Drivers Affecting Online Banking Usage of Private Commercial Banks in Sri Lanka

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Authors’ contributions

This work was carried out in collaboration between both authors. Author CH designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author AS designed the study and managed the analyses and of the study. Both authors read and approved the final manuscript.

ABSTRACT

Online banking is the compulsory condition to develop e-business within the world. The key objective of the study is to examine drivers affecting online banking facility usage of the private commercial banks in Sri Lanka. The researcher has selected five factors namely perceived risk, customers’ concern for privacy, customers’ value for online personalization, e-trust, and e-loyalty after considering previous studies and expert idea in the field. Five hundred questionnaires were distributed among the customers who attached to the seven main private commercial banks and living selected three prominent provinces of three prominent cities namely Kandy, Colombo & Galle in Sri Lanka. Although only two hundred fifteen questionnaires received from the online customers. One hundred ninety-six complete questionnaires used to the final data analysis. Descriptive statistics, correlation analysis and Multiple regression analysis utilized to analysis the data. Data analysis result of the study shows that perceived risk, customers’ concern for privacy and entrust show the significant positive effect on online bank usage in Sri Lanka. E-loyalty and customers’ value for privacy also positively influence on online bank usage, however these two factors didn’t show the significant influence on online bank usage. Sri Lankan commercial banks should promote online bank usage by considering risk, customers’ concern for privacy and entrust. Moreover, online program designers should concern innovations and significant factors when they

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develop online bank platforms. Further, the researchers should conduct further research base on different cultures to identify the issues and significant factors that may influence on online banking usage.

Keywords: Online banking; perceived risk; E-trust; E-loyalty.

1. INTRODUCTION

Today banking industry is operating within hyper completion environment, since banks are adopting various types of new technologies to satisfy customers’ needs within limited time period. Further, due to fast development of the internet and market globalization, firms try to make an effort to attract and retain customers within hypercompetitive e-market environment [1]. In 1980, internet banking introduced within the United States of America, then it was rapidly spreading among the other counties. This concept leads to rapid modification with in the banking [2]. It includes a system that enables customers of financial institutions, individuals, or businesses to access accounts, transact business, or obtain information on financial products and services on public or private networks including the Internet [3]. Ongkasuwan & Tantichattanon [4] defined online banking (OB) as a banking service that allow customers to access and perform financial transactions on their bank accounts with their computers via an Internet connection. Online banking is related to same insight of internet banking. Banks and financial institutions too were dedicated to accept this new technology in an attempt to cut cost while maintaining trust worthy consumer service [2]. Online banking allows customers to do all business and personal transactions, except for the receipt of transaction money [5]. Schneider, [6] stated that bankers have being involving in an electronic data system are being used to computer readable data using standard, in order to address most of the needs bank has to continuously engage in innovating and revise their strategies to retain in the competitive market. For this purpose, banking industry has been gradually evolved with the invention of information technology and encourage usage of online banking system within the bank system to increase effectiveness and efficiency in the system. Maenpaa, et al. [7] mentioned that advancement of Information technology has been made a significant impact on internet banking and it effects various arrears namely e-finance, e-money and e-banking. On the other side, internet banking gave an assistant to decrease the transaction cost of traditional cost of banking system such as the cost of walk-in customers, engaging new aimed and qualified employees, decrease of paper work cost and etc. Further expand the number of internet users, easy access to internet, increase of efficiency and profitability using online banking, customer satisfaction etc. directly encourage to increase the usage of online banking within the bank. In addition to mention factors, Shatat [1] stated that most companies are attempting to attract and retain customers in an extremely competitive e-market. Therefore, all instances highly relies on information technology in order to acquire, process and more over communicate information to all related users. Banks need to identify and adapt to latest developments in information technology on frequently changing trends in view of acquiring customers at a minimum cost and retaining them by accomplishing their needs. Since many of developing countries paid attention to the internet banking after introducing internet banking in US.

1.1 Banking Sector in Sri Lanka

Sri Lanka too hold the same attention in late 1980s and network all bank and branches, introduced electronic cards and provide a banking facility across gradually spread branches from one central location [8]. Government own bank and nongovernment own banks (Private commercial Banks) are operating banking activities within the Sri Lanka. First private commercial bank concerned on internet banking. Ex: In 1988, Sampath Bank in Sri Lanka was the first to embrace internet banking in Sri Lanka. After that Sri Lankan banking sector altered the deliverance channels which used by the financial institutions among the variety of Information and Communication Technology applications introduced in the last decade. Using bank’s web site, Internet banking clients can perform a wide range banking transaction electronically. On initial stages all the banks marketed their products and services on via web sites by way of using internet banking. Now a day’s more banks have come promote to use online banking both as an informational as well as transactional
intermediate with the development of the technology. As a result, registered online banking users can now carry out common banking communications such as inquiring about account information’s, requesting check book, transferring funds, paying bills and printing statements.

According to the statistics given by the Department of Census and Statistics has revealed that the computer literacy level has increased during the period of 2001-2018 along with the expanded internet connections [9]. Hence it’s significant to invest more in internet banking because the platform form already intact by giving benefits to both banks and its users. It provides banks additional channels to deliver products and services to customers at a lower cost while expanding the customer base and internet banking become strategic resources for achieving higher efficiency. With compared to the international arena Sri Lanka's context is quite different to the other well-developed countries. Thereby, an attempt has been made to explore the present condition of internet banking offered by licensed commercial banks by accessing their websites. It was revealed that all licensed commercial banks provide internet banking facility to their customers which suits present context. Hence it’s evident that local corporates have identified its significance in local context if they could transform these traditional banking customers to online segment they could minimize their operational cost by substantial amount. Further it’s beneficial for the customer too now a days banking has become a support service and with the busy schedule of people it has become very difficult to spare a separate time for banking activities. However, the former studies have indicated a resistive attitude of customers towards internet banking in this backdrop, it is important to identify the factors influencing the customers’ attitude towards internet banking and understand the relationship between those factors and attitude. Therefore, the primary objective of the study is to investigate the drivers that influence the attitude towards internet banking and give the recommendation to improve the internet banking usage.

2. LITERATURE REVIEW

Davis [10] introduced Technology Acceptance Model (TAM) and he assumed that computer system adoption depend on their Behaviour intention to use. He developed his model base on Theory of Reasoned Action (TRA) and it suggested that decision of how and when they use of new software package depends on number of factors and these factors named as perceived usefulness (PU). Further it consists of four main concepts that reflect the social influence which affects the usage of internet and other media sources, such as behavioral attitude, subjective norms, intention to use and actual use [11]. According to Theory of planned behavior (TPB) customers’ behavioral intentions to use the Online banking (OB) services are dependent on their attitudes, and subjective norms [12]. Further, several constructs have been added to the TAM over time including perceived credibility, perceived trust, organizational factors, technology factors and individual differences. Technology acceptance model (TAM) is dependent on the TRA in regard of information systems [13]. It was developed by Davis [10] to predict the main determinants of consumers' behavioral intentions toward the use of any new technology. It comprised of two main terms including perceived ease of use and perceived usefulness [14]. However, the TAM has been criticized due to its poor explanatory power, and the inconsistent relationships among its two main elements [15] in addition, it was believed that the model provides limited instructions to be followed to influence individual customers’ usage of the internet banking.

Social cognitive theory (SCT) is a framework for understanding, predicting and changing individuals’ behavior, mainly introducing human behavior as the result of the interaction between personal factors, behavior and the surrounding environment. The SCT is considered as an essential theory that can be used by researchers to understand and predict both individual and group behavior, and to identify methods in which their behavior can be modified or changed [16]. Moreover, Motivational model (MM) differentiated between two types of motivators that may affect individual customers’ behavior, especially in the field of the adoption of new information technology services, intrinsic motivators and extrinsic motivators [17]. Within the context of internet banking services adoption, individual customers may actually adopt the internet banking services for its perceived enjoyment, self-efficacy, feelings of accomplishment, prestige, personal growth or mere pleasure as intrinsic motivators or for their perception of the usefulness of these services by saving them their personal time and efforts. In addition to above theories researchers have considered the research also. According to Innovation diffusion theory individual customers’
adoption rate of any new technology depends on six innovation characteristics namely relative advantage, compatibility, complexity, observability, trialability and perceived risk [18]. Percent are Mansurmitrchi & AL-Malkawi [19] highlighted eight characteristics of the adoption of online banking (OB), namely; difficulty, trust, compatibility, third party concerns, human contact, and social influence, security, and computer proficiency. The results of research found that adopters and non-adopters different in their attitudes towards four attributes of the adoption of difficulty, trust, compatibility, and human contact. Further, human or physical contact during banking transactions was considered important for non-adopters. The study of Nath et al. [20] focused on the effect of online banking (OB) on strategic and operational dimensions of banks. Strategic dimensions include issues such as threats by e-banks and the need to offer Online banking (OB) operational issues including encountering the provisions of a better customer service, lowering transaction costs, and providing additional financial services to customers. From an operational perspective, this research indicated that banks with web-based banking realize significant benefits and investigated adoption/use behavior within the context of Hong Kong Online banking (OB) services.

Based on the above theoretical background the author identified the following factors that may influence on usage of online banking services.

### 2.1 Perceived Risk

Banking transaction is a private financial deal which has needs of greater level of reliability and confidentiality [21]. Featherman and Pavlou [22] mentioned that due to this intention online customers possibly will feel unsecure in case they experience monetary loss due to bank account misuse which will raise the level of perceived risk they have when doing internet banking transaction. Moreover, perceived risk was defined as “the situation where the decision maker has a prior knowledge of both the consequences of alternatives and their probabilities of occurrence” by Dowling [23]. Definition clearly mentions the probability of alternative result and it creates risk of online usage. Bhimani [24] mentioned that lack of security over the internet is the first obstacle to electronic commerce adoption. Moreover, scholar set up an association between perceived risk and consumer decision making [25].

According to the above literature author assumed

\[ H1: \text{Perceived risk negatively influence on the online bank usage in Sri Lanka.} \]

### 2.2 Customers’ Concern for Privacy

Customers’ concern for privacy special attention is paid to internet privacy when using [26]. The extent of this concern for privacy concern is individual. People value privacy and have always cared about what others know about it and how much they know about it [27]. However, study indicates that compensation could be an important instrument to mitigate privacy issues (e.g. Sheehan and Hoy [28], Milne and Gordon [29], Goodwin [30]) given that clients may wish, to a certain degree [31,32], [33], to share privacy with other users for products, coupons, services or economic advantages. Likewise, clients have been suggested to trade their privacy for the anticipated advantages of personalizing their products. Chellappa [34] maintains that the customer is a subjectively expected notion of privacy in its transaction.

This defines the subjectivity of the collection and subsequent access, use and disclosure of his / her personal and private details in accordance with his / her expectations. Even if data protection expectations typically are set in accordance with recognized legal directives, clients may have distinct evaluations of the privacy. However, in the case of a specific customer marketing transaction as seen on the Internet, this report has been examined formally only recently. Chellappa [34] offers client confidentiality scales. The rules have been created by Smith et al. [35] and FTC [36]. These scales evaluate subjective views of clients. These convictions are based on information, choice, access, safety and implementation elements. However, generic evaluation of issues about privacy can cause an issue because privacy itself is considered a “complicated range of different people consumer attitudes” [36]. Existing literature on public policy and marketing shines a light on dimensions of privacy other than those issued in the FTC-related guidelines. Analyses of related literature indicate that privacy concerns may be influenced by information sensitivity [27,28]. Therefore, to measure privacy concerns during the use of personalization services, it is worth making an assessment of the privacy perception in connection with information with varying sensitivity levels.
H2: Customers’ concern for privacy positively influence on the online bank usage in Sri Lanka.

2.3 E-Trust

Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of an-other. Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of an-other. A general definition of trust is difficult and its interpretation is usually context based [37,38]. However, according to Rousseau et.al [39] trust is a “psychological state comprising the intention to accept comprising the intention to accept to vulnerability based upon positive expectations of the intentions or behavior another”. According to definition readiness of a party to be vulnerable to the actions of another group of people established on the expectations of the behavior of another. Since, trust tends to have a major effect upon most personal and business activities [40]. Moreover, E-trust has been defined as “willingness to rely on an exchange partner in whom one has confidence” [41]. However, other researchers characterized as reliable, honest, consistent and fair Falkenreck and Wagner [42]. Yousafzai et al. [43], Shankar et al. [44]. An extensive review of the relevant literature has indicated that e-trust is a matter of perception and is built around key important components such as security and company published policies designed to safeguard confidential information of the customer [45,46,47,48,49].

According to the above literature author assumed

H3: E-trust positively influence on the online bank usage in Sri Lanka.

2.4 E Loyalty

The concept of E-Loyality is special nature of customer behavior towards the association. The term of e-loyalty can define as “intention to revisit the website” [50,51,52]. The method of repurchasing may include loyal conduct [53,54,55] and the loyalty perceived to the online website, intended to visit or buy from the site again. The development of loyal clients is essential in attaining and ensuring their survival in terms of strategic objectives [56,57,58,59].

H4: E-loyalty positively influence on the online bank adoption in Sri Lanka.

2.5 Customers’ Value for Online Personalization

Customers’ value for online personalization mainly derives a better value from the online services offered. The real value provided by personalized services is based on the attributes on which personalization can be accomplished [60]. The level of personalization benefits that can be delivered is subject to the data that can be acquired. For example, automatic virus protection requires data, such as the customer’s machine information, operating system and anti-virus software serial numbers. In the case of personal portals, information such as ZIP code is of a great importance when it comes to providing personalized commentaries on local weather and television programs [61]. Online service personalization can be applied to content, presentation, access, delivery, advertisements and coupons [62].

Personalization based on customers’ attributes (non-purchase related). This type of personalization is based on customer attributes and is almost independent of any specific product purchase. This includes ZIP code, preferred language, shipping address, response to promotional activities and technology-specific attributes (e.g. browser type, IP address and connection device).

Customers may exhibit various needs and expectations for each of the above-mentioned personalization types based on their own preferences. For example, a customer who travels frequently may value personalized services delivered to their mobile and hand-held devices. However, for a frequent shopper, product-purchase personalization will be more convenient. The aggregate value of personalization is a significantly important factor in the customer use of online service [61].

H5: Customers’ value for online personalization of use positively influence on the online bank adoption in Sri Lanka.

3. METHODOLOGY OF THE STUDY

The objective of the study is to identify factors influencing adoption of online banking from the customer's point of view. Questionnaire was used to collect the data and it was designed by adapting the instrument and scales derived by several past studies such as Davis [10], Lee, M [25], Forder, [63], Rousseau et al. [39]. Total
population of the study is all customers of private commercial banks in Sri Lanka and data were gathered using structured questionnaire by using printed forms. Three hundred questionnaires were distributed among the customers who attached to the seven main private commercial banks and living selected three prominent provinces of three prominent cities namely Kandy, Colombo & Galle in Sri Lanka. Two hundred fifteen questioners were returned, but then nineteen questionnaires didn’t use for analysis due to incompleteness of questions. Finally, one hundred and ninety six questionnaires used to final analysis. The study’s independent variables include technology adoption propensity, customers’ value for online personalization, customers’ privacy concern, e-trust, technological leadership and loyalty. Sri Lankan customers’ usage of online banking services is the dependent variable. Questions of questionnaire were divided into two parts namely demographic factors and questions of Drivers effecting online banking usage & Online banking usage. Drivers effecting online banking usage & Online banking usage were measured by five-point Likert scale questions and multiple-choice questions using past literature. Descriptive statistic tools used to analysis of demographic data. Correlation analysis and multiple regression were analysis life balance factors and retention. SPSS 23 is the tool using for this analysis.

4. DATA ANALYSIS AND RESULTS

One hundred and ninety-six questionnaires were used to data analysis and majority of questionnaires received from male. It was 59.4% and rest of amount represented female. Result shows that higher percentage of male use internet banking compare with female. Aged 18-35 years are the highest representatives of the study representing a percentage of 74% and age category of above thirty-five year represent the balance where represent only a nominal percentage comparing to the other representatives. It shows that higher percentage of young generation like to use online banking. Subsequently, data was analyzed based on education qualifications, result shows most respondents are holding Bachelors’ degree and higher degree qualifications with a highest percentage and 30.20% have advance level qualifications and lowest percentage of respondents has O/L qualification. Moreover, higher percentage of respondents are earning between Rs.50,000 to Rs.100,000/- rupees monthly which indicates that the selected sample is having sufficient purchasing power as well as the comfort of using online banking in view of managing their portfolios. Employment statues of the sample where it indicates the highest number represents the full time employed and second highest represent the self-employed category. Where much suitable for the study where high prominence of the findings coming from the correct sample. Table 1 shows the Cronbach’s alpha coefficient values of independent and dependent variables and all values are greater than 0.7. It means questionnaire is suitable to measure the independent and dependent variables.

The objective of the study is drivers affecting slow adaptation of online Banking usage in Sri Lanka. Table 2 shows the satisfactory level mean values for each variable around 4 which indicate Agree with minimum 3 and maximum 5 values. However E loyalty is having considerably higher mean than others. Further it is evident that Customers’ Value for Online Personalization and Technology and Leadership reflects the lowest mean value however same is very close to value 4 which is agree.

Objective of the study is to identify drivers of online bank adoption since researcher selected five independent variables and developed model. Table 1 shows the multiple regression output.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Risk</td>
<td>0.795</td>
</tr>
<tr>
<td>Customers’ Value for Online Personalization</td>
<td>0.801</td>
</tr>
<tr>
<td>Customers’ concern for Privacy</td>
<td>0.783</td>
</tr>
<tr>
<td>E-trust</td>
<td>0.898</td>
</tr>
<tr>
<td>E-loyalty</td>
<td>0.768</td>
</tr>
<tr>
<td>Use of online banking</td>
<td>0.872</td>
</tr>
</tbody>
</table>
Table 2. Model summary of drivers of online bank adoption

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R square</th>
<th>Adjusted R square</th>
<th>Std. error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.702</td>
<td>0.493</td>
<td>0.459</td>
<td>0.50750</td>
</tr>
</tbody>
</table>

Table 3. The level of drivers affecting online banking usage in Sri Lanka

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.150</td>
<td>0.352</td>
<td>3.263</td>
<td>0.002</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>0.652</td>
<td>0.129</td>
<td>0.597</td>
<td>5.048</td>
</tr>
<tr>
<td>Customers' concern for privacy</td>
<td>0.125</td>
<td>0.059</td>
<td>0.126</td>
<td>2.176</td>
</tr>
<tr>
<td>customers' value for online personalization</td>
<td>0.399</td>
<td>0.221</td>
<td>0.383</td>
<td>1.811</td>
</tr>
<tr>
<td>e-trust</td>
<td>0.209</td>
<td>0.057</td>
<td>0.0210</td>
<td>3.578</td>
</tr>
<tr>
<td>E-loyalty</td>
<td>0.198</td>
<td>0.186</td>
<td>0.227</td>
<td>1.065</td>
</tr>
</tbody>
</table>

According to the Table 1 propensity, customers’ value for online personalization, customers’ privacy concern, e-trust, technological leadership and loyalty explain 45.9% of online bank adoption. Moreover, Table 2 shows the each selected six factors influence on online banking usage adoption.

Table 3 shows that perceived risk, customers' concern for privacy and entrust show the significant positive effect on online bank usage in Sri Lanka. However, other two factors namely e-loyalty and customers’ value for privacy didn’t show the significant influence in online bank usage but these two factors also shows positive influence on online bank usage.

5. CONCLUSION AND DISCUSSION

Key objective of the study was to study identify factors effect on adoption of internet banking in Sri Lanka and give the recommendations to improving internet adoption of customers. Technology Adoption Model (TAM) and new proposed variables were extracted from literature of internet shopping, electronic commerce and online banking. After conducting factor analysis, researchers were recognized five factors namely perceived risk, customers’ concern for privacy, e-trust and customers’ value for online personalization have an influence of adopting online banking. Regression analysis were conducted using above five factors may affecting the use of internet banking and model was tested based on one hundred and sixty six Sri Lankan online customers data, According to multiple regression analysis result around 50% of online banking adoption depend on selected six factors.

Among the selected six factors e-loyalty and e-trust significantly influence on online banking adoption.

The results of the study offer the information for bankers and policy makers about those factors influence the acceptance of online banking. Moreover, study result provides how to overcome challenges and increasing the number of internet banking usage. On the other hand online banking developers, software developers and web designers should consider the issue of security to minimize risk and improvement to raise customer trust.

6. LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Although, this study conducted using large and sufficient to carry out this type of study, it included private commercial bank customers who are living in three districts in Sri Lanka. The result of the study results is generalizable only for private bank customers in Sri Lanka and it may not be generalizable for other customer segments. Moreover, the study didn’t examine the moderating effect of demographic factors that may influence on the online bank adoption level of online banking. On the other hand suggested model of the study is missing several variables (ex. performance expectancy, Effort expectancy, social influence, facilitating conditions, Perceived ease, perceived usefulness) which were investigated by other researchers (Hamadi [64], Singhal & Padhmanabhan [65]).

Future researchers are able to online banking using large sample representing various
customer segments and including additional variables including proposed model. Moreover, future researcher could be examined using various demographic factors such as educational level, income level, gender and etc. Further, Number of other factors may influence on online banking since researcher should conduct the new study using additional independent, moderating and intermediate variables.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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