

Conference Paper

Mathematics Model Interest and Actual Use of The ABC Digital Wallet

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ABSTRACT

The emergence of the COVID-19 pandemic had an impact on all business sectors, both goods and services, one of which is the electronic money sector which is related to increasing transaction values. The increase in transactions using non-cash money has resulted in high competition between providers of similar products. Seeing this phenomenon, Dompot Digital XYZ as a digital wallet service provider who is in the second position needs tips to be able to shift Gojek to its competitor who is in the first position. The purpose of this research is to find out how the variables of perceived benefits, ease of use, and security affect the actual interest and use and determine the right strategy for the ABC digital wallet service. Data collection was carried out by distributing questionnaires to 135 respondents aged 18 years who had used the XYZ digital wallet service at least 1 time. Data processing was carried out using the Structural Equation Modeling (SEM) AMOS 26 method. Based on the results of the analysis, the results of the study where the perceived benefit variable has a positive and significant effect on interest in the use, the variable perception of ease of use cannot be proven, and the perceived security variable has a positive and significant effect on interest in the use, and the variable interest in use has a positive and significant effect on actual use. Based on the analysis results obtained, the mathematical model is obtained as follows: $Y_2 = 0.264 X_1 + 0.388 X_3$.

Keywords: Perceived benefits, perceived ease of use, perceived security, SEM

Introduction

ABC digital wallet is a digital product launched by The ABC Digital Wallet Company that was licensed by Bank Indonesia. The company competes with other digital wallet providers in the process of distributing pre-employment card incentives to the public. Digital wallet applications and features are easy for consumers to use, besides that, of course, competition also penetrates price competition, promos, cashback, and ease of doing transactions, to the benefits obtained through digital wallets (Teng & Khong, 2021; Gupta et al., 2020; George & Sunny, 2021). Digital wallet applications offer various features and benefits that make them easy for consumers to use and are influenced by competition factors such as price, promotions, cashback, transaction ease, and overall benefits (Mu & Lee, 2021; Mollah & Sebata, 2022; Adiani et al., 2021). Digital wallet applications offer a combination of user-friendly features, competitive pricing, promotions, cashback incentives, transaction ease, and additional benefits that make them attractive to consumers (Kapoor et al., 2020; Ernawati et al., 2021). The competition among digital wallet providers has led to ongoing innovation and improvements, ultimately benefiting users with enhanced services and rewards. There are many ways to increase the interest of digital wallet users, one of which is by understanding consumer perceptions, there is Perception of Benefit, Perception of Ease of Use, and Perception of Security (Waluyo et al., 2021).

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Perceived benefits are the level of belief that technology users can improve performance and productivity. Perceived benefits, in the context of technology usage, refer to the extent to which users believe that using a particular technology can enhance their performance and productivity (Yuen et al., 2021; Yildirim & Ali-Eldin, 2019; Qi, 2019). This perception plays a crucial role in influencing an individual's decision to adopt and continue using technology. Perceived benefits are subjective and can vary from person to person, depending on their individual needs, expectations, and experiences with a specific technology. These perceived benefits are often key drivers of technology adoption and continued use, as they influence users' attitudes and behaviors toward technology (Wu & Song, 2021). This also applies to the opposite, if the person feels that the use of technology is not useful, he will not use it. There are three indicators of perceived benefits, namely facilitating payment transactions, accelerating payment transactions, and providing additional benefits after making transactions. Four additional indicators of perceived benefits have been used in many research namely increasing effectiveness in making payment transactions, increasing work productivity, improving work performance, and overall technology benefits.

Perception of Ease of Use is perceived as the extent to which a person can believe that the use of certain technological systems can free users from difficulties or hard work in operating. The Perception of Ease of Use, in the context of technology and usability, refers to the extent to which a person believes that using a particular technological system or software is free from difficulties or hard work (Brulé et al., 2020). This perception plays a significant role in influencing a user's decision to adopt and continue using a technology. The Perception of Ease of Use is crucial because it directly influences the user's overall satisfaction and their likelihood of continued use of the technology (Suryadi et al., 2021). Users tend to prefer technologies that are intuitive, and efficient, and minimize cognitive and physical effort, as this enhances their overall user experience. As a result, developers and designers often strive to create products and systems that are user-friendly and easy to use to meet the expectations of their target audience. The indicators of perceived ease of use variables are easy to learn, easy to control, clear and easy to understand, flexible, easy to be skilled, and easy to operate.

Revealed that in an information system, the security aspect is a major concern related to highly confidential data. Security is indeed a major concern in information systems, particularly when handling highly confidential data (Ksibi et al., 2020). Information systems are used to store, process, and transmit a wide range of data, including sensitive and confidential information. Security is a guide for consumers to believe that the technology used can properly store their data when conducting online transactions. Unauthorized persons cannot see and even manipulate it. To address these concerns and protect highly confidential data, organizations implement a combination of security measures, including encryption, access controls, firewalls, intrusion detection systems, regular security audits, and employee training. The goal is to create a robust security infrastructure that ensures data confidentiality, integrity, and availability while minimizing the risk of ses (Ansari et al., 2022). The are sen indicato variables of security perception, namely credit, no denial, reliability, privacy, integrity, confidentiality, and authentication.

The variable has been studied by a researcher who uses perceived usefulness and perceived ease of use where both variables can predict behavior in technology application. Technology Acceptance Model or TAM which is adapted from the TRA (Theory of Reasoned Action) model (Saeed, 2018). This model is widely used by other researchers in measuring the extent of user acceptance of technology, especially information technology. The usage interest in this study is a digital wallet which is defined as the level of a person's desire or interest in using a digital wallet service as a means of payment. Because it is related to finance, users need security variables where so far there have been many frauds and acts of theft of balances by certain individuals. The security variable is how consumers are confident in making transactions. After the perception is built and the three information variables are positive, the interest and actual users of the digital wallet will

make it easier to know the transactional behavior of users through digital wallets. The five variables and indicators are built for the model with the processing tool using Structural Equation Modeling (SEM).

Results and Discussion

Measurement model

In the analysis of the mathematical model of interest and actual use of the ABC digital wallet using quantitative data through the distribution of questionnaires with a Likert scale (1-5). The questionnaire in this study was distributed to respondents who were 18 years old and had used the ABC digital wallet at least 2 times. The size of the sample adequacy uses the maximum likelihood (ML) technique (100-200) and the number of indicators is multiplied by 5 (135 data). Based on the two techniques, all of them are fulfilled, namely using data 135. The data is specified into 3 classes, namely the criteria for not good, good, and very good in managing the frequency distribution. The data processing method uses AMOS 23. At this stage, testing is carried out based on the criteria of Good of Fit, cut-off value, and correlation between exogenous variables to avoid multicollinearity. To avoid multicollinearity, the correlation between exogenous variables should not be significant and variables X1, X2, and X3 are significant so the X2 variable is omitted because it has the largest correlation.

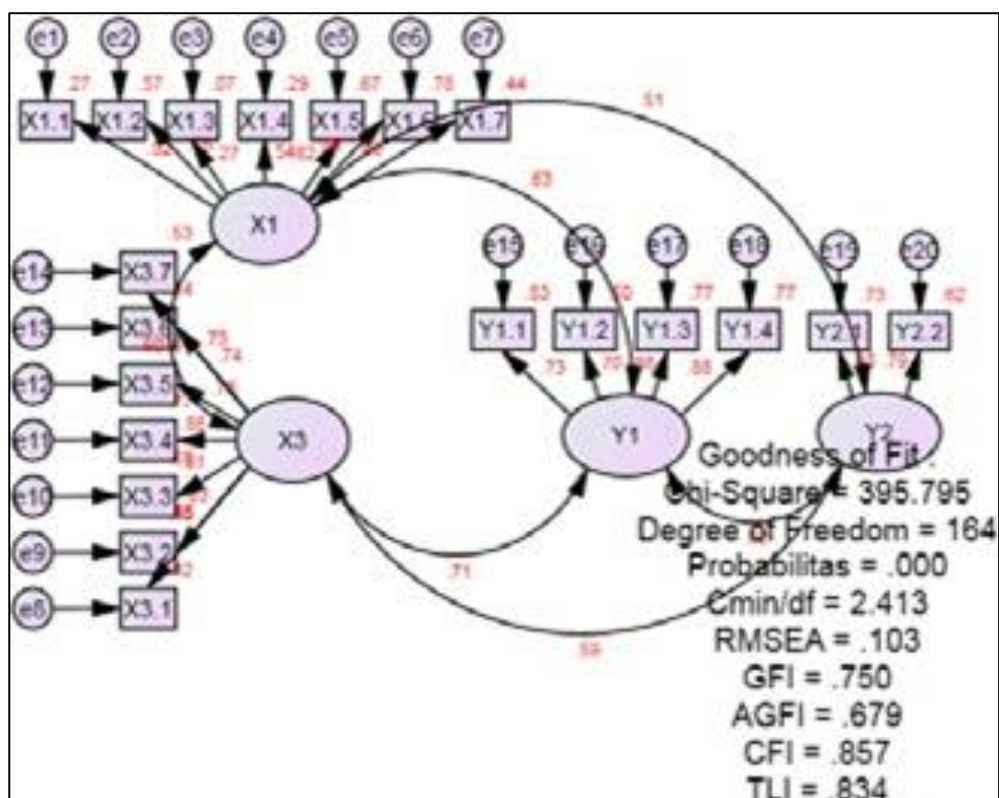


Figure. 1. Measurement model

Structural model

The results of the Structural Model testing are still not good, so it ne be mod so that the Model bes as god as it is by its application in the field. When the results of structural model testing aret as good as expected, it's e refine and modify the. its pe and applicability. Model Modification Testing is carried out using paramers at critical values.

Table 1. Goodness of fit and cut-off value

Criteria	Model test results	Critical value	Result
X2 Chi-Square	174.482	df = 146; $\alpha = 0.05$	Good
Probability	0.54	≥ 0.05	Good
C- DF	1.195	≤ 2.00	Good
RMSEA	0.038	≤ 0.08	Good
GFI	0.890	≥ 0.90	Marginal
AGFI	0.842	≥ 0.90	Marginal
TLI	0.977	≥ 0.95	Good
CFI	0.982	≥ 0.95	Good

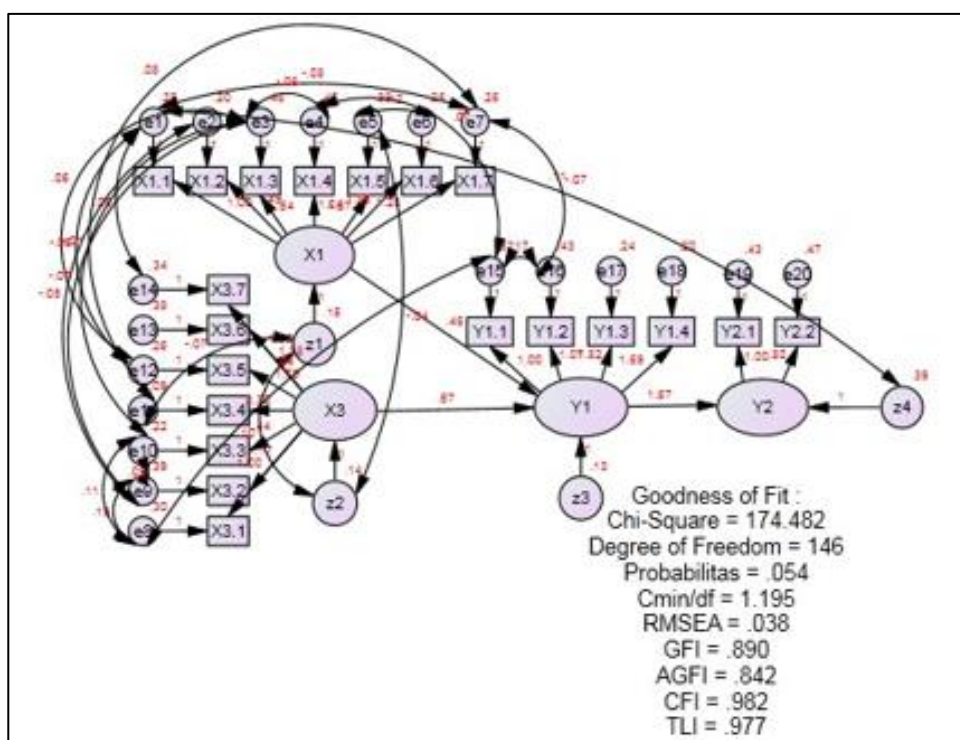


Figure 2. Structural model

Based on the results of data processing, it can be concluded that all variables and indicators are declared valid, significant, and reliable. When all variables and indicators in your structural model meet these criteria, it suggests that your research has been conducted diligently and that your model is well-supported by the data. This strengthens the credibility of your study and the validity of your findings. However, it's essential to interpret these results within the context of your research goals and ensure that they align with the broader implications and theoretical framework of your study. Additionally, be prepared to provide detailed documentation of your methods and results when presenting or publishing your research. The mathematical model generated from the interest in using the ABC digital wallet application in this study was found to be $Y1 = 0.324 X1 + 0.476 X3 + Z3$. This means that the perception of benefits and security will directly affect the interest in using the ABC digital wallet application. The perception of benefits and security is crucial in shaping users' interest in adopting and using a digital wallet application. Users looking for a combination of convenience and protection, and applications that offer both effectively are more likely to attract and retain users. While the mathematical model on the actual user interest in the ABC digital wallet is $Y2 = 0.264 X1 + 0.388 X3 + Z4$, it means that the actual use of the ABC digital wallet

application is declared influential and significant. In hypothesis testing, the relationship built is the variables X1 and X2 with Y1 and Y1 with Y2 producing a significant effect.

Table 2. Hypothesis test results

Hypothesis 1	Hypothesis 2 (1)	Model Test Results
Perceived benefits have no significant effect on interest in use.	Perception of benefits has a significant effect on interest in the use	Obtained CR value of 2,919 and t-table of 1,725 (t-count>t-table) on the effect of perceived benefits on interest in use, so that hypothesis 2 is accepted, that perceived benefits have a significant effect on interest in use. The effect of perceived benefits on interest in use has a regression coefficient of 0.324, which means that both have a positive and significant effect
Perception of ease of use has no significant effect on interest in use.	Perception of ease of use has a significant effect on interest in use.	The hypothesis cannot be proven because the variable Perception of ease of use is degraded due to multicollinearity
Perception of security has no significant effect on interest in use.	Perception of security has a significant effect on interest in use.	The effect of security perception on interest in use is obtained by CR value of 4.052 and t-table of 1.725 (t-count>t-table), so that in this hypothesis H2 is accepted, namely security perception has a significant effect on interest in use. The effect of perceived security on interest in use has a regression coefficient of 0.476, which means that both have a positive and significant effect
Usage interest has no significant effect on actual usage.	Usage interest has a significant effect on actual usage.	The effect of interest in using on actual use is obtained by CR value of 7,473 and t-table of 1,725 (t-count>t-table), so that in this hypothesis H1 is accepted, namely an interest in using has a significant effect on actual use. The effect of interest in using on actual use has a regression coefficient of 0.815, which means that both have a positive and significant effect

This study uses three stages, namely the measurement model, structural model, and modification model. The measurement model test shows that the correlation between exogenous variables has a significant relationship. When the measurement model test reveals that there is a significant relationship or correlation between exogenous variables, it suggests that these variables are not independent of each other and that they are related in a statistically meaningful way within the context of your structural model. This is commonly known as multicollinearity. Multicollinearity can create challenges in interpreting the individual effects of these variables on your endogenous variables and may lead to instability in your model estimates. It is necessary to exclude variables that have a high correlation. Elimination is done on the perceived ease of use variable (X2) to produce a smaller correlation value between exogenous variables. Suggestions that can be submitted to the ABC Digital Wallet, the company needs to increase the activity of indicators in this model because the level of distribution of confidence in the use is still below 50%.

Conclusion

Perception of benefits has a significant effect on interest in ease of use variable which has a regression coefficient of 0.324. The perception of benefits having a significant effect on the interest in ease of use is a noteworthy finding in the context of technology adoption and usability. This result suggests that users consider the advantages or benefits they can gain from a technology when evaluating how easy it is to use. Perception of security has a significant effect on interest in ease of use variable and has a regression coefficient of 0.476. The finding that the perception of security has a significant effect on interest in ease of use is a significant result in the context of technology adoption and usability. It indicates that users consider security as an important factor when evaluating the ease of use of a technology. While interest in ease of use has a significant effect on actual use with a regression coefficient of 0.815. The finding that interest in ease of use significantly affects actual use highlights the crucial role of user experience and user-centered design in the successful adoption and utilization of technology. It reinforces the idea that technologies designed for ease of use are more likely to be embraced and effectively integrated into users' daily routines.

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