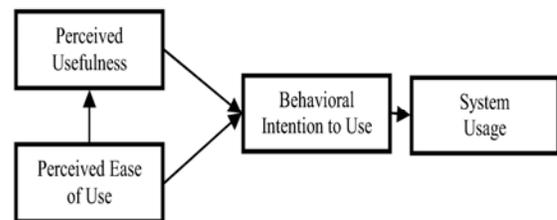


Figure 2. Model TAM oleh MONEY and TURNER 2004

1.6. Research Method

This study is one of the following research, which developed from the theory that introduced TAM Davis in 1989 that examined two factors namely the technology acceptance Perceived Ease of Use (PEOU) and Perceived Usefulness (PU). In this study the concept proposed by Money and Turner (2004).

This study describes the use of the approach of the Technology Acceptance Model (TAM) which requires that a student uses up influenced by the following factors:

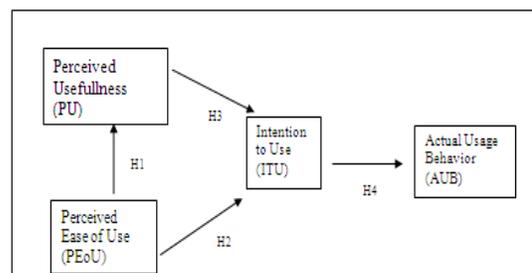


Figure 3. Model Penelitian "Factors that influence the behavior of student and faculty women in the use of social networking sites facebook"

While the indicators - the indicators used to measure each latent variable can be seen in the table below:

Table 1. Indicators of Factors Affecting Student Behavior and female professors in the use of social networking sites facebook

No	Variabel	Indikator
1.	Perceived Easy of Use (PEOU)	X1 = Mudah dipahami X2 = Mudah dioperasikan X3 = Mudah digunakan
2.	Perceived Usefulness (PU)	Y1 = Lebih cepat Y2 = Meningkatkan kinerja Y3 = Lebih berdaya guna Y4 = Lebih mudah Y5 = Meningkatkan produktivitas Y6 = Lebih efektif
3.	Intention to Use (ITU)	Y7 = Keinginan untuk menggunakan Y8 = Keinginan untuk sharing
4.	Actual Usage Behavior (AUB)	Y9 = Frekuensi penggunaan Y10 = Lama menggunakan

a. Hipotesis

General hypothesis proposed in this study is to analyze the influence of the construct of acceptance using TAM up based approach. It is indicated that the alleged variance-covariance matrix of the same population variance-covariance matrix on the sample or otherwise with $\sigma_p = \sigma_s$.

$H_{00} : \sigma_p = \sigma_s$

Different empirical data with theories / models → hypothesis is accepted if $p \geq 0,05$

$H_{00} : \sigma_p \neq \sigma_s$

Empirical data Different from theories / models → hypothesis is accepted if $p < 0,05$

While the special hypotheses in this study are:

H₁ : Allegedly Perceived Ease of Use (PEOU), or the perception of ease of coed and women faculty in the use of up effect on Perceived Usefulness (PU) or the benefits of using Facebook. Where is the easier it up to use the greater benefit for female students and female professors who use them.

H₂ : Allegedly Perceived Ease of Use (PEOU), or the perception of ease of coed and women faculty in the use of up effect on Intention to Use (ITU) or the intention to use up. Where is the easier it up to use the higher intentions to use female students and lecturers.

H₃ : Allegedly Perceived Usefulness (PU) or the benefits of using up effect on Intention to Use (ITU) or the intention to use up where the greater the benefits of using up the higher levels of student and woman lecturers intention to use it.

H₄ : Allegedly Intention to Use (ITU) or the intention to use up effect on Actual Usage Behavior (AUB) or the use of Facebook's own behavior. Where the greater the intention to use up the higher level of user

behavior by female students and female lecturers.

b. Research Type

This research is a causal relationship (causal) of the variables to be studied so that from this research are to identify how and what are the dominant factors that influence student behavior and female faculty in the use of Facebook as a means of support in teaching and learning in STMIK Nusa Mandiri Jakarta.

c. Variables and Measurement

The variables used in this study are variables that can not be measured directly (latent variables), namely:

1. Exogenous constructs as the independent variable (X) Ease of use (Perceived Ease of Use)
2. Endogen construct as the dependent variable (Y), namely:
 - a. Expediency (Perceived Usefulness)
 - b. Intention to use
 - c. User Behavior facebook (Actual Usage Behavior)

d. Population

In this study, taken from the student population STMIK Nusa Mandiri, Jakarta, which consists of 974 students from two courses of study in college is the Program Information Systems and Informatics Engineering division.

e. Samples and Sampling

In a study using SEM, the sample size is very influential because the sample size provides a basis for estimating the sampling error. With estimated using Maximum Likelihood (ML), minimum sample required at least 100 or between 100-200 because when larger or very large will produce a significant difference so that goodness-of-fit to be ugly, and vice versa if the data is less than 100. In this study sample of 110 respondents.

1.7. Data Collection Technique

Data collection techniques used in this study was a questionnaire or a questionnaire using semantic differential measurement scale with a range of 1 to 7 for the answers strongly disagree to strongly agree responses. Questionnaire that will be filled given to students in STMIK Nusa Mandiri Jakarta with simple random sampling technique.

1.8. Data Analysis

Data analysis was performed on a statistical analysis of this paper is descriptive and inferential statistical analysis.

1.8.1. Descriptive Analysis

Descriptive statistical analysis conducted to examine the frequency distribution of concentration and size distribution data on the characteristics of the sample (respondents) and variable indicators Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Intention to Use (ITU), and Actual Usage Behavior (AUB). Size of concentration that can be studied include the mean, median, and mode. The size of the spread that can be studied is the maximum, minimum, standard deviation, and variance.

1.8.2. Inferential Analysis

Inferential statistical analysis conducted using Structural Equation Modeling (SEM) in order to obtain an appropriate model for the problem under investigation, in addition to the analysis by SEM can also be performed to determine the causal relationship between dependent and independent variables in this study.

Structural Equation Modeling (SEM) is a set of statistical techniques that allow testing of a series of relationships simultaneously.

This simultaneous relationship established between one or several dependent variables with one or several independent variables. Each of the dependent and independent variables to form factors or constructs, built from several indicator variables. According to Hair, Anderson, Tatham and Black [4]: Step - step in testing the model using the basic approach to SEM is divided in 7 stages: (1). Theory-Based Development Model, (2). Development Path Diagram (Line Diagram), (3). Conversion Chart Path to the equation, (4). Input Type Selection Matrix and Proposed Estimation Model, (5). Assessment of Structural Model Identification, (6). Assessment Criteria for Goodness of Fit, (7). Interpretation and Modification Model.

2. Experimental Results

2.1. Descriptive Statistical Analysis

Testing or analysis of descriptive statistics that give an explanation of the mean (average), standard deviation, variance, maximum, range, kurtosis and skewness.

From this analysis, the data obtained has a value Valid N (listwise) with a good level of validity that is equal to 132 (100%), as well as other criteria contained in the descriptive statistical tests.

2.2. Inferential analysis

2.2.1. Testing Model Assumptions

1. Sample Size

The sample size that must be met in the modeling of SEM, the minimum sum to 100. This study used 132 samples, therefore the number of samples have met the requirements of sample size.

2. Normality Test

In Table Assessment of normality, which is presented in can be seen that the values are in column or all within the recommended range of values of between -2.58 to 2,58. Therefore it can be said that the data are univariate normally distributed. As for the multivariate normal distribution is close in range, namely 2.66. Data eligible for further analysis.

3. Outliers

On the table contained in the Mahalanobis distance can be seen in Mahalanobis d-squared test that there is no value greater than χ^2 table, meaning there were no multivariate outliers. Outlier test in this study, the Mahalanobis distance under χ^2 table 27.69 (0.01, 13) with a total of 13 indicator variables. This means there is no multivariate outlier, so the data can be expressed well and subsequent analysis.

4. Multikolinearitas dan Singularitas

Determinant of the sample covariance matrix is presented in Table sample covariance, can be seen that its value is 5.123 or not equal to zero. Therefore it can be said that there was no multicollinearity and singularity problems in the data analyzed, so that the data declared invalid.

2.2.2. Processing in Structural Equation Models

1. Research Object

This research was conducted to analyze the four latent variables, one of them (PEOU) are the exogenous variables and the three other variables (PU, ITU and AUB) is an endogenous variable.

2. Model Based Testing Theory

Testing the theory-based models performed using AMOS software version 16.0. Here are the results of testing these models:

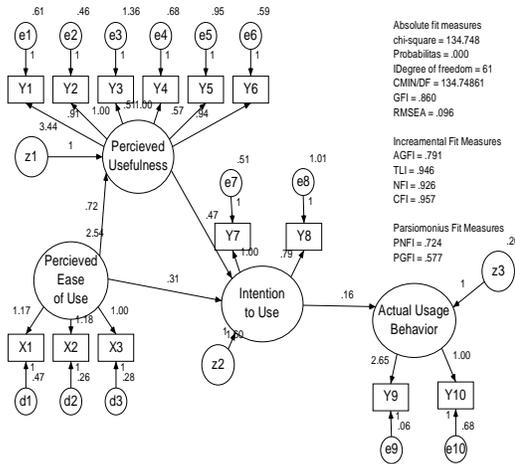


Figure 4. Results Initial Model Research

The hypothesis that explains the empirical data with the model / theory is:

H₀ : The data is identical to the theoretical or empirical model (hypothesis accepted if P ≥ 0.05).

H₁ : The data is different from empirical or theoretical model (hypothesis is rejected if P < 0.05).

Based on Figure 4. shown that the theoretical model proposed in this study did not fit with the observed population model, because it is known that the probability value (P) do not qualify because the results were below the recommended value of > 0.05 [5].

For a while it can be concluded that the model outputs do not meet admission requirements Ho, so that no hypothesis can be tested further. However, for the model proposed declared fit, then it can be modified in accordance with the model suggested by AMOS.

This study using the Developmental Model Strategy, this strategy allows for modification of the proposed model if the model has not met the recommended requirements. Modifications made to obtain a fit model (fit) with the testing requirements [15].

Based on existing theoretical justification, then made modifications to the model with the assumption that changes in the structural model must be based on solid theory [5].

Based on the results Estimation and Regression Wiegth, it is modified by deleting the indicator variable that is not a valid constructor for a latent variable structural model proposed. If the value estimate on the loading factor (λ) of an indicator variable < 0.5, the indicator should be dropped (deleted) [5]. Furthermore, to see the significance (Sig), the required value is < 0.05. If the value of Sig > 0.05 it can be said that the

indicator is not a valid constructor for a variabel latent and this should be dropped (deleted) [15]. Modifications carried out in order to get the value Probability > 0.05 so that the declared fit model (fit). In this research, modifications done in a single stage.

From Confirmatory Factor Analysis of test results, it is known that all the loading factor of indicator variables Y3 (With facebook learning becomes more efficient) and Y5 (With facebook to increase productivity in learning) on the PU constructs (usefulness), is relatively small compared with the indicator variable such as Y1, Y2, Y4, and Y6. Although both indicators (Y3 and Y5) are valid constructs but still be removed in order to lower the probability value of Chi Squares for his ride (model fit). After Y3 and Y5 removed the Chi Squares decreased from 134.748 to 55.603 and Probability him up from from 0000 to 0051, then the model has been declared fit (fit). Model because it has been declared fit to meet the limit value of P (Probability) required (> 0.05). Table 2. The following shows the value Significance (Sig) and estimates on indicator variables for the PU is removed.

Table 2. Indicator variable Modification of PU (Perceived Usefulness)

Variabel indikator	Sig (Sig < 0.05)	Estimate (> 0.5)	Keterangan
Y3	0.000	0.689	Konstruk yang valid
Y5	0.000	0.784	Konstruk yang valid

After the modification of the model, then got a fit model as shown in Figure 5.

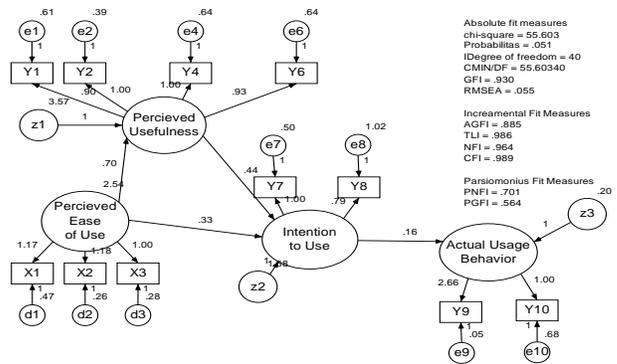


Figure 5. Testing Results Final Research Model

3. Suitability test model

Fit criteria on model is not only seen from its probability value but also involves other criteria include the size of Absolute Fit Measures, and Incremental Fit Measures Parsimonious Fit Measures. To compare values obtained in this model with a limit of critical values at each measurement criteria, it can be seen in the

following table: **Table 3. Comparison Test Suitability Model**

Ukuran kesesuaian	Batas nilai kritis	Hasil model ini	Keterangan
1. Absolut Fit Measures			
■ Chi-Squares X ² (CMIN)	Kecil, = χ^2 / df = 0.05 = 2.0 = 0.90 = 0.08	55.603	Baik
■ Probability Chi-Squares (CMIN/DF)		0.051	Baik
■ GFI		1.390	Baik
■ R.MSEA		0.930	Baik
		0.055	Baik
2. Incremental Fit Measures			
■ AGFI	= 0.90	0.885	Marginal
■ TLI	= 0.95	0.986	Baik
■ NFI	= 0.90	0.964	Baik
■ CFI	= 0.95	0.989	Baik
3. Parsimonious Fit Measures			
■ PNF1	= 0.60	0.701	Baik
■ PGFI	= 0.60	0.564	Marginal

(Source: Sports AMOS data in accordance with a limit of 16.0 critical value [15])

Based on the above table, it can be said as a whole declared fit model (fit). model proposed in this research is supported by the facts on the ground. It is indicated that the alleged variance-covariance matrix of the same population variance-covariance matrix of the sample (observational data) or can be expressed $\sum_p = \sum_s$.

In this research, two-stage model analysis is analysis of CFA (Confirmatory Factor Analysis) and subsequent analysis of the full model. The second analysis indicates that the model declared fit (as) good for each latent variable as well as for the overall model. Analysis of the CFA model can be seen in Test Confirmatory Factor Analysis.

2.2.3. Testing Results

a). Test Parameter Measurement Model Latent Variables This test relates to the validity and reliability testing.

I. Validity Testing

Tests on the validity of latent variables is done by seeing the value Significance (Sig) obtained for each indicator variable is then compared with the value of α (0.05). If $Sig \leq 0.05$ then Reject H0, which means that the indicator variable is a valid constructor for a particular latent variable [15]. Judging from the output Regression weights.

A. Exogenous Latent Variables

(1). PEOU (Perceived Ease of Use)

Table 4. Variable Parameter Test PEOU

PEOU	Sig (≤ 0.05)	Hasil Hipotesis	Keterangan
X1	0.000	Tolak H ₀	Konstruk yang valid
X2	0.000	Tolak H ₀	Konstruk yang valid
X3	1.000	Tolak H ₀	Konstruk yang valid

Each indicator variable X1 (easily understood), X2 (easy to operate), and X3 (easy to use) was significantly is valid konstruktur

(Reject H0) for latent variables PEOU. Evident from the value obtained by X1 and X2 on the test model parameters measurement PEOU variables with significance (sig) / real level (α) 00:05 above the critical value ($sig \leq \alpha$). Meanwhile, X3 measurement parameter set value 1. Because defined a priori, then the parameter X3 is not on the test. As a result, the measurement variable X3 is a valid constructor for latent variables PEOU. So we can say that facebook is easy to understand, easy to use and easy to operate.

B. Latent Variable Endogen

(1). PU (Perceived Usefulness)

Table 5. Variable Parameter Test PU

PU	Sig (≤ 0.05)	Hasil Hipotesis	Keterangan
Y1	0.000	Tolak H ₀	Konstruk yang valid
Y2	1.000	Tolak H ₀	Konstruk yang valid
Y4	0.000	Tolak H ₀	Konstruk yang valid
Y6	0.000	Tolak H ₀	Konstruk yang valid

Indicator variable Y1 (faster), Y2 (improve performance), Y4 (easier), and Y6 (more effective) significantly is a valid constructor (Reject H0) for latent variables of PU. Evident from the value obtained by Y1, Y4 and Y6 in the test measurement model parameters PU variables with significance (sig) / real level (α) 0,05 above the critical value ($sig \leq \alpha$). While the measurement parameter set Y2 is worth 1. Because defined a priori, then Y2 is not in the test parameters. As a result, the measurement variable Y2 is a valid constructor for latent variables of PU. Then it can be said that by using facebook, it can improve learning performance, easier, faster and more effectively in progress facebook.

(2). ITU (Intention to Use)

Table 6. ITU Variable Test Parameters

ITU	Sig (≤ 0.05)	Hasil Hipotesis	Keterangan
Y7	1.000	Tolak H ₀	Konstruk yang valid
Y8	0.000	Tolak H ₀	Konstruk yang valid

Y7 indicator variable (willingness to use), and Y8 (desire for sharing) are significantly is a valid constructor (Reject H0) for latent variables ITU. Evident from the value obtained in the test model parameters Y8 measurement ITU variables with significance (sig) / real level (α) 0,05 above the critical value ($sig \leq \alpha$). While the measurement parameters defined Y7 worth 1. Because defined a priori, then the parameter Y7 not in the test. As a result, the variable measuring Y7 is a valid constructor for latent variable ITU.

(3). AUB (Actual Usage Behavior)

Table 7. Variable Parameter Test AUB

AUB	Sig (\leq 0.05)	Hasil Hipotesis	Keterangan
Y9	0.000	Tolak H ₀	Konstruk yang valid
Y10	1.000	Tolak H ₀	Konstruk yang valid

Based on the above table, it is known that each indicator variable Y9 (Frequency of use), and Y10 (old use) significantly is valid konstruktur (Reject H₀) for latent variables AUB. Y9 value obtained in testing the measurement model parameters AUB variables with significance (sig) / real level (α) 00:05 above the critical value (sig \leq α). While the measurement parameters defined Y10 worth 1. Because defined a priori, the parameters of Y10 is not in the test. As a result, the variable measuring konstruktur Y10 is valid for latent variable AUB.

II. Reliability Testing

1. Testing Directly

This test can be seen directly from the AMOS output by looking at the R² (Squared Multiple Correlation). Reliability of an indicator can be viewed by maintaining the value of R². R² explain about how large the proportion of variance explained by indicators of latent variables (while the rest is explained by measurement error) by [15].

AMOS output results on the value of R² (Squared Multiple Correlation) are as follows:

Table 8. Squared Multiple Correlation for variabel X (Eksogenous)

X1	X2	X3
0.882	0.930	0.900

Table 9. Squared Multiple Correlation for variabel Y (Endogenous)

Y1	Y2	Y4	Y6	Y7	Y8	Y9	Y10
0.865	0.924	0.882	0.866	0.872	0.676	0.974	0.296

Based on the above table can be seen that the Y9 indicator variables have the highest R² value that is equal to 0974 so it can be concluded that the AUB latent variables contributing to the variance of Y9 of 97.4% while the remaining 2.6% is explained by measurement error.

Y10 indicator variable is an indicator of the least latent variable realibel from AUB, because of its R² value is the smallest compared to other indicator variables. Result output on yield reliability test individually.

2. Indirect Testing

By doing joint reliability test, the recommended approach is to find the value scale is Composite Reliability and Variance Extracted

from each latent variable by using information on the loading factor and measurement error.

Composite Reliability declare the size of internal consistency of the indicators of a construct that indicates the degree to which each indicator that indicates a constructs / latent common. While Variance Extracted show these indicators are already well represented in the latent constructs that are developed [5] and [4].

Table 10. Joint Reliability Test

Variabel Laten	Composite Reliability	Variance Extracted
PEOU	0.966	0.905
PU	0.968	0.884
ITU	0.872	0.774
AUB	0.763	0.635

In the table above shows that PEOU, PU, ITU and Composite Reliability AUB has a value above 0.70. Limits recommended critical value for Composite Reliability is 0.70. Latent variables PEOU, PU, ITU and AUB memenuhi Variance Extracted boundary value that is \geq 0.50. Thus it can be said that each variable has good reliability.

b). Test of Structural Model Parameters

I. Hypothesis Testing

A. Descriptive Hypothesis

H1: Suspected Perceived Ease of Use (PEOU) influence on Perceived Usefulness (PU).

H2: Suspected Perceived Usefulness (PEOU) influence on Intention to Use (ITU)

H3: Suspected Perceived Usefulness (PU) influence on Intention to Use (ITU)

H4: Suspected Intention to Use (ITU) effect on Actual Usage Behavior (AUB).

Thus, in the final model, obtained four viable hypothesis to be tested to see its effect.

B. Statistical Hypothesis

Exogenous latent variables:

H0: $\gamma_n = 0$; No effect (Accept H0)

H1: $\gamma_n \neq 0$; Influential (Reject H0)

Endogenous latent variables:

H0: $\beta_n = 0$; No effect (Accept H0)

H1: $\beta_n \neq 0$; Influential (Reject H0)

C. Real Taraf

Menggunakan taraf nyata (α) = 5 % = 0.05

D. Criteria Decision Making

- If the probability (Sig) <0.05 hence H0 is accepted

- If the probability (Sig) <0.05 hence H0 is rejected

II. Hasil Pengujian Hipotesis

Table 11. Hasil Pengujian Hipotesis

Hipotesis	Sig	Hasil Hipotesis
H ₁ (PEOU-PU)	0.000	Tolak H ₀
H ₂ (PEOU-ITU)	0.000	Tolak H ₀
H ₃ (PU- ITU)	0.000	Tolak H ₀
H ₄ (ITU-AUB)	0.000	Tolak H ₀

Based on the above table, can be explained that:

- (1). Variables Perceived Ease of Use (PEOU) influence the variable Perceived Usefulness (PU)
- (2) Variable Perceived Ease of Use (PEOU) influence on variable Intention to Use (ITU).
- (3) Variable Perceived Usefulness (PU) effect on variable Intention to Use (ITU).
- (4) Variable Intention to Use (ITU) affect the variable Actual Usage Behavior (AUB).

Based on the above hypothesis test, it was explained That the use of facebook as a tool in the learning process is influenced by four latent variables of Perceived Ease of Use (PEOU) or ease of use, Perceived Usefulness (PU) or expediency, Intention to Use (ITU) or Willingness to use and Actual Usage Behavior (AUB), or behaviors.

2.2.4. Interpretasi Model

Based on the modification of the model and the results of hypothesis testing, it was explained that the model obtained in this study are as follows:

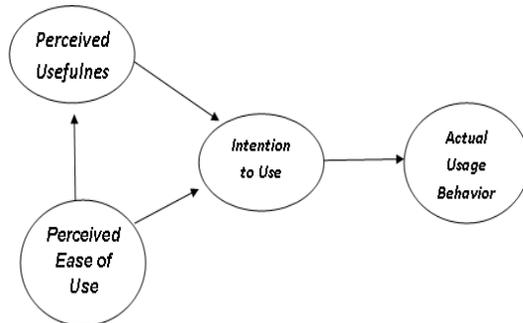


Figure 6. Final Results Research Model

Final model obtained in this study is a combination / modification of the TAM (Technology Acceptance Model) by Davis (1989) and (MONEY and TURNER 2004). Model Davis (1989) in accordance with this research is PEOU variables (Perceived Easy of Use) or ease of variables affect the PU (Perceived Usefulness) or expediency. TAM model by (MONEY and TURNER 2004) is appropriate in this study is the variable PU (Perceived Usefulness) or benefit directly influence the variable ITU (Intention To Use) or the desire to use, and PEOU variables

(Perceived Easy of Use) or ease of influential to variable ITU (Intention To Use) or the desire to use, as well as variable ITU (Intention To Use) or the desire to use a variable effect on AUB (Actual Usage Behavior) or the use of real behavior.

Based on the above model, it can be said that the use of facebook as a tool in the learning process is influenced by variables (PEOU) ease and variable (PU) benefits, which affect the variable (ITU), the desire to use. Once users experience the convenience and expediency facebook then with the feeling of want to use, ultimately affects the real behavior in using facebook. In this research found that with ease to use and helpful to facebook as a tool in the learning process, it will form a positive attitude in willingness to use it and finally realized in real behavior to use it.

Variable ease of use (PEOU) facebook influence their emergence variable (PU) and variable willingness to use (ITU), in accordance with [1] and [9] means that more easy to use facebook facebook hence increasing the usefulness and also affect the willingness to use it . Because of facebook can be accessed anywhere using the internet, so that facebook can be easily understood, operated and easy to use for a variety of student and faculty women.

Variable usefulness (PU) using the facebook effect on the variable willingness to use (ITU). Benefits obtained from facebook among others faster, improve productivity, more effective, easier, enhanced performance, and efficient. With the benefit of the facebook, giving rise to the perception of a desire to use. This is in line with the results of research that the perceived usefulness of individual influence on behavior intention or desire to use facebook.

Variable real behavior in the use of (AUB) facebook is influenced by the variable willingness to use (ITU). Conduct real use in using facebook arise because of the desire to use. In this study, positive behavior in using facebook, among others, the frequency in use facebook and the time spent in using facebook.

Conclusions

Based on tests conducted on the hypothesis, it can be concluded matters as follows:

1. Final model obtained in this study is a combination / modification of the TAM (Technology Acceptance Model) by [Davis 1989], and [MONEY AND TURNER 2004]. Variables affecting the use of facebook as a tool in the learning process in the study include PU (Perceived Usefulness), PEOU (Perceived Easy of Use), ITU (Intention To Use).

2. PEOU variables (ease of use facebook) affect the variable PU (benefit use facebook).
3. PEOU variables (ease of use facebook) effect on ITU variable (willingness to use facebook).
4. Variable PU (benefit by using facebook) effect on ITU variable (willingness to use facebook).
5. ITU variable (willingness to use facebook) influence on AUB variables (real behavior in using facebook).

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