

Customer Preference in using Internet Banking

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Abstract. Emerging technology and the increasing number of Indonesian people who use internet, encourage banking firms to make strategies with the use of internet technology in order to survive in the competition. Internet banking is a banking service that allows customers to perform banking transactions via internet. The purpose of this study was to determine customer preferences toward the use of internet banking in Bandung. Attributes used are taken from research related to e-SERVQUAL. Dimensions of e-SERVQUAL is to measure the quality of service on virtual. There is five attribute in e-SERVQUAL and used in this study are the fulfillment, privacy/security, efficiency, system availability, and problem handling. A conjoint analysis was used to evaluate the customer preferences on internet banking use. A survey to 400 users of internet banking in Bandung, Indonesia were conducted, using a purposive sampling method. Results of this study stated that fulfillment is the most important attribute for customers with importance value, efficiency, system availability, privacy/security, and problem handling.

Keywords. Preferences; internet banking; e-SERVQUAL; conjoint analysis

I. INTRODUCTION

Every innovation is happening in the banking world is supported by the facts of the field as to the many internet users as well as mobile phones in Indonesia. (Rifaldi and Atiek, 2010). A widely studied area of technological transformation is in retail financial services. The Internet has sparked an IT-based revolution in the financial services sector that has radically altered the way that banking services are delivered. This development, referred to as Internet banking (IB), has enabled busy people to complete their financial activities in a cost-effective and efficient manner at any time of the day, regardless of their physical location (Makris et al., 2009). Nowadays the banking industry must provide added value services that give an added value for its customer in order to increase added value for its customers in order to survive.

The Internet has sparked an IT-based revolution in the financial services sector that has radically altered the way that banking services are delivered. This development, referred to as Internet Banking (IB), has enabled busy people to complete their financial activities in a cost-effective and efficient manner at any time of the day, regardless of their physical location (Makris et al., 2009). IB also allows bank customers to engage in a vast array of financial services such as paying bills, checking account information, transferring funds, and utilizing investment and check services through bank websites (Tan and Teo, 2000).

There have also been benefits for the financial institutions. Banks spend a great deal of money on IB because it reduces costs relative to other forms of banking, and provides more timely and complete customer information (Gerrard and Cunningham, 2003). It also increases service quality which is necessary for survival in competitive markets (Rouibah et al., 2009).

Financial service providers must aim to have a comprehensive understanding of how their customers feel about this technology (Lassar et al., 2005). An important factor that influences customer adoption and use of IB is their attitude toward the technology. By identifying the expectations and wants of customers, and understanding their motivations for adopting (or not adopting) IB, bank managers and policy-makers can develop strategies to improve the take up of such technology. (Hanafizadeh, 2014).

According to APJII (Association of Indonesian Internet Service Providers), the number of Internet users in Indonesia during 2014 was as much as 88.1 million people, or a penetration of 34.9%. With the increasing growth of Internet technology, many companies have developed a strategy designed to encourage customers to perform self-service via the Internet or also called a self-service technologies / SSTs (Lovelock et al., 2011: 255). In order to expand its service network, in addition to open branch offices in various places, now the banks began to involve the use of information technology, especially internet to simplify business processes, namely by providing banking services via internet or internet banking. Internet banking is banking activities conducted from home, offices, or other places by using the internet (Sunarto, 2008: 11). There are several reasons that can be argued that the banking industry is currently widely adopted the concept of internet banking, which are to maintain and increase customer loyalty, to expand the reach of its market access, reduce administrative and operational costs, and can be used as a competitive advantage to the competition among banks very tight online (Khalfan et al., 2006; in Omar et al., 2011).

According to comScore survey, a global provider of digital media analysis says that the number of unique visitors (Unique Visitor) internet banking in Indonesia, Singapore, Malaysia, Vietnam, Hong Kong, and the Philippines increased in January 2011. Internet banking in Indonesia increased significantly unique visitors compared to other Asian countries, up to 72% of unique visitors. The other survey conducted by Markplus Insight, has found that the number of internet banking users in Indonesia has grown an average of 70% in 2010 through 2012. Based on the data above, it can be seen that the internet banking in Indonesia has growing fast, it became a good opportunity for the bank to further improve internet banking service. To increase customer loyalty and satisfaction towards the use of internet banking, it is very important for the bank to find out what attributes of the key considerations in the use of internet banking customers. The purpose of this study was to determine customer preferences towards internet use in Bandung.

II. LITERATURE REVIEW

Consumer preference is consumer choice against some alternative product to be bought, where consumers are looking for products that can giving a greatest satisfaction or have the best capability and is expressed in the form of the order (ranking) or scale (rating) (Hair et al.). Therefore, it is important for companies to know the preferences of consumers. The reason the use of electronic service quality dimensions as a attribute of internet banking, because in some studies have found that the dimensions of electronic service quality can significantly influence customer satisfaction and loyalty in using internet banking services. These dimensions can describe what the customer wants to use internet banking, such as the results of research conducted by Anggraeni and Yasa (2012), that the quality of service quality online (e-service quality) has a significant influence on customer satisfaction with the positive direction.

The study attributes adopted from the dimensional quality of electronic services (E-SERVQUAL) developed by Parasuraman et al. (2005) in develops electronic service quality dimensions consisting efficiency, system availability, fulfillment, privacy responsiveness, compensation, and contact. The attributes of Internet banking is also obtained from studies conducted by Khan et al. (2009) that found the seven dimensions of quality of electronic services on the Internet banking service. The dimensions include Reliability, Accessibility, User-Friendliness, Privacy/Security, Efficiency, Responsiveness, and Fullfilment. Kumbhar (2012) testing the validity and reliability of this scale essentially eBankQual. In this dimension developed to measure the quality of service and satisfaction in e-banking services,

this study uses eBankQual dimensions to measure the quality of internet banking services, results show that the dimensions eBankQual consisting of System Availability, E-Fulfillment, Accuracy, Efficiency, Security, Responsiveness, Easy to use, Convenience, Cost Effectiveness, Problem Handling, Compensation, Contact , Brand perception and perceived value is an important dimension of eBankQual reliable and valid for further use.

III. METHODOLOGY

The variables used in this to describe the attributes of the internet banking including the E-Fulfillment, Efficiency, Privacy or Security, Availability sytem, and Problem Handling. From the collection of attributes can be known that determines the relative importance in the consumer's decision in choosing a service (Lovelock et al., 2011:77). So from the attributes of the internet banking, customers can establish a preference for the use of internet banking in Bandung.

Table 1. Variable used in Internet Bankin Preference

Attirbutes	Level
E-fulfillment Scope of services offered, digitalization of business information, Variety of services (Khumbar, 2012)	<ol style="list-style-type: none"> 1. Transfer 2. Bill Payment (PLN, PAM, Internet, telephone, Credit Cards etc.) 3. Purchase (Pulse, Stocks, tickets, etc.) 4. The account information (transaction status, transaction history, balance etc.) 5. Registration Account or Deposit
Privacy/Security Trust, privacy, believability, truthfulness, and security, building customer confidence, freedom from danger about money losses, fraud, PIN, password theft; hacking etc. (Khumbar, 2012)	<ol style="list-style-type: none"> 1. Security code via token 2. Security code via SMS 3. Auto Log Off (Session time off) 4. otification transaction status via email or SMS 5. Blockage ID if several times wrong insert a security code, user ID, password.
Efficiency Ease of use and speed of access a site (Zeithaml et al., 2009:115).	<ol style="list-style-type: none"> 1. Speed of access or loading sites 2. Website easy to navigate and easy to use 3. Simple website layout and easy to understand 4. Step of transaction easily or minim complexity. 5. Has mobile version appereance
System Availability Technical functionality of site, especially how the site is available and functioning properly. System availability is the accuracy of a function of the site technically (Zeithaml et al., 2009:117).	<ol style="list-style-type: none"> 1. Website never crash or error 2. Accurate information 3. Web page functioning properly in accordance with user commands
Problem Handling It refers to problem solving process regarding internet banking services (Khumbar, 2012).	<ol style="list-style-type: none"> 1. Contact (email, phone number, online chat / helpdesk) 2. Userguide can be downloaded (pdf, word, etc.) 3. Demo how to use ibanking website 4. FAQ (Frequent Ask Question)

To assess customer preference towards the use of internet banking in Bandung, this study using conjoint analysis techniques. According to Hair et al. (2010: 266) Conjoint analysis is a multivariate analysis technique developed specifically to find out how consumers form a preference of some types of objects (products, services, or ideas). Consumers can build the best estimate of the preferences by weighing the shape of the object through combination of attributes. in performing conjoint analysis, there are several steps that must be passed, starting from goal setting conjoint analysis, design conjoint analysis, assumptions conjoint analysis, conjoint model estimation, interpretation of results, the validation results conjoint, and the latter is to apply the results of conjoint (Hair et al., 2010: 274).

Conjoint analysis method used in this study is the Traditional Conjoint. Presentation methods used in this study is a full-profile. After that designing stimuli automatically using SPSS 20 with orthogonal design, and produced 25 stimuli. Hair et al. (2010: 280), if the number of stimuli that created too much, it can be done using the concept of a minimum reduction of the formula:

$$\text{Minimum Stimuli} = \text{Total Level} - \text{Total Attributes} + 1 \text{ or } 22 - 5 + 1 = 18$$

3.1. Sample and Data Collection

A structured questionnaire that was adapted from prior research (Khumbar, 2012) was used to obtain relevant data for this study. The questionnaire was randomly distributed to 400 bank customer in Indonesia especially the internet banking user. The data gathered were analyzed using various statistical methods such as Descriptive analysis, reliability analysis and conjoint analysis were used. Samples were taken by way of non-probability sampling, i.e sampling technique by not giving opportunities or equal opportunity for every member of the population for selected elements into the sample (Hair, 2010). The sampling technique used in this research is purposive sampling. Survey was conducted through electronic questionnaires that distributed through online (twitter, facebook fanpage, email) and also through face to face questionnaire.

3.2. Respondents' Demographic Profile

The respondents comprised of 38.0% of females and 62% males. Majority of the respondents in this study, that is, 33%, were in the age group between 35 years old to 45 years old. In terms of education levels, the majority of respondent 41% respondents have obtained a Bachelor degree. Interestingly, 47% of the respondents were earning between Rp. 2,5 million to Rp. 5 million per month whereas 28% of respondents were drawing an income of more than Rp. 5 million per month.

Table 2. Respondent Demography

Gender	Male	62%
	Female	38%
Age	<25	25%
	25-35	31%
	35-45	33%
	>45	11%
Occupation	Private employee	34%
	Government employee	14%
	Entrepreneur	22%
	Student	23%
	Housewife	1%
	Etc	6%
Income	<Rp. 2.000.000	25%
	Rp.2000.000– 5.000.000	47%
	> Rp. 5.000.000	28%
Education	Elementary School	1%
	Junior High School	2%
	Senior High School	25%
	Diploma	18%
	Bachelor degree	41%
	Post Graduate/ Magister	11%
	Doctorate degree	2%
Device used to access Internet banking	Smartphone	57%
	Computer	13%
	Laptop	21%
	Tablet	9%

3.3. Usage of Internet Banking

All the respondents that involved in this survey had experience in using Internet banking. Majority of the respondent become a member of internet banking between 3-5 years membership. Meanwhile the frequency of internet banking mostly 5-10 times in a month. Furthermore, mostly %57%) of respondents accessed the Internet banking system using smartphone as a device.

Table 3. Respondent Internet Banking Usage Behavior

<i>internet banking membership</i>	< 1 tahun	18%
	1-3 tahun	28%
	3-5 tahun	34%
	>5 tahun	20%
Internet banking usage in a month (times)	< 5 kali	26%
	5-10 kali	50%
	>10 kali	24%
Perangkan yang biasa digunakan untuk akses <i>internet banking</i>	<i>Smartphone</i>	57%
	Komputer	13%
	Laptop	21%
	Tablet	9%

3.4 Analysis, finding, & discussion

To measure the validity and reliability of conjoint analysis used a person correlation R and Kendall tau as indicator. In this study has a Pearson's correlation value of 0.987. This means that the correlation is very high. The higher the correlation, the more fit or better model. Meanwhile, the significance of the correlation value is also strong, which is 0.000 or less than 0.005. Thus, indicate a strong relationship between the estimated results (estimates) and reality (actual) or a strong correlation between the estimated results of conjoint with the real preferences of customers

Table 4. Correlation Pearson & Kendall

Correlation	Value	Sig.
Pearson's R	.987	.000
Kendall's tau	.863	.000

Conjoint analysis used to determine which attributes are most important or the most considered in receipts internet banking customers, it can be seen from the value of interest (importance value). Once analyzed, the five attributes, attributes that are most important or most considered customers of internet banking services is an attribute of the first e-fulfillment with the highest value of importance value, which amounted to 44.943%, efficiency (19.793%), the third ranking is system availability (14.652%), the fourth is security/privacy (13.369%), and problem handling with the smallest value (7,297%). Table 5 descrobe the importance and also utility value of each level for customer preference in internet banking. The higher the value the usefulness or utility, then that level is the most preferred by customers.

Table 5. Conjoint Analysis Result

Attributes	Level	Utility	Std. error	Importance Value
<i>E-Fulfillment</i>	Transfer	.169	.085	44.943 %
	Bill payment	.021	.095	
	Purchase (Pulse, stocks, tickets, etc.)	.012	.130	
	Account Information (account balance, transaction status)	.063	.130	
	Registration Account or Deposit	-.264	.108	

Privacy/ Security	Security code via token	-.008	.130	13.369 %
	Security code via SMS	.013	.108	
	Auto Log Off (session time off)	-.048	.095	
	Notification transaction status via email or SMS	.081	.130	
	Blockage ID if several times wrong insert a security code, ID, password	-.038	.085	
Efficiency	Speed of access or speed of loading sites	.045	.095	19.739 %
	Website easy to navigate and easy to use	-.010	.130	
	Simple website layout and easy to understand	-.026	.130	
	Step of transaction easily or minim complexity	-.099	.108	
	Has mobile version appearance	.091	.085	
System Availability	Website never <i>crash</i> or <i>error</i>	.088	.140	14.652 %
	Accurate information	-.035	.070	
	Web page functioning properly in accordance with user commands	-.053	.090	
Problem Handling	Contact (phone number, email, chat <i>online/helpdesk</i>)	.032	.119	.297 %
	Userguide can be downloaded (pdf, word, etc.)	.005	.105	
	Demo how to use internet banking website	.000	.000	
	FAQ (Frequent Ask Question)	-.038	.056	

The respondent mostly prefer the transfer as a feature in using the internet banking, with utility value (0.085). Banks need to develop a transfer features to fit the needs of customers, which include a scheduled transfer transaction (scheduled transfer) to be processed later in accordance with the instructions of the client, as well as the routine transfer transactions (recurring transfer) will be processed on a regular basis (daily, weekly, monthly, etc.) according to customer needs. Ma et al. (2011); in Mujilan (2013), states that the banks need to have the ability to innovate according to user needs by providing unique features in internet banking website. This allows the user to attract the attention of customers and non-bank users to log into the website.

The highest utility values of efficiency attributes that have internet banking is mobile version of the utility value of 0.091. It also occurs in several countries in Europe and Asia, where 80% of households using mobile banking services to conduct banking activities (Gupta, 2005; in Bankole et al., 2011). Banks need to develop a mobile version of Internet banking services in the form of mobile browser (Internet banking makes website view/display in accordance with the size of smartphones) and mobile application (making specific applications of internet banking).

The highest utility value of the attribute system availability is internet banking website that never crash or error with the utility value of 0.088. Banks need to increase bandwidth and server capacity in order to internet banking internet banking website is always available whenever although during busy hours or when traffic is high. Banks must also always extend internet banking website domain any particular period. Because if it is not extended then the domain will expire, so that the website can not be accessed by the customer.

The utility value of the attribute privacy / security which has high value is transaction status notifications via email or sms with the utility value of 0.081. Customers feel that after they perform a valuable transaction (relating to financial) through they should receive notification via SMS (Peever et al., 2010; in Omar et al., 2011). These results are consistent with research conducted by Omar et al. (2011), which states that the majority of internet banking users in Pakistan would like to receive SMS or email when a transaction occurs on

their internet banking. This is because internet banking users need information that is up-to-date related to changes in their internet banking account. Because if there is a transaction that is not done by the owner of the account, then it can be known.

Solving problems by doing contact with the bank via telephone, email, online chat/helpdesk, twitter, facebook etc. in a way that most preferred customers internet banking users in Bandung with the utility value of 0.032. These results are consistent with research conducted by Paschaloudis and Tsourela (2014) noted that the dimensions of the contact, which is related to the availability of assistance over the phone or online is an electronic service quality dimensions most important for users of internet banking in Greece. In managing and dealing with customer complaints required attitudes, behavior and speech patterns are well in order to please the customer. Employees of banks, especially from the call center needs to understand the customer of the customer experience and provide answers to customers completely.

IV. CONCLUSION AND FUTURE RESEARCH

After conjoint analysis, it can be concluded that most considered the attributes of customers in the use of internet banking services sequence is e-fulfillment, efficiency, system availability, privacy / security, and problem handling.

From the research that has been done related to customer preferences towards internet banking, then the banks should improve all attributes of internet banking in accordance with customer preferences. The quality improvement can be done by looking at the order of priority (the value of the benefit) of each attribute so that costs are allocated to the banking and internet banking can be optimized according to the target. Banks need to educate customers by providing as much information about the utility and how to use internet banking to non-user so that they are at least aware of the existence of internet banking, and further that they want to use internet banking services. Banks also need to encourage young customers, especially students to use internet banking services, by providing socialization in schools and universities on easy to use internet banking services. In addition, the banks need to encourage clients who work as self-employed in particular for online sellers (e-commerce) to use internet banking services to help them in running the business, because the self-employed will be more interaction with customers, suppliers, distributors, and other business partners. How to provide socialization to the merchants through merchant communities. Future research are expected to completed this study, further research is expected to add attributes used, extend limitation of the study, and suggested to include the internet banking non-user.

References

- [1] Anggraeni, Ni Made S., dan Yasa, Ni Nyoman K. (2012). E-Service Quality Terhadap Kepuasan dan Loyalitas Pelanggan dalam Penggunaan Internet Banking. *Jurnal Keuangan dan Perbankan*. Vol.16, No.2 Mei 2012, hlm. 293–306. Terakreditasi SK. No. 64a/DIKTI/Kep/2010.
- [2] Asosiasi Penyelenggara Jasa Internet Indonesia. (2015). *Pengguna Internet Indonesia Tahun 2014, Sebanyak 88,1 Juta (34,9%)*. Didapat dari: <http://www.apjii.or.id/v2/read/content/info-terkini/301/pengguna-internet-indonesia-tahun-2014-sebanyak-88.html>.
- [3] Bankole, Felix., Bankole, Omolola., dan Brown, Irwin. (2011). Mobile Banking Adoption in Nigeria. *The Electronic Journal on Information Systems in Developing Countries*. EJISDC (2011). 47, 2, 1-23.
- [4] ComScore. (2011). *Online Banking on the Rise in Southeast Asia*. Didapat dari: www.comscore.com/Insights/Press-Releases/2011/3/Online-Banking-on-the-Rise-in-Southeast-Asia.
- [5] Hair Jr, Joseph F., Black, William C., Babin, Barry J., Anderson, Rolph E. *Multivariate Data Analysis: Global Perspective* (7th edition). (2010). New Jersey: Pearson Prentice Hall.

- [6] Khan, Mohammed S., Mahapatra, Siba S., dan Sreekumar. (2009). Service Quality Evaluation In Internet Banking: An Empirical Study In India. *International. Journal Indian Culture and Business Management*, Vol. 2, No. 1, 2009.
- [7] Kumbhar, Vijay. M. (2012). Reliability Of “Ebankqual” Scale: Retesting In Internet Banking Service Settings. *Business Excellence And Management*, Volume 2 Issue 2 June 2012.
- [8] Lovelock., Christopher,H., Wirtz,Jochen., Mussry,Jacky. *Pemasaran Jasa: Manusia, Teknologi, Strategi*. (2011). Jakarta: Erlangga.
- [9] Marketeers. (2012). **Survey Markplus Insight: Naik 6 Juta, Pengguna Internet Indonesia kini 61 Juta Orang**. Didapat dari: <http://marketeers.com/article/free-download-indonesia-internet-users-2012-report.html> .
- [10] Mujilan. (2013). Kualitas Layanan Internet Banking dan Karakteristiknya Berdasarkan Frekuensi Penggunaan. *Widya Warta No. 01 Tahun XXXV II/ Januari 2013*. ISSN 0854-1981.
- [11] Omar, Abdullah., Sultan Naveed., Zaman, Khalid., Wajid, Nazish B.A., Khan, Khalid. (2011). Customer Perception towards Online Banking Services: Empirical Evidence from Pakistan. *Journal of Internet Banking and Commerce*. August 2011, vol. 16, no.2.
- [12] Parasuraman, A., Zeithaml, Valerie. A., Malhotra, Arvind. (2005). E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service Research*, Volume 7, No. X, Month 2005 1-21.
- [13] Paschaloudis, Dimitris dan Tsourela, Maria. (2014). Using E-S-QUAL to Measure Internet Service Quality of Ebanking Web Sites in Greece. *Journal of Internet Banking and Commerce*. April 2014, vol. 19, no.1.
- [14] Sugiyono. *Metode Penelitian Bisnis*. (2013). Bandung: Alfabeta.
- [15] Sunarto, *Teknologi Informasi dan Komunikasi*. (2008). Jakarta: PT Grasindo.
- [16] Zeithaml, Valerie A., Bitner., Gremler. *Service Marketing: Integrating Customer Focus Across the Firm* (5th edition). (2009). New York: Mc.Graw Hill Companies Inc