Analysis of User Satisfaction Level of myIM3 Application Using TAM Method

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Abstract

User satisfaction is a critical thing in handling a business. The company must be capable to provide quality services for the products/services provided by them. MyIM3 application is an application developed by PT. Indosat Ooredoo Hutchison to check and purchase credit and data packages online, find promotions offered by Indosat Ooredoo Hutchison, etc. More than 10 million users have downloaded the MyIM3 app on the Play Store and AppStore. The number of features offered makes users often experience problems in accessing the application, so it affects user satisfaction. This study aims to find a correlation between variables to determine the level of user satisfaction with myIM3 application. This study applied Technology Acceptance Model (TAM) method. The number of respondents obtained by using the calculation of Slovin's formula was 400. The technique of data collection used in this study was by distributing questionnaires to myIM3 users throughout the public with various criteria. The technique of data analysis used in this study was Structural Equation Model (SEM). From this study, the hypothesis that has the most significant influence is Attitude Toward Using to Behavioral Intention to Use, while other hypotheses which also have a significant influence are Perceived Ease of Use to Perceived Usefulness, Perceived Usefulness to attitude Toward Using, Perceived Ease of Use To attitude Toward Using, and Behavioral Intention to Use to User Satisfaction.

I. INTRODUCTION

This study applied Technology Acceptance Model (TAM) method. The TAM method is founded on a psychological theory that illustrates the behavior of information technology users based on belief, attitude, intention, and user behavior relationship. [2] TAM method was applied because it includes several perceptions that can be used to analyze the level of user satisfaction.

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These perceptions are Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, and Behavioral Intention to Use. [3] This study aims to find a correlation between variables to determine the level of user satisfaction with myIM3 application.

Study Literature : Level of user satisfaction using TAM method: User satisfaction is a feeling of satisfaction from an individual originating from doing a comparison of performance with their expectations. If the performance fails to meet the criteria of the user, thus the user is not satisfied with the performance. If it is reasonable then the user would be satisfied. [5] TAM is a method that can be used in determining the level of user satisfaction. TAM is used in several studies to determine the level of user satisfaction. [3, 4, 13]

Perceived Ease of Use : It is measure of how users perceive to be unrestricted from a particular measure when implementing a system. Implementing a system means it will be unrestricted from a certain measure. Ease is defined as freedom from difficulty or that requires great effort. [9] Perceived Ease of Use in the use of myIM3 application is that the application is easy to understand and easy to use, the easier the use of the application, the easier it will be accepted by the user. Several previous studies have shown that Perceived Ease of Use has a significant impact [3,4] Thus, the following are hypotheses tested :

H1: Perceived Ease of Use significantly affects Perceived Usefulness

H3: Perceived Ease of Use significantly affects Attitude towards Using.

Perceived Usefullness : A measure of how users perceive that when using a particular system can improve users' performance and benefit users. [9] Perceived Usefulness in the use of the myIM3 application is to shorten the time and facilitate users in making purchases, and checking credit and data packages. Some studies show a significant influence on Perceived Usefulness [3,13] Thus, the following hypothesis is tested :

H2: Perceived Usefulness has a significant effect on Attitude toward Using

Attitude Toward Using : The attitude of the user in accepting or rejecting a system for various actions required in the user's position or activity. [10] Attitude Towards Using in the use of the myIM3 application is the attitude of feeling satisfied and not weary when using the application. Several previous studies have shown that Attitude Toward Using has a significant impact. [4] Thus, the following hypothesis is tested:

H4: Attitude Toward Using has a significant effect on Behavioral Intention to Use

Behavioral Intention to Use : The user's interest in a system to solve a specific behavior. [12] Behavioral intention to use in the use of the myIM3 application is the interest in using the application at any time.

H5: Behavioral Intention to Use has a significant effect on User Satisfaction

User Satisfaction : A review of an experience perceived by users when using a system. [11] User Satisfaction in the use of the myIM3 application is when the user is satisfied with the application.
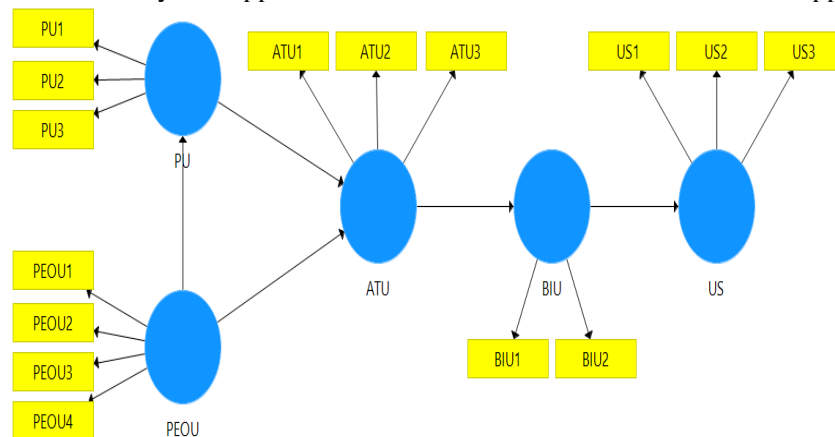

Figure 1. Conceptual Model

II.   METHODS

Data and Sample Collection: This study was completed within the scope of the general public in Indonesia. Respondents from this study were the myIM3 application downloader on the PlayStore and AppStore in public, with a minimum criterion of using for one month and aged over 17 years.

The sample calculation in this study was Slovin's formula calculation. Samples obtained from calculations using the Slovin's formula amounted to 400 samples. Data collection techniques used in this study was by distributing questionnaires. The questionnaires were distributed online to the myIM3 application downloaders according to several criteria that had been previously established. The distribution was completed through media platforms such as Telegram, Facebook, Instagram, Twitter, and WhatsApp. The distribution of these questionnaires was conducted to obtain an evaluation of respondents regarding with the satisfaction of myIM3 users towards myIM3 application. Respondents obtained in accordance with the required sample are 400.

Instrument Development: In this study, the questionnaire was divided into 2 (two) parts. The first is the demographic characteristics entry such as age and region. The second consists of several questions derived from the variables used. 3 questions from Perceived Usefulness, 4 questions from Perceived Ease of Use, 3 questions from Attitude Toward Using, 2 questions from Behavioral Intention to Use, and 3 questions from User Satisfaction. The questions were answered using the Likert scale ranging from" strongly agree "to" strongly disagree".

Descriptive Profile: Table 1 shows the demographic characteristics of the respondents aged 17-25 years as much as 90.25%, 26-35 years 8%, 35-50 years 1.75%, and 50 years and over 0%. Most of the respondents were from Java Island with 91.5%, Kalimantan Island 2.5%, Sumatra Island 2.25%, Sulawesi Island 1.5%, Riau Islands 1%, Bali Island 0.75%, and NTT 0, 5%.

Table 1. Demographic Characteristics

Demographic Characteristics	Frequency	Percentage
Age		
17 – 25 years	361	90,25 %
26 – 35 years	32	8 %
35 – 50 years	7	1,75 %
> 50 years	0	0 %
Region		
Java Island	366	91,5 %
Sumatera Island	9	2,25 %
Kalimantan Island	10	2,5 %
Bali Island	3	0,75 %
Riau Island	4	1 %
Sulawesi Island	6	1,5 %
NTT	2	0,5 %

Data analysis: Data analysis used in this study is Structural Equation model (SEM) analysis using SmartPLS 3.2.9 software. SEM analysis is a statistical technique that can be used to develop and validate statistical models. SEM analysis is frequently in the form of a clause model (cause-effect). SEM is also the development of path analysis. [6]

III. RESULTS AND DISCUSSIONS

Result

Measurement model: The evaluation of measurement model is done by reviewing the value of outer loading, Cronbach's alpha, composite reliability, and Average Variant Extracted (AVE). Outer loading is declared to meet the value of convergent validity or valid if the value is > 0.70. [7] Cronbach's alpha construct value is acceptable when the value is > 0.60 and the composite reliability value is acceptable when the value is > 0.70. [8] To evaluate the discriminant validity, it can be checked by looking at the Average Variant Extracted (Ave) for each construct. The Average Variant Extracted (AVE) is valid if the value is > 0.50. [8] The Average Extracted variant (AVE) value describes the magnitude of the variance of the indicator by the construct variable. [7]

Convergent Validity : Convergent Validity is used to determine the validity of each relationship of each indicator with its construct. Convergent validity assessment can be seen through the outer loading, the indicator is stated to meet the value of convergent validity if the value is > 0.70. [7]
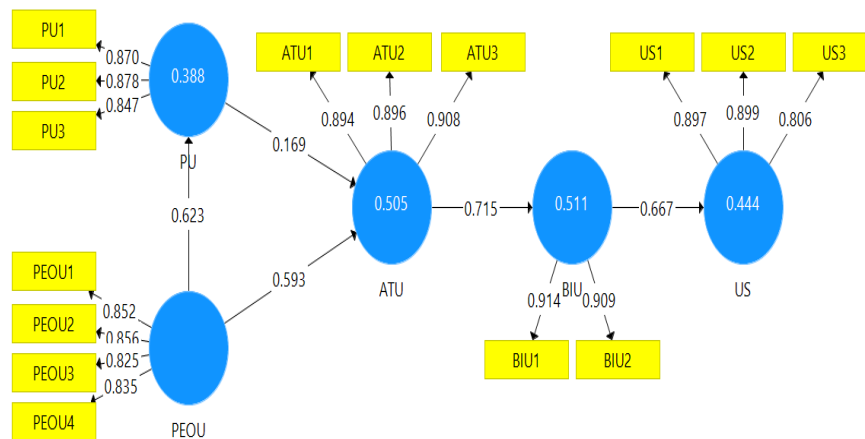

Figure 2. Measurement Model

Table 2. Measurement Model Result

Construct Indicator	Outer Loading	Cronbach's Aplha	Composite Reliability	AVE
APU		0.832	0.899	0.748
Can increase effectiveness	0.870			
Make ease	0.878			
Useful	0.847			
PEOU		0.863	0.907	0.709
Ease to understand	0.852			
Ease to use	0.856			
Ease to control	0.825			
Ease to remember	0.835			
		0.882	0.927	0.809
Pleased when using the application	0.852			
Not bored when using the application	0.856			

Enjoy when using the application	0.825			
		0.797	0.908	0.831
Use anytime	0.914			
Use under any conditions	0.909			
		0.836	0.902	0.754
Providing service	0.897			
Service quality	0.899			
Recommend	0.806			

Table 2 shows that each indicator has an outer loading value > 0.70, so it can be stated that the outer loading value has met the Convergent Validity value. The Cronbach's Alpha value for each variable is >0.60, so the Cronbach's Alpha value for each variable is declared reliable. Composite Reliability value on each variable > 0.70, so that each variable is declared reliable.

Table 3. Discriminant Validity Result

Construct	ATU	BIU	PEOU	PU	US
ATU	0.899				
BIU	0.714	0.911			
PEOU	0.698	0.579	0.842		
PU	0.538	0.488	0.623	0.865	
US	0.764	0.666	0.620	0.553	0.868

Discriminant Validity: Discriminant validity is used to measure the value of a construct and declared different from other constructs. [7] This test was assessed on the basis of cross loading. The results of the cross loading are declared valid if the indicator construct measured by the correlation is greater than the other indicator constructs or those below.

Table 4. Cross Loading Result

Construct	ATU	BIU	PEOU	PU	US
ATU1	**0.894**	0.620	0.643	0.504	0.669
ATU2	**0.896**	0.642	0.605	0.439	0.666
ATU3	**0.908**	0.665	0.637	0.509	0.725
BIU1	0.654	**0.914**	0.530	0.453	0.623
BIU2	0.649	**0.909**	0.527	0.437	0.592
PEOU1	0.580	0.439	**0.852**	0.510	0.480
PEOU2	0.576	0.485	**0.856**	0.556	0.510
PEOU3	0.589	0.509	**0.825**	0.537	0.555
PEOU4	0.608	0.518	**0.835**	0.495	0.543
PU1	0.509	0.424	0.556	**0.870**	0.519
PU2	0.412	0.419	0.530	**0.878**	0.434
PU3	0.470	0.425	0.529	**0.847**	0.476
US1	0.724	0.639	0.617	0.539	**0.897**
US2	0.660	0.551	0.543	0.472	**0.899**
US3	0.598	0.538	0.443	0.420	**0.806**
ATU1	**0.894**	0.620	0.643	0.504	0.669
ATU2	**0.896**	0.642	0.605	0.439	0.666

In table 4 it can be seen that the cross loading value of all existing constructs is greater than the value of other constructs or those below it, so it can be said that all constructs are declared to satisfy discriminant validity.

Structural Equation Model: SEM analysis is currently popular in research. SEM has the capability to

test models that can represent several complex theoretical hypotheses. [14]

Hypotheses testing: Hypotheses testing is a test conducted to determine the explanation of the proposed connection. [8] Hypotheses-testing can be done by comparing the value of the t-count / t-statistic with the value of the T-table. This test takes a significant level of 5% or 0.05 and with (Degree of freedom) Df = n – (2) that is 400 – 2 = 398, so the t-table is 1.96. Hypotheses can be accepted if the value of T-statistic > 1.96 and P-value < 0.05. [7]

Table 5. Hypotheses Testing Result

Hypotheses	Relation	Original Sample	T Statistic	p-Value	Description
H1	-> PU	0.623	13.913	0.000	Accepted
H2	ATU	0.169	3.467	0.001	Accepted
H3	-> ATU	0.593	12.185	0.000	Accepted
H4	> BIU	0.715	20.619	0.000	Accepted
H5	> US	0.667	18.156	0.000	Accepted

H1 is successfully received from the Perceived Ease of Use relation which gives significant influence to Perceived Usefulness with a T-statistic value of 13.913 and p-Value of 0.000. H2 is successfully received from the Perceived Usefulness relation which gives significant influence to Attitude towards Using with T-statistic value 3.467 and p-Value 0.001. H3 is successfully received from Perceived Ease of Use relation which gives significant influence to Attitude towards Using with T-statistic value 12.185 and p-Value 0.000. H4 was successfully received from attitude Toward Using relation which significantly influence Behavioral Intention to Use with a T-statistic value of 20.619 and p-Value of 0.000. H5 is successfully received from Behavioral Intention to Use relation which gives significant influence to User Satisfaction with a T-statistic value of 18.156 and p-Value of 0.000.

Structural Model Evaluation: Evaluate by looking at the values of R Square, Q2, and f2. The value of R Square can be used to determine how the influence of the independent variable in influencing the dependent variable. The value of R Square is categorized into 3, namely strong with a value of 0.75, moderate at 0.50, and weak at 0.25. [6] the value of Q2 can be used to determine the effect of the indefinite connection of structural models to the measurement of observation for the dependent variable. If the value of Q2 > 0 then it can be said that the resulting observation value is good, if Q2 < 0 then it can be said the observation value is not good. [8] f2 is a measure used to assess the indefinite impact of the independent variable on the dependent variable. If the f2 value of 0.02 is classified as a small value, 0.15 is classified as a medium value, and 0.35 is classified as a large value. [8]

Table 6. Structural Model Evaluation Result

Hypotheses	Construct	R Square	Q2	f2	Description
		0.505	0.4035		Good
		0.511	0.4188		Good
		0.388	0.2851		Good
		0.444	0.3275		Good
H1	--> PU			0.634	Large
H2	ATU			0.035	Small
H3	--> ATU			0.435	Large
H4	-> BIU			1.043	Large
H5	> US			0.800	Large

R Square Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) able to describe attitude Toward Using (ATU) by 50.5% categorized as weak value, Attitude Toward Using (ATU) able to describe Behavioral Intention to Use (BIU) by 51.1% categorized as moderate value, Perceived Ease of Use (PEOU) able to describe Perceived Usefulness (PU) by 38.8% categorized as weak value, and Behavioral Intention to Use (BIU) can describe user satisfaction (US) of 44.4% categorized as a weak value. The value of Q2 all variables > 0, therefore it can be said that all variables in this study have a good observation value. The values of F2 H1, H3, H4, and H5 are categorized as great because the value is > 0.35, while H2 is categorized as small because the value is close to 0.02 and < 0.15.

Discussion and Implications

This study uses several constructs of the Technology Acceptance Model (TAM) such as Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, and Behavioral Intention to Use. The results showed that users of the myIM3 application feel the ease of using the application so that it benefits users. H1 shows that the Perceived Ease of Use variable has a significant impact on Perceived Usefulness, so it can support that ease and affect the usefulness. The ease and practicality of using the myIM3 application have a significant impact on the attitude of using myIM3 application; it is supported by H2 and H3 which are significant to Attitude Toward Using. Positive use attitudes can have a significant effect on interest in the use of application, this is supported by H4 which is where Attitude Toward Using has a significant influence on Behavioral Intention to Use. Once the user feels interested in using the myIM3 application at any time and under any circumstances, it can be interpreted that the user feels satisfied with the myIM3 application. H5 shows the connection of Behavioral Intention to Use that has a significant effect on User Satisfaction so that it can support that users are satisfied with the myIM3 application.

IV. CONCLUSION

Based on the purpose of the study, to find a correlation between variables to determine the level of user satisfaction with the application of myIM3, and based on the results of the analysis using the TAM method, it can be concluded that Perceived Ease of Use (PEOU) gives a significant influence on Perceived Usefulness (PU) with a T-statistic value of 13,913, Perceived Usefulness (PU) gives a significant influence on Attitude Toward Using with a T-statistic value 3,469, Perceived Ease of Use (PEOU) has a significant influence on attitude Toward Using (ATU) with a T-statistic value of 12,185, Attitude Toward Using (ATU) has a significant influence on Behavioral Intention to Use (BIU) with a T-statistic value of 20,619, Behavioral Intention to Use (BIU) has a significant effect on User Satisfaction (US) with a value of 18,156, so this can illustrate that all of the hypotheses can be accepted and describe that myIM3 users are satisfied with the application. In this study, the most influential variable on the use of myIM3 application is Attitude Toward Using which provides a significant value of Behavioral Intention to Use of 20,619.

V. REFERENCES

[1] Y. Hamdani, "Strategi Digital Marketing PT. Indosat Ooredoo Medan Dalam Meningkatkan Kepercayaan Pelanggan," *J. Interak. J. Ilmu Komun.*, vol. 3, no. 1, pp. 40–50, 2019.

[2] T. Irawati, E. Rimawati, and N. A. Pramesti, "Penggunaan Metode Technology Acceptance Model (TAM) Dalam Analisis Sistem Informasi Alista (Application Of Logistic And Supply Telkom Akses)," @ *is Best Account. Inf. Syst. Inf. Technol. Bus. Enterp.*, vol. 4, no. 2, pp. 106–120, 2019.

[3] B. A. Stefany, F. M. Wibowo, and C. Wiguna, "Analisis Kepuasan Pengguna Aplikasi Wisata Brebes Dengan Metode Technology Acceptance Model (TAM)," *J. Inf. Syst. Informatics*, vol. 3, no. 1, pp. 172–184, 2021.

[4] T. Sugihartono and R. R. C. Putra, "Analisis Kepuasan Pengguna Menggunakan Technology Acceptance Model Pada Sistem Pelayanan Publik," *Satin-Sains Dan Teknol. Inf.*, vol. 6, no. 2, pp. 97–105, 2020.

[5] A. Muhsin and D. A. Zuliestiana, "Analisis Pengaruh Kualitas Website (Webqual) 4.0 Terhadap Kepuasan Pengguna Bukalapak Di Kota Bandung," *eProceedings Manag.*, vol. 4, no. 3, 2017.

[6] R. Solling Hamid and S. M Anwar, "Structural equation modeling (SEM) berbasis varian." PT Inkubator Penulis Indonesia, 2019.

[7] S. Haryono, "Metode SEM Untuk Penelitian Manajemen dengan Amos Lisrel PLS, Edisi 1, PT," *Intermedia Pers. Utama, Bekasi*, 2016.

[8] J. F. Hair Jr, G. T. M. Hult, C. M. Ringle, and M. Sarstedt, *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications, 2021.

[9] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Q.*, pp. 319–340, 1989.

[10] E. Marlina and others, "IMPLEMENTASI TECHNOLOGY ACCEPTANCE MODEL DALAM AKTIVITAS BERBELANJA ONLINE MELALUI SITUS LAZADA. CO. ID," *J. Online Mhs. Bid. Ilmu Sos. dan Ilmu Polit.*, vol. 5, no. 2, pp. 1–15, 2018.

[11] A. Widodo and A. S. A. Putri, "Pengaruh Persepsi Kegunaan Dan Persepsi Kemudahan Penggunaan Terhadap Sikap Penggunaan Teknologi Pada Pengguna Instagram Di Indonesia (Studi Pada Followers Akun Kementerian Pariwisata@ Indtravel)," *J. Sekr. dan Adm. Bisnis*, vol. 1, no. 1, pp. 18–26, 2017.

[12] N. Afni and I. Akil, "Analisis Tingkat Kepuasan Pengguna Commuter Line Terhadap Commuter Vending Machine dengan Metode Technology Acceptance Model Pada PT. KAI Commuter Jabodetabek," *Simnasiptek 2017*, vol. 1, no. 1, pp. 7–13, 2017.

[13] C. Lazim, N. D. B. Ismail, and M. Tazilah, "Application of technology acceptance model (TAM) towards online learning during covid-19 pandemic: Accounting students perspective," *Int. J. Bus. Econ. Law*, vol. 24, no. 1, pp. 13–20, 2021.

[14] R. H. Hoyle, *Handbook of structural equation modeling*. Guilford press, 2012.