

ACCEPTANCE TECHNOLOGY FACTORS OF MOBILE BANKING USAGE BASED ON UTAUT2 MODEL

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ABSTRACT

The aim of this research was to examine factors in UTAUT2 was developed by Venkatesh et al., (2012) (Unified Theory of Acceptance and Use of Technology2) Model which were influenced people in using mobile banking. Constructs used in this research were: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habits, behavioural intention, and use behaviour. This research based on survey research, and data were gathered using questionnaire. The questionnaires were distributed through internet link and it was responded by 199 respondents. The population in this research are every person who used mobile banking. The sample amount used the literature which was said that if the number of arrows in the model is maximum 10, the minimum amount of samples are 91 samples. Data analysis techniques employed in this research was Partial Least Square – Structural Equation Modeling (PLS-SEM). Results from this research shows that the factors influencing use of mobile banking are habitss and behavioural intention. In other sides, factors that determine the intentions on using mobile banking are habitss and performance expectancy. Results of this research contributes to the identify the factors that should be enhanced by banks to optimize the use of mobile banking and also contributes to the banks customers to make them understand what factors influenced them most on using mobile banking. Theoretical contribution from this paper related to contribution of references about examining the factors affect use of mobile banking in Indonesia from the UTAUT2 model.

Keyword : Behavioural Intention, Hedonic Motivation, Social Influence, Use Behaviour

ABSTRAK

Tujuan dari penelitian ini adalah untuk menguji faktor-faktor dalam model UTAUT2 dikembangkan oleh Venkatesh, et al., (2012) (*Unified Theory of Acceptance and Use of Technology 2*) yang memengaruhi para pengguna dalam menggunakan layanan *mobile banking*. Konstruk-konstruk yang digunakan dalam penelitian ini adalah: ekspektansi kinerja, ekspektansi usaha, pengaruh sosial, kondisi yang memfasilitasi, motivasi hedonis, nilai harga, kebiasaan, minat perilaku, dan perilaku penggunaan aktual. Penelitian ini berbasis penelitian survei dan data diperoleh melalui kuesioner. Kuesioner didistribusikan melalui tautan internet dan mendapat respon dari 199 responden. Populasi penelitian ini adalah para pengguna layanan *mobile banking*. Jumlah sampel didasarkan pada referensi yang menyatakan bahwa jika jumlah panah dalam model maksimum 10 panah, maka jumlah sampel minimal sebanyak 91. Teknik analisis data yang digunakan dalam penelitian ini adalah teknik *Partial Least Square – Structural Equation Modelling (PLS-SEM)*. Hasil penelitian ini menunjukkan bahwa faktor-faktor yang memengaruhi penggunaan layanan *mobile banking* adalah faktor kebiasaan dan minat perilaku. Di sisi lain, faktor-faktor yang memengaruhi minat perilaku adalah faktor kebiasaan dan faktor ekspektansi kinerja. Hasil dari penelitian ini berkontribusi dalam rangka mengidentifikasi faktor-faktor yang dapat ditingkatkan oleh pihak bank sebagai penyedia layanan *mobile banking* untuk mengoptimalkan penggunaan layanan *mobile banking*. Kontribusi lain dalam penelitian ini adalah bagi nasabah pengguna layanan *mobile banking* untuk semakin memahami faktor-faktor yang memengaruhi mereka dalam penggunaan layanan tersebut. Kontribusi teoritis dari penelitian ini terkait dengan pengujian faktor-faktor model UTAUT2 yang memengaruhi nasabah di Indonesia dalam menggunakan *mobile banking*.

Kata Kunci : Minat Perilaku, Motivasi Hedonis, Pengaruh Sosial, Perilaku Aktual

Introduction

Mobile banking activities or more commonly known as mobile banking is increasingly being carried out in the era of the fourth industrial revolution as it is today. The result of the Jenius Financial Study in collaboration with Nielsen showed that internet banking and mobile banking users in Indonesia had increased

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from 28 percent in 2014 to 30 percent in 2018 (www.bareksa.com, 2019).

Based on these findings, in Kontan's webpage as written by Hutauruk, stated that the number of internet banking and mobile banking transactions had increased. Furthermore, the webpage cited four banks that are part of the news, namely Bank BNI, Bank Mandiri, Bank BRI and Bank BCA. The number of internet banking and mobile banking users at the four banks had always increased significantly until towards the end of 2019 (Hutauruk, 2019). At the time of the emergence of internet technology, banking institutions began to offer banking services based on those technologies, and then the concept of internet banking appeared. Several years later, banking service technology began to be developed again in line with the rise of mobile phone technology with high mobility, so the concept of mobile banking founded. Therefore, the increase in the use of mobile banking is caused by the number of cellphones more than the number of computers (Aldiabat et al., 2019).

The use of mobile banking is one form of the use of information systems and technology. In the field of science and research, the use of information systems and technology could become an interesting object for research. For this reason, several models have emerged and can be used to examine the acceptance and use of information systems and technology. One model that can be used in examining the use of information systems and technology is the Unified Theory of Acceptance and Use of Technology (UTAUT) model which was first proposed by Venkatesh et al., (2003). The UTAUT model is a combination of several technology acceptance models. Over time, the UTAUT model has developed which will be described in more detail in the next section. UTAUT which has undergone development (UTAUT2) was developed by Venkatesh et al., (2012). The development of the UTAUT model into UTAUT2 was carried out in order to accommodate research on the use of technology in the customer context. These particular reasons become a component that distinguishes UTAUT and UTAUT2.

UTAUT has factors related to the prediction and use of technology, especially in an organizational context (Venkatesh et al., 2016). Factors added in UTAUT2 include: hedonic motivation, price value, and habitss. These three factors are considered to determine a person's interest in using technology. In particular, the habits factor is also considered as determining the actual behaviour of a technology user. Besides adding new factors, UTAUT2 also updates the role of several factors that have appeared in the UTAUT concept. These factors are: condition factors that facilitate not only determinants of actual behaviour in using technology, but also determinants of interest in behaviour. Next, the UTAUT2 model changes the determinant concept of moderating factors including age, gender, and experience. Finally, the UTAUT2 model eliminates the voluntary factor in using technology.

Research on the adoption of the UTAUT2 model to predict the use of mobile banking shows mixed results. Research conducted on 229 respondents of Islamic banking customers in Pakistan showed that the constructs of performance expectations, business expectations, facilitating conditions, hedonic motivation, price values, and habitss had a positive influence on interest in using mobile banking services. The interest factor in using services also had a positive effect on the actual use of mobile banking. The factor that did not influence the study was the social influence factor which apparently did not influence the interest in using mobile

banking (Raza et al., 2019). The results of this study were also confirmed by other studies of 343 bank customers in Jordan (Alalwan et al., 2017). The results they found were performance expectations, business expectations, hedonic motivation, and price values had a positive effect on the interest in using mobile banking.

The interest factor also affected the adoption of mobile banking and the social influence factor did not affect the interest in using mobile banking. The thing that distinguishes the two studies regarding the basic construct of UTAUT2 is that in the second study it does not include a habitual construct, and the facilitating condition construct is only a determinant of actual adoption / use, not a determinant of interest in using mobile banking. Another study that explores user acceptance of mobile banking services was a study of mobile banking service user acceptance in Mozambique (Baptista, and Olivera, 2015). This study showed results that were not entirely the same as the two studies above. The results of these studies which support the two studies above were that performance expectations and hedonic motivation had a positive influence on the interest in using mobile banking services for respondents from Mozambique and the social influence construct had no influence on the interest in using mobile banking services. Meanwhile, the difference between the results with the two studies above were the construct of business expectation, facilitating conditions, price value did not affect the interest in using mobile banking services and the construct of conditions that facilitate and the interest in using mobile banking services had no effect on actual use.

Research in this article this study uses the UTAUT2 Model as a grounded theory to answer the question: what factors in the UTAUT2 model affect the use of mobile banking by individuals? The author chose this title because as described in the previous section, that in the era of the fourth industrial revolution, the use of mobile banking is increasing, including in Indonesia. More specifically, this study aims to examine the basic factors (constructs) of UTAUT2 without including the moderating constructs because it is to find out whether all the basic constructs in UTAUT2 affect the use of mobile banking. This is due to differences in findings in UTAUT2 studies regarding the use of internet banking against the UTAUT2 model in general.

The novelty in this study is to test the UTAUT2 model for the use of basic construct-based mobile banking because so far the UTAUT2 research articles in the use of mobile banking have not been able to show uniform results. The novelty in this study lies in the use of all the basic constructs of UTAUT2 because some existing studies tend to only use part of the basic constructs of UTAUT2 to analyze the factors that influence the use of mobile banking. The urgency of this research is that mobile banking services are increasingly being used by customers so that it can be seen the factors that influence them in using mobile banking services. Therefore, this article is expected to provide a contribution both in practice and in theory, namely in determining policies that can be carried out by banks so that the use of mobile banking is more optimal. On the other hand, it is hoped that this research can also contribute in practical terms and it is also hoped that this article can contribute to one of the UTAUT2 studies in terms of the use of mobile banking which uses all the basic variables in UTAUT2.

Literature Review

User Acceptance Theory of Technology Usage

Several models of user acceptance in using technology began to emerge and color the world of behavioural information systems research. The acceptance models include: Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Model of PC Utilization (MPCU), and several other models. This study uses UTAUT2 as the basis for the theory used. UTAUT2 is a development of UTAUT as a theory to test user acceptance in using technology. UTAUT itself is a combination of several theories, namely Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Motivational Model (MM), Theory of Planned Behaviour (TPB), Combined TAM and TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Difusion Theory (IDT), Social Cognitive Theory (SCT) (Venkatesh et al., 2003)

Unified Theory of Acceptance and Use of Technology 2 (UTAUT2)

The UTAUT (Unified Theory of Acceptance and Use of Technology) model first appeared in a research article entitled User Acceptance of Information Technology: Toward a Unified View (Venkatesh et al., 2003). The UTAUT model is illustrated in Figure 1 below.

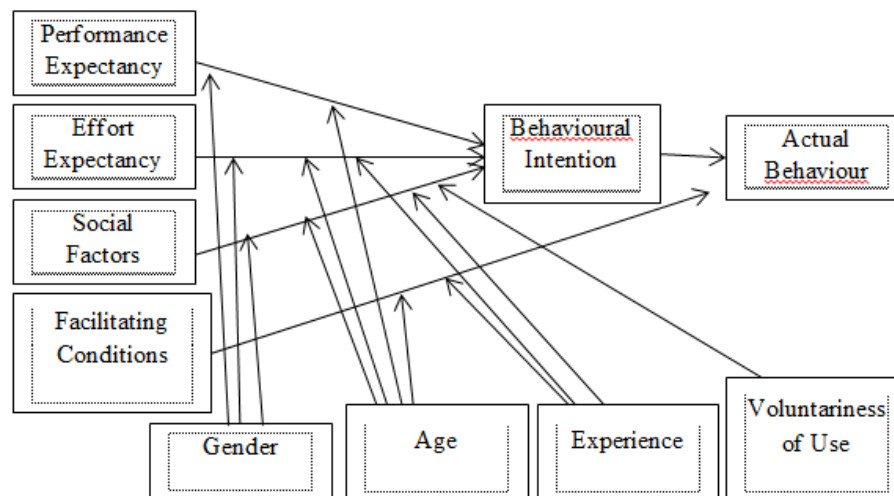


Figure 1. UTAUT Model
Source: Venkatesh et al., 2003

The UTAUT model integrates elements from models of technology acceptance and use, therefore the UTAUT model has the name unified of theory. UTAUT has four constructs that are expected to have a significant direct role in actual interest and behaviour in using technology, namely the construct of performance expectations, business expectations, social influence, and facilitating conditions. In this model there are also four key moderators, namely gender, age, experience, and volunteerism in the use of technology. During its development, this UTAUT model eventually inspired the emergence of the next model, namely the UTAUT2 model (Unified Theory of Acceptance and Use of Technology2).

The background of the emergence of the UTAUT2 model is that the previous UTAUT model was a model that focused on the interest and use of technology in an organizational context, while the modifications to the UTAUT model that resulted in UTAUT2 focused on the context of consumer use of technology (Venkatesh et al., 2016). Figure 2 below shows the UTAUT2 model. The UTAUT2 model has several differences from the UTAUT model mainly due to differences in user context. The first difference is the addition of several constructs that determine interest in using technology and the actual use of technology. Some of the added constructs are: hedonic motivation, price value, experience, and habits. The four additional constructs reflect the determinants of technology use in the consumer context.

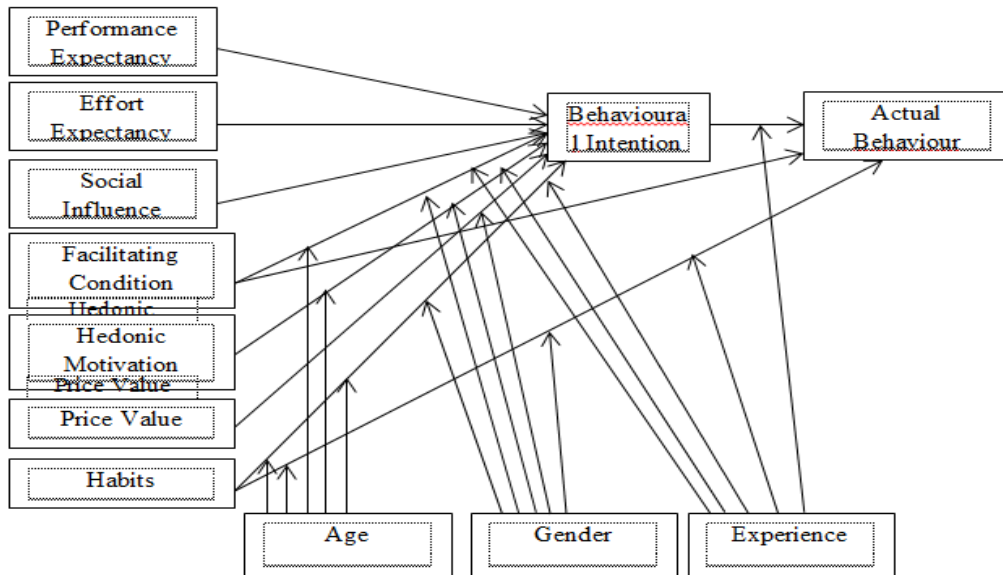


Figure 2. UTAUT2 Model
 Source: Venkatesh et al., 2016

Mobile Banking Services

Mobile banking services are increasingly being used by banking customers. Mobile banking itself can be defined as banking transaction activities such as transferring money, checking balances, making investments, and paying bills via mobile phones (Singh & Sinha, 2016). In line with this definition, there is also another definition, namely mobile banking as a channel of interaction between consumers and banks through mobile facilities (Buvaneshwari, et al., 2014). The increasing number of mobile banking users is due to the many advantages of mobile banking services that customers can experience compared to other banking services. A study showed that the factors that can be the advantages of mobile banking services that make customers satisfied were (in order of highest value): transaction accuracy, security and trust, convenience, system availability, responsiveness, usefulness, transaction speed, system reliability, and boarding house. Another benefit of mobile banking services for customers is the simplicity of banking activities that customers can carry out so that customers no longer need to go to the bank and queue (Kelly and Palaniappan, 2019).

Mobile banking services are provided by banking institutions for several purposes. One of the goals is to attract customers. Banks and other financial institutions are always trying to attract consumers (customers) by constantly trying to find new mechanisms related to customer service (Asfour and Haddad, 2014). Mobile banking services are also provided by banks as part of their contribution to improving banking financial performance (Du and Agami, 2017). Apart from some of the things mentioned above, banks are developing technology in their services in order to reach all their customers (Mufingatun et al., 2020).

User Acceptance of the Mobile Banking Service based on the UTAUT2 Model

Researches that examines user acceptance of mobile banking services using the UTAUT2 model have indeed emerged, but the results of these studies have not shown consistency with each other, such as research on the use of mobile banking in Mozambique (Baptista, and Olivera, 2015), mobile banking usage research in Jordan (Alalwan et al., 2017), and mobile banking research toward Islamic Banking customer (Raza et al., 2019). Research in this article use three previous studies as fundamental references. From the three previous studies, the similarity of results related to the constructs that determine the interest and use of mobile banking service technology can be seen in the construct of performance expectancy and hedonic motivation which have a positive influence on the interest in using mobile banking services. Another similarity of results can be seen in one of the constructs of UTAUT2 which is apparently not a determinant of interest in using mobile banking service technology, namely the Social Influence construct. This is because the mobile banking service is a very personal service with sensitive personal data, so customers who use mobile banking services tend not to show others that they are using the service (Oliveira et al., 2014).

The difference in the findings of the three studies can be seen in the results of several constructs. The first is the effort expectancy construct. The results of research on customers in Mozambique showed that the effort expectancy construct had no significant effect on behavioural interest in using mobile banking services (Baptista, and Olivera, 2015). This finding is different from the two other studies which state that the effort expectancy construct had a positive effect on behavioural interest in using mobile banking services. This different finding is suspected to be due to the use of mobile phones which is at a high level for customers in Mozambique so that customers feel that mobile banking services are easy to use.

Next construct is facilitating condition. Based on UTAUT 2 model, Facilitating condition construct is expected to influence behavioural interest in using technology and also influence actual usage. The findings obtained are that facilitating conditions have no significant effect on both the interest in using technology and on the actual behaviour in using mobile banking services (Baptista, and Olivera, 2015) ; facilitating conditions have a positive effect on the actual use of mobile banking services (Alalwan et al., 2017); and facilitating condition has a positive influence on behavioural intention in using mobile banking services (Raza et al., 2019). The price value construct also raises

different findings. The price value construct had a positive influence on the interest/behavioural intention in using mobile banking services according to two previous studies, but it turns out that there were other findings which state that the price value construct has no significant effect on interest/behavioural intention (Baptista, and Olivera, 2015). This difference in findings is due to the fact that mobile banking services are not subject to special fees for their operation, and even if there is a fee it is still considered cheaper than other financial channels. The final difference regarding results is the influence between behavioural intentions in using technology on actual behaviour. Intention in using mobile banking services has a positive effect on actual behaviour in using these services, but there are other findings that show that intention in using mobile banking services does not have a significant effect on actual behaviour.

The Effect of Performance Expectancy Construct on Intention Construct for Using Mobile Banking Services

Performance expectancy is defined as the degree to which someone believes that using the system will help them get benefits related to their work (Venkatesh et al., 2003). On the other hand, behavioural intention for using technology is defined as a level of desire for someone to use new technology (Tsai, 2012). The results of previous research used as a reference in this research article indicate that performance expectancy has a positive effect on the interest in using technology. This means that when a person feels that using technology can provide benefits to his work, he will be interested in using the technology. Based on the description above, the first hypothesis is as follows:

H1: The construct of performance expectancy has a significant and positive influence on the intention construct for using mobile banking services.

The Effect of the Effort Expectancy Construct on the Intention Construct for Using Mobile Banking Services

Effort expectancy construct is defined as a level of ease associated with using a system (Venkatesh et al., 2003). The results of previous research indicate that the effort expectancy in using mobile banking services has a positive effect on the interest in using these services, but on the other hand there are findings that show that effort expectancy does not have a significant effect on the interest in using mobile banking services (Baptista, and Olivera, 2015). Conceptually, when someone feels that using technology is easy, then this will cause that person to have an interest in using technology. Therefore, from the description above, the second hypothesis is as follows:

H2: The effort expectancy construct has a significant and positive effect on the intention construct for using mobile banking services.

The Effect of Social Influence Construct on the Intention Construct for Using Mobile Banking Services

Several previous studies show that the social influence construct does not have a significant effect on the intention for using mobile banking services. Social influence is defined as the degree to which a person perceives that other people who are important to him believe that someone must use the new system (Venkatesh et al.,

2003). Although the results of previous studies show that there is no influence between social influences on intention, this study still includes testing of social influence on the intention for using mobile banking services because the respondents studied are in different countries. Conceptually, when other people who are important to us suggest using new technology, our intention for using that technology will be even greater. Then, the third hypothesis is as follows:

H3: Social influence construct has a significant and positive effect on intention construct for using mobile banking services.

The Effect of Facilitating Condition Construct on Intention and Actual Behaviour Constructs for Using Mobile Banking Services

Regarding the facilitating condition construct, there are two variables to be tested in this study. The first test is the effect of facilitating conditions on the intention for using technology. Facilitating conditions are defined as the level at which individuals believe that organizational and technical infrastructure is available to support the use of a system (Venkatesh et al., 2003). Some findings suggest that facilitating condition for mobile banking services has no significant effect on the intention for using the services (Baptista, and Olivera, 2015). Another finding states that the conditions that facilitate mobile banking services have a positive effect on the intention for using these services (Raza et al., 2019).

Technical and organizational infrastructure is very important in determining one's intention for using technology. The UTAUT2 model, on the other hand, describes the effect of facilitating condition constructs on the actual behaviour of a technology. Actual behaviour relates to the actual use of technology by users. Facilitating conditions can positively influence actual behaviour in using mobile banking services (Alalwan et al., 2017). Facilitating condition tend to increase technology usage behaviour.

so the hypothesis for a facilitating condition construct is:

H4a: The facilitating condition construct has a significant and positive effect on the intention construct for using mobile banking services.

H4b: The facilitating condition construct has a significant and positive effect on the actual behaviour for using mobile banking services

The Effect of Hedonic Motivation Construct on Intention Construct for Using Mobile Banking Services

Hedonic motivation construct is defined as a willingness to initiate behaviours that can increase positive experiences (pleasant or good) and behaviours that can reduce negative experiences (Kaczmarek, 2017). Hedonic motivation is a major determinant of behavioural intention and is considered more important than performance expectancy in a non-organizational context (Venkatesh et al., 2016). Of the three previous studies referred to in this article, hedonic motivation in using mobile banking services has a positive influence on the intention for using this technology. This shows that the intention for using mobile banking technology will be even higher if customers are happy to use the technology (Alalwan et al., 2017). Therefore, the hypothesis related to hedonic motivation construct is:

H5: Hedonic motivation construct has a significant and positive effect on the intention construct ofr using mobile banking services

The Effect of Price Value Construct on Intention Construct for Using Mobile Banking Services

Venkatesh et al., (2016) define price value construct based on research of the influence of price, brand, and storage of information on products by customers. Price value is defined as customer cognitive limit between the perceived benefit of an application and the monetary cost of using the application (Dodds et al., 1991). Meanwhile, the results of several previous studies related to the effect of the price value construct on the intention for using mobile banking services show different findings. The price value construct has no effect on the intention for using mobile banking services (Baptista, and Olivera, 2015). This finding is due to the fact that the mobile banking service is seen as a free service, without additional cost, and even if a cost appears, the cost is still cheaper than other financial means. Two other studies found that the price value construct positively affects the intention for using mobile banking services. The higher the price value issued by users for a technology, then they expect to get higher benefits than the price they pay (Venkatesh et al., 2016). Based on this description, the hypothesis related to the price value construct on intention is as follows:

H6: Price value construct has a significant and positive effect on the intention construct of using mobile banking services.

The Effect of Habits Construct on Intention and Actual Behaviour Constructs for Using Mobile Banking Services

Habits construct have several definitions. Venkatesh, James & Xi (Venkatesh et al., 2016) refer to several previous studies to define habitual constructs. The habits of using information technology can be identified with an automation perspective (Kim et al., 2005). More deeply about the concept of habits, there are researchers who define habits as a level where a person tends to show behaviour (using Information Systems) automatically, because it is through the learning process (Limayem et al., 2007). Several previous studies suggest that habit constructs have a positive effect on behavioural intention and on actual behaviour for using mobile banking services. Then the hypothesis for the habits construct is as follows:

H7a: Habits construct has a significant and positive effect on the intention construct for using mobile banking services.

H7b: Habits construct has a significant and positive effect on the actual behaviour construct for using mobile banking services.

Research Method

Research Type

This type of research was a quantitative study with a survey research strategy. A survey research strategy is a research strategy that attempts to describe quantitatively the tendencies, attitudes, or opinions of a particular population by examining a sample of that population (Creswell, 2015). Quantitative research is concerned with quantifying and analyzing variables to obtain results using numerical data and certain statistical techniques (Apuke, 2017).

Population and Samples

The population in this study were all people who have used mobile banking services in various regions in Indonesia. The sampling technique used nonprobability sampling technique with convenience sampling method. Convenience sampling methods focus on gathering information from members of the population who are comfortably able to provide that information (Sekaran and Bougie, 2016). Formulation of the minimum sample size in this study used the concept proposed by Marcoliedsa and Saunders (2006) as stated in Wong's research (Wong, 2013) which indicates that if the maximum arrows in a model are 10, then the minimum number of respondents is 91 respondents.

Data Collecting Technique

The data in this study were collected using a questionnaire based on the Google form (Google form) which is distributed using an internet link. The questionnaire in this study used a 5-Likert scale questionnaire model which is referred to from previous studies (Venkatesh et al., 2016) with adjustments to the context of the object under study, namely the user's perception of using mobile banking services. The questionnaire in this study consisted of 34 statements that had to be answered by respondents regarding the factors in UTAUT2 related to the use of mobile banking.

Data Analysis Technique

The data analysis technique in this study used PLS-SEM (Partial Least Square - Structural Equation Modeling). There are two kinds of evaluation models in PLS, namely the outer model and the inner model. Outer Model is a measurement model to assess the validity and reliability of the model, while the inner model is related to the structural model to predict the causality relationship between latent variables using the bootstrapping process (Abdillah and HM, 2015). There are several conditions that must be met in evaluating the model using PLS.

In the outer model, testing section, it is related to the validity test, which is divided into two types, namely the convergent validity test and the determinant validity test. Convergent validity criteria in PLS according to Chin (1995) is outer loading > 0,7; communality > 0.5; and Average Variance Extracted (AVE) > 0.5 (Abdillah and HM, 2015). The discriminant validity test has a score criterion on the cross loading of each indicator in a construct which will be different from the indicators in other constructs and will collect on the intended construct (Abdillah & HM, 2015). Reliability test, as part of the evaluation of the outer model, can use two methods, namely Cronbach's Alpha and Composite Reliability. The provisions used are the Cronbach's Alpha value and the Composite Reliability value must be greater than 0.7. The next evaluation is an evaluation of the inner model used to test the relationship between constructs. The provisions used in decision making are to compare the T-table value with the T-Statistics value. For one-tailed research with a confidence level of 95 percent or 5 percent alpha, the T-statistics value must be greater than or equal to 1.64 to show support for the hypothesis. The inner model test can be done using the bootstrapping process.

