

## **Factors Influence Internet Banking Acceptance (A Case Study of ABC Internet Banking in Bandung Indonesia)**

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**Abstract:** The purpose of this research was to determine the customer perception toward an ABC internet banking and to determine the factors influencing acceptance level of internet banking by customers of ABC bank in Bandung Indonesia. There are six dimensions being used in this research to measure the customer acceptance level of internet banking. The dimensions are perceived usefulness, perceived ease-of-use, perceived enjoyment, amount of information on online banking, security and privacy and quality of internet connection. The data were collected by using purposive sampling by choosing the individuals which met the certain characteristics, in this case customers of ABC bank in Bandung Indonesia. There were 400 respondents were taken in this research. The analysis method was descriptive analysis and path analysis using the program of SPSS Ver. 17. The study found that the customer perception toward ABC internet banking was good and all of the six dimensions were significantly influencing the behavioral intention. Perceived ease-of-use dimension had the greatest influence on behavioral intention. Therefore, the bank should focus and make improvements on this dimension.

**Key words:** Internet banking, modified TAM, behavioural intention, Bandung, Indonesia

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### **INTRODUCTION**

The development of electronic commerce industry or e-Commerce, especially in Indonesia has spurred competition in providing a product and services in a virtual world. The development of online business is supported by a significant improvement of the internet users. That caused a lot of business people were interested in doing online business by looking at prospective internet users in Indonesia. Electronic commerce is now hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and to sell or buy products and services. This revolution in the market place has made a revolution in the banking sector for the provision of a payment system that is compatible with the demands of the electronic marketplace. The term “electronic banking” or “e-banking” covers both computer and mobile banking. It refers to the use of information and communication technology by banks to provide services and manage customer relationship more quickly and most satisfactorily (Charity-Commission, 2003). Electronic banking according to Al-Abed is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick and mortar institution. Internet banking is defined as the use of internet to deliver banking activities such as funds

transfer, paying bills, viewing current and savings account balance, paying mortgages and purchasing financial instruments and certificates of deposits (Singhal and Padhmanbhan, 2008). According to Henry, in Thulani *et al.* (2009), internet banking refers to system that enable banking customers to get access to their account and general information on bank products and services through the use of bank’s websites without the intervention or inconvenience of sending letters, faxes original signature and telephone confirmations.

Although, the number of Internet users has increased significantly during recent years, Internet banking has not yet become popular among Indonesian bank customers. It can be seen by looking at a survey conducted by Nielsen in 2012, only 7% of Internet users had used the Internet for banking transactions and the growth of ABC internet banking users was small compared to the ABC mobile banking based on the ABC bank analyst meeting in 2013.

This small growth of internet banking motivated the researchers to conduct this research. This study analyzed the factors influence the acceptance of ABC internet banking in Bandung. The approach of this research was based on the extension of the original Technology Acceptance Model (TAM) founded by Davis. The extended TAM developed by Pikkarainen *et al.* (2004) consisted of six factors, namely: perceived usefulness,

perceived ease-of-use, perceived enjoyment, information on online banking, security and privacy and quality of internet connection which would be used in this research.

**Problem statements and research questions:** Based on the above discussion, the problem statement is as follow: internet banking website is capable in helping the customers to conduct almost every transaction anytime without leaving their places. With the advantages given by the internet banking, there are still some customers who do not wanted to use internet banking services with some consideration.

Given the problem statement above, this study intended to answer the following research questions based on the modified TAM adopted from Pikkarainen *et al.* (2004).

What is the perception of the customer on Perceived Usefulness, Perceived Ease-of-use, Perceived Enjoyment, Information on Online Banking, Security and Privacy and Quality of Internet Connection?

Are there any influence of Perceived Usefulness, Perceived Ease-of-use, Perceived Enjoyment, Information on Online Banking, Security and Privacy and Quality of Internet Connection to Behavioral Intention? Based on the research questions, the objective of this study are as follows:

- To determine the customer perception on perceived usefulness, perceived ease-of-use, perceived enjoyment, information on online banking, security and privacy and quality of internet connection
- To determine the influence of perceived usefulness, perceived ease-of-use, perceived enjoyment, information on online banking, security and privacy and quality of internet connection to behavioral intention

**MATERIALS AND METHODS**

**Literature review and conceptual Model:** TAM was originally proposed by Davis in 1986 to explain the acceptance of technology. TAM is considered as an influential extension Theory of Reasoned Action (TRA), according to Ajzen and Fishbein (1980). Davis and Davis proposed TAM to explain why a user accepts or rejects information technology by adapting TRA.

According to Davis, TAM is an information system theory that models how users come to accept and use a technology. There are two main construct in TAM which determining the actual system usage. Those two construct are perceived usefulness and perceived ease

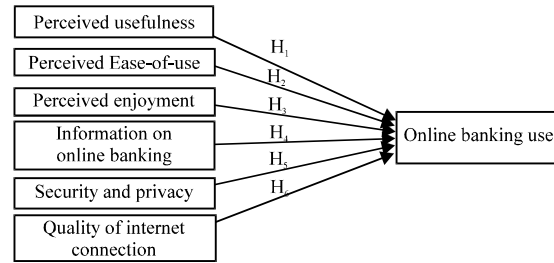


Fig. 1: Model for consumer acceptance of online banking

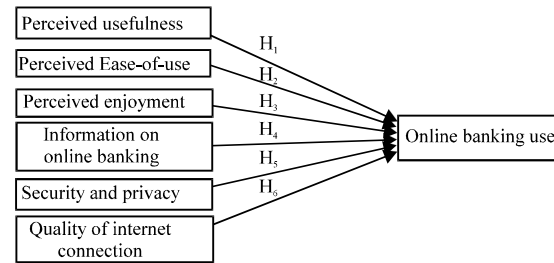


Fig. 2: Modified conceptual model

of-use. Perceived Usefulness (PU) is “the degree to which an individual believes that using particular system would enhance his/her job performance” and Perceived Ease-of-Use (PEOU) is “the degree to which an individual believes that using a particular system would be free of physical and mental effort”.

The conceptual model of this research is an extension of Technology Acceptance Model (TAM) made by Pikkarainen *et al.* (2004). This extended TAM consists of six independent factors considered to have significant influence on acceptance of internet banking. The independent variables are perceived usefulness, perceived ease-of-use, perceived enjoyment, information on online banking, security and privacy and quality of internet connection as can be seen on Fig. 1.

Based on Fig. 1, there are six independent variables which influence the online banking use. To get more suitable model with the object of the study, the researchers modified the Pikkarainen *et al.* (2004) framework by changing the dependent variable from online banking use to behavioral intentionto use, since the targeted respondents are the prospective users of ABC internet banking. Thus the proposed modified model is as presented in Fig. 2.

As can be seen on Fig. 2 this study replaced the dependent variable online banking use with behavioral intention. Behavioral intention is an important factor in predicting someone’s actual behavior in adopting technologies. According to Ajzen (2006), behavioral

intention is the possibility of a person to perform certain behaviors and is the major determinant of actual usage behavior. Davis and Warshaw defined Behavioural intention as the level on which a person intended to use and adopt a new system. Ajzen (2006) stated that "Intention is an indication of a person's readiness to perform a given behavior and it is considered to be the immediate antecedent of behavior". Some previous researches (Ajzen, 1985; Ajzen and Fishbein, 1980; Yi *et al.*, 2006) had noted that behavioral intention is the major determinant of actual usage behavior. Thus, the researcher decided to end the construct with behavioral intention as the dependent variable.

Perceived usefulness according to Davis is "the degree to which an individual believes that using particular system would enhance his/her job performance". Based on Davis people tend to use an application if they believe it will improve their job performance. Davis also found perceived usefulness as a major factor of behaviour intention and usage behavior. A number of studies supported that perceived usefulness influenced behavioral intention and had significant effects on behavioral intention.

Perceived ease-of-use is defined as "the degree to which an individual believes that using a particular system would be free of physical and mental effort". According to Wang a customer will perceive that using internet banking can be useful when the use of the service is easy for them. They also found that Perceived ease-of-use had significant effect on behavioral intention. Perceived ease-of-use affected the consumer's intention to use internet banking also supported by Al-Maghrabi and Denis and Eriksson. The customer would be more attracted to use internet banking if it is easier to operate (Al-Somali *et al.*, 2008).

Perceived Enjoyment according to Davis, Bagozzi and Warshaw refers to "the extent to which the activity of using computer is perceived to be enjoyable in its own right". According to Suki and Suki, a person would be more inclined to do or repeat a more enjoyable activity than other activity. A number of studies on Perceived enjoyment had noticed that Perceived enjoyment significantly affected intention to use computers.

Information on online banking is defined as the users' general knowledge regarding online banking (Pikkarainen *et al.*, 2004). The lack of awareness about internet banking services has found to be the reason of consumers reluctance to use internet banking services. According to Sathye, the use of internet banking is a fairly new experience for many people and lack of

awareness of internet banking is a major factor which preventing people from adopting internet banking. In an empirical study of Australian consumers, Sathye found that consumers were oblivious about the possibilities, advantages and disadvantages online banking has to offer. Pikkarainen *et al.* (2004) had reported that the critical factor on the adoption of internet banking is the amount of information a customer has about internet banking and its benefit.

Shan defines security and privacy as the offered security level by the internet banking service provider to each user. "Privacy can be defined as the claim of individuals, groups or institutions to determine when and to what extent, information about them is communicated to others" (Agranoff, 1991). The importance of security and privacy to the acceptance of online banking had been noted in many banking studies elsewhere (Hair *et al.*, 2010). Security and privacy were also found to be significant obstacles to the adoption of online banking in Australia. Cranor found that privacy issues had proven important barriers to the use of online services. Obviously, customers would not adopt internet banking unless it was considered safe and secure.

Quality of internet connection according to Al-Shomali *et al.* (2008) was defined as is the level of stability and reliability of an internet connection which can fully support any online activities done by customers. Many people become reluctant to use the system when they experience frequent delay in response, frequent disconnection, lack of access and poor security, thus quality of internet connection is important in the context of internet banking. Sathye noted that the use of online banking was not possible without a proper internet connection. The quality of internet connection had a significant effect on online banking acceptance (Al-Somali *et al.*, 2008). In line with the definition of each variable and the schematic relationship among variable as shown in Fig. 2, the hypotheses of this research are as follows:

- H<sub>1</sub>: perceived Usefulness (PU) has a positive influence on Behavioral Intention (BI) to use internet banking
- H<sub>2</sub>: perceived Ease-of-Use (PEOU) has a positive influence on Behavioral Intention (BI) to use internet banking
- H<sub>3</sub>: perceived Enjoyment (PE) has a positive influence on Behavioral Intention (BI) to use internet banking

- H<sub>4</sub>: the amount of information (INFO) a consumer has about online banking has a positive influence on Behavioral Intention (BI) to use internet banking
- H<sub>5</sub>: security and Privacy (SEP) have a positive influence on Behavioral Intention (BI) to use internet banking
- H<sub>6</sub>: the quality of the internet connection has a positive influence on Behavioral Intention (BI) to use internet banking

**RESULTS AND DISCUSSION**

**Data analysis method and result:** In this research used descriptive analysis and path analysis method as data analysis technique. According to Sekaran and Bougie (2010), a descriptive study is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation. Descriptive analysis was performed to obtain the respondents opinion regarding the variables involved in this study. Table 1 shows the result of descriptive analysis.

Based on the Table 1, the descriptive analysis result, the overall variable in this research were categorized as “Good” by the respondents, this means that the respondents are agree with the statements in each variable. To answer if there are any influence of Perceived Usefulness, perceived ease-of-use, perceived enjoyment, information on online banking, security and privacy and quality of internet connection to behavioral intention, this study applied path analysis and chose SPSS v.17 Software to process the data. Based on Hair *et al.* (2010), path analysis is an approach that employs simple bivariate correlations to estimate relationship in Structural Equation Modeling (SEM). Path analysis used to determine the strength of the paths shown in path diagrams. Prior to collect main data the pilot study was done to test the validity and reliability of the questionnaire. The pilot study was done by using data from 30 respondents. The result of pilot study are shown in Table 2. As it can be seen on Table 2 all the items fulfill the requirement of validity (Corrected Item Total Correlation, CITC = 0.349) and reliability (Cronbach’s apha, CA = 0.7). Once the quationnaire fulfill the requirement of good measurement, this study used the questionnaire to collect main data. The data from 400 respondents collected through online questionnaires were processed using SPSS V.17 Software.

Table 3 shows the result of the path analysis from the SPSS calculation. In path analysis, the correctness of the proposed model can be measured by using Path Coefficient (PC) and R2). The path coefficient should have t-values at least 1.96, respectively to be considered

**Table 1: Descriptive analysis result**

Dimensions	Total index (%)	Category
Perceived usefulness	79.75	Good
Perceived ease-of-use	76.34	Good
Perceived enjoyment	75.47	Good
Information on online banking	71.75	Good
Security and privacy	74.73	Good
Quality of internet connection	72.06	Good
Behavioral intention	74.84	Good

**Table 2: Validity and reliability test**

Variables/Items	CITC	r-table
<b>PU (X1)</b>		
ITEM 1	0.518	0.349
ITEM 2	0.574	0.349
ITEM 3	0.611	0.349
ITEM 17	0.731	0.349
ITEM 4	0.584	0.349
ITEM 5	0.533	0.349
ITEM 6	0.563	0.349
<b>PEU (X2)</b>		
ITEM 7	0.746	0.349
ITEM 8	0.758	0.349
ITEM 22	0.458	0.349
ITEM 9	0.844	0.349
ITEM 10	0.498	0.349
ITEM 24	0.719	0.349
ITEM 11	0.686	0.349
ITEM 12	0.700	0.349
<b>PE (X3)</b>		
ITEM 13	0.544	0.349
ITEM 14	0.795	0.349
<b>INFO (X4)</b>		
ITEM 15	0.701	0.349
ITEM 16	0.706	0.349
<b>SEP (X5)</b>		
ITEM 18	0.643	0.349
ITEM 19	0.755	0.349
ITEM 20	0.710	0.349
ITEM 21	0.747	0.349
<b>QIC (X6)</b>		
ITEM 22	0.458	0.309
ITEM 23	0.405	0.349
<b>BI (Y)</b>		
ITEM 24	0.719	0.349
ITEM 25	0.807	0.349
ITEM 26	0.733	0.349
ITEM 27	0.803	0.349

Independent variables (X) Reliability test: CA = 0.943; No. of items = 23;  
 Dependent variable (Y) Reliability test: CA = 0.935; No. of items = 4

**Table 3: t-value of each variables relationship of the model**

Paths	Path		Path		
	coefficients	t-values	coefficients	t-values	
PU->BI	0.157	2.881	INFO->BI	0.120	2.585
PEU->BI	0.176	2.837	SP->BI	0.170	3.317
PE->BI	0.135	2.831	QIC->BI	0.187	4.844

significant at the 95% confidence level two tailed test. Table 3 shows the path coefficients and t-values of the model which are all above the requirements. These mean that all the main hypotheses in this study are significant.

The R<sup>2</sup> of this study is 0.535 or 53.5%. It means that 53.5% of behavioral intention are simultaneously influenced by perceived usefulness, perceived ease-of-use, perceived enjoyment, information on online banking,

security and privacy and quality of internet connection while the rest of 46.5% of the influence may come from the other factors which are not included in this research.

### CONCLUSION

Based on the descriptive analysis, the customer perception on perceived usefulness, perceived ease-of-use, perceived enjoyment, information on online banking, security and privacy and quality of internet connection is good. From the path analysis, it can be seen that all of the factors in this research have significant influence to the behavioral intention. The  $R^2$  value in this research is 0.535 or the same as 53.5%. It can be concluded that all of the factors in this research is significantly influencing the behavioral intention by 53.5%.

The perceived ease-of-use has the greatest influence in this research, this means that if ABC Bank would like to increase the intention of its customers to use Internet banking, ABC Bank should make the customers think that using internet banking is easy. Beside that, since all the factor have significantly influence the behavioural intention toward using internet banking, the bank should make improvements since all of the factors which are; perceived usefulness, perceived ease-of-use, perceived enjoyment, information on online banking, security and privacy and quality of internet connection were have positive significant influence to the behavioral intention to use ABC internet banking. The order of the influential factors to the behavioral intention in this study started from the biggest influence to the lowest are: perceived ease-of-use (11.4%), security and privacy (10.3%), perceived usefulness (9.3%), quality of internet connection (8.3%), perceived enjoyment (7.5%) and information on online banking (6.3%).

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