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Factors Affecting Customer Loyalty in the Use of Mobile Banking Sharia Bank "X" In Jakarta

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Abstract

This study aims to determine the factors that influence customer loyalty in the use of mobile banking Islamic bank 'X', by applying the theory of diffusion of innovation. The characteristics of innovative technology which include relative advantages, compatibility, perceived risk, and trust are used as antecedent variables to measure customer loyalty in the use of mobile banking. The research uses a quantitative approach with a survey method. The sample is 166 customers who use mobile banking Islamic bank 'X'. Data were collected through questionnaires and analyzed using the SEM – PLS method. The research findings indicate that relative advantage, compatibility, perceived risk, and trust have a significant effect on customer loyalty which is mediated by the variable of using mobile banking. Relative advantage and compatibility are the most powerful and significant factors in the use of mobile banking.

Keywords
Relative advantage; compatibility; satisfaction; perceived risk; trust; use of mobile banking; customer loyalty.

I. Introduction

As the banking industry becomes increasingly competitive, each bank must develop its services and products to serve the needs of existing customers and attract new customers. Banks must provide the greatest utility and convenience to their customers and need to focus on satisfaction to influence customer loyalty. Services that meet customer needs must be simple, compatible, and personalized with complementary services. In addition, banks must have a digital platform with fast and secure access (Boonsiritomachai & Pitchayadejanant, 2017, p. 1).

Mobile banking is one of the latest innovations of today's financial channels. Indeed, the widespread use of smartphones has increased more demand for mobile banking services. There are various benefits of using mobile banking services. Among the advantages highlighted are in the form of flexibility, coverage, and interactivity as well as having greater accessibility compared to traditional banking services, especially automated teller machines (ATMs) (Mohd Thas Thaker, Allah Pitchay, Mohd Thas Thaker, & Amin, 2019, p 1038). Mobile phones require minimum investment and training, and customers can perform a variety of tasks. Mobile banking allows users to access and check their accounts at any time via a mobile phone or other mobile devices instead of visiting a bank and computer-based internet banking. To encourage customers to use mobile banking services, financial institutions have taken various strategies to ensure their customers continue to use mobile banking. Many banks have invested in mobile banking strategies, which include the improvement of banking applications that provide new benefits to customers and increased satisfaction (Sampaio, Ladeira, & Santini, 2017, p. 1133).

One of the Islamic banks which is the object of this research is PT Bank Muamalat Indonesia Tbk. PT Bank Muamalat Indonesia Tbk is included in the ranks of the world's best banks (World's Best Banks 2021) according to Forbes Magazine. Around 500 banks

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around the world entered the consumer selection as the world's best banks, where Indonesia placed 20 banks on the list. For information, earlier this year Bank Muamalat has also named the best sharia bank in Indonesia in terms of service and maintaining customer loyalty in the 4th Satisfaction, Loyalty, & Engagement (SLE) 2021 organized by Infobank Magazine ("Bank Muamalat Enters the Ranks of the World's Best Bank Forbes version," 2021). To compete with other Islamic banking companies and traditional banks, PT Bank Muamalat Indonesia innovates in banking services. Innovation is very important for companies to build core competencies and create sustainable competitive advantages. In the theory of diffusion of innovation, adoption decisions are understood as choices to make full use of innovations as the best available course of action in an organization (Vagnani & Volpe, 2017, p. 110).

Willingness to use mobile banking is found to be very high, especially when the level of risk is very low (Mohd Thas Thaker, Allah Pitchay, Mohd Thas Thaker, & Amin, 2019, p. 1041). Risk is consumer perception, not a product characteristic. The risk under the security factor plays an important role in adopting online banking. Several others have also experienced the fact that risk remains the biggest concern among customers who use mobile banking services. Among the various risks associated with the use of mobile banking, the most prominent include security risk, data input and output risk, connection loss risk, personal information loss risk, and so on. Because there is no physical contact between customers and bank staff, any type of electronic transaction is always risky and this also affects the use of mobile banking. Risk is one of the key factors influencing the use of Islamic mobile banking (Mohd Thas Thaker, Allah Pitchay, Mohd Thas Thaker, & Amin, 2019, p. 1041). Organization must have a goal to be achieved by the organizational members (Niati et al., 2021). The success of leadership is partly determined by the ability of leaders to develop their organizational culture. (Arif, 2019).

Mobile banking can improve overall customer satisfaction with the bank if it offers added value to customers and can share knowledge and benefits of using mobile banking. To increase user satisfaction, mobile banking providers must provide transparent and secure banking services; otherwise, users will feel insecure and less willing to adopt mobile banking (Suhartanto, Dean, Ismail, & Sundari, 2019, p. 1410). Based on the description of the background of the problem above, the problem of this research can be formulated as follows: what factors affect customer loyalty in the use of mobile banking Islamic Bank 'X'? The purpose of this study was to determine the factors that influence customer loyalty in the use of mobile banking Islamic Bank 'X'.

II. Review of Literature

2.1 Islamic mobile banking

Mobile banking is the ability of customers to perform banking or financial transactions using mobile devices (Mohd Thas Thaker, Allah Pitchay, Mohd Thas Thaker, & Amin, 2019, p. 1038). Islamic banks are operated within Sharia principles and guidelines. The main sources of Sharia are the Quran, Sunnah, Ijma' (consensus of the people), and Qiyas (analogs). According to Sharia principles, all types of transactions must be free from usury or interest, gharar (excessive uncertainty or ambiguity created due to lack of information or control in contracts) and maysir (games of chance or speculation). Islamic banks aim to generate profits from Sharia-compliant products and services such as Mudarabah, Murabahah, Musyarakah, Ijarah, Sukuk, Wakalah, Kafalah, etc. The

profitability of Islamic banks depends on the selection of the appropriate Islamic finance mode and its performance.

2.2 Diffusion of Innovation Theory (DOI)

Diffusion of Innovation Theory (DOI) to explain the antecedents of consumer attitudes of generation Y towards mobile banking. The DOI model was validated by previous researchers in the context of technology adoption. The main constructs of DOI are relative advantage, compatibility, complexity, trialability, and observability. Since mobile banking is fund-based, several other important factors can influence mobile banking adoption such as perceived risk) and trust (trust). Trust is identified as an important factor in determining the adoption of e-banking including mobile banking and internet banking (Sreelakshmi & Prathap, 2019, p. 198).

2.3 Relative Advantage

In particular, relative advantage refers to the degree to which an innovation provides the desired consequences for the adopter compared to other available alternatives, providing decision-makers with insight into its net benefits, which in turn will support the innovation adoption decision (Vagnani & Volpe, 2017, p. 110).). According to (Mohd Thas Thaker, Allah Pitchay, Mohd Thas Thaker, & Amin, 2019, p. 1042) relative advantage is known as the degree to which each innovation is considered better than the original idea.

2.4 Compatibility

Compatibility refers to the degree to which an innovation is perceived as consistent with existing values, past experiences, and the needs of potential adopters (Lin & Bautista, 2017, p. 348). According to DOI theory, compatibility is a factor that influences attitudes to adopt new technology. Roger describes compatibility as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (Rogers, 1983) in (Sreelakshmi & Prathap, 2019, p. 198). When customers realize that mobile banking services suit their lifestyle and preferences, they tend to adopt them.

2.5 Perceived risk

(Sreelakshmi & Prathap, 2019, p. 199) defines perceived risk in mobile banking as the degree of uncertainty about mobile banking outcomes. In the case of mobile banking *nonadopters*. Perceived risk is a major factor in determining adoption intentions. Security information such as PINs, passwords, and user IDs, loss of mobile phones are possible risks involved in mobile banking. (Sharma & Sharma, 2019, p. 67) feel that security and privacy risk concerns tend to be higher with financial transactions via mobile devices because individual and personal information is stored on users' phones.

Trust is the willingness of one party to be vulnerable to the actions of the other party (Park, Amendah, Lee, & Hyun, 2019, p. 34). Trust denotes positive beliefs about perceived reliability, dependability, and trust in a person, object, or process. Trust is not only interpersonal but also interactional with technology. Trust in technology has been linked to user technology adoption and user behavior, making accelerating trust in technology a significant concept (Park, Amendah, Lee, & Hyun, 2019, p. 35).

2.6 Satisfaction

Satisfaction is a consumer's fulfillment response, the extent to which the level of fulfillment is pleasant or unpleasant (Mohd Thas Thaker, Amin, Mohd Thas Thaker, & Allah Pitchay, 2019, p. 529). There are two types of satisfaction mentioned in the existing literature, namely overall satisfaction that comes from the overall experience and attributes satisfaction which measures the performance of individual attributes. Customer satisfaction is considered a key element to measure success in the use of mobile banking (Liébana-Cabanillas, Alonso-Dos-Santos, Soto-Fuentes, & Valderrama-Palma, 2016, p. 3). User satisfaction is the extent to which an application helps users create value for the company's internal or external customers (Hsiao, Lin, Wang, Lee, & Zhang, 2019, p. 43).

2.7 Use of Mobile Banking

Usage "measures everything from visits to Web sites, on-site navigation, information retrieval, to execution of transactions" (Baabdullah, Alalwan, Rana, Kizgin, & Patil, 2019, p. 43). This study examines the impact of using mobile banking on user loyalty.

2.8 Customer Loyalty

The word loyalty denotes a situation where the customer is meant to stick with a particular brand or organization for a longer period. It is a kind of intrinsic commitment by customers who buy the product or service of their choice continuously, regardless of attractive advertising or other competitors' actions. Loyalty creates a psychological connection in which customers develop feelings and common connections to organizations, products, and services (Mohd Thas Thaker, Amin, Mohd Thas Thaker, & Allah Pitchay, 2019, p. 528).

III. Research Method

This study uses a quantitative approach with a survey method in the form of distributing questionnaires. The research population is the customer of Islamic bank X. The sampling technique is purposive random sampling with a total sample of 166 people.

3.1Variable Operations

Based on the theoretical description described, it can be made operationalization of variables as shown in table 2.

Table 1. Operational Variables

Variable	Dimension	Indicator	Source
Innovative Technology (Independent Variable/X1)	1. Relative Advantage	1) An easy way to manage finances. 2) Manage finances to be efficient. 3) Manage finances to be effective. 4) Controlling finances 5) Useful for controlling finances	(Sreelakshmi & Prathap, 2019, p. 201) ; (Al-Jabri & Sohail, 2012, p. 391)

	2. Compatibility	1) Suitable for managing finances. 2) Likes to try new technology. 3) Likes to adopt new technology. 4) Lifestyle was compatible. 5) Compatible with work style.	
	3. Perceived risk	1) Information can be tampered with by others. 2) Confidentiality risk. 3) Potential risk 4) Riskier than other banking service options. 5) Lost/wrong PIN code	
	4. Trust	1) Secure mobile banking transactions. 2) Maintain the security of his personal information. 3) The mobile banking administrator will not misuse his personal information. 4) Reliable	(Chu, Lee, & Chao, 2012, p. 1283)
Satisfaction (independent variable/X2)	Overall satisfaction/cumulative satisfaction	1) Satisfied with the transaction. 2) Happy (*delighted*). 3) Happy (*happy*). 4) The correct choice. 5) Meet expectations. 6) Overall satisfied with mobile banking.	(Ganguli, McKecnie, & Roy, 2011, p. 172) , (Ganguli, McKecnie, & Roy, 2011 ; Sampaio, Ladeira, & Santini, 2017, p. 1152) ; (Baabdullah, Alalwan,

			Rana, Kizgin, & Patil, 2019, p. 50)
Use of mobile banking (Mediator/Intervening/ Y Variable)	Use of mobile banking	1) Contents of bank balances and statements. 2) To transfer money. 3) To check balance. 4) Pay bills.	(Baabdullah, Alalwan, Rana, Kizgin, & Patil, 2019, p. 49)
Customer Loyalty (Bound Variable/Z)	1. Attitude	1) First choice. 2) Recommend. 3) Say positive things. 4) Encourage/persuade friends.	(Akroush & Mahadin, 2019, p. 781) ; (Chu, Lee, & Chao, 2012, p. 1283) ; (Xu, Goedegebuure, & Van der Heijden, 2007, p. 85) ; (Kandampully & Suhartanto, 2000, p. 347)
	2. Behavior	1) Intention to continue to use. 2) Prefer to use mobile banking. 3) Requires mobile banking.	

IV. Result and Discussion

4.1 Research result

This study was obtained from the results of distributing questionnaires to 166 respondents. Research data were analyzed quantitatively. Based on the data on the characteristics of the respondents, it can be seen, as follows: respondents who are male as many as 98 people (59%) and female respondents as many as 68 people (41%). Then, the current age of the respondent is for the age between 20-25 years as many as 19 people (11.4%), the age of the respondent is between 26-31 years as many as 29 people (17.5%), the age of the respondent between 32-37 years is 35 people (21.1%), age respondents between 38-43 years as many as 43 people (25.9%), and respondents aged over 43 years as many as 40 people (24.1%). Furthermore, the last education level of respondents who graduated from high school was 7 people (4.2%), respondents with D3 education were 29 people (17.5%), respondents who had undergraduate education were 82 people (49.4%), and the last education was master's degree as many as 48 people (28.9%). Furthermore, the type of work of the respondents, namely civil servants as many as 41 people (24.7%), respondents with private employee status as many as 75 people (45.2%), entrepreneurs as many as 21 people (12.7%), and housewives as many as 29 people (17.5) whose research data can be seen in table 3.

Table 2. Characteristics of Respondents

Demographics	Frequency	Percent (%)
Gender		
Man	98	59.0
Woman	68	41.0
Age Range		
20 – 25 Years	19	11.4
26 – 31 Years	29	17.5
32 – 37 Years	35	21.1
38 – 43 Years	43	25.9
Over 43 Years	40	24.1
Last education		
senior High School	7	4.2
D3	29	17.5
S1	82	49.4
S2	48	28.9
Profession		
Government employees	41	24.7
Private employees	75	45.2
entrepreneur	21	12.7
Housewife	29	17.5

4.2 Data analysis

Data analysis was carried out in two stages. The first stage is intended to check the validity and reliability of the variable construct. To assess construct validity, this study assessed *Outer Loading*, *Average Variance Extracted* (AVE), Cronbachs Alpha and *Composite Reliability* (CR). As shown in Table 4, all validity indicators meet the recommended limit values, *indicator loading* is more than 0.7; *Cronbach's Alpha* and *Composite Reliability* more than 0.7; and AVE is more than 0.5 (J. Hair, Hollingsworth,

Randolph, & Chong, 2017, p. 455) , which means that the research indicators are valid and reliable.

4.3 Measurement Model

Table 3. Results of Outer Loading, Cronbach's Alpha, Composite Reliability, and AVE

Indikator	Outer Loading > 0,7	Cronbach's Alpha > 0,7	Composite Reliability > 0,7	AVE > 0,5
Keunggulan Relatif		0,901	0,926	0,716
KR1	0,859			
KR2	0,881			
KR3	0,853			
KR4	0,844			
KR5	0,790			
Kompatibilitas		0,886	0,917	0,688
Kmptblts1	0,879			
Kmptblts2	0,837			
Kmptblts3	0,831			
Kmptblts4	0,848			
Kmptblts5	0,748			
Risiko yang dirasakan		0,879	0,912	0,673
Risiko1	0,856			
Risiko2	0,829			
Risiko3	0,813			
Risiko4	0,811			
Risiko5	0,792			
Kepercayaan		0,893	0,926	0,758
Percaya1	0,886			
Percaya2	0,858			
Percaya3	0,868			
Percaya4	0,870			
Kepuasan		0,917	0,936	0,708
Puas1	0,810			
Puas2	0,868			
Puas3	0,882			
Puas4	0,875			
Puas5	0,795			
Puas6	0,816			
Penggunaan Mobile Banking		0,767	0,851	0,588
PMB1	0,787			
PMB2	0,820			
PMB3	0,747			
PMB4	0,710			
Loyalitas Nasabah		0,878	0,905	0,577
Loyalitas1	0,719			
Loyalitas2	0,783			
Loyalitas3	0,791			
Loyalitas4	0,796			
Loyalitas5	0,759			
Loyalitas6	0,753			
Loyalitas7	0,712			

Furthermore, to find out the results of *discriminant validity*, it can also be seen from the results of the Fornell-Larcker criteria.

Table 1. Fornell-Larcker Criterion

	Trust	Satisfaction	Superiority Relatively	Compatibility	Loyalty Customer	Use Mobile Banking	Risk
Trust	**0,870**						
Satisfaction	0,571	**0,842**					
Relative Advantage	0,561	0,451	**0,846**				
Compatibility	0,545	0,614	0,573	**0,830**			
Customer Loyalty	0,637	0,629	0,474	0,568	**0,760**		
Mobile Banking Usage	0,687	0,638	0,655	0,709	0,703	**0,767**	
Risk	-0,190	0,021	-0,059	-0,096	-0,189	-0,208	**0,821**

Note: The square root of AVE values is shown on the diagonal and printed in **bold** (reflective constructs only)
The AVE of each latent construct should higher than the construct's highest squared correlation with any other latent construct (Fornell-

Fornell-Larcker criteria suggest that *discriminant* constructs can be assessed as good if each *square root of the AVE* reflective construct has a value greater than the correlation value with the same construct in the model (Joseph F. Hair, Hult, Ringle, & Sarstedt, 2014, p. 150). The research findings in table 5, it shows that all *cross-loading correlations values* in each *square root of the* AVE reflective construct (trust, satisfaction, relative advantage, compatibility, customer loyalty, use of mobile banking, and risk) are in *bold.*

shows a result that is greater than *the inter-construct reflective correlations*, which means that the research data is declared valid.

Furthermore, based on the results of the SEM-PLS calculation, the *cross-loading factor values* for each research variable can be seen in table 6.

The results of the research data collected in table 6 related to *cross-loading*, it is clear that the results of each *loading* indicator on the variable are greater than other variables. A good model, of course, produces a *loading* indicator value greater than 0.7 and this is in line with research findings that it turns out that the results of each *loading* indicator in the research construct (trust, satisfaction, relative advantage, compatibility, customer loyalty, use of mobile banking, and risk) are greater than 0.7 which means the research indicator is declared valid. The *rule of thumb* for a good indicator must have a correlation value > 0.7, meaning that the research indicator is valid (Garson, 2016, p. 69).

Table 5 Cross Loading

	Trust	**Satisfaction**	**Superiority Relatively**	**Compatibility**	**Loyalty** Customers	Mobile Usage Banking	Risk
KR1	0,515	0,403	0,859	0,576	0,483	0,613	-0,070
KR2	0,479	0,394	0,881	0,523	0,438	0,623	-0,094
KR3	0,479	0,323	0,853	0,436	0,360	0,540	-0,001
KR4	0,432	0,402	0,844	0,427	0,383	0,503	-0,051
KR5	0,465	0,390	0,790	0,440	0,320	0,463	-0,023
Kmptblts1	0,432	0,565	0,484	0,879	0,492	0,654	-0,136
Kmptblts2	0,464	0,470	0,425	0,837	0,440	0,584	-0,133
Kmptblts3	0,509	0,489	0,523	0,831	0,490	0,580	-0,045
Kmptblts4	0,468	0,522	0,534	0,848	0,463	0,573	-0,057
Kmptblts5	0,392	0,497	0,410	0,748	0,473	0,543	-0,016
Loyalitas1	0,485	0,507	0,322	0,458	0,719	0,569	-0,129
Loyalitas2	0,555	0,500	0,388	0,423	0,783	0,551	-0,154
Loyalitas3	0,546	0,567	0,439	0,504	0,791	0,603	-0,169
Loyalitas4	0,446	0,517	0,327	0,387	0,796	0,510	-0,141
Loyalitas5	0,413	0,432	0,300	0,390	0,759	0,500	-0,179
Loyalitas6	0,461	0,422	0,329	0,378	0,753	0,447	-0,096
Loyalitas7	0,456	0,365	0,402	0,463	0,712	0,535	-0,130
PMB1	0,527	0,556	0,498	0,591	0,619	0,787	-0,248
PMB2	0,592	0,415	0,703	0,654	0,537	0,820	-0,105
PMB3	0,536	0,532	0,413	0,498	0,499	0,747	-0,095
PMB4	0,443	0,459	0,359	0,403	0,492	0,710	-0,189
Percaya1	0,886	0,461	0,483	0,454	0,564	0,576	-0,220
Percaya2	0,858	0,468	0,480	0,472	0,564	0,573	-0,131
Percaya3	0,868	0,471	0,511	0,471	0,566	0,601	-0,113
Percaya4	0,870	0,582	0,480	0,500	0,524	0,639	-0,193
Puas1	0,441	0,810	0,309	0,460	0,498	0,493	0,010
Puas2	0,524	0,868	0,369	0,523	0,565	0,527	0,000
Puas3	0,508	0,882	0,373	0,510	0,549	0,506	0,024
Puas4	0,498	0,875	0,411	0,543	0,493	0,557	0,033
Puas5	0,453	0,795	0,447	0,558	0,520	0,610	0,037
Puas6	0,454	0,816	0,363	0,500	0,546	0,525	0,002
Risiko1	-0,182	0,034	-0,064	-0,075	-0,174	-0,148	0,856
Risiko2	-0,150	-0,010	-0,044	-0,074	-0,154	-0,191	0,829
Risiko3	-0,187	-0,023	-0,038	-0,115	-0,167	-0,190	0,813
Risiko4	-0,120	0,043	-0,121	-0,093	-0,161	-0,184	0,811
Risiko5	-0,128	0,062	0,033	-0,021	-0,111	-0,133	0,792

To assess discriminant validity, (Henseler, Ringle, & Sarstedt, 2014, p. 121) recommends the Heterotrait-Monotrait method to assess the discriminant validity of constructs with a limit value of not more than 0.9. By using this recommendation, the discriminant validity of the tested constructs was met because all Heterotrait-Monotrait

values were less than 0.9. These values indicate that the discriminant validity between the variable constructs is met, as shown in Table 7 below

Table 2 Heterotrait-Monotrait Ratio (HTMT)

	Trust	Satisfaction	Superiority Relatively	Compatibility	Loyalty Customer	Mobile Usage Banking	Risk
Trust							
Satisfaction	0,628						
Relative Advantage	0,625	0,496					
Compatibility	0,614	0,680	0,636				
Customer Loyalty	0,715	0,694	0,524	0,641			
Mobile Banking Usage	0,825	0,763	0,767	0,848	0,848		
Risk	0,210	0,050	0,085	0,114	0,211	0,250	

4.4 Measurement Model

After the measurement model, the second stage of the data analysis process is evaluating the structural model and testing the developed hypotheses. For this purpose, this research uses SmartPLS. Assessment of *path coefficients*, according to (Suhartanto, Helmi Ali, Tan, Sjahroeddin, & Kusdibyo, 2019, p. 90) recommends, is carried out using a bootstrap procedure with 5,000 iterations.

Recently, a global fit measure for PLS pathway modeling used GoF (0 <GoF<1) calculations, defined as the geometric mean of the communality mean and the R2 mean (for endogenous constructs) (Tenenhaus et al. 2005). Since the community is the same as AVE in the PLS pathway modeling approach, we propose a limit value of 0.5 for communality, as suggested by Fornell and Larcker (1981) in (Wetzels, Odekerken-Schröder, & Oppen, 2009, p. 187). In addition, in line with the effect sizes for R2 (small: 0.02; medium: 0.13; large: 0.26) proposed by Cohen (1988), we obtained the following GoF criteria for small, medium, and greater than R^2 with the substitution determining the minimum mean AVE of 0.50 and the effect size for R^2 in the equation defining GoF.

Table 7 Goodness of Fit (GoF) Model

Construct	AVE	R2	Hasil
Relative Advantage	**0,716**		
Compatibility	**0,688**		
Risk	**0,673**		
Trust	**0,758**	0,417	
Satisfaction	**0,708**		
Mobile Banking Usage	**0,588**	0,697	
Customer Loyalty	**0,577**	0,454	
Average Scores	0,673	0,523	
AVE * R2	0,352		
GoF = ?(AVE x R2)	**0,593**		**Very good**

Based on the findings of the research data in table 8, the GoF value is 0.593, which means that *the performance* between the measurement model and the structural model can be said to be *fit* (GoF_{large}) because it meets the standards above 0.36, including the strong category.

Table 3 Coefficient of Determination (R square)

	R Square	R Square Adjusted
Trust	0,367	0,359
Customer Loyalty	0,575	0,567
Mobile Banking Usage	0,698	0,688

Based on the findings in table 9, it shows that the percentage of confidence after being influenced by satisfaction is obtained by R square 0.367 or 36.7%, and the remaining 63.3% is determined by other factors not examined, the results of R^2 of 0.367 are in the range of 0.25 – 0.50 is included in the substantial category. Then, the percentage of mobile banking usage after being influenced by relative advantages, compatibility, risk, trust, and satisfaction obtained R square 0.698 or 69.8% and the remaining 30.2% determined by other factors not examined, the results of R2 of $^{0.698}$ are in the range of 0.50 – 0.75 including the moderate category (medium). Finally, the percentage of customer loyalty after being influenced by the use of mobile banking is obtained by R square 0.575 or 57.5%, and the remaining 42.5% is determined by other factors not examined, the results of R^2 of 0.575 are in the range of 0.50 – 0.75 including the category of moderate (medium).

In addition to using the R square (R2) value, experts also reuse the Q2 predictive sample to identify the effectiveness of predictive relevance (Suhartanto, Helmi Ali, Tan, Sjahroeddin, & Kusdibyo, 2019, p. 90). Q2 shows how well the data can be rearranged using the PLS parameters and the proposed model. Based on the *blindfolding procedure*, the results of data analysis showed that the predictive relevance (Q2) for endogenous variables was acceptable because the value was positive (Hair Jr, Hult, Ringle, & Sarstedt, 2017).

Table 4 Cross-validated redundancy (Q^2)

	SSO	SSE	Q^2 (=1-SSE/SSO)
Trust	664,000	485,135	0,269
Satisfaction	996,000	996,000	
Relative Advantage	830,000	830,000	
Compatibility	830,000	830,000	
Customer Loyalty	1162,000	792,781	0,318
Mobile Banking Usage	664,000	405,048	0,390
Risk	830,000	830,000	

Based on the data presented in table 10, it shows that the satisfaction variable has a *moderate predictive ability* to trust because the value of Q2 (0.269) is in the range between 0.15 – 0.35. Then, relative advantage, compatibility, risk, trust, and satisfaction have the strong predictive ability on the use of mobile banking because the value of Q^2 (0.390) > 0.35. Furthermore, the use of mobile banking has a *moderate predictive ability* on customer loyalty because the Q2 value (0.318) is in the range between 0.15 – 0.35. The value of Q^2 is above zero ($Q^2 > 0$) which implies that the structural model has a high predictive ability (Joseph F. Hair, Risher, Sarstedt, & Ringle, 2019, p. 19). The results of the *cross-validated redundance* (Q^2) were 0.02, 0.15, 0.35 *for a weak, moderate, strong degree of predictive relevance*.

The result of R *square* (R^2)will experience a change if one of the *exogenous constructs* (independent variable) *is* removed from the research model, then to evaluate whether the omitted *exogenous construct* can have an important impact on *endogenous constructs* (dependent variable) it can be seen from the *effect size results*(f^2). Guidelines for assessing *effect size* f^2 is that the values of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects (Cohen, 1988)

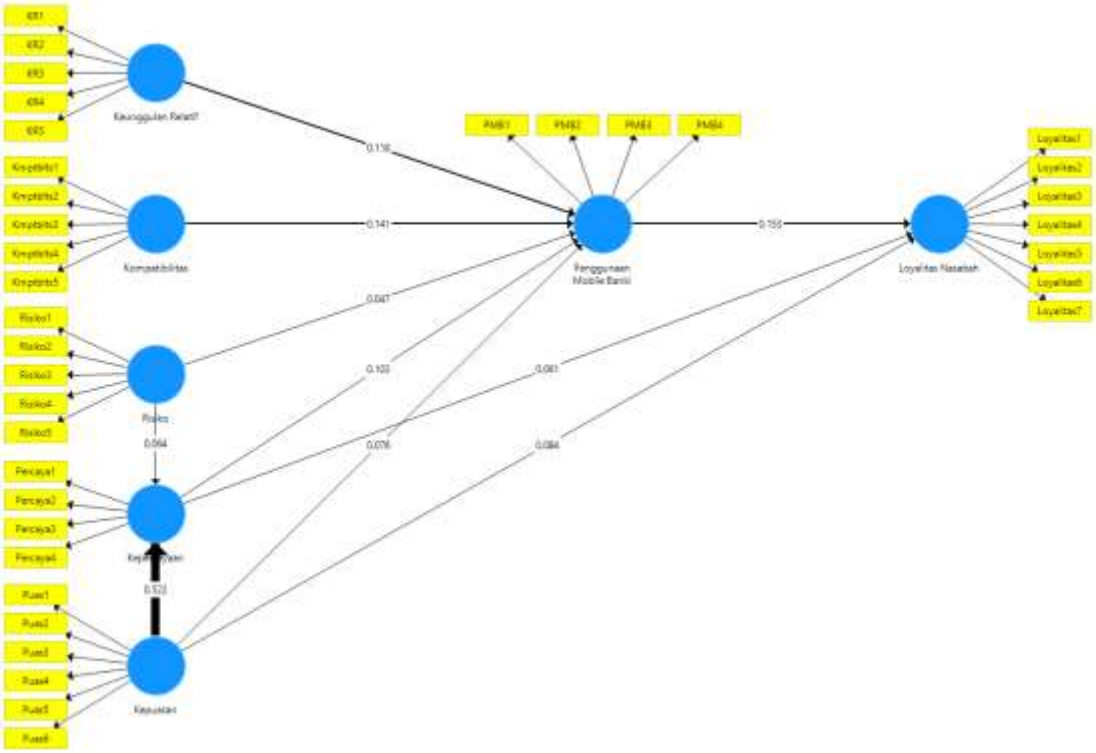

Figure 1*Results of f Square*

Based on the findings of the research data in Figure 2, it is clear that the magnitude of the effect of relative advantage on the use of mobile banking is obtained by f square (f ^{2}) is 0.118. Then, the results of the compatibility construct obtained by f square (f ^{2}) is 0.141. The results of the Risk construct obtained that f square (f ^{2}) is 0.047 and 0.064. Then, the results of the confidence construct obtained by f square (f ^{2}) are 0.103 and 0.061. The satisfaction construct obtained by f square (f ^{2}) is 0,522; 0.076, and 0.084. Meanwhile, the use of mobile banking on customer loyalty obtained f square (f ^{2}) is 0.153.

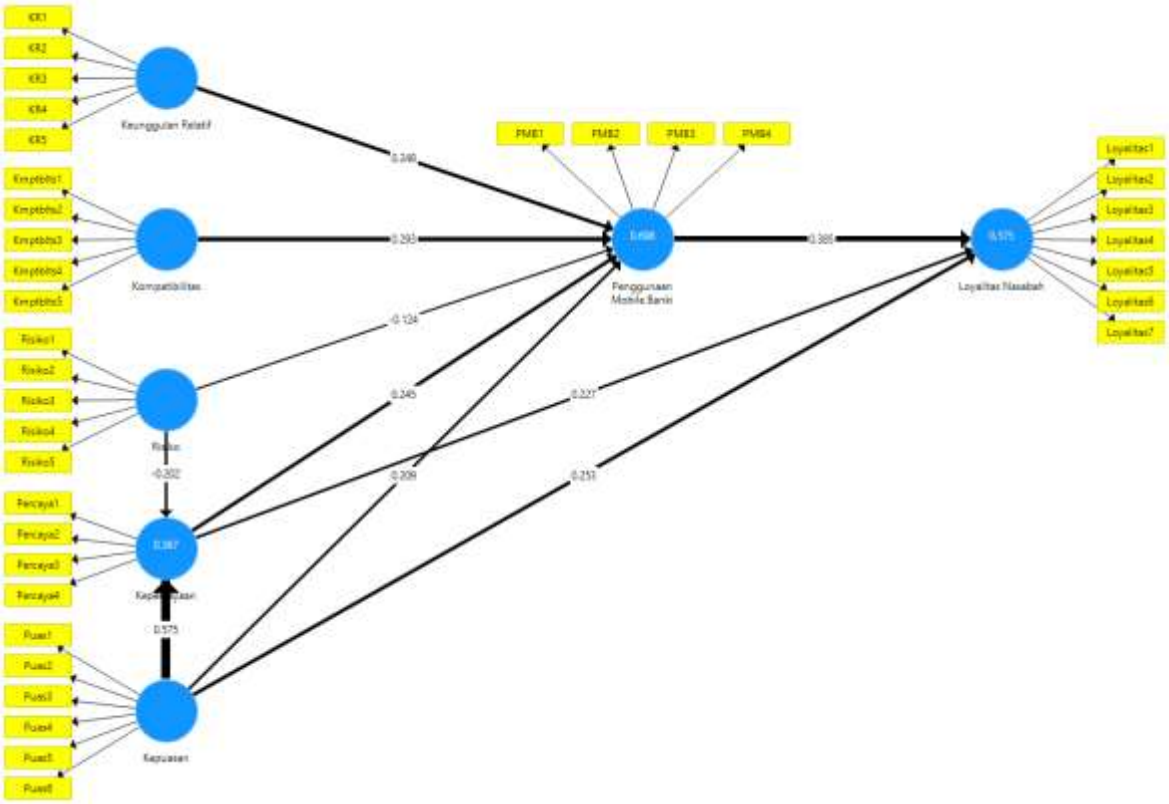

Figure 2*SEM Output – PLS Hypothesis Testing*

Table 5 Path *Coefficient* and Significance

	Path	T Statistics	P Values	Hipotesis	Hasil
Keunggulan Relatif -> Penggunaan Mobile Banking	0,248	3,507	**0,000**	H1	Diterima
Kompatibilitas -> Penggunaan Mobile Banking	0,293	4,568	**0,000**	H2	Diterima
Risiko -> Penggunaan Mobile Banking	-0,124	2,790	**0,005**	H3	Diterima
Risiko -> Kepercayaan	-0,202	3,051	**0,002**	H4	Diterima
Kepercayaan -> Penggunaan Mobile Banking	0,245	3,993	**0,000**	H5	Diterima
Kepercayaan -> Loyalitas Nasabah	0,227	2,770	**0,006**	H6	Diterima
Kepuasan -> Kepercayaan	0,575	8,478	**0,000**	H7	Diterima
Kepuasan -> Penggunaan Mobile Banking	0,209	3,218	**0,001**	H8	Diterima
Kepuasan -> Loyalitas Nasabah	0,253	3,198	**0,001**	H9	Diterima
Penggunaan Mobile Banking -> Loyalitas Nasabah	0,385	5,109	**0,000**	H10	Diterima

Based on the findings of the research data in table 11, it shows that the results of hypothesis testing from H1 - H10 show that the hypothesis is accepted and there is a significant effect.

4.5 Discussion

From the results of hypothesis testing that has been carried out, it can be seen that the results of the answers to the objectives of this study are as follows: in this study, there were 10 (ten) hypotheses tested. The results of testing the first hypothesis, show that relative advantage has a positive and significant effect on the use of mobile banking. The findings of this study are in line with research (Sreelakshmi & Prathap, 2019) which found that *relative advantage* partially has a positive and significant effect on attitudes, which in turn has an impact on the use of mobile banking. Thus it can be interpreted that customers use mobile banking because they get a relative advantage due to the easy way to use mobile banking applications, customers can manage finances through mobile banking applications efficiently and effectively, and can control the entry and exit of money. Then, compatibility has a positive and significant effect on the use of mobile banking. The findings of this study are in line with research (Sreelakshmi & Prathap, 2019) which found that partial compatibility has a positive and significant effect on attitudes, which in turn has an impact on the use of mobile banking. The compatibility of this mobile banking application makes customers interested in using it because it is in accordance with the lifestyle of customers who often carry out financial transactions and customers are happy to adopt innovations.

Then, the risks experienced also have a negative and significant effect on the use of mobile banking. This is in line with research (Mohd Thas Thaker, Allah Pitchay, Mohd Thas Thaker, & Amin, 2019) which found that *perceived risk* had a negative and significant effect on adopting Islamic mobile banking. Thus, it can be interpreted that the smaller the risk perceived by the customer, the higher the use of mobile banking. This is because customers feel safe regarding their identity data which can be kept confidential by the manager of the mobile banking application. Important customer data information cannot be tampered with even by other people and the customer's PIN code is not misused by irresponsible parties. Furthermore, the perceived risk also has a negative and significant effect on the use of mobile banking. This is in line with research (Sreelakshmi & Prathap, 2019) which found that *perceived risk* has a negative and significant effect on trust. The lower the risk experienced by customers in using mobile banking, the higher the level of trust in them to continue using the mobile banking application. This is because customers do not feel worried about making financial transactions through mobile banking which has guaranteed security and will still use mobile banking instead of other banking services. After all, the mobile banking application is practically used anywhere and anytime.

Furthermore, the results of the study show that trust has a positive and significant effect on the use of mobile banking. The findings of this study are in line with the results of previous research (Sreelakshmi & Prathap, 2019) which found that trust has a positive and significant effect on attitudes, which in turn use mobile banking. Customers who have high trust in the mobile banking application will of course continue to use it because transactions through mobile banking are considered safe and customer data information is kept confidential and mobile banking can be relied on for financial transaction activities. Then, trust also has a positive and significant effect on customer loyalty. This is in line with previous research (Liébana-Cabanillas, Alonso-Dos-Santos, Soto-Fuentes, & Valderrama-Palma, 2016) which found that trust has a positive and significant effect on mobile banking loyalty. Customers who already have high trust certainly have an impact on high loyalty to the use of mobile banking. Customers will make this mobile banking service the first choice for financial transaction activities. There are plans from customers to recommend mobile banking to others to carry out financial transaction activities and will continue to use it in the future.

Then, satisfaction has a positive and significant effect on trust. The findings of this study are in line with the results of research (Liébana-Cabanillas, Alonso-Dos-Santos, Soto-Fuentes, & Valderrama-Palma, 2016) ; (Sampaio, Ladeira, & Santini, 2017) found that satisfaction has a positive and significant effect on trust in mobile banking applications. This means that customers who feel satisfied in using mobile banking will further increase their trust. This is because customers feel the satisfaction of transacting through mobile banking which can be done anywhere and anytime. Services using mobile banking are considered more practical and fun because customers do not need to queue for financial transactions. As long as customers use mobile banking services, they feel satisfied, so customers put full trust in this mobile banking application.

Then, satisfaction has a positive and significant effect on customer loyalty. The findings of this study are in line with the results of research (Sampaio, Ladeira, & Santini, 2017) which found that customers who feel satisfaction have a positive and significant effect on loyalty to using mobile banking. This means that customers who feel satisfied in using mobile banking will certainly be more loyal to continue using mobile banking. This is because the mobile banking he uses is as expected so that customers will recommend it to others and spread positive messages regarding mobile banking that has provided satisfactory service.

Finally, the use of mobile banking has a positive and significant effect on customer loyalty. The findings of this study are in line with the results of research (Liébana-Cabanillas, Alonso-Dos-Santos, Soto-Fuentes, & Valderrama-Palma, 2016). This means that customers who have used mobile banking will be more loyal to continue using it because mobile banking is considered very useful for their business activities and in accordance with the work style of customers who often make financial transactions through mobile banking applications.

V. Conclusion

This study seeks to apply the theory of diffusion of innovation which aims to determine the factors that can affect customer loyalty in the use of Islamic mobile banking. The characteristics of the innovative technology inherent in mobile banking include relative advantage, compatibility, perceived risk, and trustworthiness. This innovation diffusion theory has been successfully used to measure the use of mobile banking and customer loyalty. The results of research findings on hypothesis testing prove that the ten hypotheses that have been tested resulted in significant research data findings. Factors that influence customer loyalty in the use of mobile banking include relative advantage, compatibility, perceived risk, trust, satisfaction, which is mediated by the variable of using mobile banking. The most powerful influencing factor of the characteristics of innovative technology is the relative advantage and compatibility because, in today's modern era and the progress of the times, everyone has adopted innovative technology. What's more, for people who already have high savings and make financial transactions, of course, having mobile banking has become a part of their lives to manage finances well and easily.

References

Akroush, MN, & Mahadin, BK (2019). An intervariable approach to customer satisfaction and loyalty in the internet service market. Internet Research, 29 (4), 772—798.

Alonso-Dos-Santos, M., Soto-Fuentes, Y., & Valderrama-Palma, VA (2020). Determinants of Mobile Banking Users' Loyalty. Journal of Promotion Management, 26 (5), 615—

633.
Arif, S. (2019). Influence of Leadership, Organizational Culture, Work Motivation, and Job Satisfaction of Performance Principles of Senior High School in Medan City. Budapest International Research and Critics Institute-Journal (BIRCI-Journal). P. 239-254
Baabdullah, AM, Alalwan, AA, Rana, NP, Kizgin, H., & Patil, P. (2019). Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model. International Journal of Information Management, 44, 38—52.
Bank Muamalat is included in the Forbes World's Best Bank Rankings. (2021). Retrieved from https://www.bankmuamalat.co.id/en/news/bank-muamalat-enter-jajaran-bank-terbaik-dunia-versi-forbes
Boonsiritomachai, W., & Pitchayadejanant, K. (2017). Determinants affecting mobile banking adoption by generation Y based on the Unified Theory of Acceptance and Use of Technology Model modified by the Technology Acceptance Model concept. Kasetsart Journal of Social Sciences, 1–10.
Chu, P.-Y., Lee, G.-Y., & Chao, Y. (2012). Service Quality, Customer Satisfaction, Customer Trust, and Loyalty in an E-Banking Context. Social Behavior and Personality: an international journal, 40 (8), 1271—1283.
Fam, K., Mohd Suki, N., & Thye Goh, T. (2014). Exploring a consumption value model for Islamic mobile banking adoption. Journal of Islamic Marketing, 5 (3), 344—365.
Ganguli, S., McKecnie, S., & Roy, SK (2011). Generic technology-based service quality dimensions in banking. International Journal of Bank Marketing, 29 (2), 168—189.
Garson, GD (2016). Partial Least Squares Regression and Structural Equation Models. USA: Statistical Publishing Associates.
Hair, J., Hollingsworth, CL, Randolph, AB, & Chong, AYL (2017). An updated and expanded assessment of PLS-SEM in information systems research. Industrial Management & Data Systems, 117 (3), 442—458.
Joseph F. Hair, J., Hult, GTM, Ringle, CM, & Sarstedt, M. (2014). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). London: SAGE Publications, Inc.
Kandampully, J., & Suhartanto, D. (2000). Customer loyalty in the hotel industry: the role of customer satisfaction and image. International Journal of Contemporary Hospitality Management, 12 (6), 346–351.
Lam, SY, Shankar, V., Erramilli, MK, & Murthy, B. (2004). Customer value, satisfaction, loyalty, and switching costs: An illustration from a business-to-business service context. Journal of the Academy of Marketiag Science, 32 (3), 294—311.
Liébana-Cabanillas, F., Alonso-Dos-Santos, M., Soto-Fuentes, Y., & Valderrama-Palma, VA (2016). Unobserved heterogeneity and the importance of customer loyalty in mobile banking. Technology Analysis & Strategic Management, 29 (9), 1015—1032.
Merhi, M., Hone, K., & Tarhini, A. (2019). A cross-cultural study of the intention to use mobile banking between Lebanese and British consumers: Extending UTAUT2 with security, privacy and trust. Technology in Society, 59, 1—12.
Mohd Thas Thaker, MAB, Allah Pitchay, AB, Mohd Thas Thaker, HB, & Amin, MFB (2019). Factors influencing consumers' adoption of Islamic mobile banking services in Malaysia. Journal of Islamic Marketing, 10 (4), 1037—1056.
Mohd Thas Thaker, MAB, Amin, MFB, Mohd Thas Thaker, HB, & Allah Pitchay, AB (2019). What keeps Islamic mobile banking customers loyal? Journal of Islamic Marketing, 10 (2), 525—542.
Niati, D. R., Siregar, Z. M. E., & Prayoga, Y. (2021). The Effect of Training on Work

Performance and Career Development: The Role of Motivation as Intervening Variable. Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences, 4(2), 2385–2393. https://doi.org/10.33258/birci.v4i2.1940

Nurhayati-Wolff, H. (2021). Number of smartphone users in Indonesia from 2017 to 2020 with forecasts until 2026(in millions). Retrieved from https://www.statista.com/statistics/266729/smartphone-users-in-indonesia/

Park, J., Amendah, E., Lee, Y., & Hyun, H. (2019). M-payment service: Interplay of perceived risk, benefit, and trust in service adoption. Human Factors and Ergonomics in Manufacturing & Service Industries, 29 (1), 31—43.

Sampaio, CH, Ladeira, WJ, & Santini, FDO (2017). Apps for mobile banking and customer satisfaction: a cross-cultural study. International Journal of Bank Marketing, 35 (7), 1133—1153.

Suhartanto, D., Dean, D., Ismail, TAT, & Sundari, R. (2019). Mobile banking adoption in Islamic banks. Journal of Islamic Marketing, 11 (6), 1405—1418.

Suhartanto, D., Helmi Ali, M., Tan, KH, Sjahroeddin, F., & Kusdibyo, L. (2019). Loyalty toward online food delivery service: the role of e-service quality and food quality. Journal of Foodservice Business Research, 22 (1), 81—97.

Tam, C., & Oliveira, T. (2017). Understanding mobile banking individual performance. Internet Research, 27 (3), 538—562.

Vagnani, G., & Volpe, L. (2017). Innovation attributes and managers' decisions about the adoption of innovations in organizations: A meta-analytical review. International Journal of Innovation Studies, 1 (2), 107—133.

Wetzels, M., Odekerken-Schröder, G., & Oppen, C. v. (2009). Using PLS Path Modeling for Assessing Hierarchical Construct Models: Guidelines and Empirical Illustration. MIS Quarterly, 33 (1), 177–195.

Xu, Y., Goedegebuure, R., & Van der Heijden, B. (2007). Customer Perception, Customer Satisfaction, and Customer Loyalty within Chinese Securities Business. Journal of Relationship Marketing, 5 (4), 79—104.