USAGE AND RISK PERCEPTION OF INTERNET BANKING: CASE STUDY IN YOGYAKARTA SPECIAL REGION, INDONESIA

Singgih Santoso, PhD
Umi Murtini, MSc
Duta Wacana Christian University, Indonesia

Abstract

With number of samples 401 respondents, research aim is to measure consumer awareness, usage, and risk perceptions towards internet banking which based on information technology and communications. Research design is survey using a questionaire with 401 respondent as a sample; sampling method is multistage random sampling in five sub-provinces in Yogyakarta Special Region Province. The result show internet banking awareness is low, namely 27,4%; level of internet banking owner much more low, namely around 3,7%. Main reason not using internet banking is about lack of consumer readiness, lack of internet knowledge, and high administration cost. Respondent that considering to know internet banking most correlating this facility with a balance and banking transaction cheque via internet. Transaction frequency for internet banking is vary, between one times in a month until more than five times in a month, with the number of transactions also vary, between Rp. 1.000.000,- Rp. 2.000.000- until above Rp. 5.000.000,-. In terms of risk perception, younger age group (18-24 years old) have the courage to take higher risk than upper age groups.

Keywords: Internet banking, usage, awareness, risk perception

Introduction

Nowdays many banks have internet service banking facilities for banking transactions. This thing along with increasingly height of consumer of internet inside the country. Internet banking will increase an efficiency, effectiveness, and productivity and also increase an earnings through much more effective vendor system than conventional system. Based on the result of 2013 MARS survey from 1.710 respondents in 5 towns (Jakarta, Bandung, Semarang, Surabaya, Medan), 34,7% of respondent have an internet banking awareness (www.mars-indonesia.com). Though this number still less compared to level of awareness in mobile banking, but there is

improvement trend that enough significant. Unhappily, level of awareness internet banking that have fair high, is not followed with its penetration level, that is just reach 8,1%, or 91,9% respondent do not used or have internet banking access. These also a long way off lower to compare to penetrating mobile level banking that have reached 41,2%.

The Cisco Customer Experience Report, which focused on retail banking, analyzed consumers' desires for a more personalized banking experience over multiple channels, including online, mobile, telephones, video conferencing, and bank branches (www.loyalty360.org). Conducted in early 2013, the global report includes responses from more than 1,500 consumers and 405 bank professionals spanning 10 countries. Study respondents pointed to the following attributes as most important when interacting with their financial institutions: Efficiency (68%); competence (65%); and availability (63%). Consumers are willing to exchange more details about their financial habits if banks become active advisors in exchange for greater protection from identity theft (83%), increased savings (80%), personalized service (78%), and greater simplicity (56%) in managing their finances. Poon and Tan (2008) show that there are seven factors influencing the growth of e-banking: convenience of usage (including Internet accessibility and ease of use), cost of services, trust in bank (bank's credibility), security concerns, awareness, reluctance of customers and government supports.

In Southeast Asia, internet banking users increased sharply in the past year; growth in Malaysia is about 16% year-on-year from 2,4 million users, while Hong Kong in second place in terms of number of users, with 1,3 million in January 2010, increased to 1,5 million a year later (2011) - an increase of 18%. The next was Singapore with 779.000 users in January 2010 rising to 889.000 users a year later, up 14%. In less developed countries, there are much more percentage jump; Indonesian internet banking users increased from 435,000 in January 2010 to 749,000 a year later, Philippines up 39% to 525,000 users during the same period, while in Vietnam users rose 35% to 949.000 users in year 2011.

All of the above data indicate a growth in the internet banking usage, which in the future there will increasingly shift the traditional banking activities, which have many disadvantages, such as time consumption or personal interactions.

I.
Literatur review

Internet banking in broader perspective can be defined as a system allowing individuals to perform banking activities at home, via the internet. Some online banks are traditional banks which also offer online banking,

while others are online only and have no physical presence or physical interactions. With internet banking, <u>customers</u> can get all routine <u>transactions</u>, such as <u>account</u> <u>transfers</u>, <u>balance</u> inquiries, <u>bill</u> <u>payments</u>, <u>stop-payment</u> requests, and some even offer online <u>loan</u> and <u>credit card</u> applications. Account information can be accessed anytime, day or night.

With the development of information and communication technology and proliferation of internet usage, internet banking has become one of the most revolutionized components of today's economic growth; electronic delivery of internet banking service has become one of bank marketing strategy to meet customer's demand and expectations, such as time saving or premium services. Nowdays internet banking and its rapid technology development is transforming banking industry and is having the major effects on banking relationships with its stakeholders. Banking is now no longer confined to the branches were one has to approach the branch in person, to withdraw cash or or request a statement of accounts. In Internet banking, any consumer's transaction is processed online without any reference to the branch at any time.

Internet banking is a part of electronic banking activities, which defined as a form of banking in which, funds are transferred electronically between financial institutions instead of cash, checks, or other negotiable. With internet banking, a bank get a many benefits, such as reduce paper work and begin to move to the paperless environment, controlling their overheads and operating cost so bank can have a lower lending rate, more competitive and has opportunity to expansion in the banking industry (Keswani and Chaturvedi, 2010).

Research findings from Keswani and Chaturvedi (2010) show that the Confidence and Awareness of services is most responsible factor for the Awareness towards e-banking; besides this, regression tests indicate that customer's awareness has significant impact on their satisfaction. Poon and Tan (2008) have a similar results; their research finding about internet banking in Malaysia show that benefits of e-banking are reduce operating and administrative costs, provide faster and more reliable services, reduce time, improve bank image, and improve competition position in banking industry. But they also show there are many factors influencing consumer to use e-banking, such as convinience, affordable costs, trust to bank, and e-banking security.

Research findings in Nigeria's internet banking practices from Aliyu et.al (2012) show that the relevant factors determining adoption process of internet banking are awareness ofelectronic banking, ease of use, security, cost, reluctance to change and accessibility. While Parisa (2006) from Aliyu et.al (2012) show that internet banking services has lower operating costs,

improve customer services deliver toconsumer, retain customer from brand switching, reduce branch traffics, and downsize the number of branch staff.

Research in India banking practices from Safeena et.al (2011) which examine factors influencing usage of internet banking found that perceived risk (consits of perceived security and trust), perceived ease of use (the extent to which a person believes that using a particular system will be free of effort), and perceived usefulness (extent to which a person deems a particular system to boost his or her job performance) have a positive and significant effects to usage of internet banking and then influence consumer acceptance to internet banking.

With based on different service quality models and theories such as Technology Acceptance Model (TAM),Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB), Sadeghi and Farokhian (2010) conduct research on customer satisfaction evaluation in internet banking or e-banking service, which found that there are seven factors on the following dimensions affect consumer satisfactions, i.e convenience, accessability, accuracy, security, usefulness, bank image and web site design.

Brand awareness can be measured by showing a consumer the brand and asking whether or not they knew of it beforehand. such measures include Brand recognition - Either the brand name or both the brand name and category name are presented to respondents, Brand recall - the product category name is given to respondents who are asked to recall as many brands as possible that are members of the category, and Top of mind brand awareness - as above, but only the first brand recalled is recorded (Ragavendran et. al., 2009). Concept of brand awareness can be traced to the brand knowledge concept, which composed of brand awareness and brand image; in this Keller's brand equity concept, brand awareness is related to consumers' ability to recognize or recall the brand. Brand recognition is the minimum level of brand awareness and based on aided recall test; on the other side, brand recall is based on unaided recall test and more difficult task than recognition. The first name brand in unaided recall task has achieved 'top of mind' awareness. In consumer behavior, brand awareness can play important role in consumer decision making; raising brand awareness increase the likelihood that the brand will be a member of consumer's alternative consideration set. In internet banking case, awareness of internet banking will affect consumer to shift from tradisional banking transactions to more sophisticated and more efficient banking transactions (Touminen, 2000).

Internet banking has the potential to increase costs and increase revenue through increasing cost efficientcy with increasing more effective sales system than conventional transactions. Many security requirements doing banking services via Internet are Confidentiality, Integrity,

Authentication, Non-repudiation, and Availibility.   While the risks of internet banking transactions that may arise in banking activities are Strategic Risk Compliance Risk, Transaction Risk, Reputational Risk, Information Security Risk, Credit Risk, Interest Rate Risk, and Liquidity Risk. Secure internet banking system should use layered security, from front-end (related directly with customers) to back end. Increasing the front-end security can be done by applying a user ID, PIN and personal identity to access internet banking; whereas increasing security for the back-end can be done with a firewall as a fence into the system. Indonesia goverment has published internet banking activities law, namely Indonesian Banking Law published on April 20, 2014; its law rules about active control from commisioner, many transaction security systems, and reputation risk management system.

In terms of banking risk, Kesharwani and Bisht (2012) found that perceived risk has a negative impact on behavioral intention of internet banking adoption and trust has a negative impact on perceived risk; a well-designed web site was also found to be helpful in facilitating easier use and also minimizing perceived risk concerns regarding internet banking usage. Its practical implication from this research is that banks should build a web site with features to facilitate users' assessment of internet banking services and thus minimize the perceived risk and maximize the perceived ease of internet banking services. While Sharma and Govindaluri (2014) found that factors of perceived usefulness, perceived ease of use, social influence, awareness, quality of internet connection and computer self-efficacy are primary determinants of the attitude toward the use of internet banking in urban India; this research enables internet banking service providers in urban to design new service offerings or modify current service offerings to achieve higher adoption rates in internet banking. Whereas study of Jarvinen (2014) reveals deviations between various banking services and company-level results regarding consumers' trust in their banking relationships; consumer trust is the highest in banking accounts and the lowest in investments and pensions. The study also highlights deviations in consumer trust between European countries, and identifies countries with low, medium and high trust in banking and in distinct banking services. This study also reveals its practical implication that low trust may indicate serious problems in the markets and it should be a signal to bank managers to take actions, and low-trust consumers have to be approached with a different strategy than those with high trust.

Methodoligy

Research design for this study was a survey with a questionnaire. Primary data collection obtained through interviews and fill questionnaires,

while secondary data obtained through the study of literature. Samples for Yogyakarta Special Region which consists of five districts, namely Gunung Kidul, Kapubaten Sleman, Bantul, Kulon Progo, Yogyakarta were selected using multistage random sampling method. The first stage is mapping the area; for each district the order is districts, villages, hamlets and then RW / RT. Once the names and distribution of the Neighborhood (RT) is known as the smallest unit, the second stage is to elect RT to be sampled at random; the final stage is select household as respondent by systematic sampling method.

Questionnaires are generally divided into two parts. The first part is a screening process to determine whether the selected respondents considered feasible to provide data; screening will be based on the possession of respondents, such as mobile phones, television and so on. The second part relates to the demographics of the respondents, and the third part deals with the level of consciousness and some things related to the internet banking usage.

The operating variables used in this study are respondents awareness and their perceptions about internet banking, frequency using internet banking, reasons for using or not using internet banking. The data collected from this research then be tabulated and analysed using descriptive statistics.

Results findings

Result findings from this research:

Table 1. Internet banking awareness level

	Frequency	Percent
Aware	110	27.4
Not Aware	291	72.6
Total	401	100.0

From 401 respondents, only 110 respondents (27,4%) aware to internet banking; most of them (72,6%) still do not aware internet banking or they don't know what internet banking is.

Table 2. Internet Banking Ownership

	Frequency	Percent
Have	15	3.7
Do not Have	386	96.3
Total	401	100.0

For the ownership of internet banking, only 3,7% respondent confessing have internet banking connections and do a routine bank transaction with internet banking.

From those who confess have an internet banking awareness, here are respondents' perceptions about what internet banking is or what internet banking for:

Table 3. Respondents' Perceptions

Respondents' perceptions	jumlah	%
Viewing account balances	18	16.36%
Internet based facilities	6	5.45%
Bank transactions via internet	64	58.18%
Bank services via internet	9	8.18%
Equal with mobile banking	2	1.82%
Bank information via internet	1	0.91%
Unclear answer	10	9.09%
	110	100.00%

From table 3, two most perceptions are internet banking for bank transaction activities (58,18%) and internet banking is just viewing account balances (16,36%) .

The finding shows that activity of internet banking in Yogyakarta Special Region was known by less than 50% respondent and internet banking ownership also very few, only 3,7%; and most having the perception of internet banking simply to see balance and perform simple transaction, especially fund transfer. This findings supported by the data of internet banking usage (with a multiple response data) follows:

Table 4. Internet Banking Usage

	Responses		Percent of Cases
	N	Percent	
Viewing Account Balances	104	37.4%	99.0%
Fund Transfer	100	36.0%	95.2%
Voucher for Mobile Phone	46	16.5%	43.8%
Exchange Rate Information	16	5.8%	15.2%
Interest rate Information	12	4.3%	11.4%
Total	278	100.0%	264.8%

More than 90% respondent that confessing know internet banking understand that internet banking usage is to viewing account balance and fund transfer; while knowing the other internet banking usefulness, for example for exchange rate information and interest rate information is few, only 15,2% and 11,4% respectively.

Following is reasons internet banking usage in practices from respondents:

Table 5. Internet Banking Usage in Practices

Reason	Frequencies
Viewing Account Balances	3
Fund transfer	2
Bank Transactions	6
Fast Information	1

From table 5, it can be seen that most of reasons using internet banking is for daily simple bank activities.

Next table is about reasons not using internet banking:

Table 6. Reasons Not Using Internet Banking

Reason	Percentage
Don't know what internet banking is	6.06%
Don't be offered with bank	5.05%
High administrative fees	7.07%
Unfamiliar with internet	8.08%
Can not access internet in their area	10.10%
Need not internet banking till now (ATM is still enough, prefer to do business with traditional bank transactions, etc.)	63.64%

From table 6, respondent feel they don't need to use internet banking now is a dominant reason not using internet banking, besides relates to technical matter (can not access internet, don't know how to use internet etc.).

Brand awareness for bank:

Table 7. Bank Awareness in Internet Banking

Bank	Economic Social Status 'A'	Economic Social Status 'B'	TOTAL
BCA	46	57	103
BII	5	0	5
BNI	22	27	49
BRI	17	16	33
Bukopin	2	3	5
Danamon	3	4	7
Lippo	2	1	3
Mandiri	35	33	68
Mega	3	0	3
Niaga	11	7	18
NISP	2	0	2
Panin	2	0	2
Permata	3	3	6
total	153	151	304

Note: people who have a Economic Social Status 'A' is richer than Economic Social Status 'A'

Table 7 inform that the big four bank in Indonesia, i.e. BCA, Mandiri, BNI, and BRI have a good brand awareness; respondents deems that those banks have a good reputation, big size banks, and automatically have a internet banking. This finding can support strategy to increase internet banking awareness among people through those four big banks. The other interest finding is that there is no significant difference between result for Economic Social Status 'A' and result for Economic Social Status 'B'; this finding tells that actually internet banking awareness evenly distributed in all economic status. The following table explains internet banking transaction frequencies in past month:

Table 8. Internet Banking Transaction Frequencies in The Past Month

Frequency Internet Banking Transactions in past month		freq	percentage
Valid	Once	4	28.57%
	Twice	1	7.14%
	Three times	2	14.29%
	Four times	1	7.14%
	More than five times	5	35.71%
	Never	1	7.14%
	Total	14	100.00%

From following table that show money transacted in the past month via internet banking:

Table 9. Internet Banking Money Transacted in the Past Month

Amount of money	Frequency	Percentage
< Rp 200.000	3	23.08%
>Rp 200.000-500.000	2	15.38%
>Rp 500.000-1.000.000	1	7.69%
>Rp 1.000.000-2.000.000	3	23.08%
>Rp 2.000.000-3.000.000	3	23.08%
> Rp 5.000.000	1	7.69%
Total	13	100.00%

Table 8 and table 9 indicates that transaction frequencies and amount of money transacted are highly variable; for transaction frequencies variable, there are from once a month, the second most (28,57%) to more than five times a month, the most (35,71%). And for money transacted variable, from more than Rp. 5.000.000,- to less than Rp. 200.000,-. It also suggests that internet banking users have a varied habbits and varying purposes to do a transactions.
Research also find relationship between internet banking risk with age group.
Customer attitude to risk is divided into three types, namely risk averter, risk neutral and risk taker. Younger age groups generally more

willing to take the risk compared to the older group, because they expect the higher risk will get higher returns anyway.

Table 10. Internet Banking Ownership in Yogyakarta Special Region

Age Group	Internet Banking Ownership
18 -24 years old	50%
25 – 30 years old	5%
31 – 35 years old	28,6%
36 – 40 years old	8%
41 – 55 years old	11,4%
Total	100%

Based on Table 10, the most internet banking users are 18-24 years age group, show that the younger age group have the courage to take higher risk; because younger age group in general have better internet activities understanding with its risks and know more about internet banking rules than upper age groups, it can be understood that the younger age group daer to take risks with internet banking activities. Other result shows that productive age groups (between 25 years to 55 years) in average have little access to internet banking, or even have no internet banking access. Because of their business activites, they should use internet banking to facilitate their business transactions. But lack of internet banking information, or maybe a less understanding of internet banking rather than younger age group, they prefer to avoid the risk.

Results above suggest that awareness level of internet banking in Yogyakarta Special Region people is low; less than 30% aware about internet banking. And internet banking ownership level is much lower, only 3,7%. And from the most often raised reason for not using internet banking is that they do not feel need that. From their perceptions what is the use of internet banking, the majority of respondent thought that internet banking is just for bank transactions and viewing account balances.

These findings indicate that there is a perception gap from respondent' views that result in low levels of awareness. They still not realize that the transition from technological advances in the future will shift the role of traditional banking. Brand awareness consists of brand recognition and brand recall; to raise the level of awareness, brand recognition and brand recall level must be increased, so that people understand the important role of the Internet in banking activities in the future. Based on the results of research in which the most accessible media campaign is brochures, and because internet banking product category can be classified as a high involvement products, understanding internet banking can be done through brochures and other advertising media. Attractive brochures with detailed information will be a right promotion strategy to strenghten brand recognition. To increase brand recall, repetition advertising

through brochures or newspapaer, and special sales promotion can be arranged to attract consumers to know and use internet banking. Four big banks in Indonesia (BCA, Mandiri, BNI and BRI), who also four highest brand internet banking awareness in respondents' perception can join to promote internet banking activities in Yogyakarta Special Region.

Conclusion

From 401 respondents in the course of a study on Internet banking awareness in Yogyakarta Special Region, the result suggest that the majority of respondents (72,6%) still do not know what internet banking is, and very few respondents (3,7%) have access to internet banking. The most often raised reason for not using internet banking is that they do not feel need that, and they have perception that usefulness of internet banking is just for bank transactions and viewing account balances. In fact, majority of internet banking usage is for viewing account balances and bank transaction via internet. To increase internet banking awareness level, increasing brand recognition from brochures filled with detailed information and increasing brand recall through advertising repetition is needed in long term marketing strategy. In terms of risk perception, with better internet activities understanding with its risks and know more about internet banking rules, younger age group (18-24 years old) have the courage to take higher risk than upper age groups.

References:
Aliyu, Alhaji Abubakar, Sayf M.D Younus, and Rosmaini Bin HJ Tasmin. 2012. An Exploratory Study on Adoption of Electronic Banking: Underlying Consumer Behaviour and Critical Success Factors: Case of Nigeria. *Business and Management Review* Vol. 2(1): pp. 01– 06.
Jarvinen, Raija Annedi. 2014. Consumer trust in banking relationships in Europe. *International Journal of Bank Marketing,* Vol. 32 Iss: 6, pp.551 – 566.
Kesharwani, Ankit and Shailendra Singh Bisht. 2012. The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International Journal of Bank Marketing*, Vol. 30 Iss: 4, pp.303 – 322.
Keswani, Sarika and Manu Chaturvedi. 2010. Impact of Customer's Awareness on Their Satisfaction: A Study on E-Banking in Gwalior City. *SIES Journal of Management*, September 09 - March 2010, Vol. 6(2): pp. 79-91.
Poon, Wai-Ching and Tan Booi-Chen. 2008. Spread of E-Banking in Malaysia: A Consumer Perspective. *The Icfai University Journal of Bank Management*, Vol. VII, No. 4: pp. 71-85.

Ragavendran, P. Guru, G. Devakumar, and Santhosh Upadhyay. 2009. A Study on Brand Awareness of Shampoo Products for CavinKare Pvt. Ltd, *SASTECH Journal*: Volume 8, Issue 2, September: pp. 33-40.

Sadeghi, Tooraj and Sahel Farokhian. 2010. Electronic Banking Acceptance Model (EBAM) in Iran. *World Applied Sciences Journal,* Vol. 11 (5): pp. 513-525.

Safeena, Rahmath, Hema Date and Abdullah Kammani. 2011. Internet Banking Adoption in an Emerging Economy: Indian Consumer's Perspective. *International Arab Journal of e-Technology,* Vol. 2, No. 1: pp. 56-64.

Sharma, Sujeet Kurma and Srikrishna Madhumohan Govindaluri. 2014. Internet banking adoption in India: Structural equation modeling approach. *Journal of Indian Business Research*, Vol. 6 Iss: 2, pp.155 – 169..

Touminen, Pekka. 2000. Customer Based Brand Equity: Delivering Value for the Firm, Trade and Customer. *Publications of the Turkey School of Economics and Business Administration*.