The Online Banking Usage in Indonesia: An Empirical Study

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Abstract. Many Indonesian banks have offered online banking services to improve service to existing customers and attract new ones. However, the online banking service is new to most people in Indonesia. This study focuses on this issue and attempts to identify the determinants of customer intention to use online banking. A research framework based on the Delone and McLean Information System Success (D and M IS) model for assessing website quality and the literature on brand credibility was developed to identify the factors that can affect customer intention to use online banking. This study uses customers of the financial industry in Indonesia as subjects and collects 184 valid questionnaires. Partial Least Squares (PLS) method is applied in the investigation. The analytical results indicate that brand credibility can affect customer intention to use online banking.

Keywords: Online Banking, Brand Credibility, Website Quality, Intention to Use.

1. Introduction

1.1. Indonesian Banking History

The Indonesian banking sector has a series of long history. Since the colonial rule, a number of foreign and Dutch banks as well as a few local banks carried out their business. Even during the national struggle period, a number of banks with nationalism spirit were founded. Soon after the country acquired its independence, the government of the Republic of Indonesia founded state banks, such as Bank Negara Indonesia (BNI), Bank Rakyat Indonesia (BRI), Bank Industry Negara (BIN), and Bank Tabungan Pos. Apart from the state banks, some national private banks, foreign banks (including DJB), rural banks and credit institutions had also been operating at the time. These banks were all flourishing in their era. The establishing of Bank Indonesia on 1 July 1953 had opened up new phases in Indonesia's banking structure, especially in terms of bank supervision. Government Regulation No. 1 of 1955, therefore, then ordered Bank Indonesia on behalf of the Monetary Board to carry out supervision on all the banks operating in the country.

1.2. Information Technology

The development of information technology allows banks to offer services to customers at lower cost. However, the application of sophisticated information technology may create operational risk related to fraud, the unreliability of information systems and discontinuity of operation. Therefore, rules of conduct in the application of information technology are necessary for banks.
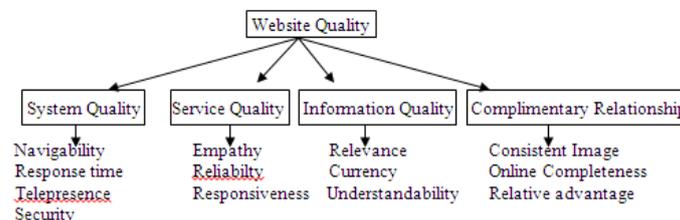

Fig. 1: Website quality's factors

2. Literature Review

2.1. Website Quality

This study uses factors to assess website quality, as shown in Figure 1. These factors are derived from the DeLone and McLean information system model, including system quality, service quality, and

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information quality. The remaining factor, complimentary relationship, was adapted from WebQual by Zeithaml et al. (2002) to better evaluate website quality in the banking industry. The relevant literature is discussed in detail below. According to Delone and McLean (2003), quality comprises three main dimensions: "information quality," "systems quality," and "service quality." Due to its advantages and popularity, this study uses the D and M IS Model combined with the complimentary relationship factor to determine how website quality will influence on brand credibility. This study defines website quality as including the following factors: information quality, system quality, service quality and complimentary relationship (Zeithaml et al., 2002).

2.2. Customer Intention

This study defined customer intention to use online banking based on the concept of Ajzen (1991), which identified customer intention as the interest of individuals in using the system offered for future banking transactions. Numerous researches have attempted identify the behavioral factors that influence individual decisions to purchase online. Each using a framework to study the matter has identified elements to measure intention to use. The most popular theories are: Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and Technology Acceptance Model (TAM). These theories showed intention to be a good predictor of behavior. In this study, intention to use online banking service represents the strength of consumer intentions to use or re-use transactional banking services offered via the -internet by their banks.
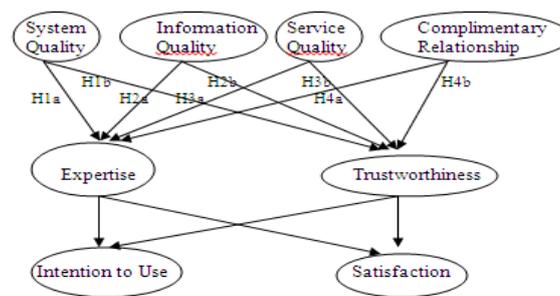
3. Research Model and Hypotheses

Fig. 2: The Research Model

3.1. Hypotheses

System quality and brand credibility: System quality indicates system performance in delivering information, and is a critical success factor influencing technology use and user satisfaction (DeLone and McLean, 1992). In the e-business context, website system quality is known to significantly affect online customer satisfaction (Palmer, 2002)   and online purchase behavior (Agarwal and Venkatesh, 2002). Therefore the hypotheses of this study are:

H$_1$: System quality positively affects brand (a) expertise and (b) trustworthiness of online banking service providers.

H$_2$: Website information quality is positively related to brand (a) expertise and (b) trustworthiness of online banking service provider.

H$_3$: Service quality is positively related to brand (a) expertise and (b) banking service provider trustworthiness.

H$_4$: Complimentary relationship is positively related to brand (a) expertise and (b) trustworthiness for online banking service providers.

H$_5$: Brand credibility subcomponents: (a) expertise and (b) trustworthiness positively affect satisfaction.

H$_6$: Subcomponents of brand credibility: (a) expertise and (b) trustworthiness positively affect customer intention to use online banking.

4. Research Methodology

4.1. Questionnaire and Sampling

This study used a questionnaire survey. One part of the questionnaire consulted the related literature and made revisions to fit this study, while the other part reorganized previous studies by the current author. For the pilot test, this study selected 25 respondents from customers of bank in Indonesia. Following the test, this study was identified as having appropriate content validity. Because this study examines online banking, the research comprises customers of the financial industry in Indonesia. The sample customers have knowledge of banking services and all have personal bank accounts. 180 questionnaires were sent out to financial industry customers with personal bank accounts. Customers were selected randomly. Participation in the questionnaire was voluntary. Moreover, the collected information was kept confidential to avoid any associated privacy concerns. All items were measured using seven-point Likert-type, scales, with anchors of 1 (strongly disagree) and 7 (strongly agree). After removing unqualified research subjects and invalid questionnaires, for example those that were incomplete or that displayed excessive internal similarity in responses, this study had 170 valid questionnaires for a return rate of 87%. Regarding gender, "females" comprised the majority of the sample (61.6%). Regarding age range, the majority of subjects belonged to the 23 - 26 years old and the 26 years old and over age groups (43.9 and 46.3%).Most respondents had at least 6 years' experience in using the Internet (72.6%). All the respondents had permanent jobs either in private firms or in the public sector. Regarding Online Shopping experience, most subjects had experience of shopping online. Subjects thus had experience of using Internet retailing services, and hence a basic knowledge of online services, and by extension the online banking that is the concern of this study.

4.2. Method and Procedure

As this research planned to find out the causal relationship of structural model, the structural equation modeling (SEM) approach will be used. The model used Partial Least Square (PLS) method to estimate. Therefore, the forecasting ability of the structural model is examined using composite reliability, discriminate validity and explanatory of the model (R^2). Because PLS does not have default data distribution, there is no need to examine whether the data conforms to the normal distribution hypotheses. Similarly, it also does not provide estimation of path coefficient of trust's interval and statistics' significant examination. To estimate the significance of the path coefficient, Bollen and Stine (1992) suggested the Bootstrap method in estimating the significance of path coefficient. Therefore, this study used Bootstrap method to test the significance of the model's coefficient. In addition, in this study, the Statistical Package for Social Science version 15.0 (SPSS) is used to analyze the demographic data.

5. Data Analysis

5.1. Measurement Model Result

This study used internal consistency reliability (Cronbach'sα) to examine scale reliability. In this study, all of the Cronbach'sα demonstrated a value significantly exceeding 0.7. The composite reliabilities of the remaining constructs are all 0.84 or above, suggesting high consistency. Under the composite reliability (CR) of the latent variables (Table 1), all model values lie between 0.84 and 0.92. These values exceed the suggested value of 0.7 (Hair et al., 1998), suggesting that all seven constructs have high reliability and internal consistency.The average variance extracted (AVE) values of constructs listed in Table 2 are between 0.62 and 0.81. Thus, the model exhibits good convergent validity (Fornell and Larcker, 1981). Table 1 lists the discriminant validity of all of the study constructs. The average variance extracted root mean square of all constructs exceeded the correlation coefficients among constructs.

5.2. Structural Model Results

The data analysis shows that the R^2 values yielded acceptable results. The R^2 values for expertise, trustworthiness, satisfaction, and Intention were very strong, demonstrating that website quality explains 74% of the variance in trustworthiness. similarly, website quality explains 55% of the variance in expertise. Trustworthiness and Expertise explain 70% of the variance in satisfaction, while intention explains 46% of the variance. The significance of the path coefficients was determined using t value calculated using the bootstrap technique. All the paths except that between system quality and expertise (H1) and information quality and trustworthiness (H6), are significant and supported by the data. Furthermore, all the supported paths are significant at the 0.01 level or higher.

6. Discussions

The analytical results obtained by this study of what drives customer intention to use online banking are inspiring. Except for H1b and H2a, all the hypotheses are verified and support the structural model. All the items in the measurement model display high internal consistency and reliability. Moreover, the predictive power and significance of the structural model is confirmed. Hypothesis H1a that system quality positively influences expertise was supported. This result demonstrates the importance of system quality in building brand credibility in online banking services. Simultaneously, hypothesis H1b, that system quality positively influences trustworthiness, was not supported. This finding indicates that system quality does not positively affect the trustworthiness of online banking credibility, a result that can be explained by the poor internet speed and quality in Indonesia. Indonesian internet providers and government should cooperate to make improvements in this area. Hypothesis H2a says that Information system positively affects expertise, was not supported, a result that can be explained by the unique characteristics of Indonesian and the Internet infrastructure in Indonesia. In developing countries such as Indonesia, Internet speeds and level of IS development are very low compared to developed countries, such as America, Japan, or Taiwan. Therefore, people do not necessarily expect high information quality to be associated with expertise. Simultaneously, hypothesis H2b was strongly supported, demonstrating that high information quality leads to high trustworthiness. In assessing information quality, website ability to provide accurate and timely information received the highest score. Hypothesis H3a, that service quality influences expertise, was supported. This result is consistent with earlier proposals by De Chernatony and Segal-Horn (2001) arguing that quality of service delivery can influence brand value and quality, including expertise. The customer view brand expertise as higher when website service quality is high. Similarly, hypothesis H3b was supported. This result demonstrates that service quality is crucial to achieving high brand credibility. From the data analysis, when evaluating the service quality of an online banking website customers assign high marks to the ability to anticipate and respond promptly to their needs and requests. Customers also hope that a high service quality website will provide follow-up service. Hypothesis H4a was supported, demonstrating the importance of complimentary relationships in building brand credibility expertise in relation to online banking services. Similarly, hypothesis H4b, that complimentary relationship will significantly and positively affect trustworthiness, was strongly supported. This result demonstrates that brand credibility of a bank increases when the complementary relationship of an online banking website is high. Trustworthiness thus depends on complimentary relationship quality. The data from the survey of complimentary relationships indicate that customers think a website with high complimentary relationship indicates a company that who keep considers the best interests of customers and offers an easy means for customers to complete their banking business. Hypothesis H5a was strongly supported, suggesting that when expertise of brand credibility is high, satisfaction with online banking service increases. Similarly, hypothesis H6a, that expertise positively affects intention to use online banking service, was supported. These results demonstrate that customers highly value bank ability not to overstate its service and to remain at the forefront of using the latest technology. Additionally, hypothesis H5b was strongly supported, providing an encouraging suggestion that trustworthiness leads to satisfaction. In certain conditions, brands with high trustworthiness are more likely than other brands to be able to satisfy customers. Simultaneously, hypothesis H6b was supported, an expected and inspiring result. The intention to use the online banking service is based on brand trustworthiness. This finding also fully and effectively provides the services claimed.

7. Conclusion and Future Research

Online banking service and customer intention is attracting and increasing attention, and further study is still needed to better understand the influences on customer intention. Exactly how website quality can affect the brand credibility and how brand credibility can influence customer intention must be understood. The results of this study support the theory of D and M IS System regarding customer intentions. Customer intentions are affected by information system quality, information quality, and service quality, which in this study comprise the website. This study once again confirms the positive effect of brand credibility on customer satisfaction (Sweeney and Swait, 2008). Furthermore, the study demonstrated the inspiring result that brand credibility also positively affects customer intention to use. By incorporating complimentary

relationship into the website quality model, this study provides a new model for measuring website quality in online banking. The factor reliability and validity are high and satisfactory. Furthermore, the structural model is confirmed and most of the hypotheses are proven. Future research should diversify the respondent more by applying a large scale survey in term of industries and even countries. Second, the research should find out whether the website quality can indirectly affect the customer intention and satisfaction or not. Because the findings demonstrated that website quality has positive effect on brand credibility and brand credibility on its turn can positively affect intention and satisfaction of customer. Future research should try to find out the role of brand credibility will play as moderator or mediator in the model. Furthermore, this study is that this study is a cross sectional study which takes place at a single point in time then the result will limit to its time of research.

8. Acknowledgements

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