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Analysis of Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) Model of Electronic Banking Usage by Bank Customers in Indonesia

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Abstract: Electronic banking users in Indonesia are increasing rapidly due to changes in people's behavior in using technology. This research method uses Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model with questionnaire to 141 respondents of electronic banking user. This study analyzes consumer ratings of exogenous variables namely Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Hedonic Motivation, Price Value, and Habit toward endogenous variables namely Behavioral Intention. This study also evaluates the moderation variables of Age, Gender, Experience, and Education in relation to exogenous variables with endogenous variables. Data analyzes by using SmartPLS 2.0 submitted that variables Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Hedonic Motivation, Habit proved have significant influence on Behavioral Intention. Price Value variables haven't significant influence on Behavioral Intention. The influence of Hedonic Motivation and Habit variables on Behavioral Intention is influenced by Age moderation variable. To improve consumer's intentions on electronic banking should prioritize Habit factor and other factors such as Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Hedonic Motivation.

Keywords: Electronic Banking, Behavioral Intention, UTAUT2, Technology Acceptance

INTRODUCTION

Global competitions in all fields are increasingly making Information Technology (IT) as a necessity that can not be abandoned. Venkatraman and Zaher (1990) say that globalization and increased international competition accelerate the movement towards the increasing use of information technology by companies. Globalization in the industrial economy adds to the company's information values and adds to business opportunities, while the information system in executing trade and managing business on a global scale.

Factor of product innovation and technological development has been an integral part with the development of the banking industry to improve service quality so that it becomes faster, good and efficient. The rapid advancement of computer technology in terms of hardware, software, host to host systems, network systems and data communications greatly impacted the banking services electronically. The development of E-Banking experienced a big leap, bank transactions became easy, fast and real time without any time and place limitations (Maryanto Supriyono, 2011).

Electronic banking is one of bank services that enables customers to obtain information, communicate and conduct banking transactions through the network, and not a bank that only provides banking services through internet (Tampubolon, 2004).

Electronic banking is a facility provided by banking companies through electronic objects (eg mobile phones, computers, and phones) to replace the need for transactions that are usually done through an ATM machine. In other words, customers can perform banking transactions via mobile phones or internet such as transactions in ATM machines. Electronic banking opens new paradigms, new structures and new strategies for retail banks, where banks face new challenges (Mukherjee and Nath, 2003).

Alsajjan & Dennis (2010) in his research in Saudi Arabia said, although the growth of internet users worldwide is quite fast, the growth of internet banking users is not as expected. According to Yoon & Steege (2013) who conducted research in Columbia, many internet users do not use internet banking and some internet users are still reluctant to make financial transactions via internet banking.

Research Results Alsajjan & Dennis (2010) and Yoon & Steege (2013) are different in Indonesia. Indonesia is the country with the 5th largest internet user (five) in the world after China, India, United States, and Brazil. The number of internet users in Indonesia reached 132.7 million of the total population of 263,510,146 people as of March 31, 2017 (Internet World Stats, 2017). Can be delivered that internet users in Indonesia exceeds half that is 50.4% of the total population. The amount of internet usage also supports the growth of e-banking usage in Indonesia. The Financial Services Authority (OJK) not that the number of e-banking users (SMS banking, phone banking, mobile banking and internet banking) increased by 270%, from 13.6 million customers in 2012 to 50.4 million customers by 2016. this increases from the changing behavior and needs of the community in utilizing digital technology to perform banking activities (Dwitya Putra, 2017).

According to Venkatesh *et al.* (2012) who has conducted research related to consumer behavior, there are indicators Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Hedonic Motivation, Price Value and Habit that can explain how a person's behavior towards the acceptance of a technology service. These seven indicators are illustrated with a Vankatesh *et al.* study model. (2012) and known as Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2).

Based on the description of the background that has been presented, the authors are interested to conduct research on the factors that affect behavior change and the needs of the community in utilizing digital technology, especially in conducting banking activities using electronic banking services in Indonesia. Therefore this research entitles "Analysis of Unified Theory Model of Acceptance and Use of Technology 2 (UTAUT2) Against Electronic Banking Usage by Bank Customers in Indonesia".

THEORETICAL

Bank Indonesia explains that banks provide Electronic Banking or E-Banking services to meet the need for alternative media to conduct banking transactions, other than those available at branches and ATMs. Banking transactions can be done anywhere, and anytime easily and practically through electronic networks, such as internet, mobile phones and telephones. Savings or giro holders may use E-banking services including Internet Banking, Mobile Banking, Phone Banking and SMS Banking.

Internet Banking namely banking (financial and non-financial) transactions conducted through computers connected to the internet network of banks. Mobile Banking is a banking service that can be accessed directly through GSM (Global for Mobile Communication) mobile phones by using SMS (Short Message Service) media. Phone Banking is a service provided for ease of obtaining banking information and for performing non-cash financial transactions via telephone. SMS Banking is a banking information service that can be accessed directly by mobile phone / mobile by using SMS media (www.bi.go.id).

UTAUT is the theory of the latest technology acceptance first developed by Venkatesh et al. (2003) as a composite of eight previous theories, namely Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Motivational Model (MM), Combined TAM-TPB (C-TAM-TPB), Model of Personal Computer Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). The UTAUT model was developed with four core constructs: performance expectancy, effort expectancy, social expectancy, and facilitating conditions. In addition to the four constructs, there are four moderators: gender, age, experience, voluntariness of use. In theory this is explained by behavioral intentions (behavioral intention) and user behavior (usage behavior) (Venkatesh et al., 2003). According to Venkatesh et al. (2003) the resulting UTAUT model formulates four factors that give rise to a system of acceptance and usage with four key moderators influencing each other. Factors that give rise to user acceptance on UTAUT model are: Performance expectancy is the level of user confidence that by using a system will help the user to produce maximum work performance. Effort Expectancy is the level of user perceived convenience in using a system. Social Influence is the awareness of a person aware of the existence of others that use a system. Facilitating Conditions, namely the belief in the existence of organizational and technical facilities that support the activities of system use (Venkatesh *et al.*, 2003).

The development of replication, application, and integration of the UTAUT model is important in broadening the understanding of technology adoption processes and reinforcing theoretical limitations of the theory (Venkatesh *et al.*, 2012). Technological developments increasingly rapidly, became one of the reasons for the need for new development of the UTAUT model. The initially developed UTAUT models to explain acceptance and use of technology will be developed for other contexts, such as consumer technologies where many industries have developed applications and services from technology targeting consumers (Venkatesh *et al.*, 2012).

Four important constructs that affect the Behavioral Intention to Use and Use Behavior of the technology on the UTAUT model developed by Venkatesh *et al.* in 2003, was developed into seven constructs on UTAUT 2 model by Venkatesh *et al.* in 2012 by adding (1) Hedonic Motivation which is the level of pleasure gained from the use of technology, (2) Price Value which is the level of comparison between the benefits perceived by users with costs incurred to use the technology, and (3) Habit which is the extent to which users tend to use technology automatically because of previous learning (Venkatesh *et al.* 2012).

Conceptual Model

Hypotheses

From the results of theory search, previous research, and research models and according to Venkatesh *et al.* (2003) the resulting UTAUT model formulates four factors that give rise to acceptance and usage systems with four key moderators influencing Behavioral Intention. Venkatesh *et al.* (2012), stated that Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Condition proved able to influence Behavioral Intention and influence Facilitating Condition on Behavioral Intention influenced by Age moderation variable, Gender, and Experience. The hypothesis used in this research is as follows:

- H1 : *Performance Expectancy has a positive effect on Behavioral Intention.*
- H2 : *Effort Expectancy has a positive effect on Behavioral Intention.*
- H3 : *Social Influence has a positive effect on Behavioral Intention.*
- H4 : *Facilitating Condition has a positive effect on Behavioral Intention.*
- H4a : *The influence of Facilitating Condition on Behavioral Intention is affected by age.*
- H4b : *The influence of Facilitating Conditions on Behavioral Intention is influenced by gender.*
- H4c : *The influence of Facilitating Conditions on Behavioral Intention is influenced by the Experience.*

The seven constructs of the UTAUT 2 model developed by adding (1) Hedonic Motivation which is the degree of pleasure gained from the use of technology, (2) Price Value which is the level of comparison between the perceived benefit of the user and the costs incurred for using the technology, 3) Habit which is the extent to which users tend to use technology automatically because of previous learning (Venkatesh *et al.*, 2012). The hypothesis used in this research is as follows:

- H5 : *Hedonic Motivation has a positive effect on Behavioral Intention*
- H5a : *The influence of Hedonic Motivation on Behavioral Intention is affected by age.*
- H5b : *The influence of Hedonic Motivation on Behavioral Intention is influenced by gender.*
- H5c : *The influence of Hedonic Motivation on Behavioral Intention is influenced by the Experience.*
- H6 : *Price Value has a positive effect on Behavioral Intention*
- H6a : *The influence of Price Value on Behavioral Intention is influenced by age.*
- H6b : *The influence of Price Value on Behavioral Intention is influenced by gender.*
- H7 : *Habitat positively affects Behavioral Intention*
- H7a : *The Habit Influence on Behavioral Intention is affected by age.*
- H7b : *The Habit Influence on Behavioral Intention is influenced by gender.*
- H7c : *The influence of Habit of Behavioral Intention is influenced by experience.*

Differences in social levels may have an effect on acceptance and use of internet banking (Yoon & Steege, 2013). Highly educated customers tend to accept change in more enthusiasm (Yeung et al., 2006). Customers with a good educational profile tend to adopt technology applications such as internet and internet banking. So in this study added the moderation variable that is the social level, especially the level of education (education). The research model is delivered to the framework scheme as follows:

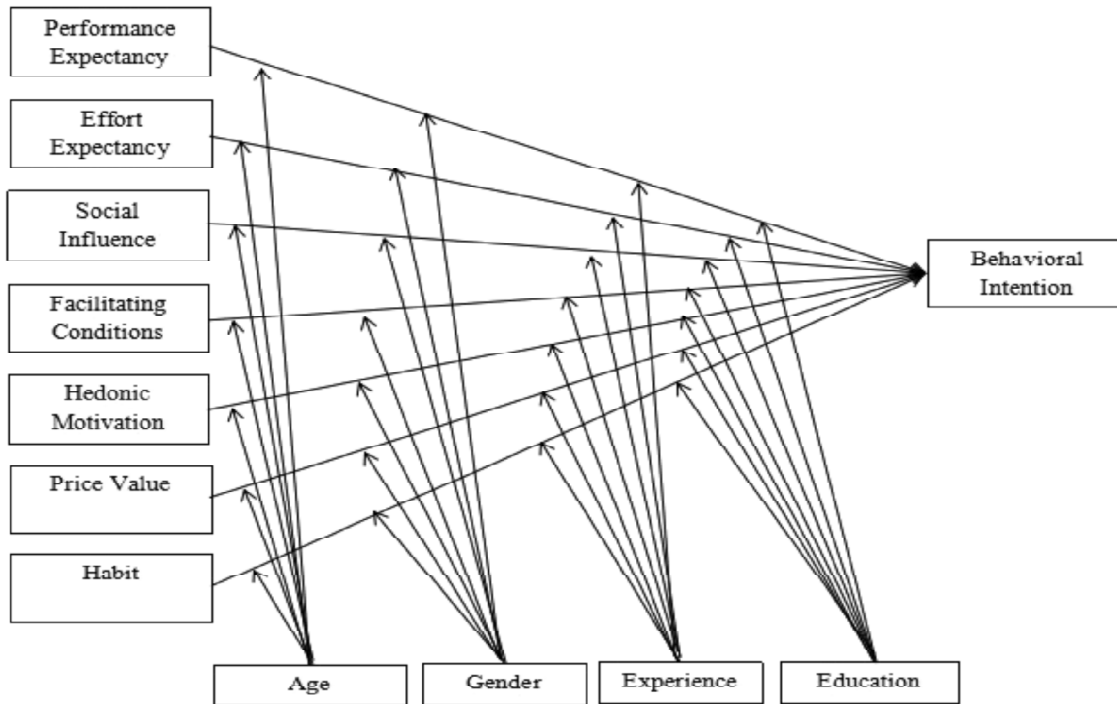


Figure 1: Research Model

Source: Research Preparation Data (2017)

RESEARCH METHODOLOGY

This research is a kind of causal research with quantitative approach. According to Sanusi (2011: 14). The sampling technique used in this research is non-probability sampling with Purposive Sampling type. In addition, the determination of the minimum sample size of SEM by Hair (1996) in Ferdinand (2002) is dependent on the number of indicators multiplied by five to ten. On this basis, the minimum sample size of this study is 130 respondents (indicator number 26 multiplied by 5).

The data onto this study were obtained from primary sources of questionnaires distributed online among social media Facebook, Twitter, Line, BBM and Whatsapp. The type of interval scale used in this study is the Likert Scale. This research uses SEM data analysis technique with PLS-SEM type that is processed using SmartPLS 2.0.

DISCUSSION AND ANALYSIS

To test the model of measurement (outer model), tested the validity and reliability of the indicators used in the research. To obtain accurate test results, validity testing and reliability in this study using SmartPLS 2.0 software. Here is the SmartPLS 2.0 model for outer test model that can be seen in Figure 2:

Based on the figure 2. the indicators that measure each variable are valid because the variables PE1, PE2, PE3, EE1, EE2, EE3, EE4, SI1, SI2, SI3, FC1, FC2, FC3, HM1, HM2, HM3, PV1, PV2, PV3, H1, H2, H3, BI1, BI2, BI3 have loading factor > 0.7 can be submitted that the three indicators in PE declared

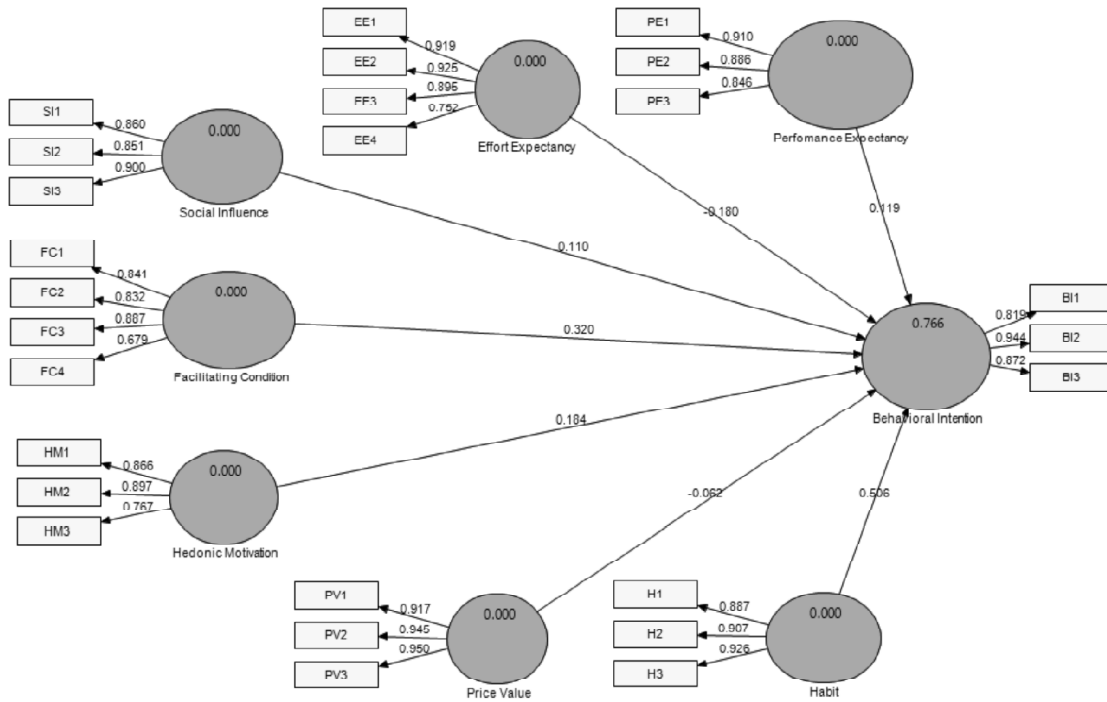


Figure 2: Path Diagram Outer Model

Source: Processed Data (2017)

Valid. In FC4 there is a loading factor of 0.679 that is < 0.7 . Some literature considers the limit is 0.5 (Singgih Santoso, 2012) and is declared valid.

Deliver that the highest loading factor is PV3 on Price Value variable that is equal to 0.9497. This shows that PV3 has the strongest relationship of PV construct compared to the relationship between indicators and other variables. Or it can be said that costs and benefits are the most powerful part of the formation of Price Value Electronic Banking.

While the lowest loading factor is FC4 in Facilitating Condition variable that is equal to 0.6794. This indicates that FC4 has the weakest relationship of FC construct compared to the relationship between indicators and other variables. Or it can be said that asking for help from others when experiencing difficulties in using electronic banking is the weakest part in formation of Facilitating Condition construct.

A model can be said to be good if the AVE value of each construct is ≥ 0.50 (Fornel and Larcker, 1981 in Ghozali, 2014: 39). The test results show that the AVE value of each construct yields > 0.5 . So it can be concluded that the model in this study has a good convergent validity.

Each cross load on each indicator is larger than the other cross loading indicator. It shows that each indicator meets the discriminant validity because the indicator has the highest cross-loading value of the intended construct compared to the cross loading value of the other construct.

According to Chin, 1998 in Ghozali (2014: 40), reliability testing is performed using Composite Reliability and Cronbachs Alpha values in each construct. To be said good reliability, the recommended value of composite reliability is ≥ 0.7 , while for cronbachs alpha of ≥ 0.6 .

It was conveyed that each construct has a good reliability value of composite reliability of each construct ≥ 0.7 and cronbachs alpha value of each construct ≥ 0.6 .

Reliability of all indicators questions in each questionnaire to the variable when used several times to measure the same object, will produce the same data.

The structural model test (inner model) is performed by looking at the R-square value of the endogenous latent construct and t-value on each exogenous latent construct of the endogenous latent construct of the bootstrapping result. The diagram path (path diagram) inner model in this study can be seen in Figure 3 below:

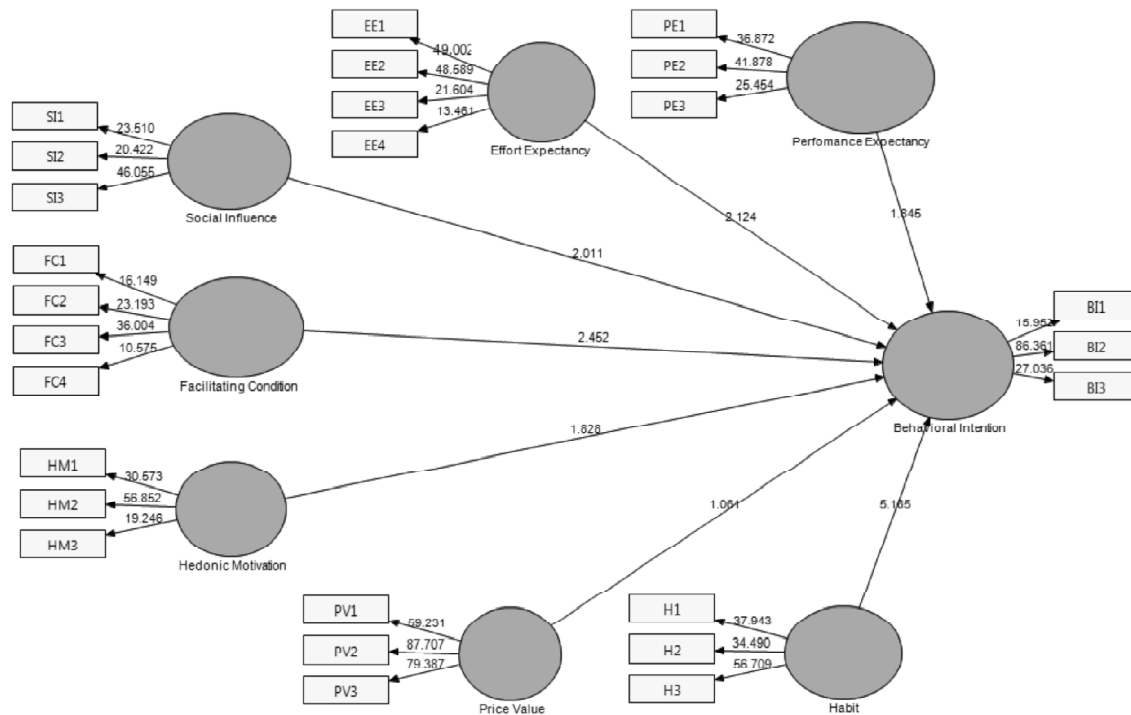


Figure 3: Path Diagram Inner Model

Source: Processed Data (2017)

From the use of bootstrapping SmartPLS 2.0 in figure 3 we get t-statistic or t-value which can describe whether there is a significant correlation between exogenous (independent) variable to endogenous (bound) variable. While to know whether the relationship is negative or positive can be seen coefficient path of figure 2. If the value of coefficient path is negative then the relationship between variables is negative, if the level of exogenous variables increases then the level of endogenous variable will decrease. Conversely, if the level of exogenous variables decreases then the level of endogenous variables will increase.

If the value of the coefficient path is positive then the relationship between variables is positive, if the level of the exogenous variable increases then the endogenous variable level will also increase. Conversely, if the level of exogenous variables decreases the level of endogenous variables will decrease. The results of the coefficient path and t-statistics are presented in Table 1 below:

Tabel 1
The Value of Path Coefficient dan T-statistik

<i>Constructive Relationship</i>	<i>Path Coefficient</i>	<i>T-statistik</i>
Effort Expectancy → Behavioral Intention	-0.180280	2.123678
Facilitating Condition → Behavioral Intention	0.319636	2.451897
Habit → Behavioral Intention	0.505967	5.185315
Hedonic Motivation → Behavioral Intention	0.183521	1.828340
Performance Expectancy → Behavioral Intention	0.118836	1.845245
Price Value → Behavioral Intention	-0.062302	1.060992
Social Influence → Behavioral Intention	0.110232	2.010508

* 0.05 significant level

Source: Processed Data (2017)

From the results of hypothesis testing for Table 1 by using an one-tailed test because in the hypothesis that was built has illustrated the direction of influence is positive. Therefore, the critical value that must be fulfilled is 1.645 (Mandrake, 2011). So the following conclusion can be obtained:

Performance Expectancy has a positive and significant effect on Behavioral Intention. The existence of this influence can be seen from the value of the path coefficient of Performance Expectancy of 0.118836 which is positive and the value of t-value of Performance Expectancy of 1.845245 is greater than t-table 1.645 at 5% significance level. H1: Performance Expectancy has positive effect on Behavioral Intention accepted. The results of this study are supported by research Indrawati and Marhaeni (2015) where Performance Expectancy has a significant influence on Behavioral Intention on the use of instant messaging applications.

Effort Expectancy has a negative and significant effect on Behavioral Intention. The existence of this influence can be seen from the value of path coefficient of Effort Expectancy of 0.180280 with negative value and value of t-value of Effort Expectancy of 2.123678 which is bigger than t-table 1.645 at 5% significance level. H2: Effort Expectancy has a positive effect on Behavioral Intention is rejected. The higher level of Effort Expectancy is the ease of using electronic banking services, the lower the consumer intention to use the technology services in the future. Vice versa the lower the difficulty level in using electronic banking services the higher the intention of consumers using the technology services in the future.

Social Influence has positive and significant effect on Behavioral Intention. The existence of this influence can be seen from the value of the path coefficient of Social Influence of 0.110232 which is positive and the value of Social Influence t-value of 2.010508 is greater than t-table at 1.645 5% significance levels. H3: Social Influence has positive effect on Behavioral Intention accepted. The higher the level of awareness of someone about the existence of others that use a system, especially electronic banking, the higher the consumer intention to use the electronic banking services in the future (Behavioral Intention).

Facilitating Condition has positive and significant effect on Behavioral Intention. The existence of this influence can be seen from the value of path coefficient of Facilitating Condition of 0.319636 which is positive value and t-value value of Facilitating Condition of 2.451897 which is bigger than t-table 1.645 at 5% significance level. H4: Facilitating Condition has positive effect on Behavioral Intention accepted.

Hedonic Motivation has a positive and significant effect on Behavioral Intention. The existence of this influence can be seen from the value of the path coefficient of Hedonic Motivation of 0.183521 which is positive and the value of t-value of Hedonic Motivation of 1.828340 is greater than t-table 1.645 at the 5% significance level. H5: Hedonic Motivation has a positive effect on acceptable Behavioral Intention.

The results of this study are supported by research conducted by Dhaha and Ali (2014) where Hedonic Motivation has a significant influence on Behavioral Intention in using 3G technology services.

Price Value has a negative and insignificant effect on Behavioral Intention. The absence of such influence can be seen from the value of the path coefficient of the Price Value of 0.062302 which is negative and the value of the value of the Price Value of 1.060992 is smaller than t-table 1.645 at a significance level of 5%. H6: Price Value has a positive effect on Behavioral Intention rejected.

Because in the Price Value construct test the value of t-value is not significant, then the construct is not included in the test of the moderation variable. So directly hypothesis H6a: The influence of Price Value on Behavioral Intention is influenced by Age rejected and H6b: The influence of Price Value on Behavioral Intention influenced by gender is rejected.

It can be said that there is no comparative influence over the perceived benefit of the user and the cost of the probability that a person will use electronic banking technology services. This may be due to the fact that the cost used to use electronic banking is not separate from the cost of using the internet (data service) as a whole so the cost can not be measured with certainty. Internet usage fees (data services) differ according to each provider providing data services.

Habit positive and significant impact on Behavioral Intention. The existence of this influence can be seen from the value of the path coefficient of Habit of 0.505967 which is positive and the value of t-value of Habit is 5.185315 which are bigger than t-table 1.645 at 5% significance level. H7: Habit positive effect on Behavioral Intention accepted.

The results of this study are supported by research conducted by Indrawati and Marhaeni (2015) where Habit has a significant influence on Behavioral Intention on the use of instant messaging applications as well as Dhaha and Ali (2014) where Habit has a significant influence in consumer interest using 3G services.

Testing of moderator variables Age, Gender, Experience, and Education were obtained from bootstrapping processed using Smart PLS 2.0 and then tested the significance level with t-test.

The age variable does not moderate Performance Expectancy, Effort Expectancy, Facilitating Condition, and Social Influence variables. **H4a: The influence of Facilitating Condition on Behavioral Intention influenced by Age is rejected.** The influence of Hedonic Motivation on Behavioral Intention is influenced by Age. It can be seen from the t-value value of Hedonic Motivation of 2.872601 greater than the value of t-table 1.645 at a significance level of 5%. **H5a: The influence of Hedonic Motivation on Behavioral Intention is affected by Age accepted.** The Habit Influence on Behavioral Intention is affected by Age. This can be seen from the value of t values of Habit 2.097747 greater than the value of t-table 1.645 at a significance level of 5%. **H7a: The Habit Influence on Behavioral Intention is affected by the acceptable age.**

Gender variables do not moderate variables Performance Expectancy, Effort Expectancy, Facilitating Condition, Hedonic Motivation, Social Influence and Habit on Behavioral Intention at the 5% significance level due to having a smaller value t-value than t-table. Based on the results of the moderation test can be concluded:

- H4b : *the influence of Facilitating Conditions on Behavioral Intention influenced by gender is rejected,*
- H5b : *The influence of Hedonic Motivation on Behavioral Intention influenced by gender is rejected,*
- H7b : *The influence of Habit on Behavioral Intention influenced by gender is rejected.*

Based on the data processing, it can be concluded that the Experience variable does not moderate Performance Expectancy, Effort Expectancy, Facilitating Condition, Hedonic Motivation, Social Influence and Habit variables on the 5% significance level because each variable has a smaller value t-value of t-table 1.645 at a significance level of 5%.

Based on the results of the moderation test can be concluded:

- H4c : *The influence of Facilitating Conditions on Behavioral Intention is influenced by Experience being rejected,*
- H5c : *The influence of Hedonic Motivation on Behavioral Intention influenced by Experience is rejected,*
- H7c : *The Habit Influence on Behavioral Intention is influenced by Experience being rejected.*

Variable Education does not moderate variables Performance Expectancy, Effort Expectancy, Facilitating Condition, Hedonic Motivation, Social Influence and Habit on Behavioral Intention at the 5% significance level because each variable has a t-value smaller than t-table 1.645 at significance level 5%.

Differences in social levels may have an effect on the acceptance and use of internet banking (Yoon & Steege, 2013). Highly educated customers tend to accept change in more enthusiasm (Yeung *et al.*, 2006). However, based on research conducted on the majority of respondents in this study has the level of education Bachelor (S1) is 92.2% (130 respondents) concluded that the education variable does not moderate the relationship between Performance Expectancy, Effort Expectancy, Facilitating Condition, Hedonic Motivation, Social Influence and Habit against Behavioral Intention.

The magnitude of the effect on the endogenous latent construct is represented by the R-square value of the endogenous latent construct. In this study, the R-square values obtained in the Behavioral Intention construct are as follows:

Tabel 2
The Value of R-square

<i>Endogenous Latent Constructs</i>	<i>R Square</i>
Behavioral Intention	0.77

Source: Data Processed (2017)

Based on Table 2 above can be seen that the value of R-square on Behavioral Intention constructs is equal to 0.77. Means Behavioral Intention variable is explained by the variables Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Price Value, Hedonic Motivation, and Habit by 77%. While the rest is 23% influenced by other factors that are not measured in this study.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

It can be concluded that Performance Expectancy, Social Influence, Facilitating Condition, Hedonic Motivation, and Habit have a positive and significant influence on Behavioral Intention; Effort Expectancy has a negative and significant effect on Behavioral Intention; and Price Value have negative and insignificant effect on Behavioral Intention. The influence of Hedonic Motivation and Habit on Behavioral Intention is influenced by Age moderation factor. The relation of the level of pleasure gained from the use of electronic banking services technology and the habit of conducting financial transactions using electronic banking with consumer intentions using technology services in the future is influenced by consumer age.

Suggestion

To be able to produce more representative research results, further research is suggested to seeing the habits of consumers in performing financial transactions using electronic banking and see the impact on the involvement in periodic factors of using the service and further research is expected to perform analysis using the composition of data more proportional to some categories of respondents such as Age, Gender, Experience, and Education.

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