International Journal of Business Marketing and Management (IJBMM)
Volume 4 Issue 11 November 2019, P.P. 01-12
ISSN: 2456-4559
www.ijbmm.com

Understanding Determining Factors of Customer Technology Acceptance and Intention of Migrating To Mobile Banking In Indonesia, With Age as a Moderating Variable

Permana Honeyta Lubis[1], Syafruddin Chan[2*], Sorayanti Utami[3]
[1, 2, 3] *PhD, Universitas Syiah Kuala, Indonesia*

[*] *Corresponding author: syafruddin.chan@unsyiah.ac.id*

Abstract: *This study empirically explored the direct effect of e-commerce knowledge and perceived ease of use on customer acceptance of IT and Migration intention to mobile banking in the province of Aceh, Indonesia. It also attempted to investigate the indirect effect of the e-commerce knowledge and perceived ease of use on migration intention to mobile banking through customer acceptance of IT. 200 bank customer across Aceh Besar district and Banda Aceh city in the province of Aceh, Indonesia were selected as the respondents of the study on the basis of stratified random sampling technique. Using the structural equation modelling (SEM) analysis, the study found that, with the exception of the effect of e-commerce on migration intention, all other direct hypothesis have a significant effect on migration intention to mobile banking. The e-commerce knowledge and perceived ease of use were documented to positively and indirectly affect the migration intention. Additionally, the study found a full significant mediated effect of customer acceptance on the relationship between e-commerce and migration intention, while the role of customer acceptance is a partial significant mediated effect on the relationship between perceived ease of use and migration intention to mobile banking. To further provide more comprehensive and robust empirical findings of the study, it also have been test the moderation role of age as a control variable to see the difference between over and under 35 years old. Since the p value comparison model is higher than cut off value, it can be concluded that there is no significant difference between young and old age group in responding the proposed offer by the bank to switch to mobile banking.*

Keywords: *E-commerce knowledge, perceived ease of use, IT customer acceptance, intention adoption, migration intention to mobile banking.*

I. Introduction

Background

In the new global economy, the threat to the existence of a bank has become a central issue that the bank is facing a dilemma of disruptive technology (Hall & Martin, 2005). It is irrefutable that the advancement of internet technology opens up new opportunities for businesses to grow and expand on a larger scale; however, on the other hand, the development of technology also threatens the ways in which banks currently conduct their business.

Recent developments in communication technology have heightened the need for banks to understand their customer preferences better (Sinha & Mukherjee, 2016). Customer behavior in the settings has changed. Almost all banking transactions that in the past were predominantly done offline can now be done via the internet, including ones involving third parties. Transactions using internet banking can be done by customers irrespective of their current time and place. This is compounded by the sharp hike in the usage of handheld devices because almost all the functions of a PC or Laptop can now be simulated by smartphones (King, 2010). This is why online transactions have been redefined to the point where place and time no longer pose significant boundaries to its process. The array of procedures that can be carried out by mobile banking is staggering, starting from checking account balance, transferring funds, charging mobile phone vouchers, to paying electricity and water bills. The ease of doing the transactions without having to leave one's home or office is one the main advantages of this product, which has never happened before (King, 2010).

However, doing transactions with e-banking is not without its weaknesses. For some people, transactions through internet banking are considered not fully secure (Al-Sharafi, Arshah, & Abu-Shanab, 2016). Others argue that the move from conventional transactions to internet banking imposes a large number of requirements, obligating one to fill many forms and spend an unpractical amount of time (Song, 2010).

Several attempts have been made by banks to adapt themselves to the changing of technological environments. But the bottom line of how the business can succeed hinges on the bank's capability in delivering superior value to its customers, by designing more attractive products compared to those of its competitors.

Although the availability of technology can support the improvement of bank services to its customers, the acquisition of the technology, especially mobile banking technology, should be reasonably in line with customer preferences. In addition to the fact that technology investment imposes a significant amount of expenses, the application of a technology that is not largely desired by customers will make them feel burdened by the hassle required to join the new program (Malaquias & Hwang, 2016).

The question, then, is whether technology can create better relationships between customers and their banks. For the younger generation, otherwise known as millennial, this statement may hold true. They are more comfortable in conducting banking affairs through their smartphones. Moreover, banks can make use of social media channels such as Instagram, Facebook, or Twitter in reaching them to promote new products (King, 2010).

One of the greatest challenges for banks in applying this mobile technology is to project how customers will respond to it. In many preceding studies, some authors have explored the variables that should be considered so that the process of adopting technology can run smoothly, among them performance expectancy and effort expectancy. But because we are talking about technology, then the customer value offered to customers has to relate to customer experience. The individual experience of customers in utilizing the provided internet-based transaction channels must be mapped out, tested and refined. Only then will the business model offered to customers be accepted (Yusuf Dauda & Lee, 2015)

One of the most significant ongoing discussions in the banking sector is how responsive the bank is in adapting itself to the development of this technology (Yusuf Dauda & Lee, 2015). If the bank is not responsive enough in acquiring technology, then there will be a third party who will do it in its stead. Just take a look at Uber—it is one of the biggest taxi companies in the world, and yet it ironically does not have a single vehicle as its asset. The same thing can happen in the banking industry.

It must be recognized that the time for customers to adopt technological innovations become shorter from time to time. Understanding this, banks must be much more responsive in their efforts to acquire new technology to keep up with their customers' demands.

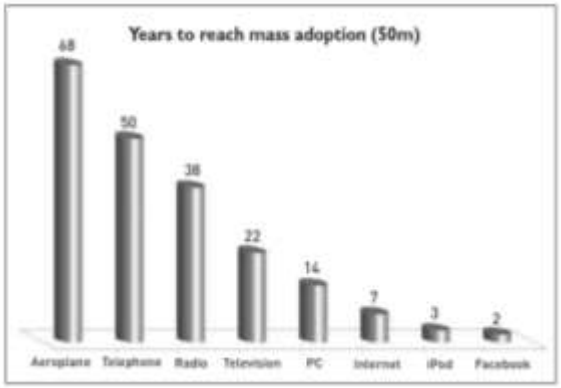

Figure 1. Shorter Time in Adoption Technology

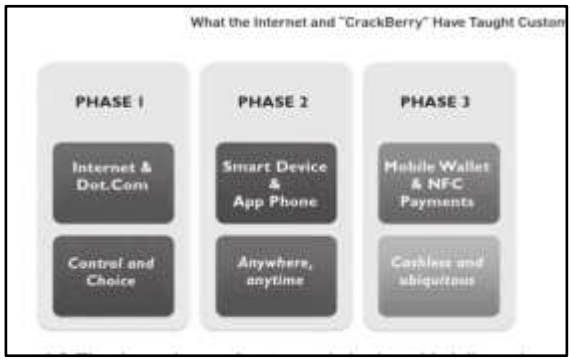

Figure 2. Three Phases of Disruption Technology

Source: King (2010)

The main challenge faced by many banks is the change of the battlefield. The competitive advantage of banks is now no longer determined by who has the largest and most luxurious branch offices, but by how responsive they are in offering internet- and mobile-based products to their customers so that they can make secure financial transactions at any time and place.

There is little-published data on how banks in developing countries such as Indonesia can transform themselves to fit the development of existing technological environments. Therefore, it is necessary to understand the determining factor of technology acceptance among bank customers, because it is the acceptance of the technology that drives customers to switch to mobile banking.

At the same time, banks must be aware of the threat of disruptive technology in the ever-evolving financial field of time such as Unbundling of banks by financial technology providers and peer-to-peer payment providers (i.e. Paypal). Moreover, there is a number of newly surfacing payment technologies such as Google Wallet and Android Pay, as well as the emergence of crypto currencies like Bit coin, which are discussed extensively nowadays.

Understanding the fact that the dynamic development of technology has the potential to disrupt conventional business models, banks need to understand how customers respond to technological developments, and how it translates to their behavior in doing transactions with the bank (Reddi, 2016).

So far, very little attention has been paid to how the changing of the technology is driven by customer preferences. Today's customers expect a total customer experience that works for him. The expectation is that they do not want their customers to switch to competitors (Deng, Lu, Wei, & Zhang, 2010). It is imperative for the bank to know what factors are considered by the customers in their decision calculus to use internet-based and mobile-based products. By knowing the factors that customers take into consideration in making these decisions, the bank can then persuade customers to become mobile banking users (Zahir Bokhari, 2014).

This paper attempts to show what the determining factors of customer technology acceptance are and its impact on intentions of migrating to mobile banking. This paper will also include age as a moderating variable. The aim is to see the difference in behaviors between the old and millennial generations in dealing with technological developments and their desire to switch to mobile banking (Grabner-Kräuter & Faullant, 2008).

Limitation of the study**:** Due to resource constraints, this study only examines respondents located in three provinces in the western part of Indonesia, namely Aceh, North Sumatra, and Riau.

II. Literature Review

Customer E-Commerce Knowledge Management

E-commerce is the process of buying and selling products and products through electronic means such as mobile applications and the Internet. E-commerce agrees on retail both online and electronic transactions. E-commerce has increased in popularity in recent times, and in a way, it won the traditional brick and mortar store. E-commerce allows you to buy and sell products on a global scale, twenty-four hours a day without the same overhead as you do with brick and mortar stores. For the best marketing mix and the best conversion rate, the E-commerce business will also have physical participation, this business is known as a click and mortar store.

Definition of Customer Knowledge Management (CKM) according to Zhang, Z. (2011) is a process for transferring, sharing, applying data, information, and knowledge relating to customers for the benefit of the company. The implementation of CKM is expected to be able to complete the knowledge of the customers. If customers have adequate knowledge about the features offered by marketers, customers will increasingly be able to get the advantages of the products offered to them. Efforts made by marketers to improve customer understanding of mobile online banking products can be categorized as E-Commerce Knowledge Management Customers (Buchnowska, D. 201)

Perceived Ease of Use

Perceived Ease of Use is one of the variables in the Technology Acceptance Model (TAM) developed by Davis, F. D. (1989). Perceived Ease of Use is the extent to which a person believes that using a particular system will not be difficult. The technology acceptance model (TAM) is an information systems theory that explained how users received and used technology. This model shows how the compilation is provided by new technology, which is calculated based on factors and how they will be used. TAM has been continuously studied and developed into the TAM2 concept (Venkatesh, V., & Davis, F. D. (2000) and Theory of Acceptance and Use of Integrated Technology or UTAUT (Venkatesh et al. 2003). TAM 3 has also been approved in the context of e-commerce by including the effects of trust and risk which are understood in the use of the system (Venkatesh, V., & Bala, H. 2008)

Acceptance of IT Customers

It is undeniable that the contribution of technology to business improvement, including helping companies win the competition in this era of increasingly fierce competition. The success of an information system can help with four different measures, namely user satisfaction, system usage, decision performance, and organizational performance. Users will only use technology if they accept it (IT Customer Acceptance). The use of information technology systems is the main variable that influences managerial performance (Sharda, N. 1998; Davis, 1989). Information Technology Systems (STI) provides five main roles in organizations (Wu, J. H., & Wang, S. C. 2005).namely: efficiency, assistance, communication, collaboration, competitiveness.

Breakthrough technology in financial products is marked by the emergence of Financial Technology products (Fintech) that support the public in accessing financial products, facilitate transactions and also increase financial literacy that can be accessed through access to mobile application applications (mobile devices) (EBA Report 2018)

Migration of Intentions to Mobile Banking.

Intentions adoption or migration is something that represents consumers who have an opinion, will, plan or agree to buy products or services in the future, in this case internet banking products through mobile devices (Mobile Banking) Martins, C. et al. (2014).

An increase in purchase intention means an increase in one's intention to make a purchase in the future (Zhou, T., Lu, Y., & Wang, B. 2010). Researchers can also use buying intentions for the benefit of consumers. When consumers have a positive desire and have commitment to buy, the brand must good enough according to them (Püschel, J., et al. 2010).This is exactly what drives the purchase that will ultimately be made by consumers. According to the TAM Model, the technological aspect is very helpful in encouraging a person to increase his degree of desire to buy (Davis, F. D. 1989; Venkatesh, V., & Davis, F. D. 2000; Venkatesh, V., et al. 2003; Venkatesh, V., & Bala, H. 2008; Baptista, G., & Oliveira, T. 2015).

Influence between Variables

Migrating intention to Internet Mobile Banking or buying interest according to Cloete, et al. (2002) is the tendency of consumers to buy a brand or take action related to the purchase as measured by the likelihood of consumers making a purchase. According to the TAM Model from Davis (1989), factor technology plays an important role in increasing one's desire to buy products or services in the future. However, the form of technology embedded in product features is a type of technology that can be accepted by customers (Martins, C et al. 2014). Only desirable technology will make customers willing to use it. According to the TAM theory, one of the variables considered by customers to accept technology as part of product innovation is the Perceived Ease of Use (Venkatesh, V., & Davis, F. D. 2000). How easily the technology is used when customers will carry out financial transactions via smartphones. Another variable that is no less important is customer e-commerce knowledge (Venkatesh, V., & Bala, H. 2008). E-commerce knowledge refers to customer understanding of digital transactions using internet as a medium of communication and execution of financial transactions. In the final section, we will look further at how the age (old and millennial generation) influence the use of mobile banking to resolve their financial transaction needs.

Based on the above discussion, this study proposes the following research model for estimation.

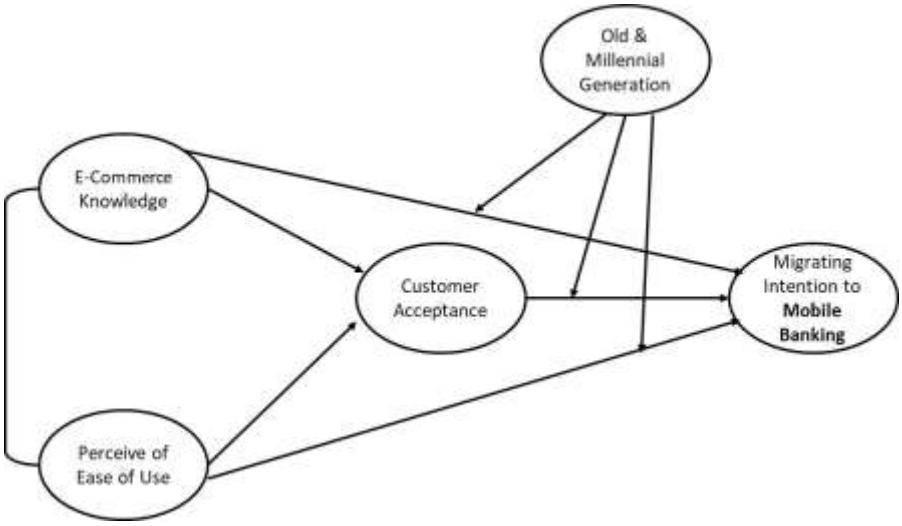

Figure 3. Research Model

Thus, referring to Fig. 1, this study would test the following hypotheses:

1. E-Commerce Knowledge, Perceived Ease of Use influence IT Customer Acceptance
2. E-Commerce Knowledge, Perceived Ease of Use influence Migration Intentions to Internet Banking
3. IT Customer Acceptance influence Migration Intentions to Internet Banking
4. E-Commerce Knowledge and Perceived Ease of Use influence Migration Intentions to Internet Banking through IT Customer Acceptance
5. There are significant differences between the Old and Millennial Generation in increasing interest in using mobile banking

III. Research Method

Population and Sample

The population of this research is all bank customers in Aceh, Indonesia. While the sample used in this study is 10 (ten) times the number of indicators (Hair, 2010), namely 200 respondents of bank customers, which will be distributed equally to the 2 districts which are Kota Banda Aceh and Aceh Besar.

Operationalized variables

To ensure a high level of validity, all item measurements of variables are adapted from the previous study with some minor modifications made to fit the context of the study. To measure the migrating intention (endogenous variable) 5-indicator are used (i.e better schedule, make my life, easier, the cost is affordable, access to the system, the system is useful in managing my account). To measure IT customer acceptance (mediating variable) 5-indicator are used (keep track of my transaction records transfer payment easily, do my financial matters anywhere and anytime., easier to get information my saving account balances, useful in managing my bank account). Meanwhile, to measure the E-Commerce Knowledge (exogenous variable) 5-indicator are used (my ability to use internet banking, mobile banking application is useful, doing my financial matters using internet based application, update with new e commerce technology, give me advantage over those who don't) and lastly to measure perceived ease of use (exogenous variable) 5-indicator are used (easy to follow, find the information easily, user interface of the system clear and intuitive, user friendly, the system to be flexible to interact with)

Data analysis technique

To empirically test the proposed hypotheses, the multivariate technique of structural equation modelling (SEM) technique is adopted in this study and analyzed using the Analysis of Moment Structures (AMOS) program version 22.0. The SEM is a statistical technique to analyze indicator variables, latent variables, and measurement errors, and relationships among variables. The SEM multivariate technique combines aspect for factors analysis and multiple regression that allows the tests of dependency relationships between measured variables and latent constructs simultaneously.

To explore the direct effects of E-Commerce Knowledge, Perceived Ease of Use, to IT Customer Acceptance and Migration intention and also indirect effect of E-Commerce Knowledge and Perceived Ease of Use to Migration intention through IT Customer Acceptance the following SEM equations are estimated:

$$ICA = \gamma_{11}ECK + \gamma_{12}PCV + \varepsilon_1 \quad (1)$$

$$MI = \gamma_{21}ECK + \gamma_{22}PCV + \varepsilon_2 \quad (2)$$

$$MI = \gamma_{31}ECK + \gamma_{32}PCV + \gamma_{33}ICA + \varepsilon_3 \quad (3)$$

Where ICA is the IT customer acceptance; ECK is the E-commerce knowledge; PCV is the perceived ease of use and MI is the migrating intention to internet banking.

Before estimating the Equations (1) – (3), the instrument tests of validity and reliability were conducted to discover the most powerful and the weakest indicators measuring the latent variables as indicated by the standardized loading factor and to ensure the consistency of indicators. The test of validity for overall suitability models is based on the product moment of Pearson correlation and the goodness of fit indices. The best suitability level is categorized as a good fit; the moderate level is categorized as marginal fit; and the weakest level is categorized as a poor fit. In this case, the validity test was conducted for 20 indicators, comprising 5-item measuring the migrating intention to mobile banking, 5-item measuring the IT customer acceptance, the 5-item measuring e-commerce knowledge, and 3-item measuring perceived ease of use. Meanwhile, the reliability test is conducted by identifying the correlating scores of each item in the form of statements with their scores. The correlation between items' scores and the total scores should be significant and its value to be greater than 0.60 for the item to be categorized as reliable.

In short, in the data analysis, prior to the instrument tests and estimation of the SEM equations, the study provides first the descriptive statistics of the respondents and their perceptions on the variables using the statistical software of the SPSS version 24.0. As suggested by [40], this study assessed the properties of measurement scales for convergent validity and discriminant validity, and constructed composite reliability by the confirmatory factor analysis (CFA), followed by estimating the SEM equation to verify the direct and indirect path relationships between the investigated variables using the statistical software of AMOS version 24.0.

IV. FINDINGS AND DISCUSSIONS

Descriptive statistics of the respondents

All questionnaires distributed to the 200 respondents were returned and completely filled up. Of 200 respondents, the majority of them were men (70%) and the rest 30% was female. In term of age, it can be described that 15.7% of respondents are between 21 to 30 years of age, 15.7% of respondents are between 31 to 40 years of age, 31.4%, respondents are between 41-50 years of age and 5.0% of respondents are over 50 years of age. In the view of the educational level, the majority of respondent were with a high school degree (29.3%), bachelor degree (48.2%) followed by a diploma degree (19.3%), and master degree (3, 2%). Finally, in term of the monthly income, 25% of them earned a monthly income between IDR3-3.9 million, 23,9% earned monthly income between IDR4 – 4.9 million, 29,6 % earned monthly income between IDR 5-5.9 million, 21,4% earned monthly income more than IDR6 million.

Respondents' perception

In this section, the perception of the respondents on the investigated variables is reported. The respondent perceived that IT customer acceptance, E-commerce knowledge, perceived ease of use and migrating intention to internet banking in a good category, indicated by a mean value of greater than 3.40 and it was statistical significance at the 1% level. Specifically the E-commerce knowledge showed the highest mean value of 4.00, followed by Migrating intention to mobile banking (3.88), Perceived Ease of Use (3.73) and IT Customer acceptance 3.69. The IT customer acceptance was perceived as the lowest mean value compare to other variables. This indicated that IT is still hard to be accepted and trusted among respondent who being targeted to migrate to mobile banking.

Measurement Model

To ensure the accuracy and consistency of the indicators in measuring the investigated variables, the study tested the validity and reliability of the indicators. Of the 20 indicators for measuring 4 investigated variables, all of them were found to be valid and reliable, as indicated by the 5% level of significance of each standardized loading factors of greater than 0.50. This showed 2 out of 20 indicators had a loading factors value less than 0.50 and had to be eliminated from the model. The rest could be used to measure the variables for further analysis. Subsequently, to ascertain the appropriateness of the estimated SEM, the study performed the goodness of fit test. Out of 10 goodness of fit indices tested, 6 indices were found to be a poor fit, so the model need to be improved to raise its fitness by using modification indices facility provided by Amos. Amos suggested to add covariance line between e6 and e7 since it has the highest MI score (129.627). There were 3 more covariance line added to the model based on the score of MI. They were the covariance line between e17 and e18, e19 and e 20, and between e17 and e20.

The following figure is the model after modification:

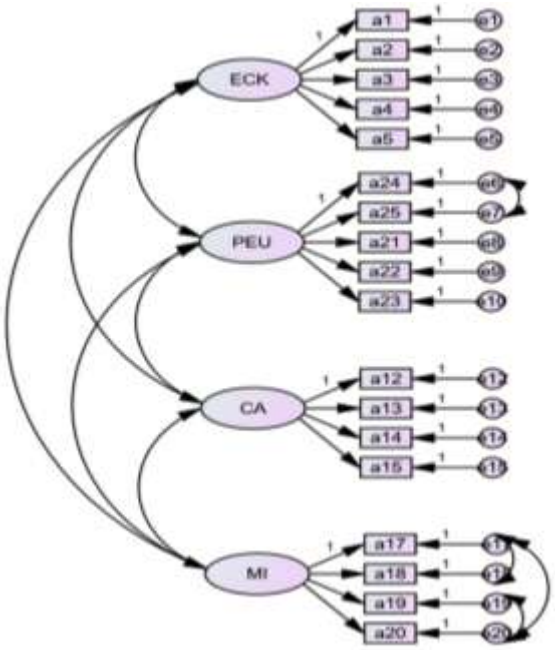

Figure 4. Measurement Model

Out of 10 goodness of fit indices tested, 7 indices were found to be a good fit, while the rest 3 were found to be marginal fit. The 4 marginal fit indices consisted of the Non-Centrality Parameter (NCP), FMIN and HOELTER, while the rest 6 good fit indices comprised the CMIN/DF, Goodness of Fit (GFI), Adjusted goodness of fit (AGFI), the Incremental Fit Index (IFI), the Root Mean Square Error of Approximation (RMSEA) , Akaike Information Criterion (AIC)and Expected Cross Validation Index (ECVI) . These are indicated by their indices which were above the cut-off value. Overall, the SEM equations estimated were found to be the good fit model. According to Verbeek (2012), it is hard to find all the goodness of fit indices meet all the goodness of estimated SEM, particularly as the size of the study sample is large, as the case of our study.

Direct effects of the E-commerce knowledge, perceived ease of use, IT customer acceptance on migrating intention to internet banking

Table 2 reported the main findings of direct effects of E-commerce knowledge, perceived ease of use, IT customer acceptance on migrating intention to internet banking in the province of Aceh, Indonesia.

Table 1 Regression Weight Structural Equation Model

			Estimate	S.E.	C.R.	P	Std Coeff.
CA	<---	ECK	.354	.073	4.877	***	.274
CA	<---	PEU	.327	.028	11.674	***	.280
MI	<---	CA	.326	.029	11.241	***	.425
MI	<---	ECK	.082	.049	1.682	.092	.082
MI	<---	PEU	.327	.028	11.674	***	.364

The following figure is the structural model to test direct hypothesis:

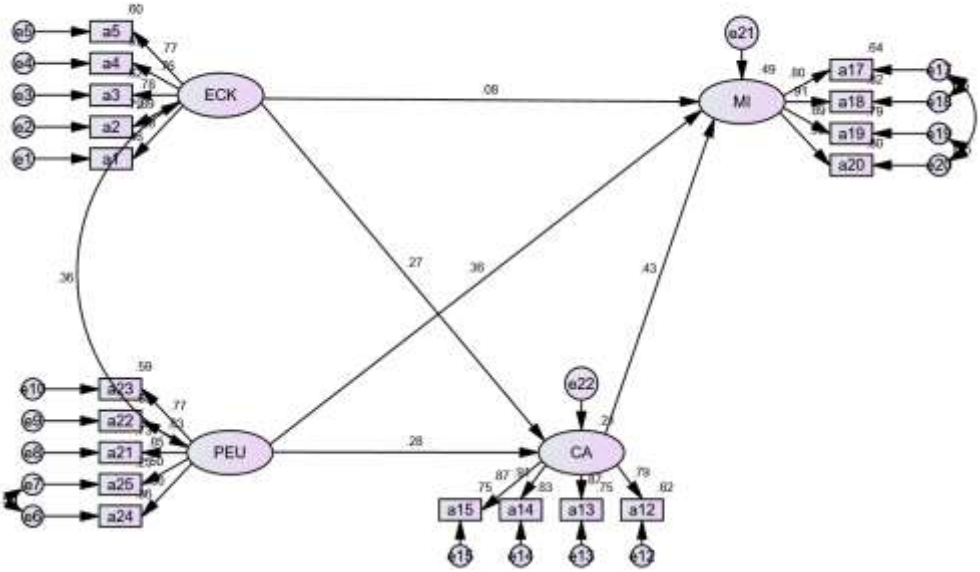

Figure 5: Structural Model

Direct effects of the E-commerce knowledge, perceived ease of use on IT customer acceptance

As observed from Table 2, the e-commerce knowledge and perceived ease of use were found to have a positive significant effect on the IT customer acceptance at the 1% level, respectively. The estimated value of .274 indicated that an increase by 1 unit in the level of e-commerce knowledge has contributed to an increase in the level of IT customer acceptance by 0.274 unit in the Likert scale. The higher level of the e-commerce knowledge, indicated by a better confidence to be able to use internet banking and believe that mobile banking application is useful, so having mobile banking give customer advantage over those who don't. Those indicators make the customer feel more knowledgeable to migrate and operate mobile banking. The estimated value of .280 indicated that an increase by 1 unit in the level of perceived ease of use has contributed to an increase in the level of IT customer acceptance by 0.280 unit in the Likert scale. The higher level of the perceived ease of use, indicated by the menu of mobile banking is easy to follow, the information could be find easily, user interface of the system clear and intuitive, user friendly and the system to be flexible to interact with.

Our finding of a significant effect of the E-commerce knowledge, perceived ease of use on IT customer banking acceptance in the province of Aceh, Indonesia is similar to the finding of the study by Wu, J. H., & Wang, S. C. (2005). The e-commerce knowledge and perceive ease of use are the main driver and the crown of migrating intention to mobile banking. Relying on the strength of their easy to use technology, the bank can easily influence more conventional bank customer to accept the technology of mobile banking and ultimately attract them to migrate to mobile banking. Therefore, both e-commerce knowledge and perceived ease of use of the mobile banking system played an important role in increasing size of mobile banking customers as their new captive market.

Direct effects of the E-commerce knowledge, perceived ease of use and IT customer acceptance on migrating intention to mobile banking.

As observed from Table 2, the e-commerce knowledge was found to have not significant effect on migration intention to mobile banking, while perceived ease of use and IT customer acceptance were found to have a positive significant effect on the migration intention at the 1% level.

The insignificant effect of e-commerce knowledge on migration intention into mobile banking in the province of Aceh, Indonesia is contradicted to the finding by Tariq, M. I., et al. (2013) who documented the significant influence of product knowledge on purchase intention of 362 individuals' consumer to explore the factors affecting purchase intentions among FMCG consumers of Pakistan. A small scale of Bank in the province of Aceh, Indonesia as compared to other well-established large scale banking institutions nationwide along with low internet penetration level are believed to be the main contribution for the insignificant effect of the customer knowledge on their migration intention level to mobile banking.

The estimated value of .364 indicated that an increase by 1 unit in the level of perceived ease of use has contributed to an increase in the level of migration intention to internet banking by 0.364 unit in the Likert scale. The higher level of the perceived ease of use, indicated by an easy to follow, find the information easily, user interface of the system clear and intuitive, user friendly and the system to be flexible to interact with have caused more conventional bank consumers convert to mobile banking. The estimated value of .425 indicated that an increase by 1 unit in the level of IT customer acceptance has contributed to an increase in the level of migration intention to internet banking by 0.425 unit in the Likert scale. The higher level of the customer acceptance, indicated by keep track of my transaction records transfer payment easily, do my financial matters anywhere and anytime., easier to get information my saving account balances and useful in managing my bank account have caused more conventional bank consumers do migration to mobile banking.

Our finding of a significant effect of the perceived ease of use and IT customer banking acceptance on migration intention to mobile banking in the province of Aceh, Indonesia is similar to the finding of the study by Davis, F. D. (1989) and also Martins, C., et al. (2014). The perceive ease of use and customer acceptance are the main driver of migrating intention to mobile banking. Relying on the strength of their easy to use technology, the bank can easily influence more conventional bank customer to accept the technology of mobile banking and ultimately attract them to migrate to mobile banking. Therefore, both perceived ease of use of the mobile banking system and customer acceptance played an important role to attract more conventional customer to mobile banking product.

In term of the magnitude effect, the customer acceptance is found to be the most dominant factor in affecting the intention level of bank customer to convert to mobile banking. Specifically, an increase in a 1 unit of perceived ease of use and customer acceptance have contributed to an increase in the level of intention migration to mobile banking by 0.364 and .425 unit in the Likert scale, respectively. This further shows the important of customer acceptance to determine the conventional bank customer switch to the mobile banking system.

The significant effects of all these variables on the mobile banking adoption intention are supported by many previous studies. For example, Davis, (1989) found a positive influence of perceived ease of use to customer acceptance. Buchnowska, D. (2011) documented a positive significant effect of e-commerce knowledge on migration intention; and Foon, Y. S., & Fah, B. C. Y. (2011) found a positive influence of perceived ease of use on mobile banking adoption intention. Finally, Venkatesh, V., & Bala, H. (2008) found a significant positive effect of customer acceptance on mobile banking adoption intention.

Mediating effects of IT Customer Acceptance on the relationships between E-commerce knowledge and perceived ease of use on migrating intention to mobile banking.

Verification testing continued with indirect testing using Bootstrapping Method. There are two indirect effects found in this research model, namely the influence of e-commerce knowledge on migrating intention to mobile banking through customer acceptance and the effect of perceived ease of use on migrating intention to mobile banking through customer acceptance.

Table 2. Mediating Effect Test

Description	MI
ECK (Lower Bound)	0.073
ECK (Upper Bound)	0.166
ECK (Standardized Indirect Coefficient)	0.117
PEU (Lower Bound)	0.084
PEU (Upper Bound)	0.151
PEU (Standardized Indirect Coefficient)	0.119

ECK: e-commerce knowledge, PEU: Perceived ease of use, MI: Migration intention to mobile banking

It is seen that the coefficient of the lower bound towards the upper bound does not exceed the zero point, so it can be said that e-commerce knowledge influences the migrating intention to mobile banking

through customer acceptance. Because indirectly the effect of e-commerce knowledge on migrating intention to mobile banking through customer acceptance has a significant effect, while directly the impact is not significant, then the role of variable customer acceptance here is full mediating. The magnitude of indirect influence of e-commerce knowledge on migrating intention to mobile banking through customer acceptance is 0.117, which means that on a Likert scale if there is an increase of 1 unit of e-commerce knowledge will increase migrating intention to mobile banking through Customer acceptance by 11.7%

It is seen that the value of the lower bound coefficient towards the upper bound does not pass through the zero point, so it can be said that the perceived ease of use has a significant effect to the migrating intention to mobile banking through customer acceptance. Because both directly and indirectly the effect of perceived ease of use on migrating intention to mobile banking through customer acceptance is significant, the role of customer acceptance here is partial mediating.

The indirect effect of perceived ease of use on migrating intention to mobile banking through customer acceptance is 0.119, which means that on a Likert scale if there is an increase of 1 unit perceived ease of use will increase migrating intention to mobile banking through customer acceptance by 11.9%

In addition, our finding on the significant indirect effect further confirmed our earlier finding from the direct effect of an exogenous variable on endogenous variable where the variable of perceived ease of use was found to be the crucial determinant in enhancing the intention of bank customer to convert to mobile banking.

This further indicates the pivotal role of human resources with higher skills to promote the BPRs' competitive advantage and their performances. The BPRs should be able to enhance and combine various business skills and integrate them into the BPRs' business strategy in accordance with technological advancement. The BPRs should enhance their potential access to a broad range of markets through online and make it difficult for their competitors to imitate [28]. The improvement of core competency would contribute towards the competitive advantage of the BPRs and finally their performances.

Moderating effects of age as a control variable to see the different between old and millennial generation in responding to bank offers to migrate to mobile banking

In this final section, a multi-group moderation hypothesis will be discussed between customers who are relatively old, ie over 35 years old and those who are still under 35 years old. So age is used as a control variable to see if there is a significant difference between those over 35 year-old and those under 35 year-old.

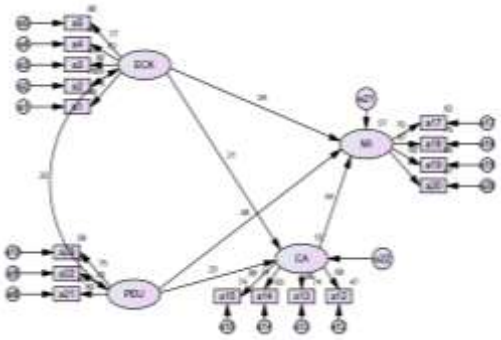

Figure 6. Structural model for Young Group

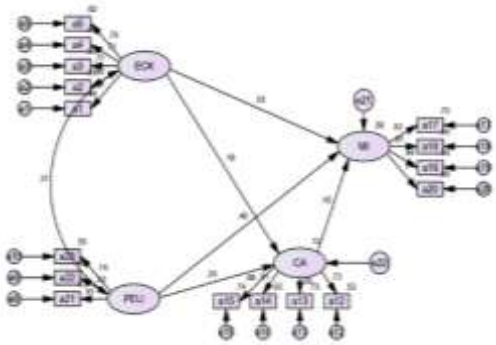

Figure 7. Structural model for Old Group

Table 3. Model Comparison

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural weights	13	13.087	.441	.003	.003	-.006	-.006

Table 4 illustrates the different test between young and old groups. The p value comparison model is = 0.441> 0.05, so it can be concluded that there is no significant difference between young and old age group in responding the proposed offer by the bank to switch to mobile banking. In other words the marketing strategy undertaken to attract more convention customer to convert to the mobile banking between those who are over 35 years and those who are under the age of 35 are relatively the same.

V. Conclusion

This study empirically explored the direct effect of e-commerce knowledge and perceived ease of use on customer acceptance of IT and Migration intention to mobile banking in the province of Aceh, Indonesia. It also attempted to investigate the indirect effect of the e-commerce knowledge and perceived ease of use on migration intention to mobile banking through customer acceptance of IT. 200 bank customer across Aceh Besar district and Banda Aceh city in the province of Aceh, Indonesia were selected as the respondents of the study on the basis of stratified random sampling technique. Using the structural equation modelling (SEM) analysis, the study found that, with the exception of the effect of e-commerce on migration intention, all other direct hypothesis have a significant effect on migration intention to mobile banking. The e-commerce knowledge and perceived ease of use were documented to positively and indirectly affect the migration intention. Additionally, the study found a full significant mediated effect of customer acceptance on the relationship between e-commerce and migration intention, while the role of customer acceptance is a partial significant mediated effect on the relationship between perceived ease of use and migration intention to mobile banking.

To further provide more comprehensive and robust empirical findings of the study, it also have been test the moderation role of age as a control variable to see the difference between over and under 35 years old. Since the p value comparison model is higher than cut off value, it can be concluded that there is no significant difference between young and old age group in responding the proposed offer by the bank to switch to mobile banking.

Future studies on this issue are suggested to cover more respondent across all Aceh province. It also need to be compare between those customer who already used mobile banking and the customer who don't use the system yet, in order to get more insight comprehension of the behaviour of those two groups.

References

[1.] Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, *50*, 418-430.

[2.] Bhattacherjee, A. (2000). Acceptance of e-commerce services: the case of electronic brokerages. IEEE Transactions on systems, man, and cybernetics-Part A: Systems and humans, 30(4), 411-420.

[3.] Buchnowska, D. (2011, September). Customer knowledge management models: Assessment and proposal. In *EuroSymposium on Systems Analysis and Design* (pp. 25-38). Springer, Berlin, Heidelberg.

[4.] Cloete, E., Courtney, S., & Fintz, J. (2002). Small Businesses' Acceptance and Adoption of e-Commerce in the Western-Cape Province of South-Africa. *The Electronic Journal of Information Systems in Developing Countries*, *10*(1), 1-13.

[5.] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.

[6.] Davis, F. D. (1989). *A Technology Acceptance Model for Empirically Testing New End-User Information Systems Theory and Results* (Doctoral dissertation, Doctoral Dissertation, Sloan School of Management, Massachusetts Institute of Technology, 1986, "Perceived Usefulness, Ease of Use, and User Acceptance of Information Technology," MIS Quarterly, 13, 3).

[7.] EBA Report (2018) European Banking Authority Report on the Impact of Fintech on Incumbent Credit Institutions' Business Models

[8.] Foon, Y. S., & Fah, B. C. Y. (2011). Internet banking adoption in Kuala Lumpur: an application of Unified Theory of Acceptance and Use of Technology (UTAUT) model. International Journal of Business and Management, 6(4), 161.

[9.] Kleijnen, M., Wetzels, M., & De Ruyter, K. (2004). Consumer acceptance of wireless finance. Journal of financial services marketing, 8(3), 206-217.

[10.] Martins, C., Oliveira, T., & Popovič, A. (2014). Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, *34*(1), 1-13.

[11.] Püschel, J., Afonso Mazzon, J., & Mauro C. Hernandez, J. (2010). Mobile banking: proposition of an integrated adoption intention framework. International Journal of bank marketing, 28(5), 389-409.Purpose

[12.] Sharda, N. (1998). Multimedia information networking. *AMCIS 1998 Proceedings*, 398.

[13.] Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. Decision sciences, 39(2), 273-315.

[14.] Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, *46*(2), 186-204.

[15.] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

[16.] Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information & management*, *42*(5), 719-729.

[17.] Yu, C. S. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model. Journal of electronic commerce research, 13(2), 104.

[18.] Zhang, Z. (2011). Customer knowledge management and the strategies of social software. *Business Process Management Journal*, *17*(1), 82-106.

[19.] Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. Computers in human behaviour, 26(4), 760-767.