UX in Platform Use Behavior based on Perceived Ease of Use and Perceived Usefulness in Mutual Fund Investment Behavioral Intention

Dina Fitria Murad[1], Nora Fitriawati[1], Imanuel Revelino Murmanto[1], Dwi Rahmania Noviani[1] and Sudido[1]

[1]*Information Systems Department, BINUS Online Learning, Bina Nusantara University, Jakarta, Indonesia*

Keywords: perceived ease of use, perceived usefulness, user experience (UX), user interface (UI), technology acceptance model (TAM)

Abstract: Moduit is present as one of the mutual fund investment platforms, which also animates the online investment platform. However, the number of customers who make transactions in Moduit is only 4236% of customers who have completed their registration, and this indicates a mistake in the system's acceptance of the user. This study aims to determine the factors that influence the approval of the Moduit platform. This study developed an expanded model based on the technology acceptance model (TAM). This model was tested by an online survey sample using SPSS. To achieve this study's goal, we propose UI models and designs on Moduit. The results show that the user's intention to use Moduit is influenced primarily by perceived ease of use and perceived usefulness. Perceived ease of use also affects indirectly through perceived usefulness to behavioral intentions.

1 INTRODUCTION

Fintech is a commercial industry composed of companies that use new technology to provide more efficient financial services. Financial technology integrates various types of financial services into the day to day lives of customers (Moon and Kim, 2016)(Fernando et al., 2018). Millennials, as well as the generation coming up behind the ages coming up behind them, are used to technology and want to manage their money easily and quickly, instead of walking to physically branches to perform transactions and other operations (Kim et al., 2015) . It uses mobile-centered information technology to raise the efficiency of the financial system (Surendran, 2012).

Among the new Fintech services, Moduit presents a new investment platform for mutual fund and change every process of mutual fund investment from traditional to be digital to help users invest as easy as online shopping. However, Moduit is a relatively new player of the Mutual Fund Investment Platform, and its market is still growing and unstable. Because in January 2019, Moduit only has 42% of 36% verified users that already do the transaction.

The goal of this research is to find and understanding of the factors that influence Moduit user experience acceptance. To achieve the purpose of this research, this research aims to propose a model and UI design of Moduit by developing an extended model based on the TAM (technology acceptance model).

Thereby the research proposes that:

H1. Perceived ease of use will have a positive influence on behavioral intentions to use Moduit.

H2. Perceived usefulness will have a positive influence on behavioral intentions to use Moduit.

H3. Perceived ease of use will have a positive influence to perceived usefulness.

2 LITERATURE REVIEW

Technology Acceptance Model has been developed by Davis (1989) is one of the most popular research models to predict the use and acceptance of information systems and technology by individual users. TAM has been widely studied and verified by different studies that examine individual technology acceptance behavior in various information systems constructs.

In the TAM model, there are two factors perceived usefulness, and perceived ease of use is relevant in computer use behaviors. Davis defines perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or live performance. Perceived

Murad, D., Fitriawati, N., Murmanto, I., Noviani, D. and Sudido, .
UX in Platform Use Behavior based on Perceived Ease of Use and Perceived Usefulness in Mutual Fund Investment Behavioral Intention.
DOI: 10.5220/0009090402990304
In *Proceedings of the International Conferences on Information System and Technology (CONRIST 2019)*, pages 299-304
ISBN: 978-989-758-453-4
Copyright © 2020 by SCITEPRESS – Science and Technology Publications, Lda. All rights reserved

ease of use (PEOU) can be defined as the degree to which the prospective user expects the target system to be free of effort. The development of TAM discusses how to create a foundation that can predict and explains events that drive technological development (Nguyen and Huynh, 2018). And approval of acceptance and publication of integration technology in organizational concepts (Juliandi et al., 2018).

The more difficult a technology is to use, the lower the interest of individuals to use it, and the slower individuals and community groups will adopt it. Modeling Venkatesh and Alomary firmly state that PU influences BI. The existence of PU directly affects the behavioral intention to use. Furthermore, from the results of Ducey's research, it is known that the user's intention to adopt new technology is more determined by one's attitude, such as perceived ease of use and perceived usefulness (Nguyen and Huynh, 2018)(Chuang et al., 2016).

3 RESULT AND DISCUSSION

In this study, primary data have been collected from the actual Moduit users. These respondents belong to a Moduit verified and prospect client, and the questionnaires are obtained from an online survey site, and 97 respondents complete the survey. Likert five-point scale ranging from "strongly disagree" and "strongly agree" were used, and all questions were measured through self-reporting. The demographic details of the respondents are as follows 51% are prospect clients means they have not completed the registration and 49% are verified client means they already complete the record but have not tried transaction. Measurement items used in the study are developed based on a series of experimental stages. In the first step, every detail in the model is borrowed from the related studies to get initial face validity.

And, all constructs used in this study (Figure 1) adopt the Venkatesh & Bala theory.

Construct	Item
Perceived usefulness	1. I use the Moduit platform because my friends or family use it. 2. I feel the Moduit platform is suitable for me to start or continue investing. 3. Moduit platform runs well without any technical problems when using it.
Perceived ease of use	1. I can use the Moduit platform without any help from others. 2. Moduit platform that can be accessed from various platforms makes it easy for me to use. 3. A large amount of news about 'bulging' investments makes me worry about using online investment platforms like Moduit. 4. Interface (appearance) of the Moduit platform is enjoyable, increasing my curiosity to explore the features of Moduit. 5. I like to use Moduit platform. 6. I feel helped by the features of Moduit platform.
Behavioral intention	1. The choice of words that used on Moduit platform helps me to understand the purpose of the process that needs to be done on the platform. 2. I feel the Moduit platform has a natural process of registration. 3. I do not find any difficult to complete all my personal data information needed on the Moduit platform.

Figure 1: construct and item that we used.

In the second step, it is required to test the validity, reliability, and correlation of the constructs to perform the path diagram (Figure 2).

Item	value r count	value r Table	explain
PEOU1	0.614	0.168	Valid
PEOU2	0.718	0.168	Valid
PEOU3	0.297	0.168	Valid
PEOU4	0.678	0.168	Valid
PEOU5	0.737	0.168	Valid
PEOU6	0.790	0.168	Valid
PU1	0.632	0.168	Valid
PU2	0.681	0.168	Valid
PU3	0.741	0.168	Valid
BI1	0.668	0.168	Valid
BI2	0.651	0.168	Valid
BI3	0.749	0.168	Valid
BI4	0.571	0.168	Valid
BI5	0.545	0.168	Valid

Figure 2: The constructs to perform the path diagram.

All variable and sub variable are valid, based on the observation of the total score of each sub variable are higher than r table value; which is 0.168 (Bryman and Cramer, 2005).

		PEOU	PU	BI
PEOU	Pearson Correlation	1	.618**	.734**
	Sig. (2-tailed)		.000	.000
	N	97	97	97
PU	Pearson Correlation	.618**	1	.691**
	Sig.(2-tailed)	.000		.000
	N	97	97	97
BI	Pearson Correlation	.734**	.691**	1
	Sig.(2-tailed)	.000	.000	
	N9	97	97	97

Figure 3: Validity test.

The third step carried out reliability testing. The reliability of measures is tested by calculating Cronbach's alpha. These scores are found to be satisfactory enough.

Case Processing Summary

		N	%
Cases	Valid	97	100.0
	Excluded[a]	0	.0
	Total	97	100.0

Cronbach 's Alpha	N of Items
.869	14

Figure 4: Reliability test.

There are 14 items with a Cronbach Alpha value of 0.869 greater than a minimum Cronbach alpha 0.6, and it can be concluded that the research instrument used to measure service variables can be said to be reliable or reliable.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PEOU1	51.06	68.288	.548	.860
PEOU2	50.99	67.739	.672	.856
PEOU3	52.20	71.347	.142	.889
PEOU4	51.15	67.882	.624	.858
PEOU5	51.14	66.312	.687	.854
PEOU6	51.30	65.858	.749	.852
PU1	52.09	62.856	.517	.864
PU2	51.35	66.626	.618	.857
PU3	51.29	66.499	.693	.854
BI1	51.14	67.229	.607	.857
BI2	51.03	68.426	.596	.859
BI3	51.37	65.027	.695	.852
BI4	51.92	65.431	.458	.866
BI5	51.78	65.338	.418	.870

Figure 5: item-Total Statistic.

The following table provides an overview of the statistical values for the 14 item questionnaire statements. Cronbach's Alpha value if they are Deleted known¿ 0.6, it can be concluded that the 14 items of this questionnaire statement are reliable.

In the fourth step, a correlation test is performed. Correlation analysis is a study of the discussion of the degree of closeness of the relationship between variables expressed by the correlation coefficient. The relationship between these variables can be both positive and negative. In correlation analysis, there are no terms independent variable (X) and dependent variable (Y). Because the relationship between the independent variable with the dependent variable will be the same meaning as the relationship between the dependent variable and the independent variable.

Based on the output table above, conclusions can be drawn by referring to the three basic decision making in Pearson's bivariate correlation analysis above:

1. Variable PEOU (Perceived Ease of Use) is significantly correlated with variable BI (Behavioral Intention), based on the observation that Pearson correlation score, which is 0.734, is more significant than r table value; which is 0.168. As an alternative observation: Sig. (2- tailed) the correlation score value of variable PEOU over BI, which is 0.000, is less than 0.05 as an alpha value.
2. Variable PU (Perceived Usefulness) is significantly correlated with variable BI (Behavioral Intention), based on the observation that Pearson correlation score, which is 0.691, is more significant than r table value; which is 0.168. As an alternative observation: Sig. (2- tailed) the correlation score value of variable PU over IU, which is 0.000, is less than 0.05 as an alpha value.
3. To test the hypothesized relationships between constructs, the path diagram model is used. Path analysis aims to provide quantitative estimates of the causal connections between sets of variables. The connections process in one direction and are viewed as making up distinct paths. These ideas can best be explained concerning the central feature of a path analysis - the path diagram. The path diagram makes explicit the possible causal connections between variables 0. According to the model summary test results, an examination of R2 value (perceived usefulness=0.382, behavioral intention=0.630) demonstrates that the proposed model shows a substantial amount of the variance. According to the test result, every hypothesis except H3 is accepted. Perceived usefulness and perceived usefulness give influence to behavioral intention directly. However, the indirect relationship between perceived ease of use and behavioral intention is not supported.

Hypothesis	Beta	Residual Coeffici ent (e_x)
H1. Perceived ease of use → Behavioral intention	0.497	0.6083
H2. Perceived usefulness → Behavioral intention	0.383	
H3. Perceived ease of use → Perceived usefulness	0.618	0.7861

Figure 6: Result of hypothesis.

Figure 6results are then used to produce the path diagram as shown in Figure 7

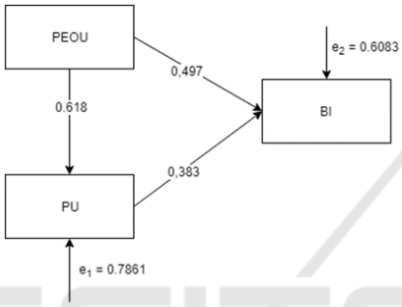

Figure 7: Path Diagram Model

Based on the results of the hypothesis test and the results of the correlation test (table 7), the variable Perceived Ease of Use (PEOU) most influences user intentions. So, this study provides several UI design recommendations that emphasize increasing Perceived Ease of Use (PEOU) which is expected to increase user interest in accessing the Moduit platform.

No.	Subvariabel	Information	Follow-up
1.	Computer Self - Efficacy	82.5% of respondents who filled out the questionnaire agreed and strongly agreed that the Moduit platform could be used without the help of others.	82.5% of respondents who filled out the questionnaire agreed and strongly agreed that the Moduit platform could be used without the help of others.
2.	Perception of External Control	88.3% of respondents who filled out the questionnaire agreed and strongly agreed that the Moduit platform that could be accessed from various platforms could facilitate their use.	Because Moduit is easily accessible on various platforms, and all customers agree, this study does not provide UI recommendations for this sub-variable.
3.	Computer Anxiety	46% of respondents who filled out the questionnaire agreed and strongly agreed that the news about bulging investments added to concerns about investing online, and 20.4% of respondents chose neutral or was among those who agreed and disagreed with this statement.	This study provides UI design recommendations on the "Why Moduit" feature to reduce customer concerns about Moduit.
4.	Computer Playfulness	Only three respondents out of 97 said they disagreed and strongly disagreed that the Moduit platform was enjoyable so that it could increase user curiosity.	Because the Moduit platform interface is pleasant, and 94 respondents agreed, this study does not provide UI recommendations for this sub variable.
5.	Perceived Enjoyment	Only six respondents out of 97 said they disagreed and strongly disagreed that users were happy to use the Moduit platform.	Because 91 customers feel happy using the Moduit platform, this study does not provide UI recommendations for this sub variable.
6.	Objective Usability	Only four respondents out of 97 said they disagreed and strongly disagreed that the User found it helpful to have several features on Moduit.	This study provides UI design recommendations on the "How to Work" feature to help customers understand the process of investing in Moduit.

Figure 8: Previous Research.

According to the test result, perceived ease of use is the most correlated variable with behavioral intention. This study will recommend a new UI design for Moduit platform based on the outcome.

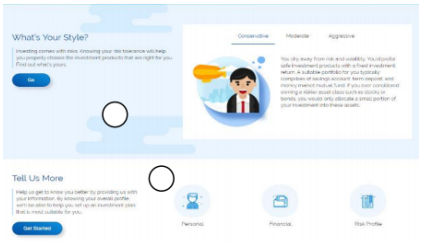

Figure 9: ”How it Works” Page – Before (source: https://www.moduit.id/id/how-it-works/)

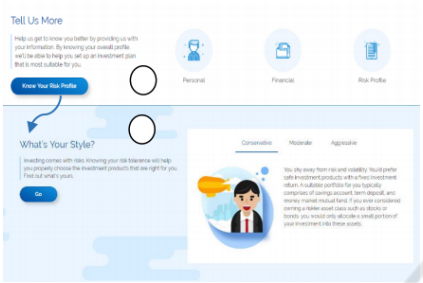

Figure 10: ”How it Works” Page – After

According to the picture, the structure of this page is a little bit change by switch section 1 to be section 2 and section 2 to be section 1. This change aims to restructure based on the actual process, which users have to register first as a prospect client, then they able to know what is their risk profile type, make users quickly understand how the process to invest in Moduit.

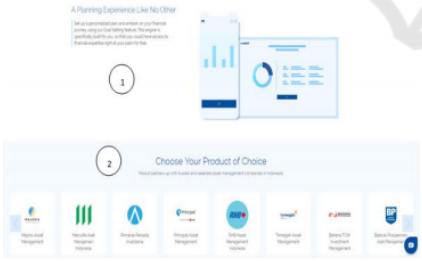

Figure 11: ”How it Works” Page – Before (2)

Figure 12: ”How it Works” Page – After (2)

After changing the structure of the “How it Works” page, the next section of this page modified by adding a sentence too describes clearly about goal setting features will help Moduit to help users find the product which matches with user’s risk profile. The new button will bring into the next section to see all of Moduit’s products.

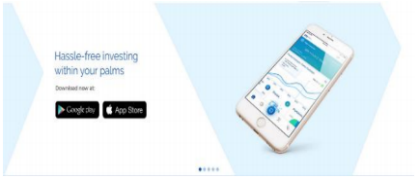

Figure 13: ”Home” Page – Before

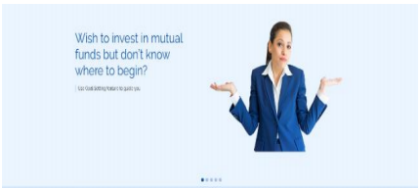

Figure 14: ”Home” Page - After

The first image slider of “Home” Page is changed because the new picture is more describing Moduit services. It will make users quickly understand what is Moduit when they open the Moduit website.

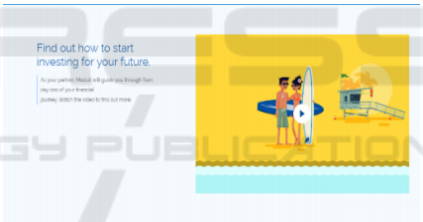

Figure 15: ”Home” Page – Before (2)

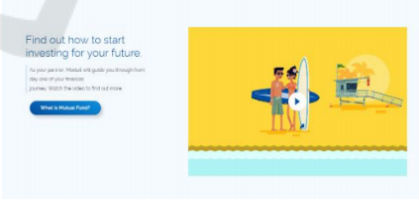

Figure 16: ”Home” Page – After (2)

The second part of “Home Page,” which changed, is a new button beside the video. To help users to know more about mutual fund investment, they can click that button, and it will bring them to Moduit “Level Up” Page, which has much information regarding Mutual Fund Investment.

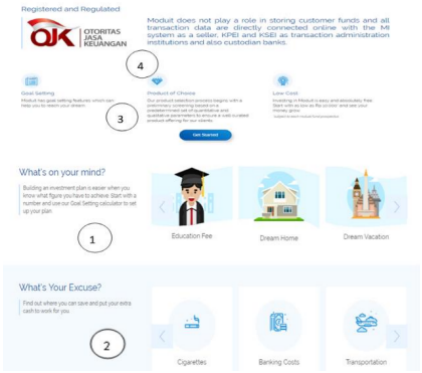

Figure 17: "Why Moduit" Page – Before (2)

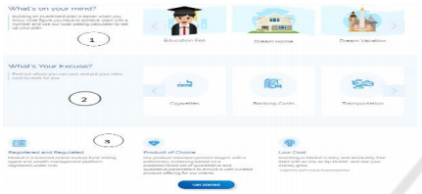

Figure 18: "Why Moduit" Page – After (2)

Before Section 1, the new section is added to explain more about why invest in Moduit is save? It will help the user to understand and increase their believer to Moduit. Chapter 1 and Section to is switch, it aims to help user understand first about good things of Moduit.

4 CONCLUSIONS

This paper makes a contribution to the Fintech literature by providing an understanding of the factors that affect Moduit acceptance. Considering the relatively recent development of Moduit and the lack of relevant studies, this study offers value as an early study. The result hint that perceived ease of use and recognized usefulness factor is a critical factor influencing the Moduit acceptance. This research finds that perceived ease of use factor's indirect influence on intention is not significant but only affects directly. According to the result, this research also gives some UI design recommendations to Moduit. However, this research has some improvements in the future. First, the researcher can add trust factors. Second, the researcher can retest new design of system maintenance that Moduit has done in the future.

REFERENCES

Bryman, A. and Cramer, D. (2005). *Quantitative data analysis with SPSS 12 and 13: A guide for social scientists*. Psychology Press.

Chuang, L.-M., Liu, C.-C., and Kao, H.-K. (2016). The adoption of fintech service: Tam perspective. *International Journal of Management and Administrative Sciences*, 3(7):1–15.

Fernando, E., Condrobimo, A. R., Murad, D. F., Tirtamulia, L. M., Savina, G., Listyo, P., et al. (2018). User behavior adopt utilizing fin tech services on online transportation in indonesia (scale validation and developed instrument). In *2018 International Conference on Information Management and Technology (ICIMTech)*, pages 114–118. IEEE.

Juliandi, A., Manurung, S., Satriawan, B., et al. (2018). *Mengolah Data Penelitian Bisnis Dengan SPSS*. Lembaga Penelitian dan Penulisan Ilmiah AQLI.

Kim, Y., Park, Y.-J., Choi, J., and Yeon, J. (2015). An empirical study on the adoption of "fintech" service: Focused on mobile payment services. *Advanced Science and Technology Letters*, 114(26):136–140.

Moon, W. Y. and Kim, S. D. (2016). A payment mediation platform for heterogeneous fintech schemes. In *2016 IEEE Advanced Information Management, Communicates, Electronic and Automation Control Conference (IMCEC)*, pages 511–516. IEEE.

Nguyen, T. D. and Huynh, P. A. (2018). The roles of perceived risk and trust on e–payment adoption. In *International Econometric Conference of Vietnam*, pages 926–940. Springer.

Surendran, P. (2012). Technology acceptance model: A survey of literature. *International Journal of Business and Social Research (IJBSR)*, 2(4):175–178.