

Conference Paper

Factors Affecting Indonesian Consumers to Switch, Using Mobile Banking and Internet Banking Service

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Abstract

The development of technology provides many alternatives and options for bank consumers to obtain services with several conveniences, one of them being through applications and Internet-based services. The Indonesian Financial Services Authority (OJK) revealed that data of e-banking users are quite convincing, where the number of e-banking users (SMS banking, telephone banking, mobile banking, and Internet banking) increased 270%, from 13.6 million customers in 2012 to 50.4 million customers in 2016, while the frequency of e-banking user transactions increased 169%, from 150.8 million transactions in 2012 to 405.4 million transactions in 2016. This study aims to analyze the factors affecting bank consumers in Indonesia to switch using mobile banking and Internet banking services. This research uses quantitative approach through survey method and multiple regression analysis to measure the influence of independent variable to dependent variable. Technology Acceptance Model (TAM) is used to construct hypothetical models, the author also set perceived value as independent variable to complete the measurement. A total of 216 responses were received from 250 questionnaires distributed, which gave a response rate of 86%. Respondents were taken from three different classifications: Government Bank Consumer, Private Bank Consumer and Regional Bank Consumer. Surveys were conducted in Malang, Indonesia. The result of the analysis stated that perceived usefulness, perceived ease of use and perceived value have positive and significant effect on the variable of consumer intention to switch with high significance level.

Keywords: TAM, perceived value, switching intention, consumer behavior

1. Introduction

The number of online media users globally show 1.8 billion in 2010 and will be even higher in 2017. World Internet access is growing so rapidly that people are now online almost every day to do everything from checking their bank statements to shopping, finding information and enjoying entertainment. Utilization of information technology

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in Indonesia has seen a very rapid growth, along with the growth in the number of Smartphone users and Internet media that number reached 83.7 million people in 2014 [1]. In 2016, Internet users in Indonesia increased to 132.7 million people and is expected to increase in 2017 [2]. The developments in the field of information technology have had an impact on the business climate becoming more competitive. As a consequence, the volume of digital economic activity has become increasingly massive. The Financial Services Authority (OJK) revealed that data and e-banking users are quite convincing, wherein the number of e-banking users (SMS banking, phone-banking, mobile banking and Internet banking) increased 270%, from 13.6 million customers in 2012 to 50.4 million customers in 2016, while the frequency of e-banking user transactions increased 169%, from 150.8 million transactions in 2012 to 405.4 million transactions in 2016.

2. Literature Review

2.1. Switching concept

Customer switching behavior occurs when a customer leaves the initial service or product they use and replaces it with a new product or service [3]. Customer switching impacts the cost base on service provider-based companies. Keaveney argues that loyal customers can generate many benefits [4]. Gerrard identified the factors that led consumers to switch bank services are affected by three things: service failures, prices and discomfort. In his research, he argues that most of the switching behavior of consumer banks is caused by failure in service [5]. The switching model developed by Keaveney is a major advance in understanding consumer switching behavior [3]. Keaveney's study was a stimulus for those conducting research on certain service industry sectors, such as banks. There are eight models of Keaveney's events while investigating switching behavior of bank customers [6]. Their findings are consistent with Keaveney with respect to the most influential switching events.

2.2. Switching study

The most notable study concerning switching behavior was done by Keaveney [3]. Keaveney identifies a variety of important reasons that cause customers to switch from their original (initial) service provider. On this basis, Keaveney classifies the reasons for customers moving into the following eight categories: (i) core service failure,

(ii) service encounter failure, (iii) employee responses to service failures, (iv) pricing, (v) inconvenience, (vi) attracted by a competitor, (vii) ethical issues, and (viii) involuntary switching [3]. In this case, Keaveney also explained that more than half of customers switch because of the perceived value of services. In another Keaveney study (with Parthasarathy), it was revealed that certain customers would have a greater tendency to switch service providers due to lack of care for service failures [4]. The behaviors most likely to occur after product failure include exit and switch [4]. In addition, the study results also show that, in the context of online services, demographic factors such as age and income, as well as individual factors such as risk aversion, affect whether a customer continues use the service or switch [4].

Customer switching behavior has been studied in many perspectives, such as banking services [7], brand switching [8], online shopping, service providers [9], hi-tech products [10], airline selection [11], social networking sites [12], etc. Sanjukta Pookulangara examines the behavior of consumer switching using Theory of Planned Behavior (TPB) [13]. This theory assumes that individual attitudes and beliefs, along with subjective norms and control factors, will lead to the intention to perform certain behaviors, whether to change channels or not. Factors affecting switching intention to bank customers are such as being influenced by consumer attitudes regarding a product or a banking service [14]. In studies conducted on bank account holders in Spain, the result showed a significant direct relationship between switching intention and, respectively, behavioral beliefs, normative beliefs, attitudes and subjective norms.

2.3. Theoretical framework

The Acceptance Technology Model (TAM) developed by Davis [15] is used to explain and predict a person's acceptance of information technology in a business environment [15]. This model is widely used and replicated empirically in research in the field of technology acceptance. TAM provides a tangible structure to explain users of the adoption process for innovative product information and is a useful theoretical framework for explaining user behavior and ways to trace the effects of external variables, internal intentions, attitudes and beliefs [16]. A number of scientific studies have proved this model to be globally accepted in terms of validity, acceptability and reliability [17].

The expansion of the TAM concept is expected to help predict one's attitudes and acceptance of technology and can provide the necessary fundamental information on the factors driving the individual's attitude [18]. TAM is able to measure one's intentions to use a system or technology through two factors, perceived usefulness, which is

the level of individual trust that the use of technology will improve performance, and perceived ease of use, which is the level of individual trust that the used technology makes it easier to complete work [18].

1. Perceived Usefulness

Perceived usefulness is a level where a person believes that the user of a particular system will improve the work performance of that person. Based on the definition it is defined that the usefulness of the use of ICT can improve the work performance of people who use it [19]. Venkatesh concluded the benefits of information technology are benefits expected by users of information technology to carry out the task [18]. Davis also mentions that an individual will use technology if the person knows that the benefits or uses have a positive effect on their use [19].

According to Chin and Todd, usefulness can be divided into two categories, among others: (1) utilization with the estimate of one factor, (2) benefit with the estimation of two factors (usefulness and effectiveness) [20]. The dimensions of each are grouped as follows:

- (a) Utilization includes dimensions: makes job easier (make my job easier), useful, increases productivity
- (b) Effectiveness includes dimensions: improving effectiveness (enhance my effectiveness), developing job performance (improve my job performance).

2. Perceived Ease of Use

Davis defines ease of use (perceived ease of use) as a level where one believes that the use of a particular system can reduce one's effort in doing something [15]. The intensity of use and interaction between users with the system can indicate the level of ease of use. Davis provides some indicators of ease of use of IT, which include [15]:

- (a) Computers are very easy to learn
- (b) The computer works easily as desired by the user
- (c) User skills will increase by using the computer
- (d) The computer is very easy to operate.

3. Perceived Value

The perceived value is the value of the comparison between what the consumer receives (the quality, the benefit and the utility) and what the consumer must

give to get the product (price, cost, effort) [21] Another opinion says that value is a trade-off between perceived benefits and costs to be. The finding is consistent with Zeithaml's proposition that the intentions of channel use are directly influenced by the perception of channel value (and utilitarian and hedonic values), and indirectly by channel quality (and service and merchandise quality) and channel prices (and monetary prices and non-monetary) [22]. Based on Zeithaml's concept of indigo perception, this is adopted as a factor element that encourages consumers to have the intention of switching channels [22]. Thus, perceived value is defined as the customer's perception of the value received in the perceived cost exchange when obtaining products and services.

2.4. Conceptual framework

This study uses three independent variables - perceived usefulness, perceived ease of use and perceived value. The dependent variable is the bank consumer's intention to switch using mobile banking services. Based on these variables a conceptual framework can be made as follows:

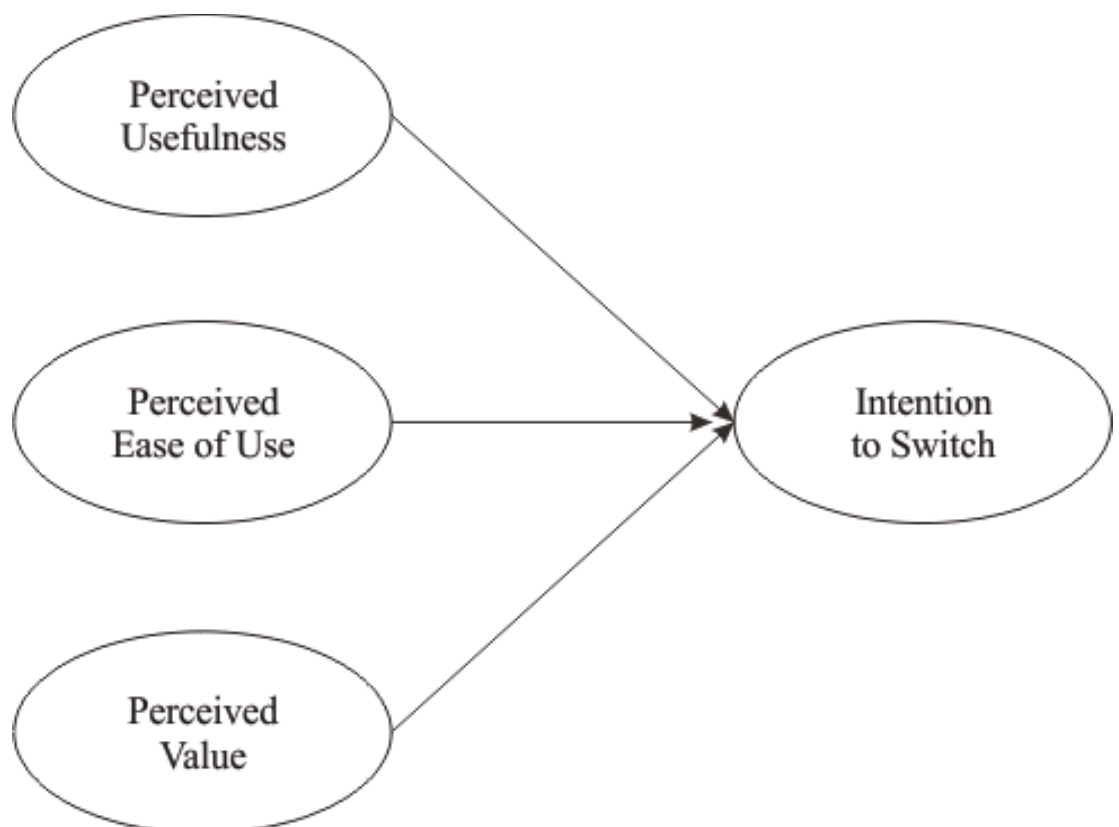


Figure 1: A schematic diagram of the conceptual framework.

3. Methodology

Research data was obtained through questionnaires distributed to respondents. Respondents in this study are bank consumers. The questionnaire consists of two parts, the first part is the demographic data of the respondents, and the second is the revelation about the research variables, which are perceived usefulness, perceived ease of use, perceived value and the intention to behave. Surveys were conducted in Malang, Indonesia, in February and March 2018, at selected locations (i.e., government banks, private banks and regional banks). The sampling technique used is non-probability sampling, data collection process uses convenience sampling method and is based on the self-administered principle [23]. Convenience sampling is a sampling procedure to get the most convenient people or units available [24]. Before the questionnaire was given, respondents were asked whether they would participate or not in the study, to fill out the questionnaire. If they agreed, the researcher submitted the questionnaire to be answered and collected after completion. A total of 216 responses were received from a total of 250 distributed questionnaires, giving an 86% response rate.

3.1. Method of analysis

Respondents are classified into five criteria - by age, education level, gender, type of bank currently in use and occupation. Based on the results of descriptive analysis it shows that, more than 70% of respondents are in the range of age 26 to 45 years old, or in the adult category, while, in terms of education level, 42.1% are of high school level and 57.9% from university level. By gender, the female respondents had higher numbers (60.6%) compared to male (39.4%). Private bank consumers accounted for 46.8% of respondents, 44.0% were state-owned bank or government bank consumers and the rest (9.3%) were regional bank consumers. In terms of occupation, the majority respondents are employees (71.3%) while the rest are entrepreneurs (14.4%) and students (14.4%).

3.1.1. Data analysis

Questionnaire items were made based on variable indicators [20]. Respondents were asked to rate their responses to the statements given by the researcher, using a Likert scale of seven points, from "Strongly Disagree" (1) to "Strongly Agree" (7). To make it

TABLE 1: Demographic profile.

Variable	f	Percentage
<i>Age group</i>		
> 45	29	13.4
16-25	35	16.2
26-35	97	44.9
36-45	55	25.5
Valid	216	100
<i>Education group</i>		
High school	91	42.1
University	125	57.9
validity	216	100
<i>Gender group</i>		
Female	131	60.6
Male	85	39.4
Validity	216	100

Source: Data analysis output, using SPSS 22.

TABLE 2: Respondent classification.

Variable	f	Percentage
<i>Bank Criteria</i>		
Private Bank Consumer	101	46.8
Regional Bank Consumer	20	9.3
State-Owned Bank Consumer	95	44.0
Validity	216	100
<i>Occupation</i>		
Employee	154	71.3
Entrepreneur	31	14.4
Student	31	14.4
Validity	216	100

Source: Data analysis output, using SPSS 22.

easier, the questionnaire is written in Bahasa Indonesia. Data demographic characteristics of respondents were processed using descriptive analysis and scale data were analyzed using multiple linear regression.

3.2. Research hypothesis

The hypothesis is a temporary answer that must be tested to find out the truth. The variables used consist of latent variables, where variables cannot be observed directly but can be measured through indicators [24]. Based on the formulation of problems and reviews of literature conducted, the hypotheses in this study are as follows:

- H1. There is a significant and positive relationship between perceived usefulness and consumer intentions to switch, using mobile banking and Internet banking. [16]
- H2. There is a significant and positive relationship between perceived ease of use and consumer intentions to switch, using mobile banking and Internet banking. [16]
- H3. There is a significant and positive relationship between perceived value variable and consumer intentions to switch, using mobile banking and Internet banking. [22]

4. Results and Discussion

4.1. Results

Reliability of a test refers to the degree of stability, consistency, predictability and accuracy of item. The item is verified by calculating the Cronbach alpha value; in general, the alpha value is considered sufficient if more than 0.7. Nunnally recommends that alpha more than 0.6 be sufficient for the initial stages of the study. The Cronbach alpha estimated for perceived usefulness variable is 0.884, the perceived ease of use variable alpha is 0.663, the perceived value variable is 0.835 and the switching intention scale is 0.825. Because Cronbach’s alpha in this study is much higher than 0.6, it is considered to have adequate reliability.

TABLE 3: Reliability coefficient.

Variable	Item	Cronbach’s	Mean	SD
Perceived usefulness	5	0.884	6.509	2.0500
Perceived ease of use	4	0.663	6.510	1.3938
Perceived value	4	0.835	6.498	1.6282
Intention to switch	4	0.825	6.397	1.5587

Source: Data analysis output, using SPSS 22

The mean value indicates the respondents’ average answers for all items in the questionnaire. The results showed that the mean value of the perceived usefulness

variable was 6.509, the perceived ease of use variable had a mean value of 6.510, the perceived value variable had a mean value of 6.498 and for the variable of intention to switch services the mean value is 6.397. Overall, the mean value of respondents' answers is 6.479, which means that all respondents "strongly agree" that ease, usefulness and product value have an effect on the intention to switch using mobile banking service.

TABLE 4: Test of collinearity.

Variable	Tolerance	VIF
Perceived usefulness	0.439	2.279
Perceived ease of use	0.386	2.588
Perceived value	0.472	2.117

Source: Data analysis output, using SPSS 22

In the normality and multicollinearity test, this study involved 216 sample of respondents. There were two main methods used to determine the existence of multicollinearity between independent variables in this study. This methodology involves the calculation of both the tolerance test and the inflation variable (VIF) [23]. The results of this analysis are presented in Table III, from the multicollinearity test data it was found that no tolerance level is less than or equal to 0.01 and all VIF values are below 10. Thus, the measure chosen to assess the independent variables in this study did not reach a level that indicated multicollinearity.

TABLE 5: Regression results.

Variable	β	t - value	p - value
Constant	0.825	4.169	0.000
Perceived usefulness	0.434	6.985	0.001
Perceived ease of use	0.423	6.954	0.000
Perceived value	0.333	5.634	0.003

Source: Data analysis output, using SPSS 22

The results of multiple regression analysis are used to evaluate the strength of the proposed relationship. Three hypotheses are formulated and all variables are maintained after the test of reliability and validity. The hypotheses were tested using multiple regression following established guidelines [23]. Variable intentions for switching services are used as dependent variables. The results of the analysis, as shown in Table 5, reveal that H1, H2, and H3 are significant in the prediction model (p - value < 0.005). The variable of perceived usefulness is positively related to the intention to switch ($\beta = 0.434, p < 0.005$), perceived ease of use variable also relates positively to intention to switch ($\beta = 0.423, p < 0.001$), while the variable of perceived value has $\beta =$

0.333, $p < 0.005$. Thus, H1, H2 and H3 are fully supported. Table IV shows that perceived usefulness is the most significant predictor of the intention to switch service.

TABLE 6: Model Summary of Regression.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.635 ^a	0.404	0.395	0.303
a. Predictors: (Constant), x3, x2, x1				
Source: Data analysis output, using SPSS 22				

The summary model shows that the value of R square = 0.404, and the value of adjusted R square = 0.395. It shows that three independent variables, perceived usefulness, perceived ease of use and perceived value, can explain the dependent variable of intention to switch banking service by 40%, while the other 60% is explained by other variables.

4.2. Discussion

The results show that the theory of Technology Acceptancy Model (TAM) is relevant and can be used in predicting consumer intentions in switching services [21]. This study shows that there is a significant positive influence between perceived usefulness variables and perceived ease of use variables on consumer intention in moving banking services. This study is in accordance with what was proposed by Davis [19]. Other research supporting the results of this study was conducted by Msaed [16]. The results of Msaed’s research confirm that product benefits, perceived usefulness, perceived ease of use and the relative advantages of product features are the main factors driving the user’s intention to switch. Other variables, such as subjective norms, have limited impact. The cost of switching is seen as a major obstacle to the consumer’s decision to switch to new technology.

The ease of the consumer side is defined as the degree to which a consumer believes the use of technology makes things simple, easy and does not require much effort to be used [15]. In TAM theory, the more consumers who feel the ease of using technology devices, the more encouraging of themselves to use them. Ease of use is described as an attitude that positively influences and directly encourages the adoption of technology products [25], [26]. Park and Chen describe the perception of ease as a result of the presence of personalized features [26]. Consumers have been

widely explored in technology acceptance, and have been found to be an important component of technology adoption by influencing attitudes [18].

Cocosila and Trabelsi argue that, if the value of goods or services perceived exceeds the cost incurred, then the higher the likelihood of the purchase will be made [27]. Hsu and Lin also argue that the higher the perceived value, the more likely it is to adopt products with new technologies. In general, the value of a product or service is considered as an important factor in influencing consumers in adopting technology [28].

4.3. Limitation and future research

Research related to consumer switching behavior still has many dimensions and points of view that have not been included in this research, so there is a need for further research. The area where this research is conducted is also still relatively narrow, so generalizations cannot be made to explain the real conditions in Indonesia. The results of this study can be used as a first step for a more comprehensive research with a wider scale. Future research will be expected to examine a broader scope involving cooperation from several regions or countries. The results of research on consumer switching behavior will benefit banks, especially in knowing consumer interest and marketing of application-based bank service products, such as mobile banking and Internet banking.

4.4. Conclusion

The results show that the variables of perceived usefulness, perceived ease of use and perceived value are important factors in measuring consumer intentions to switch. Therefore, the researcher suggests to conduct more in-depth study related to other factors that have not been studied. In-depth study of switching behavior is done in several countries using diverse approaches and theories, recent studies include push variables, variable pull and mooring variables that prevent a person from moving.

References

- [1] <https://www.kominfo.go.id>. jumlah pengguna smartphone dan media internet di Indonesia. 2014 [cited 2014 2017]; Available from: <https://www.kominfo.go.id>.

- [2] Internetworldstats.com. The number of internet users and penetration in indonesia. 2016; Available from: <http://www.internetworldstats.com/asia.htm>.
- [3] Keaveney, M.S., Customer Switching Behavior In Service Industries: An Exploratory Study. *Journal of marketing*, 1995. 59(2).
- [4] Keaveney, S.M.d.P., M., Customer Switching Behavior in Online Services: An Exploratory Study of the Role of Selected Attitudinal, Behavioral, and Demographic Factors. *Journal of the Academy of Marketing Science*, 2001. 29(4): p. 374-390.
- [5] Philip Gerrard, J.B.C., Consumer switching behavior in the Asian banking market. *Journal of Services Marketing*, 2004. 18(3): p. 215-223.
- [6] Vishal Vyas, S.R., Drivers of customers' switching behaviour in Indian banking industry. *International Journal of Bank Marketing*, 2014. 32(4): p. 321-342.
- [7] Michael D. Clemes, C.G., Dongmei Zhang, Customer switching behaviour in the Chinese retail banking industry. *International Journal of Bank Marketing*, 2010. 28(7): p. 519-546.
- [8] Osama Sam Al-Kwafi, Z.U.A., An intellectual journey into the historical evolution of marketing research in brand switching behavior – past, present and future. *Journal of Management History*, 2015. 21(2): p. 172-193.
- [9] Yongqiang Sun, D.L., Sijing Chen, Xingrong Wu, Xiao-Liang Shen, and X.Z. c, Understanding users' switching behavior of mobile instant messaging applications: An empirical study from the perspective of push-pull-mooring framework. *Computers in Human Behavior*, 2017. 75: p. 727-738.
- [10] Zeeshan Ahmed, M.G., Usman Rafiq, Factors Affecting Consumer Switching Behavior: Mobile Phone Market in Manchester- United Kingdom. *International Journal of Scientific and Research Publications*, 2015. 5: p. 1-7.
- [11] Jishim Jung, H.H., Mihae Oh, Travelers' switching behavior in the airline industry from the perspective of the push-pull-mooring framework. *Tourism Management*, 2017. 59: p. 139-153.
- [12] Chun-Nan Lin, H.-Y.W., Understanding users' switching intentions and switching behavior on social networking sites. *Aslib Journal of Information Management*, 2017. 69(2): p. 201-214.
- [13] Sanjukta Pookulangara, J.H., Ge Xiao, Explaining consumers'channel-switching behavior using the theory of planned behavior. *Journal of Retailing and Consumer Services*, 2011. 18: p. 311-321.
- [14] Farah, M.F., Application of the theory of planned behavior to customer switching intentions in the context of bank consolidations. *International Journal of Bank Marketing*, 2017. 35(1): p. 147-172.

- [15] Davis, F.D., Bagozzi, P R,Warshaw P, User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 1989. 35(8): p. 982-1003.
- [16] Cristelle Msaed, S.O.A.-K., Zafar U. Ahmed, Building a comprehensive model to investigate factors behind switching intention of high-technology products. *Journal of Product & Brand Management*, 2017. 26(2): p. 102-119.
- [17] Hong, S.H., Tam, K. and Kim, J., Mobile data service fuels the desire for uniqueness. *Communications of the ACM*, 2006. 49(9): p. 89-95.
- [18] Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D., User acceptance of information technology: toward a unified view. *MIS Quarterly*, 2003. 27(3): p. 425-478.
- [19] Davis, F.D., Bagozzi, P R,Warshaw P, Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 1989. 13(3): p. 319-340.
- [20] Chin W Wynne, T.P., On The use Usefullness,ease of use of structural equation Modeling in MIS Research: A note of Caution. *Management Information System Quarterly*, 1995. 21(3).
- [21] Fang, X., Chan, S., Brzeinski, J. and Xu, S., Moderating effects of task type on wireless technology acceptance. *Journal of Management Information Systems*, 2005. 22(3): p. 123-157.
- [22] Hsin Hsin Chang, K.H.W., Shi Yu Li, Applying push-pull-mooring to investigate channel switching behaviors: M-shopping self-efficacy and switching costs as moderators. *Electronic Commerce Research and Applications*, 2017. 24: p. 50-67.
- [23] Joseph F. Hair Jr. William C. Black, B.J.B.R.E.A., *Multivariate Data Analysis*. Seventh ed. 2014, United State of America (USA): PEARSON Education Inc. 733.
- [24] Zikmund, W.G., et al., *Business Research Methods*. 8th ed. 2009, USA: South-Western College Pub. 674.
- [25] Childers, T.L., Carr, C.L., Peck, J. and Carson, S., Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, 2001. 77(4): p. 511-536.
- [26] Park, Y.a.C., J.V., Acceptance and adoption of the innovative use of Smartphone. *Industrial Management & Data Systems*, 2007. 107(9): p. 151-175.
- [27] Cocosila, M., Trabelsi, H., An integrated value-risk investigation of contactless mobile payments adoption. *Electron. Commer.*, 2016. 20: p. 159-170.
- [28] Hsu, C.L., Lin, J.C.C., What drives purchase intention for paid mobile apps?- An expectation confirmation model with perceived value. *Electronic Commerce Research and Applications*, 2015. 14(1): p. 46-57.