Service Quality Measurement Model of E-Banking Website: Validity and Reliability Test of the Research Instrument

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ABSTRACT

This study is a preliminary study in order to find the right research instrument, to develop service quality measurement model for e-Banking website in Indonesia using Webqual. The analysis techniques use in this study is the validity test with KMO and Bartlett's test, and reliability test with Cronbach Alpha. Respondents in this study were clients of private banks National. The initial phase of this study that the respondents where selected from a Faculty of Computer Science and Information Technology majors in Banking Information Systems, Laboratory Assistant and lecturer in Gunadarma University. The limitation of this study was the number of respondents who meet the criteria for bank customers who use e-banking facilities. The first phase of deployment questionnaire results showed that the personality variable was not reliable, and there is one question that is not valid. The overall result shows that the research instrument is reliable and valid, so it can be used for the next research steps.

Key words: e-banking, webqual, measurement model, service quality

The impact of post-deregulation of banking developments in 1988 showed an increase in the amount of growth, both in the number of banks and the number of branches. Growing number of banks consisting of Bank Limited, National Private Bank Foreign Exchange (BUSN Foreign Exchange), BUSN Non Foreign Exchange, the Regional Development Bank (BPD), Banks and Foreign Banks mixture for about 6 years can be seen in Figure 1.
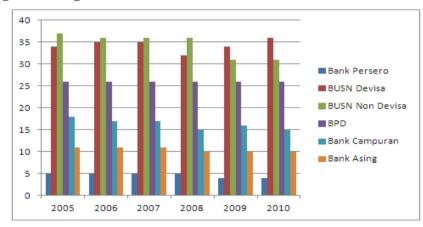
Fig.1. Growing number of Commercial Banks Periode 2005-2010

Source: Indonesia Banking Statistics, 2010-2011

In general, the use of Information and Communications Technology (ICT) in Indonesia has undergone many improvements. Conditions of application of ICT in Indonesia when compared with neighboring countries in Asia and the World can be seen in Table 1.

Table. 1 ICT of Indonesia in 2010

Indicators	Indonesia	Asia Average	World Average
Fixed Internet Subscriptions per 100 inhabitants	0.73	13.02	12.77
Mobile Cellular Subscriptions per 100 inhabitants	91.72	87.43	90.97
Fixed Telephone per 100 inhabitants	15.83	18.74	22.37
Fixed Broadband Internet subscriptions / 100 inhabitants	0.79	8.623	10.00
Percentage of Individuals Using Internet	9.9	29.067	36.15

Source: International Telecommunication Union (2012)

Table 1 shows that for all indicators, Indonesia is still below the average of Asia and the World. The development of computer and internet adoption rates in Indonesia in the period 2001-2006, if the trend seen, the use of ICT in Indonesia increased from year to year. These developments show that the people of Indonesia can be said to be increasingly literate ICT, especially Internet users.

The use of information and communication technology in the national banking sector is relatively more developed than others. Various types of technology among others include Automated Teller Machine (ATM), Banking Application System, Real Time Gross Settlement (RTGS), Electronic Clearing System and internet banking. Bank Indonesia itself more often use the term Information System Technology (TSI) for all applied Banking information and communication technology in banking services. Another of the more popular term is Electronic Banking or E-banking (Hermana, Farida, Diana Sari, 2010).

This study is a preliminary study for the development of service quality measurement model of e-banking in Indonesia by using WebQual. This study aims to test the research instrument is a questionnaire to measure visitors perceptions of service quality to the website. This analysis is done from the perspective of bank customers on the quality of e-banking services in Indonesia. This objective is related to the functionality and level of adoption of web-based services to the public interest. This is confirmed from the findings that the quality of the website plays an important role for the consumer (Zeithaml et al., 2002). Bitner, Mary Jo, Faranda, William T., Hubbert, Amy R., and Zeithaml, Valarie A (1997) whose explore about the level of participation of customer state that the level of customer participation required in a service experience varies across services as low, medium and high participation.

Application of Information Technology in the banking sector aims for speed and accuracy of processing and provision of information, as well as improve service to its customers. The current development shows precisely the banking sector of the economy is one of the most rapid and intensive in the use of information technology services to the community. Commercial banks and foreign private banks are known to have the facility of E-banking services including internet banking such as shown in previous study (Medyawati, Henny, Farida and Ega Hegarini, 2012).

The use of ICT in banking poses a high risk, requiring a mechanism or procedure that the application of ICT in banking can be done safely. Regulations issued by Bank Indonesia related to the management or operation of risk management activities of E-banking is the Bank Indonesia Regulation 9/15/PBI/2007 on the Application of Risk Management in the use of information technology by the bank. In addition to these regulations, the Indonesian Banking Architecture (API) which consists of six pillars, one of the pillars mentioned API target is to realize the empowerment and protection of banking services. Regarding the risk management process, regulated in Article 10 paragraph 1 is that banks are required to perform risk management process that includes identification, measurement, monitoring and control of risks associated with the use of Information Technology.

Theoretical Framework

Type of E-banking is growing very rapidly in recent years is the internet banking. Refer to the FFIEC (2003), internet banking is generally composed of

two main types of website that is informational and transactional. Informational websites provide customers access to public information concerning financial institutions and a variety of products and services while transactional website gives customers the ability to carry out transactions through the website by initiating banking transactions or purchase goods and services.

E-banking system is basically front-end application that directly dealing with end users that acts as a client of e-banking system of a bank. Some studies generally discuss the key dimensions of service quality and customer needs in the scope of traditional banking is the interaction between customer and bank officials (Cowling and Newman, 1995, Bahia and Nantel, 2000). The term quality service website or online service quality is often used by some researchers, but each presents a different understanding. It is a challenge in an attempt formal definition for that term (Ziethaml et al., 2002).

OCC (1999) stated that one of the aspects that should get attention in the implementation of e-banking is the demographic aspects of the customer. Psychographics are the main techniques used for research on consumer behavior as a measure of lifestyle. Mowen (2002:283) stated that "the term psychographics has an idea that describes the (graphic) psychographic factors (psycho) that make the consumer". Boyd, Walker, and Larreche (2000:199) define a lifestyle or psychographic segmentation, consumer group on the basis of the activities, interests, and their opinions.

One of the important tasks of a modern marketing manager is to ensure that the company's website in accordance with the criteria of quality consumer companies (Shapoor, 2010). Loiacono et al. (2002) construct a new method for evaluating the quality of the website by using instruments WEBQUAL ™. WEBQUAL website focused on the interface and is a basic reference for the measurement scale e-Service Quality (Wolfinbarger and Gilly, 2003). WEBQUAL builds upon the basic concepts of the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM). The main idea behind the use of WEBQUAL is possible to predict the behavior of repeat visits (re-visit/re-use) of web users based on user perceptions and overall quality of the website. This instrument consists of four concepts, namely usefulness, ease of use, entertainment, and complimentary relationship, including the various dimensions of website, each dimension is evaluated by the website visitors.

SERVQUAL scale was first proposed by Parasuraman, A. Valarie A. Zeithaml and Leonard L. Berry (1985) not be directly applied to the e-services, but its dimensions can be developed to measure e-services by adding some new dimensions that are suitable for e-services. Yang et.al (2005) has validated the five dimensions of service quality that is website usability, usefulness of content, adequacy of information, accessibility and interaction

Methodology

Sampling conducted in this study is Judgement Sampling. Respondents in this study were clients of private banks, namely Bank Mandiri, Bank BRI, Bank BCA, Bank BNI, Bank Syariah Mandiri and Bank Muamalat that are willing to be respondents. The early stages of this study the selected respondents are come from a Faculty of Computer Science and Information Technology majors Banking Information Systems, Laboratory Assistant and lecturer Gunadarma University. The limitations of this study are the number of respondents who meet the criteria for bank customers who use e-banking facilities. This is because the list of users of e-banking is very difficult to obtain from the bank. This study is a continuation of previous research has been done by Medyawati, Farida and Ega Hegarini (2012). The preliminary design questionnaire of webqual adopted from Medyawati, Farida and Ega Hegarini (2012) distributed to 100 respondents target customers for the National Private Banks (foreign exchange and non exchange) which is located in Jakarta, Depok and Bekasi. The WebQual method used in this study is to measure perceptions of service quality visitors to the website. Research instruments (quetionnaire) are designed using a 7-scale Likert Summated Rating is from 1 (strongly disagree) to 7 (strongly agree).

Table 2. Research Variables

No.	Dimensions	Number of questions	Authors
1.	Accessibility	6	Yang et.al (2005)
2.	Interaction	5	Yang et.al (2005), Barnes and Vidgen (2003)
3.	Adequacy of information	6	Yang et.al (2005), Barnes and Vidgen (2003)
4.	Usefulness of content	9	Yang et.al (2005), Barnes dan Vidgen (2003)
5.	Lifestyle	4	Mowen (2002)
6.	Personality	4	Mowen (2002)

Result and Discussion

There are 100 questionnaires have been distributed, which is returned are 95, and 6 are not valid. Thus, there are 89 questionnaires that can be analyzed. Analysis of demographic factors in this study has not been done because the main focus of this initial study was to test the validity and reliability of research instruments.

Table 3. Reliability Test Result Phase 1

Variable	Cronbach's Alpha	Reliability Value	Conclusion
Accessibility (X1)	0.780	0.60	Reliable
Interaction (X2)	0.785	0.60	Reliable
Adequacy of information (X3)	0.795	0.60	Reliable
Usefulness of content	0.843	0.60	Reliable
Life Style	0.719	0.60	Reliable
Personality	0.341	0.60	Reliable

The spread of the initial questionnaire conducted in the period from the March 19th – 22nd March, 2012. The first stage of data processing results can be seen in table 1 and 2. The result show that, those items are said to be reliable except for Personality variable and there is one questions that are invalid, i.e the Personality variable (P2), question number two. Due to lack of validity and reliability, then the next step is performed deployment again, testing of validity and reliability of questionnaires returned by on March 26, 2012 until the date of March 31, 2012.

Table 4. The Value of Corrected Item Total Correlation and Factor Loading

No.	Variables	Corrected Item total Correlation	Factor Loading
1.	Accessibility	0.356 - 0.630	0.630 – 0.834
2.	Interaction	0.336 - 0.700	0.679 – 0.844
3.	Adequacy of Information	0.382 – 0.682	0.767 – 0.844
4.	Usefulness of content	0.379 – 0.780	0.512 – 0.838
5.	Lifestyle	0.474 – 0.564	0.625 – 0.687
6.	Personality	- 0.218 – 0.527	0.669 – 0.806

Because of the limited pages, only the validity and reliability for lifestyle and personality variables are shown in this paper. The following is the results of validity and reliability of phase 2 with the questions from the questionnaire for the lifestyle variables and personality variables as shown in Table 5 and Table 6.

Tabel 5. Validity Test Result: Life Style Variable

Questions	Corrected Item Total Correlation	MSA	KMO	Bartlett's Test
GY1: E-banking facility offered by banks are relatively many	0.478	0.625	0.652	Significant
GY2: E-banking facility is a lot, got me interested	0.542	0.652		
GY3: Use of e-banking, to express your lifestyle	0.474	0.687		
GY4: The e-banking express modern lifestyle	0.564	0.639		

Table 6. Validity Test Result: Personality Variable

Questions	*Corrected Item Total Correlation*	MSA	KMO	Bartlett's Test
P1: Use of e-banking, reflects an elegant and attractive personal	0.252	0.787	0.718	Signifricant
P2: Use of e-banking because of the influence of friends and the environment around you	-0.218	0.806		
P3: Use of e-banking represents your character	0.527	0.706		
P4: Use of e-banking facilities can represent your conceptual	0.354	0.669		

Conclusion

Based on the results of validity and reliability in the previous section show that all questions point to the six variables are valid and reliable. This can be concluded that the questionnaire resulted from previous studies as a research tool can be used for further research.

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