

# Customers' Adoption and use of E-Banking Services: A Study in Public Commercial Banks, Sri Lanka

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## Abstract

Internet banking plays a major role in banking sector. It seems that commercial banks has not yet attracted sufficient customers to use internet banking when compared with the other developed and developing countries in Sri Lanka. In many developed countries growth has been experienced in banking sector due to evolution of internet banking in last two decades. Huge investments have been made by different banks in interactive information systems in order to provide advanced services to their customers and in return expect increased profits and market share. However, if customers fail to accept or fully utilize such services than the chances of losses from these investments are likely. In this study the researcher concerns the factors influencing on the customer adoption and uses of e- banking system in Sri Lankan public commercial banks? perspective especially in Colombo District. The research framework based on the factors which mainly include customer attitude, subjective norms, perceived behavioral Control, A Questionnaire survey was conducted to gather the data and 231 complete responses were gathered from banking customers who were internet users from Colombo district. Public commercial banks have been selected in Colombo District based on non-probability sampling method (quota sampling method). Multiple regression has been used for the analysis. Researcher found the factors influencing on the customer adoption of e-banking and gives recommendations in this study to identify the factors influencing on customer adoption of internet banking in the study area.

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**Index terms**— e-banking, customer attitude, subjective norms, perceived behavioral control, srilanka, commercial banks.

## 1 I. Introduction

Internet banking facilitates for bank customers to carry out financial transactions on their own through the use of a secured internet website operated by the commercial bank, a retail or virtual bank, credit union or building society (Edojariogba, 2014). Internet banking becomes as the new trend and it comes as the latest technology in the current era. Due to the development of technological advancements ATM's, credit cards, debit cards, Tele-banking, internet banking have become as effective delivery channels. It helps to deliver traditional banking products. Banks have realized that the internet helps to expand their performance local into global (Mavri and Ioannou, 2006).

Internet banking becomes popular day by day. Every person are busy with their works. They are seeking immediate services from the banks to maximize their benefits. Instead of paper banking now moves to the paperless banking systems. It helps to get quicker services with a minimum time and cost. Customers can use internet banking facilities during 24 hours while staying anywhere such as home, business, and etc. Moreover, internet banking calls many names. Such as, E-Banking, Online banking, virtual banking. Bank customers can

access their accounts through the internet. Here, Customers are given their own user names and password, by the banks to access their accounts. By using their own user name and password they can do their all transactions without going to the banks (Burnham, 1996).

The concept of internet banking activities performed through electronic networks. It is the most recent delivery channel of banking services which is used for both business to business (B2B) and Business to customers (B2C) transactions. By using internet banking customers can get varieties of services. Such as, payment of bills and invoices, transfer of funds between accounts, applying for loans, payment of loan installments, sending funds to third parties via e-mails or internet connections regardless of where the client is located ??Rahman,2002). Internet banking is the cost effective and cheapest delivery channel which reduces a large number of staff needs. Because no need a large number of employees to do their transactions. All the transactions can be done through the internet. Internet banking provides competitive advantages to the banks (Ortega, Martínez and Hoyos, 2007). With the development of the information technology banking sector's performance boosts day by day. Banks should consider reducing the inconvenience, minimizes cost of transactions and time saving to be important (Kaleem, 2008).

Internet banking can be defined as transactional online banking. Its helps to customers to access their accounts via the internet. Because by using internet banking customers can possess varieties of benefits: Such as to access their account via the internet, view their account details, buying financial services through the online, transfer funds. Unlike traditional banking, internet banking is available for 24 hours a day.

Therefore, customers can access their accounts at any time (Sathye, 1999).

According to the (Tan and Teo, 2000), internet banking facilitates varieties of transactions to their customers. When initially introduced, Internet banking was used as information delivery methods. Because, banks published their information on their websites. Therefore, customers can access and can get much information. With the development of the internet and information technologies, banks tend to adopt and internet banking as transaction mode an information mode. Further, he found that internet banking facilitates common banking transactions to their customers: Such as writing checks, paying bills, transferring funds, printing statements, and inquiring about account balances. Internet offers, opportunity with ease and convenience to perform banking transactions such as cash withdrawals, money transfer, payment of goods and services, payment of utility bills (Chavan, 2013).Some authors and researchers have described and defined internet banking in different ways:

On the other hand electronic banking is the means by which the services and products of banks are made available to their customers through the use of internet and electronic digital devices irrespective of the location of the customer and time of carrying out the transaction. Furthermore, this implies that electronic banking channels enable customers to carry out transactions on their own with ease and convenience (Ovia, 2002). Consequently, customers can carry out banking transactions, such as withdrawal of cash, deposits or transfer of funds, make payment for goods and services online without the direct help of the bank. Internet banking is the use of electronic channels such as telephone, mobile phones, computer systems, the internet and so on for the delivery of banking services and products. This implies that for a customer to successfully use any e-banking product for performing financial transactions there must be an internet connection and smart digital systems such as computers and mobile phones (Sharma, 2011).Internet banking offers the traditional players in the financial services sector the opportunity to add a low cost distribution channel to their numerous different services. Internet banking also threatens the market share of traditional banks, because it neutralizes so many of the competitive advantages of having a traditional branch network (Nehmzow, 1997).Internet banking services vary from bank to bank. Virtually all banks that offer internet banking services allow consumers to check the balance in their accounts, transfer funds and make electronic bill payments, while the more sophisticated internet banking systems allow customers to apply for loans, trades tocks or mutual funds, and even view actual images of their deposit slips ??Tang, 2004).

Internet banking is the term used for new era banking structure (Elisha, 2010). The term can ordinarily be referred to as online banking and it is a product of personal computer banking which uses the internet as the delivery channel (Elisha, 2010).This implies that electronic banking requires the use of computer systems connected to the internet. this method enables customers to carry out banking transactions such as transfer of funds, payment of bills, viewing and checking account balances, payment of mortgages and purchase of financial instruments and certificates of deposits' banking is the automated delivery of existing and new banking products and services to customers through various electronic interactive communication channels.

Internet banking is becoming increasingly globalized through the use of internet and World Wide Web. Due to the successful ending off an ethnic conflict which ran over 30 years, the infrastructure facilities are now developing in Sri Lanka. As well as the education level of Sri Lanka Lankans is in a high position and people are heading towards better life styles. Many researchers conducted on the understanding of how Relative Advantage, perceived ease of use, Perceived usefulness, demographics factors, perceived trust, social influence, Compatibility, perceived Security, Trialability, Service quality, Complexity factors influence on the customer adoption of internet banking (Ghaith, Sanzogni and Sandhu, 2010). In that manner, all the commercial banks are trying to use internet banking as the competitive tool, in order to get the competitive advantage. Internet banking allows creating solutions and plans to attract more customers to gain more share in the internet banking market. However in Sri Lankan context there are few researches only undertaken to identify the factors influencing on the customer adoption of internet banking system (Wijesiriwardana, 2003). This research also applied for the public commercial banks in

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Sri Lanka (Peoples' bank and Bank of Ceylon). On the other hand, the public commercial banks introduced the internet banking in recent years and they have very large customer base in Sri Lanka. Therefore, to identify the factors influencing on the customer adoption of internet banking system, in public banks are necessary.

In that manner the major problem associated with this research is whether there are any factors influencing on the customer adoption of internet banking system, in public banking system in Sri Lanka. In that manner following research question is developed.

## 2 What are the factors influencing on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka?

### 3 II. Literature Review a) Internet Banking

The advent of Internet, electronic commerce, communication technology and users' response to this technology has opened opportunity for many businesses including the financial institution. Adoption of electronic banking service delivery is fast gaining ground in Nigeria. Different e-Banking channels such as electronic cards, internet banking and mobile banking services have been introduced. Electronic banking offers benefits to both banks and customers. Pikkarainen et al. (2004) mentioned two fundamental reasons underlying online banking development and penetration. First, that bank gets significant cost savings in their operation through e-Banking services. It has been proved that online banking channel is the cheapest delivery channel for banking products once established. Second, that bank have reduced their branch networks and downsized the number of service staff, which has paved the way to self-service channels as quite many customers felt that branch banking took too much time and effort.

On the other hand, customers enjoy selfservice, freedom from time and place constraint, and reduced stress of queuing in banking hall. Therefore, time and cost savings and freedom from place have been found the main reasons underlying online banking acceptance. It was indicated that electronic banking services delivery are the cheapest, the most profitable and wealthiest delivery channel for banking products (Pikkarainen et al., 2004).

However, not all bank customers engage in the use on e-Banking services. There are multiple reasons for this. First, customers need to have an access to the Internet in order to utilize some e-Banking facilities such as Internet and Mobile banking facilities. Furthermore, most new online users need first to learn how to use the service. Second, nonusers often complain that online banking is incomprehensible, difficult to use and has no social dimension, i.e. the lack of face-to-face situation at branch ??Karjaluoto 2001; ??attila et al., 2003). Third, customers are afraid of security issues ??Ezeoha, 2005).

This research study is mainly focus on identifying the factors influencing to adoption of internet banking in public commercial banks Sri Lanka. The research framework for this study is based on the extension to decomposed theory of planned behavior (Tan & Teo, 2000).

Extension to Decomposed Theory of Planned Behavior (TPB) is widely studied model from social psychology which was extended from the theory of reasoned action (TRA). TPB hypothesized by individual's behavioral intension (BI) to perform a behavior is jointly determined by the individual's attitude toward performing the behavior (ATB), subjective norm (SN) and perceived behavioral control (PBC). Taylor and Todd (1995) extended theory of planned behavior by decomposing the attitude component (as relative advantage, compatibility, complexity, which were mentioned in diffusion of innovation theory by Rogers, (1983) and perceived behavioral control component (as self-efficacy and facilitating conditions). Based on the above decomposed theory of planned behavior, Tan & Teo (2000) extended it to identify the factors influencing internet banking adoption behavior on Singapore. So this research study is mainly based on this extended theory of planned behavior and it is composed with; i. Customer Attitude Attitude is defined as an individual's positive and negative feelings (evaluative effect) about performing target behavior (Fishbein & Ajzen, 1975). The different dimensions of attitudinal belief toward an innovation can be measured using the five perceived attributes (relative advantage, compatibility, complexity, trialability and observability) specifically first three attributes of an innovation (Taylor & Todd, 1995). These attributes were originally proposed in the diffusion of innovations theory (Rogers, 1983), were applied in this framework with the exception of observability, which is defined as the degree to which the results of an innovation are visible to others (Rogers, 1983). Observability was considered irrelevant in this study because an important characteristic of doing banking is 'privacy'. Therefore, observing others using internet banking services may prove difficult unless one makes a conscious effort to do so (Tan & Teo, 2000).

ii. Subjective Norms Subjective norms refer to the person's perception that most people who are important to him/her think he/she should or should not perform the behavior in question (Fishbein & Ajzen, 1975). It is related to behavior because people often act based on their perception of what others think they should do. Subjective norms have been found to be more important prior to, or in the early stages of innovation implementation when users have limited direct experience from which to develop attitudes (Taylor & Todd, 1995). Most of the consumer oriented services, the consumer-relevant groups around the individual may influence the individual' adoption. Adopter's friends, family, and colleagues/peers are groups that will potentially influence the adoption (Tan & Teo, 2000). Although there is no basis on which to predict how each of these groups will affect adoption

of internet banking, it is nonetheless expected that the influence of these groups as a whole will be significantly related to the individual's adoption internet banking (Tan & Teo, 2000).

### 4 iii. Perceived Behavioral Control

Perceived behavioral control refers to the factors that may impede the performance of the behavior. This definition encompasses two components. The first component is "self-efficacy" and is defined as an individual's self-confidence in his or her ability to perform a behavior. The second component is "facilitating conditions" and it reflects the availability of resources needed to engage in the behavior.

Self-efficacy predicts intentions to use a wide range of technologically advanced products. Thus, an

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individual confident in having the skills in using the computer and the internet is more inclined to adopt internet banking. This is because the individual is comfortable in using the innovation (Tan & Teo, 2000).

The second component, facilitating conditions refers to the easy access of technological resources and infrastructure. The government can play an intervention and leadership role in the diffusion of innovation. Potential users, in turn would view new applications such as internet banking services more favorably and hence be more likely to use them (Tan & Teo, 2000).

### 6 b) Importance of Internet Banking

Importance of Internet banking concerns doing banking activities via the Internet. Internet banking allows customers of commercial banks to check the balances of their accounts, transfer funds and pay utility bill payments. The facilities available for Internet banking differ from bank to bank. Nowadays the Internet is the main channel for Internet banking. Internet banking offers many benefits to banks and their customers (Karjaluoto, 2002). The main benefits to commercial banks are cost savings, convenience, easy access, reaching new segments of the market, efficiency, enhancement of commercial bank's reputation and better customer service and satisfaction (Jayawardhena and Foley, 2000). On the other hand Internet banking provides also new value to customers of commercial banks. Internet, banking has no limitation to time or geography. Customers of commercial banks all over the world have access 24 hours per day, seven days a week. It makes available to customers a full range of services including some services not offered at branches. Internet banking saves time and money provides convenience and accessibility (Karjaluoto, 2003). It has been claimed that Internet banking offers the customer more benefits at lower costs (Mols, 1998). Turban et al. (2000) indicated that Internet banking is extremely beneficial to customers because of the savings in costs, time and space it offers, its quick response to complaints, and its delivery of improved services, all of which benefits make for easier banking. To summarize, Internet banking provides many benefits to customers of commercial banks.

### 7 c) Adaptation of Internet banking in Sri Lanka

Internet banking has become more popular features of the banking industry with the growing popularity of modern telecommunication technology among Sri Lankans. There are 24 listed commercial banks in Sri Lanka most of the commercial banks have the facilities of Internet banking but it seems customers of commercial bank still using traditional way to get their service internet banking in Sri Lanka from bank. Further, most of the customers aware about the Internet banking they just own or have the facilities to access Internet banking, but not ready to access or use Internet banking services. It is good opportunity to increase the usage of Internet banking since most of the customers are using smart phones comfortably. The managers of commercial banks have the duty to make understand the benefits of Internet banking to their customers.

### 8 d) Conceptual Model e) Hypothesis

H1: There is a positive impact of customer attitude on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka. H2: There is a positive impact subjective norms on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka.

H3: There is a positive impact of perceived behavioral control on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka.

## 9 III. Method

Quantitative methodology was applied and questionnaire was used to collect data. From two public commercial banks in Colombo district 231 customers were selected based on the quota sampling method. Before the final data collection pilot study was undertaken. In this study questionnaire was developed with the support of previous studies carried out by experts in the relevant subject areas.

Prior to data analysis, data purification process was conducted to ensure suitability of measures (Churchill, 1979). For ensuring the reliability of scale, Cronbach's alpha was computed. Multiple regression analysis had been used as data analysis tools and used to test the hypothesis.

## 10 Source: Survey Data

H1: There is a positive impact of customer attitude on the uses of e-banking services in Sri Lankan public commercial banks-According to the table 02, the fitted model encountered that the customer attitude has a strong positive effects on the uses of e-banking services (I.e.  $R^2 = 0.781$ ). These predictions had been significant at the P-value of less than 5% ( $p < 0.05$ ) and the regressed model was satisfactory fits to the data and the predictability power of the fitted model was high and residuals also followed a normal distribution.

H2: There is a positive impact of subjective norms on the uses of e-banking services in Sri Lankan public commercial banks-According to the table 02, the fitted model encountered that the subjective norms has a positive effects on the uses of e-banking services (I.e.  $R^2 = 0.516$ ). But not strong. These predictions had been significant at the P-value of less than 5% ( $p < 0.05$ ) and the regressed model was satisfactory fits to the data and the predictability power of the fitted model was high and residuals also followed a normal distribution.

H3: There is a positive impact perceived behavioral control on the uses of e-banking services in Sri Lankan public commercial banks-According to the table 02, the fitted model encountered that the perceived behavioral control has the strong positive effects on the uses of e-banking services (I.e.  $R^2 = 0.692$ ). These predictions had been significant at the P-value of less than 5% ( $p < 0.05$ ) and the regressed model was satisfactory fits to the data and the predictability power of the fitted model was high and residuals also followed a normal distribution.

## 11 IV. Discussion, Conclusion and Recommendation

The ultimate objective of the research is to identify the factors influencing in the uses of e-banking services in Sri Lankan public commercial banks. The regression result shows that there is a strong positive impact of customer attitude and perceived behavioral control on the uses of e-banking services in Sri Lankan public commercial banks. It means that customer During this study, researcher encountered the following recommendations. This research has only been confined to the public commercial banks Industry. Therefore same research can be extended to other service sector entities such as hospital industry, private banking industry, telecommunication industry etc. Furthermore this research has been undertaken in different perspective in different context (B to B) context. <sup>1 2</sup>

01

? Customer Attitude	
? Subjective Norms	Uses of E-Banking Services
? Perceived Behavioral Control	
(Independent variables)	(Dependent Variable)

Figure 1: Table 01 :

02

Hypothesis	Variable Independent	Depend. Variable	Standardized Coefficient Beta	Sig.	Adjusted R <sup>2</sup>
H1	Constant Customer Attitude	uses of e-banking services	0.830	0.00	0.781
H2	Constant Subjective Norms	uses of e-banking services	0.573	0.00	0.516
H3	Constant Perceived Behavioral Control	uses of e-banking services	0.776	0.00	0.692

Figure 2: Table 02 :

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attitude has strong positive effects on the uses of e-banking services in Sri Lankan public commercial banks and 78.1% of change in the uses of e-banking services is explained by customer attitude in Sri Lankan public banks. These findings are in the line with Jayasiri & Weerathunga (2008). Based on that, the first hypothesis (H1) has been accepted. Further the regression result shows that there is a strong positive impact of perceived behavioral control on the uses of e-banking services in Sri Lankan public commercial banks. It means that the perceived behavioral control also has strong positive effects on the uses of e-banking services in Sri Lankan public commercial banks and 69.2% of change in the uses of e-banking services is explained by perceived behavioral control in Sri Lankan public banks). Based on that, the first hypothesis (H3) has been accepted. At the same time subjective norms also have the positive impact on the uses of e-banking services in Sri Lankan public commercial banks, even though this impact is not strong. That means only 51.6% of the changes can be explained by the subjective norms of the uses of e-banking services in Sri Lankan public commercial banks.

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