

# Customer acceptance of digital banking in Islamic bank: Study on millennial generation

Alex Fahrur Riza

Department of Islamic Banking, Faculty of Islamic Economics and Business UIN Sunan Kalijaga Yogyakarta e-mail: alex.fahrurriza7@gmail.com

#### Abstract

Different factors may be influencing the use of information and communication technology. One of the important factors is age. A well-known age-based categorization, commonly used especially in the field of economics, the Millennial Generation has some typical behaviours which are different from the older people. This study investigates the extent to which perceived usefulness and perceived ease of use influences the attitude toward product and behavioural intention towards digital banking adoption of the Millennial Generation. An exploratory research design was followed and the data was collected from Millennial Generation Islamic bank customers between the ages of 22 and 38 in Indonesia. A total of 315 useable questionnaires was collected for analysis. The analysis of the data focused on determining attitude and behaviour in the use of digital banking. The methods of model and relationship test like Structural Equation Modelling AMOS were used. Reliability was tested by conducting the Cronbach alpha coefficient analysis. The construct validity was determined by using confirmatory factor analysis. The empirical evidence show that all the variables have significant positive effect. This study will show about why the Islamic banks must boosting the digital banking to increase the millennial generation customers.

Keywords: Perceived Ease of Use, Perceived of Usefulness, Attitude toward Product, Intention to Use, Digital Banking, Millennial Generation

#### Abstrak

Faktor yang berbeda dapat mempengaruhi penggunaan teknologi informasi dan komunikasi. Salah satu faktor penting adalah usia. Sebuah kategorisasi berbasis usia yang terkenal, biasanya digunakan terutama di bidang ekonomi, Generasi Milenial memiliki beberapa perilaku khas yang berbeda dari orang tua. Studi ini menyelidiki sejauh mana manfaat yang dirasakan dan kemudahan penggunaan dapat mempengaruhi sikap terhadap produk dan perilaku niat menggunakan terhadap adopsi teknologi perbankan digital Generasi Millenial. Desain penelitian eksplorasi dan data dikumpulkan dari para nasabah bank Islam Generasi Millenial yang berusia antara 22 dan 38 tahun di Indonesia. Sebanyak 315 kuesioner digunakan dan dikumpulkan untuk analisis. Analisis data difokuskan pada penentuan sikap dan perilaku dalam penggunaan perbankan digital. Metode menggunakan uji hubungan Structural Equation Modeling AMOS. Reliabilitas diuji dengan melakukan analisis koefisien alpha Cronbach. Validitas konstruk ditentukan dengan menggunakan analisis faktor konfirmatori. Bukti empiris menunjukkan bahwa semua variabel memiliki efek positif yang signifikan. Studi ini akan menunjukkan mengapa bank syariah harus meningkatkan perbankan digital untuk meningkatkan pelanggan generasi milenial.

Kata Kunci: Persepsi Kemudahan Penggunaan, Persepsi Kegunaan, Sikap terhadap Produk, Niat Menggunakan, Perbankan Digital, Generasi Milenial

## Introduction

The development of information and communication technology has transformed the industry from manual-based to automatic-based activity and from offline to online transaction. This has a major impact on the financial industry (Nam et al, 2016). In fact, banks responded to this phenomenon of creating digital banking, where banks digitized all traditional transactions and services in an application(Nguyen, Lan, & Dang, 2017). Banking services have become more efficient and competitive with a competitive advantage (Mann and Sahni, 2012).

Since online banking services were conducted by Stanford Federal Credit in 1994, online banking spread rapidly throughout the world. In Indonesia, internet banking began to be implemented in 1998 by BII and mobile banking applied by BCA in 2001, Islamic mobile banking was applied by BCA Syariah in 2014 and followed by other banks. The transaction using digital banking be more massive after growth Start-Up Business in 2010 and has grown steadily until now. The development of technology, changes in consumer behaviour, and trends in the business competition have been the driving factors for banks to continue to innovate, especially Islamic banks that have two rules in running their businesses (Islamic law and government regulations).

Moreover, the studies mentioned were mainly conduct among general consumer population of banking services. There is a scarcity of literature that investigates the behavioural intention in adopting digital banking, specifically among the millennial generation consumers. Majority of mobile subcribers in Indonesia are formed by millennial generation (APJII, 2018), which are those between the ages of 19 and 34 have contributed 49,52%, people between the ages of 35 and 54 have contributed 29,55%, and people between the ages of 13 and 18 have contributed 16,68%. And Smartphone still have the highest gadget used to access the internet with 70,96% if compare with another gadgets.

The millennial generation is the early adopters of new technology products and services and therefore is considered to be more likely to use the digital banking in the future than other generations (Tan, Purba, & Widjaya, 2018). EFMA and Oracle Financial Services (2010) stated that bank retailers must understand generation Y's needs and wants if they want to attract the millennial generation consumers to adopt the banking services, as they are different from other generation groups in term of expectations and perceptions.

The purpose of this study was to investigate the extent to which perceived usefulness and perceived ease of use influences the attitude and behavioural intention towards Islamic digital banking adoption of the Millennial Generation using the TAM model. The contribution of this study are threefold. First, this study attempts to enhance the theoretical foundation of Islamic mobile banking studies by applying TAM to predict user behavioural intention. Second, earlier research on Islamic mobile banking not well explored in the literature in the context of Millennial Generation. Finally, this study attempts to provide further insight into the factors that lead millennial consumers to use Islamic digital banking services.

## Islamic Digital Banking

The basic financial needs of Muslims are fulfilled by Islamic banks in compliance with Islamic laws (*Sharia*) to enjoy banking services. Islamic banking strictly follows *sharia* guidelines, the Islamic rules for transaction (*fiqh muamalah*). The rules are extracted from the holy book Al-Quran and Hadits, with the other relevant secondary sources, such as *ijma*' and *Qiyas*. Based on *sharia* rules, the financing mode should be based on profit and loss sharing basis, which strictly prohibits fixed return (*Riba*). Islamic bank are sometimes also referred to as conventional banks, because they offer full-service financial intermediary (Raza et al., 2019).

Indonesia is the country with the largest number of Islamic banks. However, the number of customers Islamic banks is still so small if compared to conventional banks. It is necessary to conduct the research to find out individual preference in Islamic banking. So, the use of technology such as digital banking in service innovation to meet clients need is best understood through its relationship to the service users and how they perceive the service (Mbama and Ezepue, 2017). Overall, Muslims have a strong belief that Islamic bank accelerate the growth of the economy and play a significant role in the well-being of Muslim societies (Raza et al., 2019).

# Technology Acceptance Model (TAM)

The concept of TAM introduced by Davis in 1986, TAM explained that the individual's intention to use technology determined by Perceived Ease of Use and Perceived Usefulness that is integrated with the individual's attitude (Davis et al., 1989). TAM explains that acceptability of new technology is influenced by individual beliefs explained by two variables, that is Perceived Ease of Use and Perceived Usefulness (Geven et al., 2003). Perceived Ease of Use is an indicator of cognitive effort required to use a technology. Perceived Usefulness is a measure of individual subjective judgement on utility provided by a new technology (Hu et al., 1999). Davis et al. (1989) defines Perceived Ease of Use as a user belief that using technology is easy to do and does not require a great effort to learn it, whereas Perceived Usefulness define as user confidence interpreted through the level of usability in using technology. Attitude toward Product is defined as the level of user ratings (positive or negative) in using the technology (Ajzen, 2002; Halilovic and Cicic, 2011).

Nam et al.(2016) states the important point of TAM is Perceived Usefulness directly affect to attitude when Perceived Ease of Use affect Perceived Usefulness and Attitude toward Product. That is, emphasize the level of individual belief that using technology (Digital Banking) is not difficult thing but in practice is easy to use (Davis et al, 1989). Furthermore, the use of Digital Banking will encourage increased Perceived Usefulness. The level of confidence that Digital Banking product can improve their performance is influence by the ease of use when operating the digital banking. Previous research conducted by Wixom and Todd (2005); Shipps and Phillips (2012); Wijayanti and Riza (2017) states that Perceived Ease of Use affects Perceived Usefulness. Therefore, based on the perception of digital banking is easy to use, the usefulness of digital banking can be felt, so the first hypothesis is as follow:

H1 Millennial consumers with high Perceived Ease of Use will have higher Perceived Usefulness to adopt digital banking

TAM describe two specific construct that influence the attitude of Perceived ease of Use and Perceived Usefulness (Chen, 2016). The acceptance of the new technology of digital banking is explained by individuals' attitude to use that. Perceived ease of Use emphasize the amount of effort required to use digital banking whereas Perceived Usefulness level of digital banking products (Kim et al., 2016). Attitude is positive or negative feeling and assessment in general when individuals use new technology (Ajzen, 2002; Halilovic and Cicic, 2011).

Wijayanti and Riza (2017), Chuang et al. (2016), Nam et al. (2016), Wixon and Todd (2005) states that Attitude toward Product is influenced by Perceived ease of Use and Perceived Usefulness. Increasing the Intention to Use digital banking requires user trust that digital banking products are easy and useful (Chau and Hu, 2002; Davis 1989). User believe that digital banking is easy to use and useful in solving their financial problem thereby helping to improve the attitude of users towards digital banking services (Chuang et al, 2016). Based on TAM and previous research result, the hypothesis is formulate as follows:

**H2** Millennial consumers with high Perceived Ease of Use will have higher Attitude toward Product digital banking

H3 Millennial consumers with high Perceived Usefulness will have higher Attitude toward Product digital banking

**H4** Millennial consumers with high Attitude toward Product will have higher Intention to Use digital banking

## Method

This research used a web-based questionnaire method supported by Google form. Survey is chosen in this research, because the purpose of this study was to measure individual perceptions of digital banking they use. Although survey methods have low internal validity, this method make it easy to reach samples spread in Indonesia. This research is quantitative descriptive research that try to understand respondent general answer about perception on Islamic digital banking.

The population is defined by Neuman (2006) as the whole group to be researched in a study. The population in this study is all Islamic digital banking users between the ages of 22 – 38 years old who are spread across Indonesia. This research uses purposive sampling method, this technique is chosen to obtain the respondents in accordance with the criteria set by researchers. Criteria of respondents used as samples in this study are Islamic banking customers who have ever used mobile banking and have experience using that for transaction.

TAM measured using an instrument developed by Davis (1989) and used also by Davis et al. (1989), Hu et al. (1999), Kim et al. (2016) and Wijayanti and Riza (2017). The variables in this study are Perceived Ease of Use (PEoU), Perceived Usefulness (PU), Attitude toward Product (AtP), Intention to Use (ItU). PEoU measure using six question items, PU measure using six question items, AtP measure using three question items and ItU measure using six question items. Each variable is measured using a 5-point Likert scale. After obtaining the data, the next step is to process the data using statistical test and interpret the result (Cooper and Schindler, 2011). The research model in this study was tested using Structural Equation Model AMOS.

# Result and Discussion

The respondents in this research are customer of Islamic bank especially Millennial Generation with amount to 315. Respondents consist men and women, age ranging from 22 – 38 years old, education ranging from high school to master degree, status ranging from student, employees, entrepreneurs, and using mobile banking from one month up to over three years. Data show that the respondents came from various cities in Indonesia which show that Islamic digital banking has been used by Indonesian people across region.

Table 1 shows the demographics of customers who are sample in this study. Furthermore, data on descriptive statistics are shown in Table 2. Descriptive statistics describe the data among variable that will help researchers and readers to know the spread of respondents' answers in the instrument, average data, and deviation standard. Here is the conclusions of descriptive statistics.

Table 2 shows some information that most of respondents answered with the maximum value. The highest mean is 4.193 the lowest mean is Intention to use. In addition, the highest deviation standard is Intention to Use and the lowest deviation standard is Attitude toward Product.

Table 1. Demographic Characteristic of Respondents

Variable	Description	Frequency	0/0
Gender	Male	134	42,5
Gender	Female	181	57,5
Age	≤ 20	138	43,8
11gc	21 – 29	164	52
	≥ 30	13	4.2
Education Degree	High School	78	24,8
Education Degree	Undergraduate	224	71,1
	Post Graduate	9	2,9
	Others	4	1,3
Job	Student	208	66
J&E	Civil Servant	17	5,4
	Employees	57	18,1
	Entrepreneur	11	3,5
	Professional	12	3,8
	Others	10	3,2
Customer of Islamic	BCA Syariah	3	1
Bank	BJB Syariah	3	1
2 min	BNI Syariah	94	29,8
	BPD Syariah	3	1
	BRI Syariah	75	23,8
	BSM	109	34,6
	BTN Syariah	2	0,6
	Bukopin Syariah	3	1
	CIMB Syariah	2	0,6
	Danamon Syariah	1	0,3
	Muamalat	18	5,7
	Permata Syariah	2	0,6
Tenor be a Costumer	≤ 1 year	76	24,1
	1 year	115	36,5
	2 years	91	28,9
	3 years	16	5,1
	4 years	13	4,1
	5 years	4	1,3

**Table 2.** Descriptive Statistics

Variable	Minimum Maximum		Mean	<b>Deviation Standart</b>	
Perceived Ease of Use	1.00	5.00	4.193	0.766	
Perceived Usefulness	1.00	5.00	4.135	0.772	
Attitude toward Product	1.00	5.00	4.129	0.726	
Intention to Use	1.00	5.00	3.937	0.812	

#### Measurement Model

Before testing the hypotheses, it is necessary to test the validity and reliability of the instrument so that data obtained reliable and valid (Cooper and Schindler, 2011). The competency of the model is evaluated by individual item reliability, convergent validity and discriminant validity. The result show the variables in this study is reliable with Cronbach alpha values for PU 0.944, PEoU 0.959, AtP 0.915, and ItU 0.943. All the variables have Cronbach's alpha greater than 0.7, which meets the criteria of Straub (1989).

In addition, construct validity test show good values with KMO and Barlett's test value 0.968 with significant level of 0,000. Furthermore, instruments of each variable are already

concentrated on their factors that have been tested using confirmatory factor analysis (CFA). The convergent validity was evaluated through average variance extracted (AVE), and all variables have minimum value of 0.50 which meets the benchmark proposed by Fornell and Lacker (1981). The discriminant validity was assessed after the convergent validity by using cross-loadings analysis at Table 3 and AVE for PU 0.780, PEoU 0.829, AtP 0.792, and ItU 0.803.

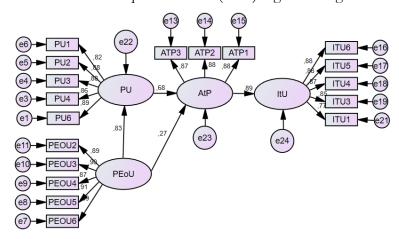
Table 3. (	Convergent Va	lidity Testing
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	PEoU	PU	ItU	AtP	P Value
PU1	.454	.625	.221	.309	< 0.001
PU2	.283	.790	.291	.259	< 0.001
PU3	.321	.775	.343	.187	< 0.001
PU4	.320	.665	.360	.329	< 0.001
PU6	.380	.676	.303	.339	< 0.001
PEoU2	.801	.283	.281	.210	< 0.001
PEoU3	.814	.285	.280	.194	< 0.001
PEoU4	.695	.325	.280	.359	< 0.001
PEoU5	.796	.317	.291	.202	< 0.001
PEoU6	.730	.306	.360	.258	< 0.001
AtP1	.336	.388	.320	.717	< 0.001
AtP2	.309	.325	.407	.707	< 0.001
AtP3	.326	.436	.352	.621	< 0.001
ItU1	.465	.291	.566	.218	< 0.001
ItU3	.266	.332	.781	.192	< 0.001
ItU4	.300	.245	.717	.374	< 0.001
ItU5	.432	.331	.659	.264	< 0.001
ItU6	.281	.276	.797	.245	< 0.001

Table 3 shows that the convergence validity is met. It can be seen from latent variables that have factor loading above 0,7 and AVE values above 0,5. In addition, the convergence validity for reflective construct is supported with significant p values (<0,001).

## Structural Model

To test the hypothesis, this study grouped the variables of the model into exogenous and endogenous variables. The structural model was analysed by examining the standardized path. The model said to be good when the hypothetical model development is theoretically supported by empirical data (Yonggris et al., 2018). The result of Structural Equation Model (SEM) is given at Figure 1.



**Figure 1.** The Result of SEM Analysis

The good of fit model indices of the SEM analysis included **Absolute fit Measures**: Chi-Square 325,135 Probability Level 0,000 is Good. RMSEA 0,069 is Good < 0,08. GFI 0,900 is Good > 0,90. **Incremental Fit Measures**: AGFI 0,870 is Marginal > 0,90. CFI 0,967 is Good > 0,95. TLI 0,962 is Good > 0,95. **Parcimonious Fit Measures**: CMIN/df 2,482 is Good < 5,00 (Hair et al. 2010, p.665). Based on the GIF result, the statistical test supports the model.

Effect	Estimate	Critical	Standardized	P Value	Exp
		Ratio	Regression Weight		
PEoU => PU	0.83	16.865	0.827	0.000	Significant
PEoU => AtP	0.27	4.467	0.270	0.000	Significant
PU => AtP	0.68	10.390	0.684	0.000	Significant
AtP => ItIJ	0.89	17 874	0.894	0.000	Significant

Table 4. Loading Values and Significance of Structural Relationship Between Constructs

Table 4 shows the relationship between each variable. It can be seen that the Perceived Ease of Use has a positive effect on Perceived Usefulness with estimate value 0,83 (p value 0,000). That is, H1 is supported significantly. Perceived Ease of Use has a positive effect on Attitude toward Product with estimate value 0,27 (p value 0,000). That is, H2 is also supported significantly. Perceived Usefulness has a positive effect on Attitude toward Product with estimate value 0,68 (p value 0,000). That is, H4 is supported significantly. Finally, Attitude toward Product has a positive effect on Intention to Use with estimate value 0,89 (p value 0,000). That is, H5 is supported significantly. So, all of hypotheses in this research are supported and significant.

Researcher gave an open question to know users perception and reason in using Islamic digital banking. Furthermore, researcher grouped the answers into several factors based on the core of similarity answers. First, the item question about what Islamic bank they were using and tenor be a costumer at them. Second, the item question about reason using digital banking and how impact with consumer business or activity, there is several factor of the answer: Ease of Use 28 %, Ease of Transaction 25%, effective and efficient 15%, Trusted 12%, Avoid *Riba* 10%, free 4%, and others 6%.

TAM explain that individual's intention to use technology is determined by Perceived Ease of Use and Perceived Usefulness integrated with individual attitude and increasing the Intention to Use digital banking (Chau and Hu, 2002; Davis 1989). This study focuses on millennial consumers about user perceptions, attitude, and behavioural intention toward Islamic digital banking. The results' are expected by researcher that digital banking supports' easiness in conducting transaction and business. Researcher also gave open question to confirm respondents' reason using digital banking. After analysed and classified respondents' answers into several factors that became the reason used digital banking. The most important finding is discovery of information that millennial generation perceptions, attitudes and intentions to re-use Islamic digital banking product and services.

In accordance with the result of previous studies conducted by Wixom and Todd (2005) and Shipps and Phillips (2012) using TAM to test the acceptance of technology as well as Chuang et al. (2016) and Wijayanti and Riza (2017) testing TAM model on financial technology, the result is not much different, this study was success to investigate the extent to which perceived usefulness and perceived ease of use influences the attitude and behavioural intention towards Islamic digital banking adoption of the Millennial Generation using the TAM model. And this study also support earlier research on Islamic digital banking from (Asmy et al., 2018), Thaker et al. (2019), and Raza et al. (2019) but this study attempts to explore the millennial consumers. Finally, this study attempts

to provide further insight into the factors that lead millennial consumers to use Islamic digital banking services. Consumer market driven is the current marketing paradigm, its mean companies create products and services based on consumers' want and needs. Although the innovation is unpredictable and disruptive, it is undeniable that the benefits of innovation are felt as evidence by digital banking, fintech, start-up, big data, AI, and so on that are able to change the market structure in this modern era. Obviously, the concept of Islamic economics provides a win-win solution for companies and consumers.

## Conclusion

This study finding have some implications for Islamic bank. The bank should increase the perceived value among customers should convince them that by opting the digital banking will result usefulness and ease of use. They can influences the attitude and behavioural intention towards Islamic digital banking adoption of the Millennial Generation. The result of this study can be used as reference for corporate managers to be a consideration in determining the strategy in running the business. The result of this study are important enough to understand perception, attitude, and behaviour of consumers in using digital banking. Islamic banks have to continue to innovate their products and services because the development of technology is so fast.

Concerned with societal implication, researcher is certain that this research will provide support to policymakers and regulators to develop strategies for advancement of society and industry. For government as regulator, it is necessary to pay attention to regulations that control the development of financial technology so as not to become disruptive economy, because rules in many interrelated fields in this transition of new industry era are still not clear. Government needs to determine a more flexible legal concept in order not to turn off the innovation but not too free. Because, it will lead the unhealthy competition. The balance between the interest of government, society, and business needs to be consider for the common good.

This research has limitation because the sample used just customer from Islamic banking. The result will be more complete if compared the result when using samples from conventional banking customers, so it can be seen perception, attitude, and behaviour millennial generation consumers. This weakness can be used as ide for further research that is by comparing the result of two types of samples. This research also focus on the internal aspects of costumers. It will be more complete if researcher including external aspect.

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