

E-BANKING: A REVIEW OF STATUS, IMPLEMENTATION, CHALLENGES AND OPPORTUNITIES

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ABSTRACT

Recent innovations in the telecommunication have proven to be a boon for the banking sector and its customers. Electronic banking is where customers interact with the bank via computer /mobile phones and banks provide them the services like short message services, fund transfers, account details, issue of cheque book etc. Presently almost all the banks in the world have started providing their customers “Electronic Banking” services. The main purpose of this review is to understand the factors which contribute to user’s intention to use the electronic banking services and issues related to implementing electronic banking by the banks. This review paper explores the factors that influence the adoption behavior of electronic banking services by consumers and factors relevant to introducing such services by the banks such as various steps that service providers should take to increase their services user’s database. Further, this paper also discusses the studies relevant to the banking industry in Sri Lanka. It is observed that most of the studies were concentrated on factors influencing customer adoption of sophisticated banking services, but studies emphasizing on issues on the side of the banks or the implementation process is yet to be explored. Future studies must concentrate on these aspects.

Keywords: Electronic Banking, Mobile Banking, SMS Banking, Customer Adoption, Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Innovation Diffusion Theory (IDT)

JEL: G00, G21, G19

INTRODUCTION

Technology is one of the most powerful agents of change in our society. New inventions bring new ways of doing things. Change comes with technology and it is now moving at a faster pace than ever” Internet

Information Technology (IT) play a vital role in all sectors of businesses. This is mainly due to its high organizational impact and rapid expansion of IT applications in the recent past. This is

particularly true in the information intensive industries, such as banking. The advancement in technology has played an important role in improving service delivery standards in the banking industry. Advances in information and communication technologies in particular, the growing use of the internet for business transaction, have had a profound effect on the banking industry.

Banking has always been a highly information intensive activity that relies heavily on information technology (IT) to acquire, process, and deliver the information to all relevant users. Not only is IT critical in the processing of information, it provides a way for the banks to differentiate their products and services. Banks find that they have to constantly innovate and update to retain their demanding and discerning customers and to provide convenient, reliable, and expedient services. Since the introduction of the Internet in 1969, many channels such as internet (Internet Banking), Telephone ("Tele-Banking") and ATM ('Everyday Banking') provides the facility for a customer to interact with the bank. In many ways, the only perceptible difference is that it utilizes a different delivery channel. Successful adoption of these may transform the consumer experience of banking services. Furthermore, these provide several distinct advantages to customers on one side, and for the banking institutions on the other. Saving time, cost and human effort are major benefits to the banking institutions. Customers are benefited by way of saving their personnel time; they can attend to their banking transactions all day-every day at a lower cost. The aim of this article is to discuss the expected benefits of information technology assisted banking and to critically discuss the available literature. The ensuing section will present a definition for banking, a discussion on what is meant by technology assisted banking and the current knowledge in the subject.

1. Banking Definition

The Cambridge dictionary defines a bank *“as an organization where people and businesses can invest or borrow money, change it to foreign money etc. or a building where these services are offered”*

A bank is an institution where people can put their excess of money and it also provides lending facilities to consumers to enable them to buy homes and to businesses to help them to grow. It is the heart of an economy in a country. Without banks nothing will happen in the economy. Banking business needs money to pay the savers and therefore charges a higher interest rate on the loans.

2. Start of the Internet

The internet was invented by a company called Advanced Research Project Agency (APRA) in 1966/67 associated with US government for military use. The World Wide Web (www) was introduced in 1990. Since then it has been commercialized by Microsoft and Apple. It was only

in the late 1980's that electronic banking become popular. Electronic banking was created as a result of various technological changes which have affected the banking industry. The evolution of E-banking started with the Automatic Teller Machines (ATM) and has included payment bill and electronic fund transfer among others. Internet banking was first adopted in New York. The first online banking service was introduced in October 1994 by Stanford Federal Credit Union, a financial institution.

3. Electronic Banking

Electronic banking can be described as the automated delivery of new and traditional banking products and services directly to customers through personnel computer. United Nation Conference on Trade and Development (UNCTAD) defines as “the deployment over the internet of retail and wholesale banking service. It involves individual and corporate clients and includes bank transfers, payments and settlements, corporate and household lending, card business and some others (UNCTAD,2002)

4. Different Forms of Banking

As Daniel (1999) describes there are different types of Banking via the internet. They are:

- Pc Banking: When the customer installs the software on his / her personal computer and access to his / her account with that particular software.
- Internet Banking: Customer can access his / her bank account via the Internet through a Pc or cellular phone and web-browser.
- TV- Based Banking: Using satellite or cable to provide account information to the TV screens of customers.
- Telephone-based Banking: Customers can access their bank and account via Short Message Service(SMS)and by normal phone using services of interactive voice responses (IVR).

5. Models used in analyzing adoption of electronic banking

- Theory of Reasoned Action (TRA)

This model was proposed by Fishbein and Ajzen (1975) and it suggested that a person's actual behavior can be determined by the behavioral intention along with the belief and subjective norms that the person has for the behavior. Subjective norms refer to “an individual's perception of other's opinion about his/her particular behavior, if he should perform a particular behavior or not” and attitude towards action is defined as a person's positive or negative attitude towards this

performed behavior. Thus, TRA is a useful model that can explain the actual behavior of an individual. Nayak *et.al.* (2014) has used Theory of Reasoned Action (TRA) in his study.

- Technology Acceptance Model (TAM)

In 1985 Davis took the TRA model and extended it to the TAM and linked it to the user acceptance of an information system. Technology Acceptance Model (TAM) proposed by Fred Davis in 1986 defined Perceived usefulness as “The degree to which an individual believes that using the particular system would enhance his or her performance” and Perceived ease of use is defined as “the degree to which a person believes that using a particular system would be free of effort”. According to him attitude of the user towards the acceptance of new technology or information system is determined by perceived usefulness and perceived ease of use. Tan and Teo (2000), Cao *et, al*(2013), Baraghani (2007), Yu(2009), Odumeru (2012), AISmadi (2012), DineshwarandSteven(2013), DebandDavid(2013), Aboelmaged and Gebba (2013), Kumari(2016a), Jayasiri, *et,al*(2016) have used the Technology Acceptance Model(TAM).and Nayak *et,al*(2014) has also used this model in addition to TRA.

- Theory of Planned Behavior (TPB)

Theory of Planned Behavior is an extension to TRA, it has taken into account one additional construct i.e. Perceived Behavioral Control (PBC). Perceived behavioral control refers to the people's perceptions of their ability to perform a given behavior in a controlled manner. PBC is further influenced by control beliefs and perceived Power or perceived facilitation. Control beliefs refer to the perceived presence of those factors that may facilitate or impede the performance of behavior. Perceived power specifies the power to have the resources that are required to use a specific system. Tan and Teo(2000), Baraghani(2007), Al-Smadi(2012), Aboelmaged and Gebba (2013) and Hettiaarachchi(2013) have used the Theory of Planned Behavior (TPB).

- Innovation Diffusion Theory (IDT)

(Rogers 2003) described the innovation-diffusion process as “an uncertainty reduction process” and he proposes attributes of innovations that help to decrease uncertainty about the innovation. Attributes of innovations include five characteristics of innovations:

- Relative advantage
- Compatibility
- Complexity

- Trialability
- Observability

Rogers (2003) stated that “individual’s perceptions of these characteristics predict the rate of adoption of innovations”. Rogers defined the rate of adoption as “the relative speed with which an innovation is adopted by members of a social system” , Relative advantage as “the degree to which an innovation is perceived as being better than the idea it supersedes”, “compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” , complexity as “the degree to which an innovation is perceived as relatively difficult to understand and use” , “trial ability is the degree to which an innovation may be experimented with on a limited basis” , observability as “the degree to which the results of an innovation are visible to others” . To summarize, Roger argued that innovations that offer a more relative advantage, compatibility, simplicity, trialability, and observability will be adopted much faster as compare to others. Tan and Teo (2000), Nayak,*et,al*(2014), Deb andDavid (2013) and Dineshwar and Steven (2013) have used IDT.

- Unified Theory of Acceptance and Use of Technology Model (UTUAT) Model

This model is based on the theories of individual acceptance that are synthesized by Venkatesh, Morris, Davis, & Davis, (2003), include the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM),Motivational Model (MM), Theory of Planned Behaviour (TPB), Model Combining the Technology Acceptance Model and Theory of Planned Behaviour (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT).Nayak,*et,al*(2014)and Yu(2012)have used Unified Theory of Acceptance and Use of Technology Model(UTUAT).

6. Empirical Evidence

A significant volume of literature is available on this subject and the existing literature can be mainly divided into factors influencing adoption of internet banking by the customers, Bank employee perception on introduction of new technology and the importance of adoption of technology for the banking industry. The ensuing section will discuss the literature on customer adoption.

7.2 The e banking customer

Daniel (1999) aimed at quantifying the current provision of electronic services by major retail banking organizations in the UK and the Republic of Ireland. Additional insight into the banks' adoption of this new channel is gained by exploring two areas important in the analysis of new offerings, that is: an organization's approach to innovation; and their view of the current and

future markets. It was found that the organization's vision of the future, their prediction of customer acceptance, which tends to be very low, and their organizational culture of innovation are the most important of the suggested factors in their adoption of electronic delivery.

Tan and Teo (2000) identified the attitudinal, social and perceived behavioral control factors that would influence the adoption of Internet banking in Singapore. The results revealed that attitudinal and perceived behavioral control factors, rather than social influence, play a significant role in influencing the intention to adopt Internet banking. Perceptions of relative advantage, compatibility, trial ability, and risk toward using the internet were found to influence intentions to adopt internet banking services. In addition, confidence in using such services as well as perception of government support for electronic commerce were also found to influence intentions.

Sohailand Shanmugam (2001) studying on the influence of demographics, it was found that there is no significant difference between age and educational qualifications of the electronic and conventional banking users, some differences exist on other demographic variables. Further analysis reveals that accessibility of internet, awareness of e-banking, and customers reluctance to change are the factors that significantly affected the usage of e-banking in Malaysia. In a subsequent study by Alam S. *et.al.*(2009) examines the relationship between internet banking adoption and awareness, ease of use, security, cost, reluctance to change and accessibility by corporate customers in Malaysia and results show that these factors examined are significantly important to the adoption of internet banking. However, perceived ease of use and reluctant to change are found to be insignificant in determining its adoption. A subsequent study by Aliyu. *et.al* (2013) confirms that security and convenience are the major drivers of customer service delivery of online banking in Malaysia. Ling *et.al*(2015) in a study of user satisfaction of internet banking indicate that factors on performance expectancy, social influence and service quality are significantly positive on user's satisfaction towards online banking in Malaysia.

Karjaluoto (2002) indicated that (1) beliefs and attitudes toward electronic banking varied between non-users and users of internet banking. The results suggest that well educated and relatively wealthy segment uses internet banking services. Internet banking was considered a fast way to take care of banking affairs. (2) Personal banking experience, and prior experience of computers and technology were the main factors underlying the formation of attitude toward internet banking. Attitude toward using computers was found to be the most significant factor affecting intention to engage in internet banking. Internet banking users had a more positive attitude toward technology, especially toward computers, than did nonusers. (3) A negative

attitude toward technology, valuing personal service, and demographic characteristics were found to be most substantial barriers to the adoption of Internet banking in Finland.

Akinci, *et.al*(2004) carried out a descriptive study to develop an understanding of consumers' attitudes and adoption of internet banking among sophisticated consumers in Turkey. Based on a random sample of academicians, demographic, attitudinal, and behavioral characteristics of internet banking users and non-users were examined. The analyses revealed significant differences between the demographic profiles and attitudes of users and non-users. Internet banking users were further investigated, and three sub-segments were defined according to a set of bank selection criteria. They are "highly educated", "cautious users" and "cautious users" Finally, based on the similarities between various Web-based bank services, four homogeneous categories of services were defined as (1) Information services, (2) Money transfers (EFT and payments), (3) Investment services (stock, bond, and mutual funds), (4) Repo and currency exchange services.

Kolodinsky (2004) found that relative advantage, complexity/simplicity, compatibility, observability, risk tolerance, and product involvement are associated with adoption in the US. Income, assets, education, gender and marital status, and age also affect adoption by Americans. Adoption changed over time, but the impact of other factors on adoption have not changed.

Bo (2005) show that both customer satisfaction and switching costs have strong positive direct effects on customer retention in Hong Kong. These analyses also confirm the moderating role of switching costs on the relationship between customer satisfaction and customer retention. However, when internet banking adopters are categorized into two segments according to their usage of internet banking service (basic and advanced users), results show that switching costs play a significant moderating role on the relationship between customer satisfaction and customer retention only for the basic -internet banking users. In another study by Yau (2007) revealed that customer satisfaction, a transaction-specific attribute, has a significant positive impact on customer retention in the scope of internet banking in Hong Kong, which concurs with extensive academic literature. Customer commitment and trust, relational-specific attributes, have negative influence on customer retention in the context. These two factors, as single effort with or mediating for customer satisfaction, do not display an effective role in enhancing the relationship towards customer retention. This finding seems to have refuted traditional marketing phenomenon in the context of non-Internet paradigms.

Lichtenstein and Williamson (2006) suggest that convenience is the main motivator for Australian consumers to bank on the internet. Their findings also highlight increasing risk acceptance by consumers regarding internet-based services and the growing importance of offering deep levels of consumer support for such services.

Baraghani (2007) found that attitude, perceived behavioral control, perceived usefulness, perceived ease of use and trust significantly influence customers' intention towards adopting internet banking in Iran. In a subsequent study by Havasi, *et al.* (2013) found that Electronic banking has posed new challenges for country authorities in regulating and supervising the financial system and in designing and implementing macroeconomic policy. The major challenges that electronic banking is facing is the security variability, lack of knowledge of end users, failure of bank transitions, user interface etc. Iranians are aware of e-banking services; they do not resist the introduction of e-banking. However, it would not harm if a campaign is set to popularize the e-banking.

Katsika (2007) demonstrated that the most important factors affecting e-banking usage among Greek bank customers were perceived usefulness and self-Efficacy.

Qureshi (2008) in a study of Pakistan, finds that the adoption ratio is very high. Almost 50% of the clients shifted from traditional banking to online banking system. The core reason of this transfer is perceived usefulness, security and privacy provided by online banking.

Grabner-Kraut and Faullant, (2008) confirm the influence of internet trust on risk perception and consumer attitudes towards internet banking in Austria. Propensity to trust is a determinant not only for interpersonal relationships but also for trust in technological systems

Alda 's-Manzano *et al.* (2008) have found that, in trying to understand who does and does not use e-banking systems in Spain, banks who offer e-banking services need to recognize and appreciate the importance of internet-specific consumer innovation levels and characteristics

Pulaski and Wisniewski (2008) finds that generally, the behavior of Polish internet users and that of consumers in more developed countries exhibit similar traits. One of the dominant relationships that has been observed in the study is the link between the decision to open an online account and the perceived level of security of internet transactions. Experience with the medium of internet and certain demographic variables also proved to be robust predictors of the adoption status. Moreover, this inquiry documents that advertising appears to be efficacious and that online banking interacts with consumption of other products offered by banks.

Yu (2009) found that factors such as service quality and service awareness are influencing user perceptions about the usefulness of SMS mobile banking which in turn affect intention to use and adoption.

Dixit and Datta (2010), shows that despite their security and privacy concern, adult Indian customers are willing to adopt online banking if banks provide them necessary guidance. A subsequent study by Deb and David (2013) found empirical evidence for positive relationship between perceived usefulness, perceived ease of use and social influence on positive attitude

towards m-banking in India. The study found support for the relationship between attitude towards m-banking and intention to adopt m-banking.

In a study of adoption of electronic banking in India Rakesh and Ramya (2014) have found empirical evidence for positive relationship between perceived usefulness, perceived ease of use and social influence on positive attitude towards m-banking in India.

Wu, *et al*(2010) show that relative advantages, trust and perceived ease of use are more important and critical to customer's intension of online banking adoption in Taiwan. In another study by Yu (2012) observe the adoption rate of mobile banking is still underused than expected. This study empirically concluded that individual intention to adopt mobile banking in Taiwan was significantly influenced by social influence, perceived financial cost, performance expectancy, and perceived credibility, in their order of influencing strength. The behavior was considerably affected by individual intention and facilitating conditions. As for moderating effects of gender and age, this study discovered that gender significantly moderated the effects of performance expectancy and perceived financial cost on behavioral intention, and the age considerably moderated the effects of facilitating conditions and perceived self-efficacy on actual adoption behavior.

Yusnaini (2010) shows that internet banking quality can influence the customer satisfaction in Indonesia. Dimensions of tangible, responsiveness and empathy have significant effects, but dimension of reliability and assurance are non-significant. This study also finds that the customer satisfaction has significant effect on the bank customer loyalty.

Khraim, *et, al*(2011) in a survey, on factors that may affect Jordanian mobile phone users to adopt mobile banking services found that; self-efficacy, trial ability, compatibility, complexity, risk and relative advantage were statistically significant in influencing mobile banking adoption. In a subsequent study by Al-Smadi (2012) emphasizes that uncertainty avoidance has a positive and significant impact on perceived ease of use and perceived usefulness. Perceived risk has the stronger impact on customers' attitude, which in turn influences customers' intention to use electronic banking services in Jordan.

Nasri (2011) shows clearly that use of internet banking in Tunisia is influenced most strongly by convenience, risk, security and prior internet knowledge. Only information on online banking did not affect intention to use internet banking service in Tunisia. The results also propose that demographic factors impact significantly, internet banking behavior, specifically, occupation and instruction. It was also suggested that an understanding of the factors affecting intention to use

internet banking is very important to the practitioners who plan and promote new forms of banking in the current competitive market.

Rahman, *et.al*, (2012) discusses constraints on e banking in Bangladesh. E-banking and its related technologies are still in its infancy stage in Bangladesh. In order to develop an environment that is favorable for the development of E-banking to continue to grow, the security and the privacy aspects need to be improved. With the security and privacy issues resolved, the future of E-banking can be very prosperous. The future of electronic banking will be a system where users are able to interact with their banks "worry-free" and banks are operated under one common standard.

Odumeru (2012) shows that acceptance of e-banking in Nigeria is significantly influenced by age, educational background, income, perceived benefits, perceived ease of use, perceived risk and perceived enjoyment.

Talla (2013) found factors discouraging customers from using e-banking, in Cameroon are the lack of trust, lack of information, lack of knowledge and perceived risk by non-users has hindered the adoption of e-banking.

A Study by Aboelmegeed and Gebba (2013) indicated a significant positive impact of attitude toward mobile banking and subjective norm on mobile banking adoption in UAE. Furthermore, the regression results indicated a significant impact of perceived usefulness on attitude toward mobile banking while the effect of perceived ease of use on attitude toward mobile banking was not supported.

Dineshwar and Steven (2013) found that awareness of local m-banking services is quite high and usage level is reasonable for Mauritius. Convenience, time and effort savings, privacy, ubiquitous access to banking services, compatibility with lifestyle and banking needs were identified as the main factors motivating m-banking adoption in Mauritius.

Munna (2014) revealed that among the factors hindering adoption of internet banking included literacy level of bank customers, fear of using ICT, cyber-crime. Therefore, the study generally recommends that, banks in Tanzania should announce the features of electronic banking services to create a positive attitude among its customers toward electronic banking services and they should increase the customers' awareness of the usefulness of using electronic banking services through advertising and long-term customer services parallel with ensure the security of their money.

Yousefi (2015) showed that perceived usefulness, perceived ease of use, attitude toward behavior, subjective norms, perceived benefit, and perceived risks affects clients' intention to accept and adopt all kinds of electronic banking in North Cyprus.

7. Bank Employees Views

In introducing a technological change to a service industry, attention must be paid to technology adoption by both employees and customers.

Shaari and Ali (2005) examined the perceptions of bank managers on internet banking with respect to strategic and operational issues and found that there is a significant difference between level of education and years of service with operational issues.

Abukhzamand Lee (2010) found that there's a need for considerable efforts to set the priorities for implementation. More work is needed to provide better understanding of the difficulties in implementation. These findings must be used to develop an adoption framework or to arrive at lessons and recommendations that will improve the state of IT in the Libyan banking industry. In another study by Towati, (2012) on the Libyan banking industry indicated that there was a significant, positive relationship between e-banking system implementation and Libyan banks employees which lead to reduce transaction cost through e-banking system and make it happen faster.

Challenges and barriers about e-banking adoption were also identified, by Talla (2013) for Cameroon, namely, resistance to change by bank employees, lack of knowledge, absence of e-laws and legislation for e-banking, absence of a proper telecommunications infrastructure and shortage of IT training.

Shaikh (2014) attempted to understand and identify banker's perception of benefits and risks associated with electronic banking facilities in Ethiopia. Findings revealed that bankers perceive "a means to save time" and "minimize inconveniences" as the most and the least advantage of electronic banking whereas, "need for expertise and training" and "charge a high cost for services" are considered as the most and the least risk associated with electronic banking.

Sharma, *et al*(2015) analyzed the bankers view in context with the online banking, the obstacles and concerns faced by the bankers, and the need for securing the online transactions revealed that major population of bankers in India feel that security is the prime concern in online banking and there is a need to ensure the security for using online banking; by providing robust security measures in the form of new algorithms.

8. Effect of Customer Qualities on E- banking

The changes / innovations introduced must suit the recipients of such services for the change to be successful. A study byAuta (2010) on Nigerian customers revealed that they have security,

access, and not enough knowledge regarding e-banking services rendered by banking sector in Nigeria. In a study on Malaysian banking sector, Hong *et. al*(2013) showed that complexity, security and customer experience were the influencing factors of internet banking services. However, individual characteristics was found to be partially influencing the adopters in their decision to adopt the internet banking facilities.

9. Effect of Adopting Electronic Banking on Banks Performance

When technology is adopted to a service oriented industry such as banking, it would be interesting to know the influences of such adoption on the performances of the bank. In a study of strategic issues by Shaari and Ali (2005) revealed that it is mandatory to implement internet banking for banks in Malaysia to compete effectively in the future. In operational issues, bankers perceived that internet banking would help improve their customer service. Hence, this finding suggests that bank management should continue to offer personalized services to its customers. Thus, internet banking should be used as an informational and transactional tool to complement and to enhance banking operations.

Auta (2010) suggest that critical infrastructure like power and telecommunication should be provided and with high level of stability to ensure the application of e-banking in Nigeria. In another study by Hassan and Mamman (2013) on Nigerian banks revealed that the adoption of electronic banking products (e-mobile and ATM transactions) has strongly and significantly impacted on the performance of Nigerian banks while on the other hand, it revealed that e-direct and SMS alert have not significantly impacted on the performance of the banks. Awareness should be created as to the numerous advantage of using the E-Mobile services by the bank's customers as their increased usage will bring about an increase in the performance of the banks.

Kwamboka (2012) revealed that there was a great variation in cashflow of commercial banks in Kenya that had adopted internet banking due to changes in internet banking, size of the bank, bank deposits, wage and bank's profitability. The study revealed that there was a strong positive relationship between cashflow of commercial banks and internet banking, size of the bank, bank deposits, wage and bank's profitability.

Saeidipour *et, al*(2013) found that internet banking expanded with the development of web applications and with increasing internet access to people who provide these services to be developed and banks that are unresponsive to this issue will disappear from the market in Iran. In another study by Havasiet, *al* (2013) show that by adopting e-banking, banks expose themselves to operational and reputational risks. If e-banking is to be successful in Iran, the services must be carefully integrated into the traditional system so as to avoid causing unnecessary disruptions to any services offered by the bank. The study also concludes that fraud poses the biggest challenge to commercial banks as they adopt electronic delivery channels. The cost of implementation for

e-banking can be too high for commercial banks as it largely requires infrastructural development, training of staff members and sometimes even outsourcing some of the electronic banking services. The adoption of e-banking requires the incorporation of sound risk management principles for it to be effective. Each financial institution should apply guidelines based on its scope and level of sophistication. Typically, electronic banking amplifies the scale of exposure of banks to traditional risks, such as transaction, strategic, reputational, and compliance risks, among others. Therefore, banks should ensure that there are adequate policies and procedures relating to risk management which involve an element of a segregation of duties; an effective security program has been implemented with appropriate communication on policy, procedures, and practices, with the necessary support from the bank's directorate.

In another study by Mwangi (2014) for Kenya, it is recommended that the banking industry should adjust to total and effective deployment of information technology due to its sophistication since the technology is irreversible with relative perceived advantage. That Kenyan banks should be able to accept the level of risk that they can cope with in electronic banking system, measurable to the bank's overall strategic and business plans.

Asia (2015) noted that electronic banking plays a great role in financial performance of banks in Rwanda. Different electronic Banking System tools like ATM, Pay direct, mobile phone banking, debit/visa card payment and E electronic check payment has a great impact on bank performance because they increase profitability, return on invest return on equity and loans, improves bank management quality, increase bank asset and promotes bank growth and Expansion. E banking contributes to positive performance of banks as witnessed by the bank of Kigali.

Ganesan (2015) found that when integrated with other channels, internet banking becomes a powerful tool for improving consumer satisfaction and increasing cross-selling opportunities. But at the same time banks must keep in mind that, every electronic channel including the internet has its short falls which can have major consequences. Keeping track of the ever changing banking industry and the latest update in internet technology, banks need to equip themselves for the competition. Even though there are enormous opportunities, transaction should not be neglected or relegated to the sidelines. This is because there are numerous aspects of banking which cannot be currently accomplished by electronic impulses.

Customers tend to suspect the accuracy, correctness, security and confidentiality of the e transactions. In another study, Sharma, et al (2015) reveal that major population of bankers in India feel that security is the prime concern in online banking and there is a need to ensure the security for using online banking; by providing robust security measures in the form of new algorithms.

10 Studies Related to the Banking Industry of Sri Lanka

Sri Lanka opened up its economy in 1977 and since then there has been a continuous development in the provision of banking facilities. The first ATM was introduced in the 1986 and a development in electronic banking started around the 1990's. Many studies have covered the developments and various aspects of electronic banking and it is now timely to look back and take account of what have been done so far. The aim of the studies conducted so far can be identified as studies concentrating on factors influencing the adoption of internet banking, factors influencing internet banking usage and strategies to improve usage by commercial banks.

10.1 Factors Influencing Usage

Existing literature reveal that there are no globally accepted factors which affect internet banking usage, and the intensity of those identified factors also vary with country, culture, education level, gender, religion, social class etc. Perera (2013) in a study using three private commercial banks as a sample revealed that majority of the internet banking users were below 45 years of age, use of internet banking pertaining to elderly people was almost negligible, majority of the internet banking users are male and males are more likely to use internet banking than females, majority of internet banking users used internet banking at their work place and the rest of the internet banking users used at their homes. The research further finds that there is a very strong relationship between usefulness, ease of use, security, compatibility and information quality with internet banking usage. In a study of university academics Kumari (2016a) has identified some of the factors which inhibit the usage of those facilities such as confusions and delays in the system, accessing problems and security problems.

10.2 Nature of the Customer

Knowing the customer category to whom electronic banking fits best will help banks concentrate on that category. Aberatne, (2015) found that Customers' attitudes about IT driven banking services are extremely good. Increased number of IT driven banking services leads to increasing overall transactions and increasing of overall transactions is very healthy for commercial banks. The study found that, over 55 years old customers have also used these services; particular age category between 23 - 30 should be given more attention. commercial banks should take some steps to promote such services among other age levels too.

In a study of university academics Kumari (2016b) found that there is a growing trend of using online banking facilities among young academic members.

10.3 Awareness

Lack of awareness effects internet banking usage negatively. Kariyawasam and Jayasiri (2016) identified that lack of knowledge on facilities of e-banking compared to traditional banking is one of the most influential factor towards the lack of usage of Internet Banking.

10.4 Satisfaction

A study by Kahandawala and Wijenayake (2014) revealed that customer satisfaction of mobile banking services is influenced by usefulness, ease of use, relative advantage, perception on risk and user lifestyle and current needs of customers. In another study by Tharanikaran *et al* (2017) it was revealed that service quality and customer satisfaction were at high degree in the electronic banking in Batticaloa district, and a moderate positive relationship between switching cost and customer satisfaction. In another study by Sanjeevanandran, (2017) found that there was moderate positive relationship between switching cost and customer satisfaction also identified. Finally, there was a significant impact of the switching cost on customer satisfaction identified. Therefore, these findings will help the banks to establish a customer oriented strategy to satisfy and survive their customers with regard to internet banking services in future.

10.5 Reluctance

Suraweera, *et al* (2011) developed a comprehensive model that identifies the factors behind the customer reluctance to use information technology driven banking services (ITDBS) in Sri Lanka. This customer reluctance model demonstrates that there are number of significant factors for Sri Lankan customers to refrain from using such ITDBS. Some of them can be attributed to customer behavior and perception, on one side, and to the banks as the service provider, on the other. However, the service providers have the ultimate responsibility to get the support of customers to adopt a service that they initiate.

10.6 Popularity

Jayasiri and Weerathunge (2011) found that the majority of the customers in the country were aware about e-banking facilities but most of them have not tried those facilities by themselves. In state banks, usage of e-banking facilities was not to a very greater extent. Further this study has identified some of the factors which inhibit the usage of those facilities such as confusions and delays in the system, accessing problems and security problems etc.

10.7 Adoption

Hettiaarachchi(2013) revealed that attitudinal and perceived behavioral control factors rather than social influence (subjective norms) plays a significant role in influencing adoption of internet banking. In particular, relative advantage, compatibility with values, internet skills, trialability, risk, confidence of using such services (self-efficacy), and technology support found to influence the adoption of internet banking. Conclusion of the research study implied that banks have to majorly influence the internet banking adoption through ‘pull strategies.

In another study by Jayasiriet. al(2016) an extended model was developed to predict customer adoption of internet banking based on the Technology Acceptance Model (TAM) integrating risk construct, six specific risk facets; security, privacy, social, time, performance and financial risk synthesized with the construct perceived web site features which has two variables; perceived system quality and perceived information quality which are integrated with the technology acceptance model (TAM) variables; perceived usefulness and perceived ease of used to propose a theoretical model to predict customers’ adoption of internet banking. The results indicated that the adoption of internet banking is positively affected by perceived usefulness, perceived security, perceived social facet, and perceived system quality and those variables were found to be the most influential factors explaining the adoption of internet banking services.

Premarathne and Gunathilleke (2016) explore and identify the factors which affect the adoption of internet banking in Sri Lanka using both primary and secondary data and the study revealed that the key determinants of consumer adoption and growth of internet banking in Sri Lanka are; the number of people who have access to internet facility, consumer awareness, web content and design, security, cost, technophobia, download speed, and customer preference of personalized services.

Shiraj(2015) examines the factors influencing the adoption of internet banking services by commercial banks in the South-Eastern region in Sri Lanka. The results of the model tested are: the adoption/ non-adoption decision is highly influenced by attitude toward change, perceived benefits, perceived risks, occupation, users’ IT knowledge except information on online banking. Only information on online banking did not affect intention to use internet banking service in the mentioned research area. The results also propose that age, gender and occupation are significantly related to internet banking behavior.

10.8 Barriers

Zarook, (2010) attempted to identify the barriers that are preventing customers from using internet banking and the reasons. There were 11 potential factors identified to be a barrier for internet banking adoption. “Security Concern” and “No Human Touch” were identified as the major barriers preventing the respondents from using Internet Banking. Five other factors such as

“No Interest”, “No Necessity”, “Time Consuming”, “No Knowledge” and “Price” were considered as miniature barriers which did not have a strong influence. The rest of the factors, “No Benefit”, “Difficult to Use”, “Computer Fatigue” and “Language” were identified to be as not a barrier for adoption.

Sivapragasam and Pieris (2014) found that customer satisfaction is the key to market internet banking services and the banks in Sri Lanka attempt to satisfy their customers by targeting their unique needs to succeed in providing internet banking services. This study determined the factors that influence the adoption of internet banking services for the benefits of the management. The attributes related to demographic factors such as: gender, age, educational level, and monthly income were significantly influential variables on internet banking. More than 75% strongly agreed that convenience, risk and security directly influence on adoption of internet banking. The attributes related to convenience, “bank administration” and “easy banking” were found to be significant on the adoption of internet banking. The attributes related to risk, “reliability” and “confidential” were found to be significant on the adoption of internet banking. “Trust” and “instructions” were found as influential factors among the attributes in security.

Further Kumari(2016 b) has identified some of the factors which inhibit the usage of those facilities such as confusions and delays in the system, accessing problems and security problems.

9. Conclusion

Existing research suggest that in order to increase the level of usage, customer awareness must be increased on the details of the facilities available and their advantages. However, Making the internet banking interface for the customer more attractive and easier to navigate is not enough to increase the adoption rate of internet banking. Trust-creating activities to increase internet trust and to diminish perceived risk must be continuously pursued. In the marketing process of internet banking services marketing experts should emphasize the benefits of its adoption, and awareness can be improved to attract consumers’ attention to internet banking services. Managers can use consumer innovativeness level as a segmentation variable to increase the use of internet banking among actual customers who are non- users or light users of the electronic channel.

Further, it was found that, lack of knowledge on accessing internet and lack of facilities for internet access too, contribute to the negative attitude towards e-banking. Increasing the banking users’ knowledge of benefits of e-banking services and increasing facilities and knowledge for internet access can be seen as improvement plans to engage more traditional banking customers to use internet banking facilities. Customer services must be simple to use, as

it can be understood easily for clients. State banks also should provide these services to achieve their goals.

Studies have also revealed that there is a moderate impact of demographics such as respondents' age, income levels and working hours.

Majority of the studies included in this review concentrates on the customer. A very few have addressed the issues with bank employees attitudes/ readiness /knowledge or training requirements in introducing electronic banking. This can be an interesting aspect to be addressed even in the case of Sri Lanka.

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