Journal of Theoretical and Applied Information Technology
15th August 2022. Vol.100. No 15

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

MOBILE BANKING RESISTANCE: EVIDENCE FROM INDONESIA

KHADIK WINARTO RIDWAN[1] , SFENRIANTO[2]

[1]Information Systems Management Department, BINUS Graduate Program- Master of Information Systems Management Bina Nusantara University Jakarta, Indonesia 11480.

[2]Information Systems Management Department, BINUS Graduate Program- Master of Information Systems Management Bina Nusantara University Jakarta, Indonesia 11480

E-mail: [1]khadik.ridwan@binus.ac.id, [2]Sfenrianto@binus.edu

ABSTRACT

This research aims to examine the influence of functional barriers consisting of usage barrier, value barrier and risk barrier and psychological barrier consisting of tradition barrier and image barrier and the influence of demographic factors on Mobile Banking service resistance in Indonesia. Because it is very rare for research on mobile banking resistance to be carried out, with research conducted in Indonesia, which is the top five countries with a population in the world with 270 million people, this is expected to help provide an up-to-date picture of bank's customers resistance to mobile banking services. The study was conducted in Jakarta on 241 successfully collected respondents who were customers of the biggest prive bank in Indonesia. The research method uses Partial Least Sequares (PLS) with SmartPLS application. The results showed that risk barrier was a single factor that affects Mobile Banking service resistance, while usage barrier, value barrier, tradition barrier and image barrier have no effect on Mobile Banking service resistance. The conclusion is that the results of this research provide an illustration that the community no longer experiences usage barriers, value barriers, tradition barriers and image barriers but still feels that risk factors are the main barriers.

Keywords: *Mobile Banking Services, Innovation Resistance, Functional Barrier, Psychological Barrier, Demographic Factor.*

1. INTRODUCTION

Nowadays the worl of banking industry is aggresively promoting it's latest innovation product so called Mobile Banking, whisch is a banking transaction services using smartphones. This means a bank's customer is most likely uses Internet Banking and Mobile Banking at the same time.

In Indonesia the value of Internet Banking transactions reached IDR 5.617 trillion[1]. One of the bigest private bank - Bank BCA controls almost the entire value of Internet Banking transactions with a total of IDR 5.349 trillion. Meanwhile, according to Ferdiansyah[2], as of December 31, 2019 at Bank Central Asia (BCA), the portion of customers who transact at branch offices is 2%. The remaining 44% use Mobile Banking services, 29% internet banking, and 24% automated teller machines (ATM).

The data above indicates that Mobile Banking transactions with all their convenience and speed still cannot completely replace the existing services, such as ATM and Internet Banking. Basically the Mobile banking service is part of the internet banking service that is accessed via mobile phones where almost all types of services at ATMs and internet banking are also available on the Mobile Banking service, so that Mobile banking services should be able to replace ATM and internet banking services. In other words, the statistical data above reflects that the total volume of Mobile Banking transactions is still smaller than the combined number of ATM transactions and web-based internet banking transactions (44% : 53%).

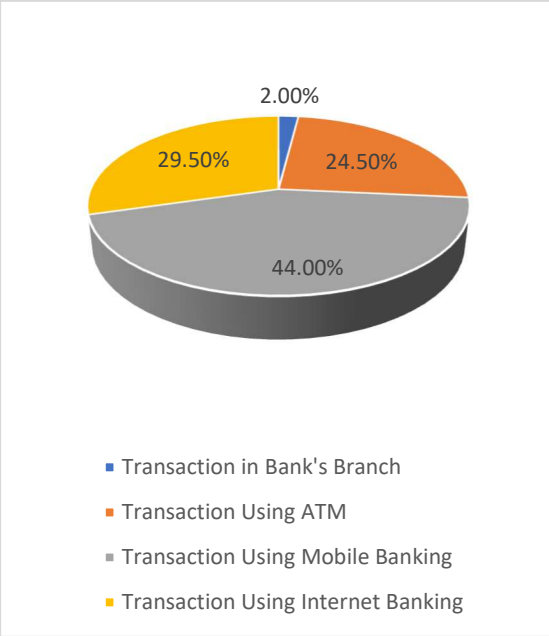

Figure 1 Volume of Banking Transaction

This indicates that there is a strong indication of the level of customer resistance to Mobile Banking services. This is the reason to conduct research related to resistance to Mobile Banking sevices. In this resarch the demographic factor aspecially customer's age will be examined as moderating factor. The main reason is because Mobile Banking application which runs in smart mobile phone may be too difficult to use for eldery, compared to younger generations. This paper is divided into five sections. The second section describes about Mobile Banking services, innovation resistance theory, functional barrier, psychological barrier, the effect of demographics on the Mobile Banking acceptance model and the related research that been done previously. The third sections present research methodology which describes research model, data collection method, hypothesis, samples, validity test, analysis method and hypothesis testing. The fourth sections present and interprete the results and discussions, while the fifth section gives a conclusion..

2. LITERATURE REVIEW

Below are the terminology and its literatures related to the research's topic.

2.1 Mobile Banking Services

It is a banking service where customers perform banking financial transactions using mobile-phone media[3]. The simplest activity could be the customer receiving transaction notifications from the bank or it could be complicated transactions such as sending money abroad. The advantages of Mobile Banking include that customers can transact from anywhere and anytime provided that the mobile-phone media used is connected to the internet.

2.2 Innovation Resistance Theory

Mostly the term "resistance" has been associated with technological innovation, especially in relation to consumer response to technological innovation. According to Ram[4], resistance is a normal consumer response to an innovation and becomes something that must be lived before the technology is adopted. Resistance to an innovation occurs in both successful and unsuccessful innovations. The above opinion is corroborated by Kuisma et al. who clarified the concept of resistance by distinguishing it from the concept of rejection[5]. If "rejection", according to him, is a form of passive behavior that results in the final decision not to adopt or abandon an innovation, then "resistance" is an active behavior that appears in every adoption process, but does not always result in rejection of the innovation[5].

2.3 Functional Barrier

Functional Barrier consist of three types, so called usage barriers, value barriers and risk barriers[6]. The descriptions are as follow:

2.3.1 Usage Barrier(UB)

Usage barriers will arise if the innovation is not in accordance with the user's habits, so that more effort is needed to learn and take advantage of the innovation[4].

2.3.2 Value Barrier(VB)

Whenever a product or a service is launched but it runs slower or takes longer when it is compared to other channel with the same services, this is so called value barrier[4]. Users are unable to identify the relative benefit that they expect to get from using the new technology. The relative advantage will be felt if the benefits received are proportional to the costs incurred[4][7]. When customers get significant benefits of using Mobile Banking services, customers tend to adopt Mobile Banking services even though the perceived need is not too significant[6]. In another situation, when customers face the situation where Mobile Banking services are much more expensive than other banking services, then customer resistance to Mobile Banking services will be happening[7].

2.3.3 Risk Barrier(RB)

The risk barrier is related to the level of risk possibly encountered by the customer[4]. The more

possible the perceived risk, the more resistance to use Mobile Banking services[4][8]. In Mobile Banking services, the risk encountered by customers can be in the situation where customer fail to complete bankingb transaction because the smartphone suddenly turns off. Another fact is, smartphones are lost much more often than desktop computers or laptops. Thus trigerring concern for customers about the possibility of the loss of smartphones and bank accounts being misused illegally by irresponsible people[9].

2.4 Psychological Barrier

Psychological barriers consist of two types, namely tradition barriers and image barrier[6]. The details are as follow:

2.4.1 Tradition Barrier(TB)

Tradition barriers happen when an innovation causes changes to the customer's traditions or daily practice[6]. When the daily routine is considered unchangeable by customers, then barriers to tradition will still to happen. Some customers prefer to perform transactions by coming directly to the bank's branch rather than using Mobile Banking services. Customers think that social interaction is more important[9]. Some customers also refuse to use Mobile Banking services because they feel convenience to using existing ATMs[7].

2.4.2 Image Barrier(IB)

The image barrier is a person's perception of an innovation[6]. To perform a research on innovation resistance, images will be used to estimate a product[10]. Image barriers are positive or negative perceptions of a product, company, brand, country of origin, or difficulty in using new technology, which may be an impediment to the acceptance of innovation in this case is Mobile Banking services[8]. In term of technological innovation, the image barrier may be started from a negative perception of the new technology[4].

2.5 Demographic Factor

In addition to functional and psychological barriers[8], resistance is also seen in terms of demographic characteristics such as gender, age, level of education and income of customers, as in previous research[5].

Muhammadi in developing an acceptance model of Mobile Banking involved both innovation resistance constraints and demographic factors[8][9]. The demographic characteristics described above, several other factors have also been investigated for their influence on resistance to innovation in general and resistance particularly to Mobile Banking. These factors include; experience of using mobile services, the type of mobile device used, and who pays the credit bill.

2.6 Previous Research

Most of the research conducted related to mobile banking services is about the reasons behind the successful acceptance or adoption of mobile banking services and not much research has been done to examine the resistance of bank customers to mobile banking services so there is not much information about the true causes of bank's customers resistance to mobile banking services. Below are the research that have previously conducted in conjuction with costomer's bank resistance to mobile banking services.

According to Aristana[10], he found four accepted hypotheses. Barriers to use were found to have an effect on resistance. This shows that customers still find it difficult to use Mobile Banking services. The difficulties experienced by customers because they consider Mobile Banking services to be complicated and inconvenient to use. The perceived difficulty is the small size of the smartphone screen and keypad, making it difficult for customers to make transactions. This can be compared to using an ATM or internet banking which has a large enough screen, which makes it easier for customers to make transactions. The resistance value was found to have an effect on resistance. This means that customers perceive that Mobile Banking services are not profitable. Although banks do not charge fees for every transaction made, cellular operators still charge fees for every transaction made by customers. The amount of fees charged varies, depending on the cellular operator used. Risk barriers were found to have an effect on resistance. This indicates that using Mobile Banking services is still considered more risky than other banking services. Possible risks include the risk of losing your PIN, failing to make a transaction or making a mistake in transferring funds. In addition, customers are also worried that their smartphone is lost or stolen and that their bank account is misused by irresponsible people. Social influence was found to have an effect on resistance. Negative views or opinions regarding Mobile Banking services from those closest to the customer (friends or family) can influence the customer's decision not to use Mobile Banking services.

Meanwhile, according to Wulandar[11] in general, the results of his research got three important conclusions. First, the perception of respondents who have become customers of Islamic

banks regarding technology-based services at Islamic banks is better than those who have not become customers. Second, the perception of respondents who adhere to Islam regarding technology-based services in Islamic banks is also better than respondents who adhere to religions other than Islam. Third, the perception of female respondents regarding the usefulness and credibility of technology-based services in Islamic banks is better than the perception of male respondents. This is consistent with the research of Wendy and Cheris[[12] which found differences in gender ratings in some contexts for the use of bank branches, ATMs, telephones and the internet. This conclusion has several managerial implications. The first is that it is very important to approach customers who are currently owned by Islamic banks or who have been customers because of the tendency for higher perceptions of technology-based services. Second, the potential to expand the market is in the group of prospective customers who are Muslim and female customers.

(Migliore at al,2022)[13] Examined the adoption of mobile banking services in China and Italy, and found that only tradition barriers are obstacles in adopting mobile banking services.

(Kyari and Al-Huthi, 2022)[14] did investigate bank's customers in Nigeria, with the conclusion that bank customers in the country are still not willing to adopt mobile banking services with major barriers to compatibility, trialability and perceived risk or risk barriers.

Another researchers[15] obtained the following research results: 1. Attitude as a moderating factor significantly influences the adoption of Mobile Banking 2. Subjective norm, there is no significant influence in the adoption of Mobile Banking. 3. Perception of Behavioral Control, positively influences the adoption of Mobile Banking. From the results of the research above, there are two of the three factors that positively influence the adoption of Mobile Banking, namely Attitude and Perception of Behavioral Control.

As mobile phone technology is now growing rapidly and the number of users is also increasing, mobile phone is now much easier to use, have much more memory capacity, so that people are getting used to using mobile phone including to perform banking monetary transactions. This fact should be expected that the barriers that previously occurred in the use and perception of Mobile Banking as found by researchers several years ago have changed greatly.

This is the main reason to perform research using standard variables stated by Ram and Sheth[6], because it is very possible that the mobile phone user community has a better perception and no longer experience obstacles in its use including in the use to transact financial banking. Also during this time it is very rare to conduct research on the influence of age and gender of customers in terms of resistance to the innovation of Mobile Banking services. So in this study was tested on five main barriers according to Sheth and a demographic factors, whisch is gender over innovation review toward Mobile Banking.

3. METHODOLOGY

This research will use primary data, namely data taken from respondents by sending questionnaire invitations to prospective respondents through internet media or giving directly to prospective respondents to be filled out. In addition, the questionnaire will also be distributed through social media to be filled out by social media users. This study will look for the main factors that hinder the adoption of innovations technology on Mobile Banking. The identification of influencing factors will be investigated using the available literature review. And the hypotheses of the factors will be taken from various reference sources and forum discussions and will become a research model. The research model will then be tested empirically in the form of hypothesis testing with data obtained from questionnaires.

3.1 Research Model

This study adopted a model with a theoretical approach to Innovation Resistance Theory (IRT)[6]. IRT offers a theoretical framework for customer resistance[8] in which this theory will help in understanding the resistance-oriented behavior of customers. Customer resistance can be defined as behavior that appear due to rational thinking and decision making regarding the adoption and use of an innovation caused by possible changes brought about by eliminating existing features.

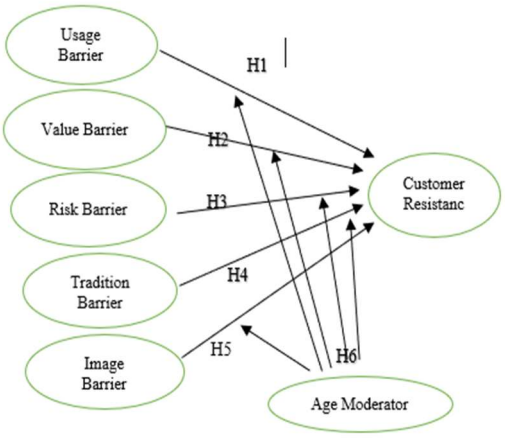

Figure 2 Research Model

3.2 Data Collection Method

Collecting data in this study using a questionnaire. To measure the independent variables of usage barrier, value barrier, risk barrier, tradition barrier and image barrier, an instrument with a 5 point Likert scale was used which was developed from the instrument used by Lukkanen[4]. For variables Gender, Age and Education are measured in nominal terms because they are categorical variables based on certain groups. Data were collected using an online questionnaire on a popular online survey website. To prevent multiple responses from a single respondent, a restriction was set to only allow the questionnaire 240 Examining the Functional Barriers, Psycological Barrier in Mobile Banking Adoption in Indonesia to be taken once from the same IP address. We also set a filter to ensure that only individuals who use a Mobile Banking application to perform transactions could participate in the survey. Respondents were invited to participate by sending them the link to the survey by e-mail, text and chat messages; invitations were also posted on several social media pages. During a 6-week period, 241 responses were obtained.. Table 1 outlines the sample characteristics.

3.3 Hypothesis Development

Ram and Sheth[6] argue that usage barriers arised when an innovation was not in accordance with existing work practices, practices or habits. This is in accordance with the concept of ease of use in the Technology Acceptance Model (TAM) by Davis[16] in Laukkanen[4] which was defined as a minimal level of effort to use an innovation. In the context of Mobile Banking, some bank customers considered bill payment through Mobile Banking difficult and time consuming because cellular phone devices can only process a limited amount of information so that not all bills could be seen[4]. Based on this discussion, a hypothesis are defined as follow:

H1: UB has a significant effect on Mobile Banking resistance.
Brown[17] in Laukkanen[5], shows that the higher the perceived benefits offered by Mobile Banking compared to other services, the higher the adoption of Mobile Banking. However, if Mobile Banking does not offer advantages over alternative services, consumers will tend to be resistant to changing their behavior.

H2: VB has a significant effect on Mobile Banking resistance.
Risk barrier related to the risk level brought by innovation[6]. Uncertainty in innovation will always be there, therefore, innovation always carries a certain degree of perceived risk. In addition, the risk can also be physical which causes losses. Risk can be functional due to innovations that do not work as expected[6]. In the context of Mobile Banking, the risk perceived by consumers can be in the situation where cutomer failed to complete banking transactions due to the possibility of low battery power or lost network connections. In addition, security risk is a crucial issue for consumers to use Mobile Banking services.

H3 : RB has a significant effect on Mobile Banking resistance.
Tradition barriers mainly refer to changes in innovation that result in routines. If the routine is important to consumers, then resistance tends to be high. In the context of Mobile Banking, this obstacle can arise from the customer's strong desire to interact with teller[18], in[4]. Customers' preferences to interact with tellers arise from the need for social interaction[4].

H4: TB has a significant effect on Mobile Banking resistance.
As for the image barrier, it is associated with the origin of the innovation such as product class and company brand. Negative perceptions of a company's product class or brand can also increase resistance[6]. In the case of Mobile Banking, the perception of the complexity of Mobile Banking technology for some consumers will form a negative image of Mobile Banking.

H5: IB has a significant effect on Mobile Banking resistance.

Addionally to the resistance constraints proposed by Ram and Sheth above[8], resistance is also seen from demographic characteristics as studied by Suoranta[19], Kuisma[5], Laukkanen and Pasanen[5], Laukkanen and Cruz[20], Naseri and Elliot[21] and Sorournejad[22]. Regarding technological innovation, gender is the most studied demographic characteristic. Research conducted by Laukkanen and Pasanen[4], Laukkanen and Cruz[20] and Sorournejad[22] shows that the level of Mobile Banking users of men is much greater than that of women.

H6: Age has a significant moderating effect to usage barrier, value barrier, risk barrier, tradition barrier and image barrier toward Mobile Banking resistance.

3.4 Sample

The study uses a probabilistic sampling technique, namely the collection of information from members of the population where each member of the population has the same opportunity. The data collection technique used in this study is a questionnaire which is a technique or method of collecting data in the form of a list of questions to be answered by respondents. In terms of the research sample size used, as per 2019 the bank has 22 million customer, the Slovin formula can be used to calculate the size of the sample. With 6.5% error tolerance Slovin formula giving 240 sample that to be collected.

3.5 Validity Test

The average correlation between items is obtained by taking all the items on the test and finally using the average of all the correlation coefficients. In other words, the instrument is split as many as the number of items then the results of the correlation coefficients are combined to get the average. This technique is popular with Cronbach's Alpha. The work to find the validity of a measuring instrument is called validation. The principle of validation is to compare the results of factor measurements with a criterion, a measure that has been deemed valid to indicate the factor in question. So, for example, a measuring device wants to investigate the work accuracy factor, it must first take a criterion that is considered to reflect a work accuracy. Through these criteria, then the results of the measurement of the work accuracy factor are highlighted. If the results of the work accuracy factor measurement show the amount of work accuracy in accordance with the criteria, then the measuring device is considered valid. An item is considered valid at a significance level of 0.05.

3.6 Reliability Test

This test was conducted to test the stability and consistency of the instrument in measuring variables[23] The reliability of the instrument was tested using the construct reliability formula as follows:

$$r_{11} = \left(\frac{n}{n-1}\right)\left(1 - \frac{\sum \sigma_t^2}{\sigma_t^2}\right)$$

Where:

r11	= level of reliability
∑∂t2	= number of score variance per item
∂t2	= total variance
n	= number of question to be tested

If the alpha value > 0.70 means that the reliability is sufficient, while if the alpha > 0.80 it indicates that all items are reliable and all tests consistently have strong reliability.

3.7 Analysis Method

The data analysis technique in this study uses binary logistic regression, also known as logistic regression. Binary logistic regression is used to model the relationship between the independent variable and the dependent variable in the form of binary/dichotomous data. The independent variables can be in the form of nominal, ordinal, interval, or ratio data types. This is in line with the opinion[24] which states that the independent variable can be a mixture of discrete (nominal) and continuous (ordinal, interval, or ratio) variables. The independent variables in this study are a combination of independent variables with interval data types, namely resistance constraints and independent variables of demographic factors with categorical nominal data types. While the dependent variable of resistance to mobile banking innovation is the status of using mobile banking services with a binary/dichotomous size, namely 0 for resistance and 1 for no resistance.

3.8 Variables and Indicators

The effect of the independent variable on the dependent variable in the Binary Logistics Regression Analysis was tested by comparing the p-value on the Wald statistic with the significance level used, which was 0.05 1. If p-value > 0.05, then the alternative hypothesis is rejected 2. If the p-value <0.05, then the alternative hypothesis is accepted.

Variable	Indicator
Usage Barrier (UB)	I am resistance to Mobile Banking as Mobile Banking Service is not easy to use
	I am resistance to Mobile Banking as Mobile Banking Service is not convincing
	I am resistance to Mobile Banking as Performing transaction using Mobile Banking Services takes too long to complete
Value Barrier (VB)	I am resistance to Mobile Banking as the benefit of using Mobile Banking is lesser compare to the cost of the smartphone price
	I am resistance to Mobile Banking as the benefit of using Mobile Banking is worst than the other channel such as ATM or Internet Banking Web Based
	I am resistance to Mobile Banking and I am reluctant to use Mobile Banking as there will be no people helping me if I do wrongly
Risk Barrier (RB)	I am resistance to Mobile Banking and I am reluctant to use Mobile Banking as there is a risk if losing my smartphone it can be used by other people illegally
	I am resistance to Mobile Banking and I am reluctant to use Mobile Banking as there is a risk if losing my smartphone I cannot do any transaction until I get the replacement
	I am resistance to Mobile Banking and I am reluctant to use Mobile Banking using public WIFI as there is a risk of data leaking
Tradition Barrier (TB)	I am resistance to Mobile Banking as I enjoy performing Banking Transaction in face to face basis
	I am resistance to Mobile Banking as I prefer performing face to face transaction as I can get in touch with bank's staff
	I am resistance to Mobile Banking as I prefer performing face to face transaction as I will get a hard copy receipt
Image Barrier (IB)	I am resistance to Mobile Banking as Mobile Banking Services does not show the importance of the services
	I am resistance to Mobile Banking as Mobile Banking Services does not show the popularity of the services
	I am resistance to Mobile Banking as Mobile Banking Services does not show as a sophisticated services
Customer Resistance (CR)	I am resistance to Mobile Banking as Mobile Banking Application is not installed in my smartphone
	I am resistance to Mobile Banking as Mobile Banking Application is installed in my smartphone but I only used if there is no other option
	I am resistance to Mobile Banking as Mobile Banking Application is installed in my smartphone but I only used for non monetary transaction

4. RESULTS AND DISCUSSIONS

4.1 Results

The conceptual research model was evaluated with Partial Least Squares – Structural Equation Modeling (PLS-SEM), using Smart PLS 3 software. Two-step structural equation modeling was employed; it was first evaluated the measurement model, and then conducted the structural model evaluation.

Table 1 Sample Characteristic

No	Measure	Item	Frequency	%
1	Gender	Male	121	50
		Female	120	50
2	Age	< 20 Years	53	53
		20 - 29 Years	145	60
		30 - 39 Year	25	10
		40 - 49 Years	13	5
		>50 Years	5	2
3	Education	Master/Phd	13	5
		Under Graduate	87	36
		High School	141	59

4.1.1 Measurement Model

The measurement model was assessed by evaluating the reliability of the measurement items and the composite reliability of the constructs. As shown in Table 3, all item loadings are above the threshold value of 0.708, which indicates they are acceptable[25]. The composite reliability values of all the constructs are also above the threshold value of 0.708, which also indicates their acceptability[25].

Table 2 Construct Reliability and Validity

	CA	rho_A	CR	AVE
CUSTOMER RESISTANCE	0.657	0.735	0.848	0.738
IB->MF->CR	1.000	1.000	1.000	1.000
IMMAGE BARRIER	1.000	1.000	1.000	1.000
MODERATING FACTOR	1.000	1.000	1.000	1.000
RB->MF->CR	1.000	1.000	1.000	1.000
RISK BARRIER	0.728	0.730	0.846	0.648
TB->MF->CR	1.000	1.000	1.000	1.000
TRADITION BARRIER	0.839	2.273	0.873	0.701
UB->MF->CR	1.000	1.000	1.000	1.000
USAGE BARRIER	0.841	0.900	0.902	0.753
VALUE BARRIER	0.827	1.073	0.913	0.841
VB->MF->CR	1.000	1.000	1.000	1.000

The validity of the measurement model was evaluated by assessing the convergent validity and discriminant validity of the constructs. Table 3 shows the Average Variance Extracted (AVE) value

of each construct, which are all above the threshold value of 0.5[25], ensuring the convergent validity of all the constructs in the model. The discriminant validity was assessed using the "Heterotrait-monotrait" ratio of correlations (HTMT) which is a measure of similarity between latent variables. It showed that the HTMT is clearly smaller than one, therefore discriminant validity can be regarded as established.

Table 3 Heterotrait-Monotrait Ratio (HTMT)

	CR	IB	RB	TB	UB	VB
Customer Resistance (CR)						
Image Barrier (IB)	**0.257**					
Risk Barrier (RB)	0.305	**0.468**				
Tradition Barrier (TB)	0.105	0.518	**0.339**			
Usage Barrier (UB)	0.171	0.423	0.124	**0.710**		
Value Barrier (VB)	0.191	0.494	0.277	0.699	**0.948**	

As shown in the above table the Cronbach's Alpha vale are >= 0.7 and the Average Variance Extracted (AVE) are > 0.5. These mean that there are close relationship between variables and indicators.

4.1.2 Structural Model Evaluation

Prior to evaluating the structural model, we checked the collinearity of the constructs, as suggested by[25]. Table 5 shows collinearity statistics value (VIF) of the construct relationships in the structural model. All are below the threshold value of 5, which indicates that they are acceptable.

Table 4 Structural model VIF values

CONSTRUCT	CUSTOMER RESISTANCE
CUSTOMER RESISTANCE	
IB->MF->CR	1.571
IMMAGE BARRIER	1.581
MODERATING FACTOR	1.023
RB->MF->CR	1.364
RISK BARRIER	1.367
TB->MF->CR	2.082
TRADITION BARRIER	2.087
UB->MF->CR	3.080
USAGE BARRIER	3.074
VALUE BARRIER	2.938
VB->MF->CR	2.931

Figure 3 shows the coefficients of determination (R2 values) and adjusted R2 of the endogen constructs in the structural model. R2 values represent the amount of variance explained by the constructs in the structural model[25]. The results show that the model explains 14 % variance of resistance using mobile banking, providing strong support for our proposed model.

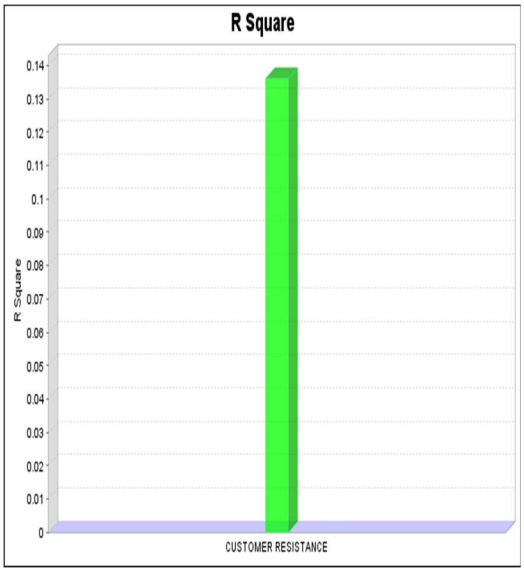

Figure 3 – R Square

Table 5 presents a summary of the hypothesis testing. The statistics confirm that all the hypotheses are supported at the 5% significance level.

Tabel 5 Hypothesis Test

Hyp	Path	Path Coeff	P Val	Accepted
H1	USAGE BARRIER -> CUSTOMER RESISTANCE	-0.225	0.064	No
H2	VALUE BARRIER -> CUSTOMER RESISTANCE	0.16	0.251	No
H3	RISK BARRIER -> CUSTOMER RESISTANCE	-0.191	0.036	Yes
H4	IMMAGE BARRIER ->	-0.136	0.124	No

Hyp	Path	Path Coeff	P Val	Accepted
	CUSTOMER RESISTANCE			
H5	TRADITION BARRIER -> CUSTOMER RESISTANCE	0.042	0.698	No
H61	UB->MF->CR -> CUSTOMER RESISTANCE	-0.152	0.175	No
H62	VB->MF->CR -> CUSTOMER RESISTANCE	0.068	0.569	No
H63	RB->MF->CR -> CUSTOMER RESISTANCE	-0.071	0.376	No
H64	TB->MF->CR -> CUSTOMER RESISTANCE	0.023	0.803	No
H65	IB->MF->CR -> CUSTOMER RESISTANCE	0.103	0.214	No
H6	MODERATING FACTOR -> CUSTOMER RESISTANCE	0.225	0	Yes

4.2 Discussion

4.2.1 Usage Barrier

Usage Barrier is found to have a non significant negative influence on the mobile banking resistance (β = -0,225 p = 0.064), thus not supporting Hypothesis 1. This finding eliminates the results of previous studies. This suggests that Mobile Banking Services are easy to use and convincing. They said that performing transaction using Mobile Banking Services takes faster to complete compare to conventional ways such as through teller. Diperpanjang, dijelaskan fenomena apa dan pengeruhanya.

4.2.2 Value Barrier

Value Barrier is found to have a non significant positive influence on the mobile banking resistance (β = 0,160 p = 0.251), thus not supporting Hypothesis 2. This finding eliminates the results of previous studies. This suggests that benefit of using Mobile Banking is much more compare to the cost of the smartphone price as well as better than the other channel such as ATM or Internet Banking Web Based. It also suggests that customer feel convinience to use Mobile Banking no need people helping them if they do wrongly.

4.2.3 Risk Barrier

Risk Barrier is found to have a significant negative influence on the mobile banking resistance (β = -0,191 p = 0.036), thus supporting Hypothesis 3 but the influence was negative. This finding diferent type of influence compared to the results of previous studies. This suggests that there is a risk to use Mobile Banking as if losing their smartphone it can be used by other people illegally or they cannot do any transaction until they get the replacement. There is also arisk to use Mobile Banking using public WIFI as there is a risk of data leaking.

4.2.4 Tradition Barrier

Tradition Barrier is found to have a non significant positive influence on the mobile banking resistance (β = 0,042 p = 0.698), thus not supporting Hypothesis 4. This finding eliminates the results of previous studies. This suggests taht there is no need performing Banking Transaction in face to face basis, or get in touch with bank's staff and also there is no need to get a hard copy receipt.

4.2.5 Image Barrier

Image Barrier is found to have a non significant negative influence on the mobile banking resistance (β = -0,136 p = 0.124), thus not supporting Hypothesis 5. This finding eliminates the results of previous studies. This suggest that Mobile Banking is showing the importance of the services, showing the popularity of the services as well as showing as a sophisticated services.

4.2.6 Age Moderating Factor toward Usage Barrier

Usage Barrier is found that not moderated by Age factor and have a non significant negative moderating influence on the mobile banking resistance (β = -0,152 p = 0.175), thus not supporting Hypothesis 6. This finding eliminates the results of previous studies.

4.2.7 Age Moderating Factor toward Value Barrier

Value Barrier is found that not moderated by Age factor and have a non significant positive moderating influence on the mobile banking resistance (β = 0,068 p = 0.569), thus not supporting Hypothesis 6. This finding eliminates the results of previous studies.

4.2.8 Age Moderating Factor toward Risk Barrier

Risk Barrier is found that not moderated by Age factor and have a non significant negative moderating influence on the mobile banking resistance (β = -0,071 p = 0.376), thus not supporting Hypothesis 6. This finding eliminates the results of previous studies.

4.2.9 Age Moderating Factor toward Tradition Barrier

Tradition Barrier is found that not moderated by Age factor and have a non significant positive moderating influence on the mobile banking resistance (β = 0,023 p = 0.803), thus not supporting

Hypothesis 6. This finding eliminates the results of previous studies

4.2.10 Age Moderating Factor toward Image Barrier

Image Barrier is found that not moderated by Age factor and have a non significant positive moderating influence on the mobile banking resistance (β = 0,103 p = 0.214), thus not supporting Hypothesis 1. This finding eliminates the results of previous studies.

4.3 The diferences to Previous Work

Unlike the findings of previous researchers where Ahmad(2012)[26], Aristana(2-16)[10], Jawira(2018)[15] who conducted research in Indonesia, and Kyari(2022)[13] who conducted research in Nigeria, they all found that functional barriers (Usage Barrier, Value Barrier and Risk Barrier) are the main obstacles to the resistance of mobile banking services. Meanwhile, this study only found one of the three functional barrriers which is an obstacle to the resistance of mobile banking services. This could happen likely because the sampling was not in a similar or equivalent city. In this study, the sample was taken in the state capital, namely Jakarta, while in pnelitian the sample was taken in a remote area far from the State Capital, so that the demographic factors of the respondents were likely to be different.

Meanwhile, researchers (Migliore et al, 2022)[14] who conducted research in Italy and China they only found tradition barriers as the main barrier to the resistance of mobile banking services while functional barriers are not obstacles in the acceptance of mobile banking services. Meanwhile, in this research, the tradition barrier is not a barrier to the resistance of mobile banking services. This difference can occur if the age group of respondents is not in the same range, for example, the majority of respondents in Italy and China are seniors so that traditionally they are used to transacting face-to-face so that they are not ready to make transactions independently which is a characteristic of mobile banking services. While in this study, the majority of respondents were those under the age of 50 where they did not experience tradition barrier in conducting mobile banking transactions.

5. CONCLUSION

As a conclusion there is only one parameter which is Risk Barrier that influences significantly to resistance in the mobile banking adoption, while other variable are not causing customer resistance. And it is not moderated by age of respnodent. From that situation it can be said that the Risk of adopting mobile banking is still a main barrier for every body regardless of age or gender or education level. From business point of view it can be said that the bank should be focusing on other aspect.

REFERENCES:

[1] S. Vision, "Pertumbuhan Internet Banking Di Indonesia," *Sharing Vision*, 2015. Https://Sharingvision.Com/Pertumbuhan-Internet-Banking-Di-Indonesia/ (Accessed Jan. 10, 2021).

[2] M. E. Fadliansyah, "Pengguna Digital Banking Bca Melonjak Signifikan Selama Pandemi Corona," *Katadata*, 2020. Https://Katadata.Co.Id/Happyfajrian/Financial/5ee75fb0a01c4/Pengguna-Digital-Banking-Bca-Melonjak-Signifikan-Selama-Pandemi-Corona (Accessed Jan. 10, 2021).

[3] James Chen, "Mobile Banking," *Investopedia*, 2020. Https://Www.Investopedia.Com/Terms/M/Mobile-Banking.Asp (Accessed Jan. 13, 2021).

[4] T. Laukkanen, S. Sinkkonen, P. Laukkanen, And M. Kivijärvi, "Segmenting Bank Customers By Resistance To Mobile Banking," *Int. J. Mob. Commun.*, Vol. 6, No. 3, Pp. 309–320, Mar. 2008, Doi: 10.1504/Ijmc.2008.017513.

[5] T. Kuisma, T. Laukkanen, And M. Hiltunen, "Mapping The Reasons For Resistance To Internet Banking: A Means-End Approach," *Int. J. Inf. Manage.*, Vol. 27, No. 2, 2007, Doi: 10.1016/J.Ijinfomgt.2006.08.006.

[6] S.Ram, "Consumer Resistance To Innovations: The Marketing Problem And Its Solutions," *J. Consum. Mark. (J Consum Mark.*, 1989.

[7] M. K. Ko De Ruyterand, "An Assessment Of Value Creation In Mobile Service Delivery And The Moderating Role Of Time Consciousness," *J. Retail.*, Vol. 83, No. 1, Pp. 33–46, 2007.

[8] H. Mohammadi, "A Study Of Mobile Banking Loyalty In Iran," *Comput. Human Behav.*, Vol. 44, Pp. 35–47, 2015.

[9] S. B. Shahriar Mohammadi, "An Efficient Model To Improve Customer Acceptance Of Mobile Banking," *Proc. World Congr. Eng. Comput. Sci. 2009*, Vol. 11, 2009.

[10] M. D. W. Aristana, "Analisis Faktor-Faktor Yang Mempengaruhi Resistensi Terhadap Layanan Mobile Banking," *Teknomatika*, Vol. 8, 2016.

[11] N. Wulandar, "Pengaruh Faktor Demografis Pada Adopsi Layanan Berbasis Teknologi Pada Perbankan Syariah," *J. Ilmu Manaj. Ekon.*, Vol. 7, 2015.
[12] W. W. N. Wan And C. W. C. Chow, "Customers' Adoption Of Banking Channels In Hong Kong," *Int. J. Bank Mark.*, 2005.
[13] A. K. Kyari And F. A. Al-Hudithi, "Understanding Consumers' Adoption Of Mobile Banking In Nigeria: An Empirical Investigation," *Int. J. Learn. Chang.*, 2022.
[14] G. Migliore, R. Wagner, F. S. Cechella, And F. Liébana-Cabanillas, "Antecedents To The Adoption Of Mobile Payment In China And Italy: An Integration Of Utaut2 And Innovation Resistance Theory," *Inf. Syst. Front.*, 2022.
[15] A. Jawira, "Analisys Of Mobile Banking Adoption In Indonesia: A Study Of Decomposed Theory Of Planned Behavior," *Pres. Univ.*, 2018.
[16] F. D. Davis, R. P. Bagozzi, And P. R. Warshaw, "User Acceptance Of Computer Technology: A Comparison Of Two Theoretical Models," *Manage. Sci.*, Vol. 35, 1989.
[17] S. A. Brown, A. P. Massey, And M. M. Montoya-Weiss, "Do I Really Have To? User Acceptance Of Mandated Technology," *Eur. J. Inf. Syst.*, 2002.
[18] N. E. Marr And G. P. Prendergast, "Consumer Adoption Of Self-Service Technologies In Retail Banking: Is Expert Opinion Supported By Consumer Research?," *Int. J. Bank Mark.*, 1993.
[19] M. Suoranta And M. Mattila, "Banking And Consumer Behaviour: New Insights Into The Diffusion Pattern," *J. Financ. Serv. Mark. 8(4)354-366*, 2004.
[20] P. Cruz, "Mobile Banking Rollout In Emerging Markets: Evidence From Brazil," *Int. J. Bank Mark.*, 2010.
[21] M. B. Naseri And G. Elliott, "Role Of Demographics, Social Connectedness And Prior Internet Experience In Adoption Of Online Shopping: Applications For Direct Marketing," *J. Target. Meas. Anal. Mark.*, 2011.
[22] S. Samaneh And S. S. Jamshid, "Determined The New Banking Strategy In Adoption Of Mobile Banking Customer In Private Banking," *J. Strateg. Manag. Stud.*, 20111.
[23] U. B. Sekaran, *Research Methods For Business: A Skill Building Approach*. 2016.
[24] M. Kuncoro, *Metode Kuantitatif: Teori Dan Aplikasi Untuk Bisnis Dan Ekonomi*. Yogyakarta: Upp Amp Ykn, 2004.
[25] J. F. Hair, *Multivariate Data Analysis*. Prentice Hall, 2009.
[26] M. Ahmad, "Pengaruh Resistance Barriers Dan Faktor Demografi Terhadap Resistensi Inovasi Mobile Banking Di Kota Mataram," *J. Magister Manaj. Unram*, 2012.