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Research Article

EXPLORING THE FACTORS INFLUENCING ADOPTION OF INTERNET BANKING IN JAFFNA DISTRICT

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ABSTRACT

Internet Banking is a form of Self Service Technology, introduced by the leading Commercial Banks in the country in the recent past. Banks that offer this facility claims that that it reduces costs and makes them more competitive. But reports on Internet Banking show that the adoption and usage of such services by customers are low. An understanding of what are the factors which influence adoption can assist banks to implement this innovative self-service technology more efficiently. In Sri Lanka, relatively little empirical research has been carried out to examine factors influencing adoption of Internet banking services. The available studies in the country are quantitative studies carried out in southern part of Sri Lanka. There is a methodological research gap for a deep qualitative study on this aspect. This study fulfills this gap by carrying out a qualitative study in Jaffna. The study was carried out by conducting in-depth interviews among thirty customers comprises of both users and non-users of Internet Banking facility. In interview data was processed through qualitative content analysis. In this process, similar data chunks were coded in two stages – First Cycle Coding and Second Cycle coding. Thereafter, these codes were brought under nine categories which provide meaningful representation of the study data and it was identified and labeled as the factors influencing adoption of Internet Banking in the region. Awareness, Ease of Use, Security Concerns, Resistance to change, Managing with passwords, Demonstrability, Branch Density, Self-efficacy and Savings Culture are the factors identified in this study. Three of these factors are new to the literature namely “Branch density”, “Managing with passwords” and “Savings Culture”. The results show that adopters perceive the IB as “Easy to use” and “Secure”. But, Security is a major concerns for non-adopters. Apart from security concerns lack of Awareness, Resistance to change, Demonstrability, Branch Density, Self-efficacy and Savings Culture are the other factors that impeding Non-Adopters towards adoption. “Managing with Passwords” is an emerging concern for both Adopters and potential Non-Adopters.

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INTRODUCTION

Over the past decade, there has been a huge drive amongst the banks to implement new technological solutions since they realised that the technology can help them to achieve a better competitive position. Today, most of the transactions can be done at any time from any where the customers are. Introduction of Self Service Banking Technology (SSBT), which consists of ATM, CDM (Cash Deposit Machine), and Internet Banking (IB), has added a different dimension to banking. A noticeable shift from traditional to channel-based banking was witnessed recently due to SSBT services.

Internet banking, also called as Online banking, or virtual banking, is an electronic payment system that provides

customers of a bank to conduct a range of financial transactions through the Bank's website. The transactions over internet by customer are directly connected to Bank's core banking system and updated on the same time.

Banking industry in Sri Lanka plays a vital role in managing financial assets. Conventionally all the banking activities were carried out manually and always customers had to go to the branch. This has consumed lot of time as well as the cost to both customer as well as bank. Internet banking is now capturing the banking industry at a rapid phase by eliminating and transforming the conventional banking activities to a web based online system. Even though this enhancement of new technology, recent finding in Sri Lanka illustrates that

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customers were more resistance toward adopting such technology even it has more sufficient relative advantages. Further, it was found that only less than 5% of bank customers, in general, use online banking and mobile banking. ATM services are extensively used in the country compared to other SSBT services (Suraweera *et al*, 2011)

So in this scenario, this research study carried out to identify the level of adoption of Internet Banking in Jaffna District and to identify the factors which influencing adoption of Internet Banking. These findings are useful to the Bankers operating in the region, to formulate appropriate strategies to ensure rapid migration of customers to Internet/Online banking and thus to reduce their operational costs.

Internet Banking

A combination of computer, telecommunications and internet banking has paved the way to making online banking service offerings which enable customers a number of ways of accessing bank's services. With the introduction of the online banking, banks are able to offer certain number of their products and services online. This feature provides advantages not only to the customers, but also for banks. The rationale behind this is to reduce their overhead costs and personnel costs and to become closer access to customers by providing the service at reduced cost with greater convenience, particular time savings and quicker responses.

Despite the huge investment in technology and introduction of value-added banking services, the success lies in the customer acceptance and adoption. Although there is a significant growth of Internet users in almost every country in the world, the number of financial transactions carried out over the Internet remains to be slow. It was found that potential users either not adopting IB or otherwise, they are not using continually after adoption (Podder, 2005). Mearian (2001) stated that though most of the bank's websites are accessed by huge number of customers in USA, only a minority have made online financial transactions. In Britain, first online banking introduced in 1994 (The financial Brand, 02.10.2012) and after 20 years only, the adoption rate reached to 53% (Statista Report, 2017). Brown (2001) stated that out of 61% online users, only 20% of consumers carries out online Banking in USA. Several studies have reported not only IB has low adoption but also it has disparity in adoption level among European countries (Podder, 2005). AcNeilson (2002) found that use of IB is increasing in Asian countries but it is still slower than estimation.

Sri Lanka being a developing country, has adopted new technological advancements time to time in part with other countries in the world. Banks operating in Sri Lanka were the pioneers in introducing new technological innovations in the country. Earlier, technology was primarily employed in Banks to automate back-office transactions. This situation has been changed by a move of IT into front office operations, which enables Lankan banks to step toward activities beyond branch level activities. In this way, the first ATM was introduced in the country in 1988. Introduction of ATMs has done huge revolution in Sri Lankan banking industry. The overcrowded cash counters were reduced, over workload of Cash Tellers were reduced, standing up in a long queue for withdrawals was vanished, customer saved their time spent unnecessarily in bank queues, cash withdrawals became possible on holidays.

Next to ATMs, Credit Cards, Cheque Deposit machines, tele-banking, mobile banking, internet banking and on latest, Cash Deposit Machines were introduced by Banks in the line of Self Service Banking Channels . At present, Sri Lankan banks provide both Self Service Banking Services and traditional banking services. Though Self Service Banking Channels provide quicker services, Banks in Sri Lanka highly concerned about Traditional Banking Services due to its physical touch.

LITERATURE REVIEW

Internet Banking in Sri Lanka

Though the Western countries introduced Internet Banking in early 1980s, it took quite a long time to reach in Sri Lanka. In 1988 only the first ATM was introduced by Bank of Ceylon in the country and gradually other technological developments came in. Credit Card was introduced in 1989. In 1996, Tele banking was introduced by Sampath Bank. The worldwide accepted comprehensive ONLINE banking system was introduced in the country in 1993 and thereafter gradually all the banks were connected to Integrated Comprehensive Banking System (ICBS). After 7 years, in 2000, Internet Banking (IB) was introduced in the country. Though introduced in 2000, most banks took steps to spread the Technology outside of the capital after 2007. So it has been passed 10 years, but the usage of the facility is not in the expected level. People are still reluctant to use Internet Banking even though there are a lot of conveniences offered by IB services.

Now the country has around 6 Mn Internet Users. But the adoption rate of IB is very low. Even now, branches has to manage long queue of customers at the Cash counters, especially on Mondays and after special holidays. There are sufficient ATMs and CDMs (Cash Deposit Machines) installed by the Banks, but still customers are using Cash Counters for small amount of withdrawals/ deposits. Overall, adoption of IT driven banking services are comparatively low in Sri Lanka except ATMs.

It was found that only less than 1% of bank customers, in general, use online banking, mobile banking, telephone banking and internet payment gateway, although ATM services are extensively used, the usage of other IT driven services are almost insignificant in Sri Lanka (Suraweera *et al*, 2011).

Internet Banking in Jaffna

Jaffna District, which is one of the 25 districts in the country having 1012 Sq.Ft extent with a population of 618,209 which is 3% of the country's population. The area was underwent a prolonged civil war for about 26 years.

The prolonged ethnic war has several impacts on banking services delivery also. The people in Jaffna district have the habit of savings. Savings inculcated in Tamil culture, people tend to save more for the betterment of next generations and as well as to give donation (dowry) for brides on their weddings. These savings habit of Tamils have greater impact on the Banking industry also. Over the last 7 decades since the first opening of Bank of Ceylon Branch in Jaffna in 1945, Banks operating in Northern Province contributed substantially in raising deposits in the country's financial system.

But the availability of financial services were quiet limited up to 2009. During the war period, private banks have reluctant to open their new branches in Jaffna, already operated Banks not invested heavily on Technological Services such as ATMs and online banking facilities. After end of war in 2009 and re-opening of the A9 road, all private banks operated in South rushed to open up their branches in Jaffna including HSBC. After 2009, the Banking density of Jaffna District has increased significantly.

Table 1 Density of Bank Branches per 100,000 in Jaffna District

	2008	2015
Population (Total)	528,000	618,209
Number of Bank Branches	41	112
Number of Bank branches per 100,000 households	7.7	18.1
Population (Adult)		407,598
Number of Bank branches per 100,000 adults		27.5

(Source: Survey data, Statistical Hand Book of Jaffna District -2016)

As per the above table it is obvious how density of banks increased significantly after end of war. Notably density of bank branches is far exceeded in Jaffna District, which is 27 branches per 100,000 adults whereas it was recorded as 18.6 in the country. So the Jaffna district in the country has the higher number of banking branches.

When considering province as a whole, Northern Province has the highest banking density among nine provinces in the country. There was over supply of Banking Services along with high levels of indebtedness (Daily News, 03.02.2017).

Thought Jaffna has higher density of bank branches, i.e, 112 branches for 407,598 adult population. Consequently banks have to compete among them to survive in the market. All banks acted fast to obtain first mover advantage in the region by providing new Self Service Banking services such as ATMs, CDMs, mobile banking, SMS alerts and Internet Banking. Among those facilities, ATMs are still most preferred service in the region. Internet banking though it provides several conveniences to the customers, the service has not reached its expected level of adoption as per the pilot study (2017) carried out by the researcher which complies with the research findings of other parts in the country(Suraweera *et al*, 2011).

On the other side, the requirement for internet banking is high in Jaffna District as the region is has the highest amount of deposits in the country. Higher the deposit base, the more the need for internet banking. People of Jaffna has all the pre-requirements to carry out IB including internet access. In a survey carried out by Samarajiva (2011), Jaffna District was ranked in 3rd place in the household internet usage in the country.

Factors determining adoption of Internet

Depending on the geographical area, economy, customer demography, development of banking industry, resource availability factors influencing Internet Banking vary from country to country. But there are some factors which are common to all customers despite any geographical background. Among them, the most influential factors are relative advantage, complexity, security, cost, resistance to change, compatibility, access to internet, demonstrability & trialability,

distance to bank branch, website and the customer demography. All these factors have been analyzed in depth below.

Awareness/Perceived usefulness (PU)/Relative advantage

The adoption or rejection of an innovation begins when “the consumer becomes aware of the product” (Rogers and Shoemaker, 1971). In the framework of bank marketing planning, Guiltinan and Donnelly (1983) identified “information about the benefits of using a product/service” is vital in service/product promotion strategy. The Wallis Report (1997) identifies that “consumers will find out those financial products and service suppliers which offer the best value for money and they are educated about it”. Therefore, for adoption of Internet banking, it is essential that the banks offering this innovative service should make the consumers aware about the availability of such a product and explain how it adds value compared to other products of its own or that of the competitors.

Perceived Usefulness (PU) is defined as the degree to which “a person believes that using the system will enhance his or her performance” (Davis, 1989). It was found that perceived usefulness has no direct impact on behavior intention but has significant on attitude, which subsequently will effect on behavior intention of using the system(Chang *et al*, 2005). With regard to the acceptance of new technology, Sathye (1999) points out that unless, the specific need of a customer is fulfilled, customers may not be prepared to change themselves from existing familiar ways of operating. In a study carried out by Hettiarachchi (2014), it was found that Relative advantage has positive influence on the adoption of Internet Banking in Sri Lanka. He found that Perceived compatibility of an innovation has a positive influence on the adoption of the Internet Banking in Sri Lanka.

Ease of Use/Complexity

The second factor that leads to adoption of innovative service/product by customers is the “ease of use”. Perceived Ease of Use (PEOU) is defined as the degree to which “a person believes that using the system will be free of mental effort” (Davis, 1989). Cooper (1997) identified “ease of adoption” as one of the three important characteristics of innovation which induces for adoption from the customer’s perspective. The Wallis Report (1997) recognizes that technological innovation “must be easy to use” to ensure customer take-up or acceptance. It was noted by Dover (1998) that “The degree to which an innovation is difficult to understand or use” was one of the reasons for failure of home banking in the USA. Durkin *et. al.* (2008) identifies that the simplicity of the products offered via internet banking induces the adoption by customers. Complexity is considered as the exact opposite of ease of use, which has been found to directly impact the adoption of the Internet (Lederer, Maupin *et al.* 2000).

In a study carried out in Sri Lanka, it was found no relationship between complexity of using internet and its adoption to Internet Banking (Hettiarachchi, 2014)

Risk

The third important factor that consumers consider before adopting an innovation is the level of risk involved. As far as Internet banking is concerned, it refers to the security and reliability of transactions over the Internet. Cooper (1997) identifies "the level of risk" as an important characteristic from a consumer's perspective in the adoption of innovation. In Australia, findings from a report reveals that "security concerns among banks and customers", are keeping both away from Internet banking (ABF, 1997). O'Connell (1996) narrated that "security concerns" is a main reason for slow growth of Internet banking in Australia.

Sathye (1999) identifies Security is a burning issue and even one instance of adverse media publicity can damage consumer confidence in the Internet Banking system. He further noted that information on security aspects needs to be presented in simple and non-technical form.

When security and privacy concerns of the customer are correctly attended in time, then credibility is achieved in the banking system (Aderonke and Charles, 2010). Customers who adopt Internet banking services are more likely to perceive problems related to loss of privacy, as the Internet apparently allows outsiders to access their private information easily (Gattiker *et al.*, 2000; Jones *et al.*, 2000).

Customers recognize a greater uncertainty when a transaction is carried out using the Internet and are very worried about security when they opt to online context (Casaló, *et al.*, 2007). Potential customers expressed Internet security, online banking regulations, customers' privacy, and bank's reputation as the most significant future challenges towards adoption of online banking. Customers assign much more prominence to security than to convenience or time-saving. Thus, in order to improve the rate of adoption of online banking, the security issue must first be addressed (Laforet & Li, 2005; Zhao *et al.*, 2008).

In Sri Lanka also, security was identified as an influencing factor for the non-adoption of Internet Banking (Hettiarachchi, 2014).

Cost

Another factor that influences the consumer adoption of innovation is the price/cost factor. In the framework of Internet banking, there are two types of costs – normal cost incurred for internet activities and the Bank charges. Rothwell and Gardiner (1984) observe that "there are two fundamental sets of factors defining user needs, namely price factors and non-price factors". Guadagni and Little (1983), Gupta (1988), Mazursky *et al.*, (1987) identify "price" as a foremost factor in brand choice. "Price factor" was emphasized as an important factor in adoption and diffusion of innovation (Howard, 1977). The Wallis Report (1997) identifies that for "consumers to use new technological advancement, the technologies must be reasonably priced compared to alternatives".

Transaction cost economics theory suggests that people will choose the cheaper method to transact when choosing between electronic or traditional services (Huang, 2002). Customers will not adopt a new financial product unless it reduces their costs (Barczak, Ellen and Pilling, 1997).

According to Premaratne & Gunatilake (2016) cost of internet connections and cost of computers have no influence on the adoption of Internet Banking in Sri Lanka.

Resistance to change

The fifth factor that affects adoption is that the existing mode of service or product delivery fulfils the customers' needs adequately. In the context of Internet banking, ATMs, mobile banking, and the extended branch networks (brick and mortar branches) are the existing modes of financial service delivery. Adoption of new technologies often comes across a certain amount of resistance to change from present ways of operating (Sathye, 1999). Quinn and Mueller (1982) notes "human beings what they are, threatened to be resistance to change". Daniel (1999) also quotes "a high level of customer inertia in changing their established banking arrangements". For customers to change present (familiar) ways of operating and to switch new technology, it must "fulfil a specific need" (Wallis Report, 1997). Unless such a need is fulfilled, consumers may not be prepared to change from present ways of operating.

In a study conducted by Weerasekara & Abeygunawardhana (2011), resistance to change was identified as the most affecting factor for the slow adoption of IB in Sri Lanka. In our country, even now the customers have the habit of updating passbook frequently, within short interval, for the purpose of confirming their balances when they use ATM cards for withdrawal. For them, the account balance should available in a tangible form. In this scenario, adoption of internet banking will take a long way.

Compatibility

Compatibility is the degree to which a new product or service is consistent and compatible with customers' needs, beliefs, values, experiences, and habits. According to Tornatzky & Klein (1982), the compatibility concept has provided a consistent explanation of technology adoption decisions. It is defined to capture the consistency between an innovation and the experiences, values, as well as needs of probable adopters (Rogers, 1995). An important aspect of compatibility that customers are able to fit in services and technologies into their daily life (Jayawardhana & Foley, 1998; Lee *et al.*, 2003; Shon & Swatman, 1998). Individuals are more willingly to adopt an innovation in their routine when they find it compatible with their past experience, beliefs and the way they are accustomed to work (Agarwal & Prasad, 1998; Tornatzky & Klein, 1982). Compatibility also expressed as an indicator of how well the service or new technology fits with the way the customers manage and control their financial assets and how it suits their present lifestyle.

Internet banking has been viewed as a delivery channel that is compatible with the profile of the modern day banking customer, who is likely to be computer-literate and familiar with the internet (Hettiarachchi, 2014)

Access to internet

Availability of access to computers/Internet is a prerequisite for adoption of Internet banking. Sathye (1999) says, the more widespread access to computers/Internet, the greater the possibility of use of Internet banking. The same was emphasized by O'Connell (1996) who notes that lack of access

to computers/Internet as one of the possible reasons for slow adoption of Internet banking. In UK, it was pointed out by Daniel (1999) that lack of customer access to suitable PCs as the reason for low usage of electronic banking. The Wallis Report (1997) states "as the Internet becomes more widely accessible households will carry out their financial transactions over the Internet".

Earlier day's access to internet was possible with computers only. But nowadays, it can be accessible with mobile phones. Introduction of smart phones in the world, has made internet access easier with low cost. Telecommunication providers offer attractive internet data packages. But the serious concern is that, though the access to internet is not much difficult and is readily available, usage of Internet Banking is comparatively low in Sri Lanka.

Demonstrability and Trialability

Rogers (1983) states that characteristics that determine an innovation's rate of adoption were Relative advantage, Compatibility, Complexity, Trialability and Observability to those people within the social system. Trialability is defined as "the degree to which an innovation may be experimented with on a limited basis". It allows the individuals to "test drive" an innovation before it is being adopted. The opportunity to conduct a trial may help to convince reluctant customers towards using technological innovation (Black *et al.*, 2001). It was identified by Hernandez and Mazzon (2006) that relative advantage control, compatibility with lifestyle, image, subjective norm, self-efficacy, relative advantage of security and privacy, demonstrability and trialability are influence to use Internet Banking.

Self-efficacy

Self-efficacy is one's belief or judgment on what he or she can do with the skill he or she possess within a particular domain (Bandura, 1977). Venkatesh and Davis (1996) suggested that many systems fail due to usability issues where a key element of the problem could be users with 'low self-efficacy'. Several studies have found relationship between self-efficacy and adoption of technology. According to Venkatesh and Davis (1996), computer self-efficacy plays a role as an antecedent of perceived ease of use. According to them when users do not have experience on information system, their confidence in computer related abilities and knowledge can be expected to help as the basis for his/her judgment about how easy or difficult a new system will be to use. When considering banking, the term 'self-efficacy' is treated as one's confidence is having the knowledge and skill in using the computer and the Internet, to perform banking transactions over the Internet (Podder, 2005). According to Chan and Lu (2004) and Wang *et al* (2003), self-efficacy indirectly influences intention through perceived usefulness, perceived ease of use, and perceived credibility in the Internet Banking Context.

Distance to Bank Branch

As per the study carried out by to Premarathne & Gunatilake (2016), they found that IB is not an important facility to many customers in Sri Lanka as bank branches located within close vicinity.

Website

Lack of user friendliness of web-site reduces the rate of IB adoption in Sri Lanka (Jeyasiri & Kariyawasam, 2016). Sohail and Shanmugham (2003) mentioned that the proper navigational attributes, besides search facilities, have a significant impact on customer perception of an Internet banking site.

Research Methodology

The main objective is to find factors those determine adoption of Internet Banking (IB). In this study, researcher adopted qualitative method to gain deeper understanding on customers' perspective on adopting IB as a new technology provided by the banks. Adopting a qualitative approach provides richer detail for exploring viewpoints in early stages of research, enabling the researcher to gain better initial understanding of the problem and to identify phenomena, attitudes and influences (Maxwell, 1996).

Population under this study are bank customers in Jaffna District who have internet access, internet access through any mode – smart phones, desktop PCs at home or even access at their workplaces. 30 bank customers were selected by adopting purposive sampling method and interviewed them to get in-depth knowledge. Purposive sampling was used because sample is selected based on researcher's judgment on whether the interviewee has the need for internet banking facility in their day – to –day life. Researcher wanted a diverse range of participants to get much insight about Internet Banking among bank customers.

In this study, in-depth interviews were conducted to get deep knowledge about customer's perspectives on IB, the benefits they enjoy or the problems they encounter being users or non-users by providing explanation wherever necessary. Interviews were conducted at the workplaces for the employees. In this method, the researcher has the benefit of identifying the nonverbal responses visually among interviewees and therefore be able to clarify the intended question which will strongly contribute to identify the reasons for non-adoption. On average, each interviews lasted about 20 minutes for adopters and 10-15minutes for non-adopters. Further, with non-adopters the researcher has spent some minutes to explain them the facilities offered by IB in general, how to get the facility and cleared some doubts of the customer based on her own IB experience.

Here, the data in the interview transcripts were systematically arranged, accumulated to increase the understanding of the phenomenon. The process of analyzing data mainly involves coding or categorizing the data with the aid of NVivo 10 software.

Findings of the study

The following steps were followed in this study to analyses qualitative interviews. (1) organizing data (2) First Cycle coding (3) Second Cycle coding (4) building overarching themes in the data (5) ensuring reliability and validity in the data analysis and in the findings (6) finding possible and plausible explanations for findings (7) an overview of final steps.

The data for the present study were collected by conducting in-depth interviews from 30 customers in Jaffna District who have

internet access. As given in Table 2 , the respondents were grouped into four categories. Out of them majority of the respondents are in the age group of 26 -35 years. This may be due to the fact that majority of working population who have frequent access of internet are falls under this category. When considering sex, almost equal respondents are selected from male and female.

Table 2 Distribution of Respondents (age and sex)

		sex		Total
		Male	Female	
Age	<=25 years	1	2	3
	26-35 years	11	8	19
	36-45	4	3	7
	>55	0	1	1
Total		16	14	30

Source: Primary Data

Open Coding (First Cycle Coding)

Open coding was the beginning of the process of assigning conceptual labels to the data. A concept is a labeled section of the data where a researcher identifies it as significant to some facts that data represent. Concepts are deemed as abstract representation of events, objects, actions and they allow researchers to group similar information to get better understanding of the data (Khandhar , 2015).

For coding, the researcher followed a process that assigned code names to the data with a label that categorized each piece of data (Charmaz, 2006). The codes stayed closely related to the data. Researcher named the data with a word that believed by the researcher represented the meaning of the participant.

There are a number of ways to do open coding. In this study, the researcher followed a line-by-line coding of the transcripts, which is important to build concepts and categories (Khandhar, 2015). This was the first step in discovering patterns. Researcher used the viewpoint that coding breaks the data into manageable pieces (Corbin & Strauss, 2008). Coding were done directly with the aid of software QSR NVivo -10. In this study, the researcher has identified 130 initial codes.

Second Cycle Coding

In this process, the initial 130 codes were summarized to reduce smaller number of codes and thereby at the end of the process, 51 codes were developed.

Concept Development (Categories)

After identifying 51 codes in Second Cycle Coding, researcher wanted to reduce the amount of data and provide meaningful representation of the data. Therefore codes were grouped into concepts/ categories. Concepts are the words that represent the main ideas in the data. All concepts, regardless of level, arise from the data (Corbin and Strauss, 2008).

The concepts were given conceptual name that represented the ideas that were contained in the data (Corbin and Strauss, 2008). To determine the conceptual names, codes were grouped which were similar. Researcher went through several repetitions of grouping codes into categories. Then the connections between categories are identified. The categories and their connections are the main result of the study (Kent Lofgren, 2012).

From the data, researcher arrived 9 concepts from the codes namely (1) Awareness (2) Ease of Use (3) Security Concerns (4) Resistance to change (5) Managing with passwords (6) Demonstrability (7) Branch Density (8) Self-efficacy and (9) Savings Culture.

Analysis of categories

Concept 1: Awareness

IB is an innovative product offered by Banks at present. Customer adoption or non-adoption of IB begins with when the customer becomes aware of the product. The availability of such as facility should reach the customers.

In the interview process, it was found that Adopters are aware of IB product. They know the product upto their requirement level. Balance enquiry, fund transfers, paying Credit Card, settling mobile bill payment, electricity payment, insurance premium payments, regular payments of special investment accounts, fund management within their own accounts are the functions adopted by Adopters in Jaffna.

Adopters became aware of the product through canvassing by the Bank Officials, word-of-mouth from friends & colleagues (Ashtiani & Iranmanesh, 2012).

When consider Non-adopters, 40% of them are not ware about IB. Even some customers have never heard the word “Internet Banking”. A few respondents showed surprise when getting to know that they can pay their utility payments through IB. But the bitter truth revealed from Non-adopters who are not using IB due to lack of awareness is, their Bank Officials not informed about IB product. According to them, no canvassing made by the Bank. As per NVivo coding, higher number of codes falls under this factor and therefore “Awareness” has been identified as one of the key factor in determining customer adoption of IB.

Concept 2: Ease of use

‘Easy to use’ is one of the reason whether a customer is adopting a new technological advanced product/service. If customers perceive IB is very difficult to operate and it is much complicated requiring more technical skills, then they will not use that product/service. Since the IB interface provides “ point and click” options, all Banks created user –friendly operations system by providing drop-down list for all category of expenses, fund transfer types, customers perceive it as a very comfortable zone to operate. From the study, all Adopters agree that IB is easy to operate, there was no any dissatisfaction from them regarding usability. Accessing the account from anywhere - at home or office or on the go, and able to access anytime across 24 hours a day are the added more value to the customers which make Adopters feel more easy and persuade them remain using.

When Non-Adopters are concerned, the reason for Non-Adoption is not because of “Difficult to use”. Even few earlier adopters who have turned into non-adopters not sited that “Difficult to operate” is the reason for declining IB. So, “Easy to operate” persuade Adopters to remain using the IB facility whereas it have no any impact among Non-adopters.

When considering NVivo coding, this factor has been identified as one of key determinants of IB adoption by having higher number of codes.

Concept 3: Security Concerns

In the interview, the participants much talked about security issues. Majority of the adopters believe the online security protocol of their banks. Even, a few adopters still have a suspicious eye over security of their transactions. For Non-adopters, security is a major problems. Non-adopters and a portion of adopters fear that their User ID and the password for the Internet Banking (IB) will traced by online hackers and they will misuse the same. All customers believe their Banks despite State Banks or private banks, and trust the security infrastructure of the banks. The threatening issue for them are the Hackers.

Apart from online Hackers, some adopters and non-adopters believe that their User ID and password also will be misused by their family members, friends and even colleagues at their work places.

An example from interview data, majority of the adopters have trust on security over the transactions carried out over IB, they trust the service providers and adopting IB as a satisfied customer. An Admin-Finance Assistant of an UN Agency, express that she is not worried about security issues on IB as follows:

“Security no matters for me. I don’t bother about security. I believe the security protocol of the Bank. So far, I never hesitate to do any transactions through web. I frequently do online shopping and pay my bill through credit card. So far, I have not encounter any problems (Adopter)”. [Transcript 1: Line 149-153]

When compared to the above adopter, an Executive of a leading private insurance company has little worry on security of his transactions and shared the researcher how he overcome this issue.

“I have little fear about security of my money. To safeguard my funds, I’m not using my salary account as the key account in IB(anchor account) for funds transfer. What I have done in the past is to transferring funds from my key salary account to another secondary account which was opened intentionally for IB and using the balance lying on that secondary account for funds transfer, utility payments , credit card payments(Adopter)” [Transcript 25: Line 131-135]

Providing similar concerns over security, a user of IB who is an Accountant for an INGO express his concerns over security as follows :

“Though there are a lot of IT developments and the banks are fast adopters of IT, I perceive IB carries itself little insecurity. So, I think it is the user’s responsibility to take care of their account, preserve passwords. What I’m doing is, after using IB on my desktop PC at the office, I delete the browsing history in my PC (Adopter)”[Transcript 10: Line 121-124]

Fear on hacking user ID and password was highlighted as a key issue for non-adoption expressed by a women who is working as an Educator.

“The first problem I foresee towards IB adoption is the security. What is the guarantee that my password will not be

hacked by someone and misused? .for me, I don’t believe the security of the transaction over the IB (Non-adopter)”. [Transcript 15: Line 46-48]

A Regional Director of an INGO, demands that Banks should enhance their prevailing security systems, he seeks an advanced user identification mechanisms like “finger prints “ and “voice recognitions”.

“I think, the bank should give us an assurance about its security. Without any assurance, I cannot adopt it blindly. Bank should develop a system to confirm that the real user has logged on and using..... (Non-adopter)” [Transcript 8: Line 122-125]

In contrary to the above women Non-adopter, a male Non-adopter who functions as a Programme Coordinator, states that there are other reasons for him for Non-adoption of IB. But he strongly agree that IB is secure.

“For me, security of IB not a matter , IB has been tested already in Western World and we Asians are practicing now. So, security is not an issue, I believe the security protocol of banks over IB (Non-Adopter)”. [Transcript 9: Line 111-112]

In NVivo coding, next to “Awareness” and “Ease of Use” this factor has been identified as the one of the key element in determining customer adoption of IB. Figure 4.4 shows visual representation as how security has been identified in NVivo 10.

Concept 4: Managing with Passwords

Nowadays, due to increased usage of internet and development of Technology, people have to manage a lot of User Names and Passwords for their personal activities such as online shopping, access to social media(Facebook, Twitter etc), registering themselves as members for certain magazines, to access certain websites as members etc etc. As per the recent survey carried out in London , it was found that average person has at least 19 passwords and 21 online profiles (Daily mail, 18.06.2015) . Though there was not that much development in Sri Lanka and in Jaffna, the researcher has found one surprising reason for Non-adoption of IB. Quite number of respondents says the reason for Non-adoption is two-factor (two-step) authentication and there is a mandatory requirement to change the password once in three months for certain banks. Some banks have developed their IB application which requires passwords complying certain requirements – both string and numeric value.

Though the two –factor authentication of passwords and the mandatory requirement to change the same once in three months is to provide utmost security for the customers, from customers point of view it seems irritating.

An Executive of an Insurance Company says the reason for his non-adoption at present (though used the facility for a certain period) is that he has forgotten the password.

“after some period of using IB, now I forgot my password, I have no time to visit the branch to re-activate that.....at present, we have to remember a lot of passwords. Passwords are being used at workplaces, to access

some websites, social media, banking. See, how much of passwords we have to remember? (Non-adopter)”.

[Transcript 25: Line 123-127]

A Development Officer explicitly showed his angry on password reminder alerts in IB platform as follows:

“I have irritated about the reminders asking me to change the password in 3 months. There are two passwords, one for log in and the other for transactions. Passwords should have LETTERS and NUMBERS with minimum 8 character, so it’s difficult to remember. Changing both passwords once in three months is another headache. Not only headache, it takes time to find new password which i can easily recall. So I stopped using that (Non-adopter)”. [Transcript 26: Line 122-126]

Similarly, a senior library staff also shared her views on password management as follows:

“I can’t manage in changing password once in 3 months..... Already there are a lot of passwords we have to remember for Facebook, email, ATM card, Wifi and online websites. Then remembering password for IB is another burden, and changing the same once in 3 months is impossible. I dont think i can allocate time to for this repeated tasks (Non-adopter)”. [Transcript 3: Line 130-134]

An Accountant of an INGO comments that changing password in the midst of his busy schedule is a burden for him.

“This feature not a pleasant arrangement for me, it irritates me a lot when I log on into IB in the midst of by busy work schedules, a time consuming task. My Bank..... lacks behind as far as user friendliness is concerned (Adopter)”. [Transcript 10: Line 109-111]

Views of a busy businessmen was aired as follows:

“The system asks me to change the password once in 3 months. It is a headache for me..... Sometimes im confused with my new passwords with old passwords(Adopter)”. [Transcript 18: Line 155-158]

Changing password perceived as an unpleasant feature despite skills of the respondents. Complying above all statements, a Doctor showed his disagreement as below:

“I don’t have any problem in handling IB except the requirement for changing password once in three months. I don’t like that. First of all, to change a password, we have spent a quite a little time to change itThen I have to remember with this combination (Adopter)”. [Transcript 20: Line 118-121]

In NVivo coding, “Managing with Password” has been identified as one of the important factor in determining customer adoption of IB.

Concept 5: Resistance to change

From the interview, it was clearly expressed by Non-adopters that they are satisfied with existing mode of banking services delivery. For most of Non-adopters, withdrawing cash from ATMs and instant SMS balance confirmation after withdrawal are sufficient.

A Management Assistant from a Govt Dept express that continuing her existing way of banking (ie. Visiting branches) is not a difficult task for her and wishes to follow what was practiced so far which is more familiar to them.

“Im satisfied with the present way of doing my bank transactions. Visiting bank for the purposes other than ATM withdrawal, is not a difficult task for me. I used to bank like this and continuing the same will not be a problem for me.Rather than switching into the unknown thing, its better to continue the existing practice (Non-Adopter)”. [Transcript 19: Line 107-112]

The above statement also supported by a Medical Laboratory Technician as follows:

“So when the salary is credited to my account, I came to know without visiting the bank. Then for withdrawals, I have ATM card. For all debit transactions, I have activated SMS alert facility, with this SMS I can re-confirm my ATM withdrawals. Whether visiting the bank is difficult or not , that is upto me..... At present, facilities like ATM, CDM and SMS alerts are quite enough to meet my banking requirements. I don’t want to any further facilities even though they are highly sophisticated (Non-Adopter)”. [Transcript 30: Line 114-116, 132-136]

Not only for personal transactions, in business environment also, traditional way of banking is still adopted in Sri Lanka. An automobile company in Colombo still prefers cheques from its customers who are spread all over the districts. A businessmen in Jaffna who obtained dealership for motor bike spare parts says his Colombo based Supplier demands postdated cheques for items supplied. Though IB provides quick transfer of funds and it does not require any cheque clearing mechanisms, Cheques remains as the most preferred mode of transactions.

“My suppliers prefer a tangible document for payment. I mean , they prefer cheque. If I issue cheque, then I will be a physical evident that I made payment.....Even they don’t accept the carbon copy of the deposit slip..... So, if I paid via IB, then there will not be a physical evidence to the Supplier, he has to check his account and confirm that the money has been credited to his account. They don’t prefer this mechanism. They wish to follow what was in practice so far (Non-Adopter)”.

[Transcript 12: Line 121-128]

Concept 6: Demonstrability

If customers are given the chance to try the innovation, it will minimize certain unknown fears, they will feel comfortable with the innovation and thus be more likely to adopt it. IB is an Innovative Product offered by Banks. During the interview, Non-adopters of IB claimed that they don’t know how to operate IB. Learning it by doing is not easy for all, ability of self- learning differed from person to person, it is based on their educational and job background. Non-adopters perceive that IB will require high technical skills which they don’t possess. These customers emphasized if the bank provide them a demonstration as how to operate it, then they are prepared to use it.

During the interview process, a lecture said that she encountered problem in her 1st log-in. According to her, IB webpage of the page requested to change her User Name and the Password in the 1st log-in. So, the changing password is the first activity she has done in the site. As it went wrong, she has

given up her idea to using IB after get the facility from the bank.

“When I first log into Bank’s website, it asked about User ID and password, and I have given. Immediately It asked to change the password and user ID. I have changed both. But immediately, I want to test again. But at the time of entering User Id and password, I had a big confusion, which is the user id and which is the password.Several times, I tried to recall, but I cant retrieve it. So, I have to visit the Bank again to get it rectified, but I don’t have time. So I stopped at this point.

(Non-adopter)”. [Transcript 25: Line 122-135]

The same experience of the above also expressed by a business men and staff working Travels Agency. Both have problems in 1st log-in and then sorted out with the help of bank staff during their 2nd visit to the bank.

A lady registrar of University shared as one of her reason for non-adoption is time limitation required for learning-by –doing in IB.

“I can’t spent my own time in getting know myself regarding operations of IB..... If the Bank Officials provide me a demonstration as how to operate it, then I will think of adopt it (Non-adopter)”. [Transcript 11: Line 111-113]

Due to the same reason referred above, a potential lady adopter working in the capacity of accountant also preferred a demonstration.

A businessmen who has low educational background needs a demonstration from the Bank.

“I don’t know how to operate it, I can’t learnt it by my own. If the bank staff at the counter will explain as how to use it, then I will be easier for me to use IB (Non-adopter)”. [Transcript 13: Line 117-119]

Concept 7: Branch Density

Density of branches (number of branches per capita) serves the population in the war effected area in many ways. The key benefit is to provide credits for rehabilitation and reconstruction which in turn maximize bank’s profit also. To penetrate a new product or service like Internet Banking, a number of bank branches will do mobilization fantastically with personal touch of customers. But in reality in Jaffna, higher density of branches contributed negatively for the promotion on IB. During the interview, respondents expressed that they have ample number of bank branches in their area, so access them is very easy. For those, rather than adopting IB, they can easily perform the same tasks thorough large spread of branches. If availability of branches are limited and they are located very far, they may thought of adopting IB. But in Jaffna, density of branches are very high compared to other parts of the country, and all branches are connected to online, customers can either approach their branch where they have account or the same transaction can be performed by any of its branch due to linkage of online.

A Development Officer of Govt Service states as follows:

“Since all banks provide online banking facility, any transaction can be done at any branch, I don’t have essence to use IB. if online banking is not available, I may think to re-use IB (Non-adopter)”. [Transcript 26: Line 133-134]

A lady accountant of GovtDept supports the above point stating quite number of branches in around work place.

“Around my work place, there are a lot of Banks and finance companies. The distance between my bank and my office is less than 1 km. So im performing all my transaction during my lunch break. Its not difficult for me to visit the branch and carry out transactions (Non-adopter)”. [Transcript 2: Line 114-117]

Due to high density of bank branches, some banks in Jaffna adopting door-to-door banking to collect deposits. People who are familiar this method, will prefer brick-and-mortar banking rather than virtual IB. A young graduate shared his views as follows:

“what I personally feel that, there are a lot of bank branches in Jaffna. The branches are located within close proximity to our residence. Even now some banks are ready to come home to collect deposits. In this scenario, people will choose branch banking which is now become very easy access. Also this will be the most familiar mechanism for our people, people will select their familiar methods rather than unfamiliar IB (Non-adopter)”. [Transcript 9: Line 121-125]

Close proximity of branches after the war made branch banking very easy and for this reason a Registrar says has not thought of adopting IB.

“Bank branches are close by to access nowadays. Not like during the war. Now, after end of the war, there are a lot of bank branches. For example, out of Jaffna City, there are branches opened in So visiting the branches, is not a time consuming task (Non-adopter)”. [Transcript 11: Line 114-117]

Another point also to mention here is that Jaffna has limited population, preferred mode of transport for most people is motor bikes, people could easily move anywhere without any traffic jams and not to consider about parking facility like in cities. Due to these reasons, working population in the region could able to perform their banking transactions during their lunch breaks. High density of branches contributed this habit.

Concept 8: Self-efficacy

As far as IB in considered, Self –efficacy is all about an individual’s confident in having the skills in using computer and the Internet, which is more inclined to adopt Internet Banking (Tan and Teo, 2000). During the interview process, it was found the people have sufficient knowledge in computer operating system and browsing internet, but the they have lack of confidence in their skills when the applying the same in IB. Since IB is related to money, they think any wrong entries will divert their money to somewhere else. So they themselves rank their skills at low level and not come forward to adopt the new technology. Due to lack of self-confidence, respondents are not adopting IB without carrying out a single transaction.

Lack of confidence is seen among respondents irrespective of their educational level. A senior library staff frankly says that she don’t have confidence in using IB without making any mistakes.

“I don’t have confident that I will enter correct account number and doing transactions correctly in IB. If I had made any

mistakes, then my money will go somewhere else. It Seems much precautions are required (Non-adopter)”

[Transcript 3: Line 126-128]

A business men heavily using cheques for his transactions expresses his concern as follows:

“As you said, if the IB is very easy, I can consider the same in future, but im much scared whether I can correctly do the transactions. I don’t have much confidence over my ability to do this. If I put wrong account number, then money will be credited to somewhere else. Im often make mistakes, sometimes making errors writing cheques. If I made same mistakes in IB, then its another burden, go to the bank to get it rectified (Non-adopter)”.[Transcript 13: Line 113-117]

In supporting the above statements, a lecturer shared her views which explicitly shows her lack of self-efficacy.

“I don’t have the confident that I will do IB in a right way. Suppose I enter a wrong account number or add one more digit, either my money will reach wrong account or more money will be deducted from my account. It’s an unnecessary work for me in the midst of my heavy work load (Non-adopter)”.[Transcript 14: Line 128-131]

Considering codes developed in NVivo, “Self-efficacy” has an impact on IB adoption.

Concept 9: Savings Culture

In Sri Lanka, people of North have been well recognized for their habitual savings culture. People in Jaffna tend to save more. When conducting interviews, the respondents revealed an unexpected answer towards adoption of IB among Non-adopters.

Non-adopters perceive if they start to use IB, then their savings balances will reduce very fast. When those people choose branch banking the task will be time consuming and the people will perform if it is necessary only. In contrast, since the IB can be performed the moment they took a decision to spend, the money will be deducted from their account. There is no time gap between a decision to spend and the transaction real time.

A lady expresses her highly concern about her savings balances as follows:

“IB is like a credit card, in credit card transaction we are compelled to purchase necessary as well as unnecessary things also. The purchase will end once the credit limit is over. Likewise, in IB, as far as funds are available in the savings account, we can do any transactions. My savings will be finished very quickly. As far as we take quick decisions to use the money, the money on IB will be also be utilized very quickly. But if it is manual banking there will be a time gap between the decision to spent money for a specific purpose and the transaction real time. On that gap, we may revise our decision that cannot be possible in IB (Non-adopter)”.

[Transcript 15: Line 109-115]

While agreeing the above point, a young graduate adding more that if his friends aware that he is using IB, then there will be frequent request from them requesting small financial help like fund transfer and mobile top-ups. Automatically balance lying in savings will be wiped off.

“as far as funds are available, I will automatically use IB facility for unnecessary and not urgent transactions. If I managed to deal with the currency, all expenses are within a limit (Non –adopter)”.

[Transcript 9: Line 116-120]

Exhausting available savings is not a criticism by personal users, young businessmen also commented in the same way. This businessmen is not maintaining proper ledgers for his business like majority of business men in Jaffna, but according his pattern of fund management, IB will lead to bear unnecessary expenses. His statement is given as follows:

“if I used to carryout transactions via net banking, then I will become addicted on that. I will utilize all the available money on my bank account. But if I managed to do business with the available liquid cash on the drawer, then my expenses are limited. I think this is a good habit, to spend what is available to me. I don’t know whether its right or wrong, I prefer this fund management (Non-adopter)”.

[Transcript 12: Line 160-164]

In NVivo coding “Savings Culture” has not been identified as the key element in determining adoption of IB, but it has impact on IB adoption.

CONCLUSIONS

The main objectives of this study are to explore and understand the factors determining the adoption of Internet Banking by (adopters and non-adopters) customers. From the analysis, the researcher come up with the conclusion that here are several factors that need to be considered and it is the duty of banks to make sure that customers are well aware of this product and start using.

Awareness and Ease of Use and trust on Security are the main factors persuade Adopters towards using IB application. Adopters have trust on Security and perceive it positively. But security has become a major concern for Non-Adopters and thereby ignored product as the transactions are unsecure. Non – Adopters did not believe that bank will protect their transactions. In this case, banks need to build confidence about internet banking. Awareness on IB such as convenience, 24 hours availability, time savings contributes positively towards using by Adopters whereas lack of awareness hinders Non-Adopters towards to have a trial on IB. It reflects Internet Banking, as an innovative product not marketed properly by the Banks.

Apart from lack of awareness, Resistance to change, Demonstrability, Branch Density, Self-efficacy and Savings Culture are the other factors that affect Non-Adopters towards adopting of IB in Jaffna.

Managing with Passwords is emerging as another concern for both Adopters and Non-Adopters. Since the world is moving towards digitization, managing with multiple level of user names and passwords become cumbersome task.

“Branch Density” ,“Managing with Passwords”, and “Savings Culture” are new to the existing literature. No of branches increased suddenly to capture existing gap in the market in Jaffna, but this spread now in turn hinders for Internet Banking

Adoption, feel some customers convenient with “branch banking” model.

Implications

The findings of this study have important implications for research and banks that are currently offering Internet Banking service as well as banks that are planning to offer such service.

Theoretical Implications: The purpose of this study is to add value to the body of knowledge about diffusion of innovative banking products. When technology is advancing fast and the applications of the same is applied across multiple sectors such as education, medical care, travel & tourism and banking, spread of such technology creates some complications in customers. From this study, it was found that managing with passwords is one of the influencing factors for adoption of Internet Banking, which is, so far not identified in the previous studies.

Further, it was found from the study that branch expansion strategy of a Bank should coincide with the geographical coverage and population. High density of branch networks negatively contributes for digitization of banking activities, thereby Banks cannot achieve expected operational cost reductions.

Managerial implications: Findings of this study have some managerial implications in banks, ranging from a strategic policy formulation level to a practical operational level. Though product design of Internet Banking is meets the expected standards, the entire branch networks have failed to popularize the product among customers. Banks follow same marketing strategy to popularize Savings products, loans products as well as digitalized products. They need improvements in IB service delivery. During the digitalization era, Banks needs reconfigure their branch networks to provide digitalized services as well as physical facilities, a combination of “Digical”.

Suggestions for future research

As IB facility is still relatively new to Jaffna, future studies should incorporate this measure after a while that the number of IB customers has reached a critical mass. In this way, a more comprehensive investigation on the effective factors that determining adoption of IB services can be conducted.

From the study, it was found that high density of bank branches affect adoption of IB since customers feel convenient with traditional bricks-and-mortar banking. So a comprehensive study can be conducted to measure the effect of branch density on IB adoption.

In this study, managing with password has been identified as a new factor in IB adoption which was not identified in previous researches carried out in the world. Hence, a further study to be conducted to measure whether it as an emerging problem of digitalization across the world or else it denotes incapability of Jaffna people.

And finally factors identified in this qualitative study to be further studied quantitatively by conducting Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

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