The Customers' Intention to use the Internet Banking Service: Unified Theory of Acceptance and Use of Technology Perspective

Gunawardena, K.A.T.P.P.[a] and Galhena, B.L.[b]

[a] *Faculty of Management and Finance, University of Ruhuna, Sri Lanka*
thilanga.ka@gmail.com
[b] *Department of Human Resource Management, Faculty of Management and Finance, University of Ruhuna, Sri Lanka*
blgalhena2@gmail.com

Abstract

Due to exponential growth of information technology, Internet Banking (IB) services received recognition as one of the major delivery channels of the banks. In Sri Lankan context, banks are investing substantially on information technology and IB improving their value addition to the respective customers. However, it was apparent that the level of IB adoption among customers at the lowest, when compared to some developed and developing countries. National Savings Bank (NSB) being the third largest state bank of the country, facing the same problem in recent years. Thus, the objective of this study is to identify the factors influencing on customer intention to use IB services of NSB. Conceptual framework has been developed based on Extended Unified Theory of Acceptance and Use of Technology model (UTAUT2). This study employed the survey approach to collect data where data were collected from 272 NSB banking customers who maintain their accounts with the branches located in Colombo City. Multiple regression analysis was used to test the hypotheses. Results revealed that six variables out of eight, performance expectancy, facilitating conditions, Social Influence, price value, habit and trust are the most significant factors, determining intention to use of IB services of NSB. It also demonstrated that the unified model of technology acceptance established in the developed countries can be transferred to developing countries with varying degrees of explanation power.

Keywords: *Internet Banking, technology acceptance, UTAUT2, Intention to use*

1. Introduction

Today's technology has driven hyper competitive globalize marketplace offering tremendous challenges for business entities (Singh, & Keating, 2018), where it requires all organizations to be in a continuous frame of adapting to changes. With such a challenging future outlook for businesses in general, organizations are required to be proactive more than ever on adopting to the technological advancement (Munir, Runeson, & Wnuk, 2018).

Financial Services Industry (FSI) has played a pivotal role in contributing to growth and prosperity of the modern economies. Stability and integrity of the FSI has been the key factor of the stable national economic growth (Murray, Skene, & Haynes, 2015). This was evident from the 2008 financial crisis started from US, which deeply affected the FSI, had rapidly cascaded into other industries and thereby slowing down entire world economy (ADB, 2009). Thus, it is imperative to identify drivers for disruption in FSI which may help to identify what would be the future holds for economic stability in general.

Behind the current waves of disruption happening in the FSI, disruptive technologies play a significant role (EY Global, 2016). As the invent of the internet has made billions of individuals and businesses connected with each other, Financial Technology (Fintech) firms are started establishing foothold into an industry once revered by traditional players. Fintech firms can be primarily defined as technology based financial service providers (Arner, Barberis, & Buckley, 2016).

Financial services firms are identified as primarily firms in retail banking, commercial lending, insurance (other than health, credit cards, mortgage banking, investment advisory, and asset management). However, as IT technology developments are being widened, the landscape of the modern financial industry has been dramatically changed. It opened opportunities that never existed in conventional banking, leading to banks transforming to the digital era (Central Bank of Sri Lanka, 2017).

This technological development in relation to FSI includes new technology and innovation that aims at competing with traditional financial methods. Crypto currencies, mobile wallets, peer to peer (P2P) lending and cross boarder payment services are few of them. Thus, traditional financial firms are being required to embrace this dynamic development into their business models to survive in the marketplace. Internet Banking (IB), one of the major components of the Fintech technologies is a must have thing in today's financial environment. Internet banking is a kind of system that enables financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through the Internet (Srivastava, 2007).

Many banks all over the world have implemented Internet banking to offer their customers a range of online services with more convenience for making banking transactions (Safeena *et al*, 2010). Internet banking allows the customers to use all banking services with their computer on bank operated secured web site (Hutchinson, & Warren, 2003). It offers features such as fund transfer, account inquiry, bill payments and bank statements to maintain a reliable customer service (Omar, Sultan, Zaman, Bibi, Wajid, & Khan, 2011). Internet banking has become an important phenomenon with a remarkable development in the banking sector.

Several studies have been performed in the context of developed countries to examine the determinants of usage of Internet banking (Alalwan, Dwivedi, Rana, & Algharabat, 2018; Zahir, & Gharleghi, 2015; Nor, & Pearson, 2015; Wang, Wang, Lin, & Tang, 2003; Mamode et al. 2011; Hamid et al. 2010; Singhal & Padhmanabhan 2008). As far as the extant literature on determinants of IB adoption is concerned, it is obvious that the findings are inconsistent where further studies on this are warranted.

During last couple of years, a significant emphasis placed on online banking activities by majority of banks in Sri Lanka (CBSL, 2017). Therefore, the consumer adoption and usage may be drastically altered, and it has not been adequately tested in Sri Lankan context in recent studies. Further, the level of Internet banking usage in Sri Lanka still remains at a low level compared to the developed countries as well as the developing countries in the region (Kariyawasam and Jayasiri, 2016). Moreover, Premarathne and Gunathilake (2016) contended that IB adoption levels in Sri Lanka is relatively low despite high adoption level of general technological advancements such as mobile usage, internet usage.

Determinants of user acceptance of internet banking have been identified using different models (Alwan et al. 2016, Boateng et al. 2016, Yuan et al., 2014, Cudjoe et al., 2016). However, in Sri Lankan context, there is only hand full of empirical studies on user acceptance of Internet banking has been performed. Hence, those findings of developed countries cannot be generalized to Sri Lankan context, specially Sri Lanka being a developing country and there are notable differences between educational level (Grimm et al., 2010), cultural beliefs and values (Samarasinghe, 2012) and economic situations (Popkova, 2014) compared to the developed world. Therefore, it is necessary to identify the factors which influence the acceptance of IB in Sri Lankan context.

1.1. Research Problem

Recent years, financial industry landscape is being rapidly changed with Fintech revolution all around the world, where financial sector circumvent by IT firms and start-ups and Telecommunication companies with innovative service offerings focusing on internet and

mobile banking concepts (CBSL, 2017). Hence, status quo has been started to shift from incumbent traditional banks to new Fintech firms, especially in the fund transfer related business. (E.g. Dialog eZcash and Mobitel mCash are popular among locals to fund small value fund transfers). Further, consumer behavior is being radically changed in recent decade with the IT innovations (Wu et al., 2005); people are more concern about convenience and security of the transactions carried out (Weir et al., 2009). Tech savvy millennial begins to enter the workforce having different set of attitudes towards traditional service delivery channels (Shankar et al., 2010) that are being creating headache for traditional players. Therefore, traditional banks are required to alter their strategic direction towards digitalization to survive in the marketplace (Crittenden et al., 2019).

Financial Services Industry makes a significant contribution of 13.4% to Gross Domestic Product (GDP) of Sri Lanka in 2017 (CBSL, 2017). The banking sector is the dominating force in the financial sector, accounting for 60.3% of the total assets of the financial sector (CBSL, 2017). Information about the local distribution of Banks, Branches, etc. is provided under Table 1. and it indicates that the banking sector is highly competitive with 25 Licensed Commercial Banks (LCBs) and 7 Licensed Specialized Banks (LSBs) operate and they continued to support economic growth of the country specially promoting financial inclusion in the country (CBSL 2017).

Table 1: Distribution of Banks, Bank Branches and Other Banking Outlets

	Category	End 2016	End 2017
	Licensed Commercial Banks (LCBs)		
i.	Total No. of LCBs	25	25
	Domestic Banks	13	13
	Foreign Banks	12	12
ii.	Total No. of LCB Banking Outlets	5,397	5,508
	Branches (a)	2,841	2,869
	Domestic Banks	2,788	2,816
	Foreign Banks	53	53
	Student Savings Units	2,556	2,639
	Automated Teller Machines	3,351	4,083
	Licensed Specialized Banks (LSBs)		
i.	Total No. LSBs	7	7
	National Level Regional Development Banks	1	1
	National Level Savings Bank	1	1
	Housing Finance Institution	2	2
	Other LSBs	3	3
ii.	Total No. of LSB Banking Outlets		
	Branches (a)	683	691

National Level Regional Development Banks	265	265
National Level Savings Bank	255	259
Housing Finance Institution	63	64
Other LSBs	100	103
Student Savings Units	27	28
Total No. of Bank branches and Other Outlets	6,107	6,227
Total No. of Automated Teller Machines	3,851	4,416

(a) All banking outlets except Student Savings Units

Source: CBSL Annual Report, 2017

As shown in Figure 1, mobile broad brand subscriptions in Sri Lanka have grown exponentially after year 2010. Further, from Sri Lankan population, 25% is accessing internet and 132% of is having mobile telephone subscription (TRC, 2018). Compared to the above internet usage level with the Asian context, it can be identified that Sri Lanka is in the growth stage, where only 32% of the population having access to the internet as per Table 2 indicated. Thus, there will be a high significance demand, placed on IB related service in coming years. Hence, banks are required to develop strategies delivering convenient and secure internet-based services.

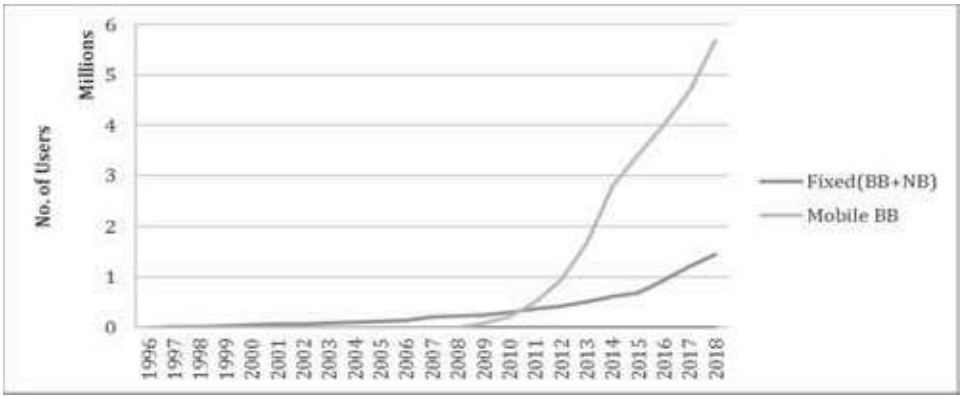

Figure 1. Internet Broad Branch penetration of Sri Lanka

Source: TRC Statistical report, 2018

Nevertheless, in present Sri Lankan context, banks are struggling to promote their IB services among their customers, which was evident when analyzing number of internet banking users of three most prominent government banks. As per the Table 3, which clearly indicates how major banks in Sri Lanka are struggling to realize a value for their huge investment in IB related service offering, which will have detrimental effect on their competitive positioning. Further, the above mentioned three of the largest banks in the country and their inefficiencies may adversely effect on entire national economy.

Table 2: Internet Usage details of Asia

ASIA	Population (2018 Est.)	Internet Users, (Year 2000)	Internet Users 30-Jun-18	Penetration (% Pop.)	Facebook 31-Dec-17
Bangladesh	166,368,149	100,000	88,687,000	53.30%	28,000,000
China *	1,415,045,928	22,500,000	802,000,000	56.70%	1,800,000
Hong Kong	7,428,887	2,283,000	6,461,894	87.00%	5,200,000
India	1,354,051,854	5,000,000	462,124,989	34.10%	251,000,000
Indonesia	266,794,980	2,000,000	143,260,000	53.70%	130,000,000
Japan	127,185,332	47,080,000	118,626,672	93.30%	71,000,000
Korea, South	51,164,435	19,040,000	47,353,649	92.60%	43,000,000
Malaysia	32,042,458	3,700,000	25,084,255	78.30%	22,000,000
Myanmar	53,855,735	1,000	18,000,000	33.40%	16,000,000
Nepal	29,624,035	50,000	16,190,000	54.70%	8,700,000
Pakistan	200,813,818	133,900	44,608,065	22.20%	32,000,000
Philippines	106,512,074	2,000,000	67,000,000	62.90%	62,000,000
Singapore	5,791,901	1,200,000	4,839,204	83.60%	4,300,000
Sri Lanka	20,950,041	121,500	6,710,160	32.00%	5,500,000
Taiwan	23,694,089	6,260,000	20,821,364	87.90%	18,000,000
Thailand	69,183,173	2,300,000	57,000,000	82.40%	46,000,000
Vietnam	96,491,146	200,000	64,000,000	66.30%	50,000,000

Source: Shabbir et al., 2019

Despite having numerous advantages to customers, majority of consumers have shown reluctance to use IB services (Lee, 2009; Nasri, 2011; Kuisma et al., 2007; Dwivedi et al., 2014). Most of the consumers may have serious concerns about using IB services for banking as a secure and convenient methods highlighting the facts such as customer's perceptions relating to ease associated with such use, the perceptions of the required skills, infrastructures such as computers, internet, etc., uncertainty face by them due to security risks and trust related issues; the service effectiveness and lack of knowledge about online transaction procedures (Aboobucker & Bao, 2018). Therefore, it becomes imperative for decision makers of the bank to understand the factors that are being affected the acceptance and usage of IB.

Table 3: Internet banking penetration of major banks

Bank	Customer Base ('000)	Internet Banking Users ('000)	(%)
BOC	13,000	247	1.90
People's Bank	12,000	914	7.62
NSB	13,000	30	0.23

Source: Annual Report: BoC/ People's Bank/ NSB, 2017

However, the IB use in Sri Lanka is still in its infancy and lag very far behind compared to counterparties in other countries (Priyangika, Perera, & Rajapakshe, 2017). Such a low adoption rate is troublesome for banking institutions (Alwan & Al-Zu bi, 2016). Furthermore, it is also true that in Sri Lankan culture a lot of people prefer the traditional ways (ATM, personal contact) of attaining financial services when doing business which raise concerns about the low adoption rate of IB (Toufaily, Daghfous, & Toffoli, 2009). Without knowing these factors, bank managers are likely to continue floundering, wasting time and resources. On the other hand, customers need to be aware of IB services, and feel secure and comfortable in using IB services, since IB service is relatively new to most of them. As indicated in the above Table 3, National Savings Bank (NSB) shows the lowest penetration levels in internet banking among three state owned banks. This is despite they have been investing heavily on IB related technology over the last few years. Investment on IT related activities over the past few years are depicted in Table 4.

Table 4 includes all IT related investments made by the NSB. Nevertheless, it indicates how much NSB is focused on future IT developments. Even though, the NSB is awarded the 1st Runner up award under the Best Website category in Financial Sector at "SLT Zero One Awards for Digital Excellence 2018" and Most Popular Corporate Website 2018 Award by BestWeb.lk above IB mentioned IB penetration levels are still at lowest. Therefore, there is a need for conducting research to understand the factors that influence the adoption of IB by customers in Sri Lanka formulating strategies that will guarantee effective implementation and adoption of IB.

There are very few researches conducted on use of IB Services in Sri Lanka context. As per the Hofstede cultural dimensions theory, different countries possess different cultural dimensions. Thus, there is a research gap of identifying consumer use of IB services and how those aspects are going to be applied by the traditional financial institutions. Thus, the research question addressed in this study is, what are the factors influencing the behavior intention of the consumers of NSB to use the IB services. Thus, the objective of this study is to identify the

significant factors determining the intention of internet banking adoption in Sri Lanka with special reference to NSB Bank.

Table 4: IT related investment made by NSB

Year	Amount Invested (Rs. Mn)
2017	712
2018	772
2019 (projected)	1,000

Source: NSB Annual Report, 2018

2. Literature Review

2.1. Internet Banking

Internet banking mainly allows a user to conduct financial transactions via the Internet. Based on this functionality of internet banking, several authors provided definitions on IB. A few of the definitions on IB are given in Table 5. When comparing all definitions, it is very much similar to each other as most authors discussed about change of delivery channel for banks. For the present study, IB is defined as the use of internet technology that enables financial institution customers, individuals or business, to access accounts transact business, or obtain information on financial products and services through a public or private network, including the internet.

Table 5: Definitions of Internet Banking

Author and Year	Definition
Berger (2003)	An alternative delivery channel through which banking services are performed.
Liao, Shao, Wang & Chen (1999)	The provision of operations such as opening an account, money transfer, finding out the bill details and paying off the bill
Reis, Gulsecen & Bayrakdar (2011)	Banking services which eliminate the obligation of having to go to the bank branch during the working hours of the bank and having to wait in the queue, which can be accessed from everywhere where internet is available, through which all operations can be carried out except physical money operations.

Rahmath & Hema (2011)	Internet banking acts as a kind of financial intermediation which makes transaction through Internet.
Gopalakrishnan, Wischnevsky & Damanpour (2003)	Internet banking is defined as a bank that offers (web-based) transactional services.
Bradley & Stewart (2002)	Internet banking represents an electronic and remote distribution channel for delivering financial services on a virtual level.

2.2. Theories of Technology (IB) Adoption

A number of models and frameworks have been developed to explain user adoption of new technologies and to explain factors driving towards user acceptance. As IB is treated as a technological innovation, and present study aims at exploring determinants of intention to use IB services, reviewing such theories are important. Most widely tested technology adoption theories include: Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980), Theory of Planned Behaviour (TPB) (Ajzen, 1991), Decomposed Theory of Planned Behaviour (DTPB) (Taylor & Todd, 1995); the Technology Acceptance Model (TAM) (Davis, 1989), TAM2 (Venkatesh & Davis, 2000) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003), the Diffusion Innovation Theory (DIT) (Rogers, 1985).

These models have evolved over the years as a result of persistent effort of researchers to validation and extension. From all theories, TRA, TPB and TAM are the most widely tested models in this technology adoption literature. However, these three models are criticized for their relatively low explanatory power in terms of behavioral intentions, which ranged between 30 – 40 percent only (Jeyaraj *et al*, 2006).

Addressing the above criticisms, Venkatesh et al. (2012) developed UTAUT2 model providing new insights into factors affecting the technology acceptance and how culture influences on individual use behavior. Despite that, UTAUT2 model is considered as a new model since its emerging in 2012 and researchers in the field of IS are increasingly testing its suitability, validity, and reliability to explain technology adoption in different contexts (Venkatesh et al 2012). Compared with other models, UTAUT2, created an essential enhancement in the variance explained in technology use, i.e., 40 percent to 52 percent in UTAUT, while 56 percent to 74 percent in UTAUT2 (Venkatesh et al. 2012). Furthermore, UTAUT2 is more applicable to this study as it focused on customer use context. In contrast, other technology acceptance and use models including original UTAUT are more applicable for employee use context (Rogers, 2003). Based on the above discussion, it is expected that UTAUT2 is a preferable model in this

study. As there are no previous studies testing UTAUT2 model in the IB acceptance in Sri Lankan context, present study developed the following research model as shown in Figure 2.

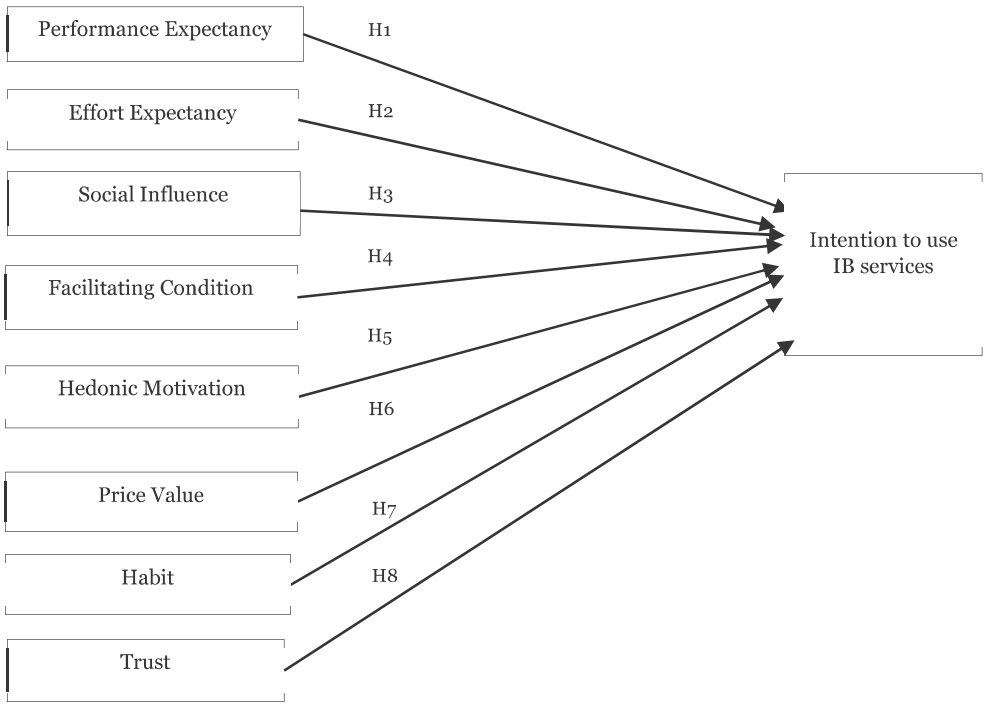

Figure 2: Research Model

2.3. Hypotheses

Performance expectancy (PE) is defined as "the degree to which an individual believes that using the system will help him/her to attain gains in job performance" (Venkatesh et al. (2003). It is apparent that once an individual perceives that, IB services offer them ample opportunities to perform their tasks more efficiently and effectively. On the other hand, if they believe that IB services are not useful and does not provide them with expected performance they intend to use traditional method over IB service. Significance of the relationship of PE on intention to use IB has been provided by several researchers (Foon, & Fah, 2011; AbuShanab, & Pearson, 2007; Rahi, Ghani, Alnaser, & Ngah, 2018; Martins, Oliveira, & Popovic, 2014). Thus, it is hypothesized that PE would have a significant positive influence on customers' intention to use IB.

H1: Performance expectancy is positively related to customers' intention to use IB services

Effort expectancy (EE) is defined as "the degree of ease associated with use of the system" (Venkatesh et al., 2003). When customers perceive that it is cumbersome to access and navigate IB services they are reluctant to use IB services vice versa. Previous research studies on UTAUT model, found that EE is a significant factor that affects behavioral intention to usage IB (Rahi, & Ghani, 2019; Martins, Oliveira, & Popovic 2014). Further it has been found that EE has a positive effect on behavioral intention to usage IB (Khater, 2016; Martins, Oliveira, & Popovic 2014). Thus, it is hypothesized that EE has a positive influence on intention to use IB.

H2: Effort expectancy is positively related to customers' intention to use IB services

Social influence is defined as "the degree to which an individual perceived important of which others believe he/she should use the new system (Venkatesh et al., 2003). Once an important person in the network of individual influences uses IB services, it is more likely for them to adopt into IB. conversely, such a key personal who will be influenced in an individual decision does not encourage to adopt IB, they intend not to use IB services. SI is an important factor that affects behavioral intention of IS usage and found that SI has a positive effect on behavioral intention of IS usage (Venkatesh et al., 2003). Furthermore, other studies found that SI has a significant positive effect on behavioral intention of IS usage (AbuShanab, & Pearson, 2007; Martins, Oliveira, & Popovic 2014). Thus, consistent with UTAUT, this study hypothesized that SI has an influence on behavioral intention of IBS usage.

H3: Social influence is positively related to customers' intention to use IB services

The Facilitating conditions (FC) provided to each consumer can vary according to the Graphical User Interface, application vendor, Personal computers (PC) or Mobile operating system, technology generation, mobile device and so on. A consumer who has access to a favorable set of FCs is more likely to have a higher intention to use a technology (Venkatesh et al., 2012). From the IB perspective, access to information and other resources may vary with consumers that facilitate their use, such as videos & FAQs. It is generally expected that; all variables remain constant a consumer while having lower level of access to FCs will have lower level of intention to use IB (Venkatesh et al. 2012). Thus following hypothesis was postulated.

H4: Facilitating conditions is positively related to customers' intention to use IB services

Hedonic motivation refers to fun or pleasure derived from using a technology and it has been showed to play an important role in determining technology acceptance and use (Venkatesh et al. 2012). Once individuals are pleased with using IB services, they tend to continuously use it for day today banking purposes. Conversely, when customers are not enjoying using IB services

they are more likely to shift again for traditional Banking services. Thus, hedonic motivation will have positive correlation in determining technology use. This leads to following hypothesis.

H5: Hedonic motivation is positively related to customers' intention to use IB services

Price values refer to consumers' cognitive trade-off between the perceived benefits of the application and the monetary cost for using them (Venkatesh et al. 2012). Typically, some individuals tend to be independent, competitive, and make decisions based on selective information and heuristics while others are more interdependent, cooperative, and consider more details. Hence in IB context, some individuals are likely to pay more attention to the prices of IB services than others. This further means that when an individual is required to pay relatively lower cost to obtain IB services, they are more likely to adopt IB services. In contrast, customers are more reluctant to use IB services when they are supposed to incur relatively high cost on this. This leads to following hypothesis.

H6: Price value will have a significant positive effect on intention to use IB services of NSB.

Habit refers to the extent to which people tend to perform behaviors automatically because of learning (Venkatesh et al. 2012). Habit will automatically guide individual's behavior without the conscious mental effort, such as belief formation or retrieval (Fazio 1990). For instance, after an extended period of repeated interaction with IB on working hours, a consumer may have developed a positive view towards IB and an associated behavioral intention (Venkatesh et al. 2012). This habit can be spontaneously triggering the positive intention to use behavior. Hence, stronger habit will lead to a stored intention that in turn will influence behavior. Based on the above claim following hypothesis was formulated.

H7: Habit will have a significant positive effect on intention to use IB services of NSB.

Trust is the defining attribute of a relationship and determining its very existence and nature is necessary even beyond economic factors (Baptista, & Oliveira, 2015). This has been further proven by researchers when an activity involves social uncertainty and risk (Fukuyama 1995). Social uncertainty and risk are factors with an IB related transaction that is typically high because of the behavior of the system performance as it is intangible. Similarly, trust is a reducer of risk in the eyes of inexperienced online customers and act as social uncertainty reducer (Gefen 2000), on seals of approval or privacy policy statements (McKnightet al. 2000), and on affiliations with respectable companies (Stewart 1999). With IB's limited Web interface, customers are not allowed to identify whether a Bank is trustworthy as in a typical face-to-face interaction. Further, trust is an important aspect where vendors can easily take advantage of

online customers (Jarvenpaa and Todd 1997). Therefore, this study hypothesized that Trust has an influence on intention to use IBS. Thus, following hypothesis was postulated.

H8: Trust will have a significant positive effect on intention to use IB services of NSB.

3. Methods

The aim of this study is to identify the significant factors explaining the intention to use IB services. The current study is categorized under Descriptive research designs as the objective is to describe the antecedents of intention of IB usage (Zikmund et al, 2010). The research question of the present study is to identify the key factors determining the intention to use IB services of the customers in NSB. Thereby, the respondents to the survey research would ideally be customers in NSB. Thus, the unit of analysis for the present study is "individual".

The theoretical constructs were measured using validated items from prior relevant research. The adapted items were validated, and wording changes were made to tailor the instrument for the purposes of this research. The research has been carried out in Sri Lankan context as there are very few empirical studies conducted on internet banking adoption as well as it was unable to find any studies on use of UTAUT 2 model on IB adoption. As the recent trends of unprecedented level of technological advancement, the banking sector is being in a constant battle to keep its relevance and maintaining confidence in the financial system. Therefore, IB usage of Sri Lankan banking sector has been taken into consideration in this study.

Among the Leading financial institutes of Sri Lanka, NSB has been selected as it is the largest licensed specialized bank in the country. NSB was established in 1971 and presently operates with more than 255 branch networks and 282 ATM machines covering Entire Island (NSB Annual Report 2018). NSB has been slow to adopt technology in the past. However, in the recent years they have turn their focus on innovation to improve their financial solutions to meet the customer expectations. To conduct this research effectively the population was narrowed down to customers of NSB in Colombo District as Colombo is identified as the commercial hub and highly populated city in Sri Lanka.

Target population consists of bank customers above 18 years of age who are using banking services provided by the leading Sri Lankan state bank; National Savings Bank. Assuming a very conservative response rate, 450 questionnaires were distributed both in person and via email to the participants. Participation in the survey was completely voluntary. Respondents were asked to complete a survey questionnaire based on their perception and/or acceptance of internet banking services. The questionnaires were distributed to 15 branches in Colombo District and 375 questionnaires were distributed among all the branches. The response rate

varied from one to another (see Table 6). After counting the incomplete responses 272 were proceeded to the further analysis.

Table 6: Questionnaire Distribution and Response Rate

Name of the Branch	Population	Questionnaire distributed	Questionnaire returned	Response rate %
Head Office	4375	125	105	84.0
City	1985	55	37	67.3
City Plus	537	15	14	93.3
Borella	1876	50	37	74.0
Maligawatta	766	20	16	80.0
Wellawatta	1866	50	43	86.0
Bambalapitiya	1987	55	38	69.1
World Trade Centre	998	30	18	60.0
Pettah	769	20	9	45.0
Kotahena	675	20	13	65.0
Kollupitiya 2nd	255	10	8	80.0
Total	16089	450	338	75.1

4. Results

Demographic factors were first analyzed and results are illustrated in Table 7. Majority of the respondents were male with 52.6% while 47.4% responds were female. Most of the respondents were from the age group of 21 to 30 years with 42.6% of the total respondents.

Table 7: Demographic profile of the respondents

Variable	Frequency	Percentage
Female	129	47.4
Male	143	52.6
Age category		
20 Years or Less	11	4.0
21 to 30 years	116	42.6
31 to 40 years	100	36.8
41 years or above	45	16.5
Education Level		
G.C.E. O/L or below	8	2.9
G.C.E. A/L	80	29.4
Diploma	101	37.1

Degree or higher education	83	30.5
Experience with Internet Banking		
Less than 6 months	51	18.8
6-12 Months	47	17.3
1-2 Years	59	21.7
More than 2 Years	115	42.3
Preferred devise of use		
Smart Phone	188	69.1
PC/ Laptop – Office	36	13.2
P/C Laptop – Personal	48	17.6

Source: Survey Data, 2019

It was followed by 31 to 40 years' age group representing 38.8% of the participants. Therefore, most of the participants either represent Y Generation and X generation (Kotler & Keller, 2016). Further, according to the Sri Lankan perspective those age groups represent income earners with technological knowledge.

Most of the participants i.e. 37.1% are having diploma as their educational qualification. Further, more than 67% of the participants are having a diploma or a degree as their educational qualification. As indicated in the table 7, 42% of the participants are having previous IB experience for more than 2 years.

Further, it can be identified that majority of the participants i.e. 69.1% use smart phones as the preferred devise to enter IB services.

Table 8: Reliability of the Measures

Variable	Cronbach's Alpha	No. of Items
Performance Expectancy	.665	5
Effort Expectancy	.759	4
Social Influence	.905	3
Facilitating Condition	.644	3
Hedonic Motivation	.703	4
Perceived Value	.767	3
Trust	.649	5
Behavioral Intention	.782	4

Source: Survey Data, 2019

In order to establish the reliability of the constructs, the Cronbach Alpha values were tested and results are shown in Table 8. All the variables met the threshold values of 0.6 confirming the internal consistency of the measures. Consequently, correlations among variables were tested using person correlation and results that are shown in Table 9.

Table 9: Correlations, Means and Standard Deviations

	PE	EE	SI	FC	HM	PV	HB	BI
PE								
EE	.441**							
SI	.186**	.314**						
FC	.349**	.377**	.116					
HM	.494**	.563**	.498**	.224**				
PV	.381**	.295**	.123*	.229**	.287**			
HB	.539**	.263**	.090	.346**	.448**	.221**		
BI	.489**	.252**	.039	.359**	.357**	.342**	.590**	
TR	.374**	.451**	.302**	.309**	.393**	.291**	.287**	.335**

**. Correlation is significant at 0.01 level (2-tailed).

*. Correlation is significant at 0.05 level (2-tailed).

Source: Survey Data, 2019

4.1. Hypotheses Testing

Hypothesis testing is based on regression analysis using SPSS. Table 10 provides the results of hypothesis testing with R2, standard coefficient, and significance. The Adjusted R Square value is .429 (Table 10). Thus, the regression model explains 43% of the variance in Internet banking adoption among respondents with 8 independent variables which specified the research model. As indicated in the ANOVA table regression model is statistically significant (F = 29.329, P= 0.000).

In sum, this study confirms the results of UTAUT. Supporting H1, performance expectancy (PE) had significant effects on behavioral intention to use (b= .141, p = 0.023). Social influence had a significant positive impact on IB adoption, supporting H3 (b = .114, p = 0.037). Facilitating condition had a significant positive impact on IB adoption supporting H4 (b = 0.124, p = 0.019).

Price value was found to have a significant effect on IB Adoption, supporting H6 (b = .148, p = 0.004). Habit had a significant positive impact on IB adoption, supporting H6 (b = .392, p = 0. 000). Supporting H7 while trust was found to have a significant effect on IB Adoption,

supporting H8 (b = .120, p = 0.029). Effort expectancy and hedonic motivation were not found to have a significant effect on user's IB Adoption, not supporting H2 and H5.

Table 10: Hypotheses Testing

Model Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.130	.304		3.717	.000
Performance Expectancy	.163	.071	.141	2.279	.023
Effort Expectancy	-.079	.065	-.075	-1.221	.223
Social Influence	.078	.037	.114	2.096	.037
Facilitating Condition	.138	.059	.124	2.354	.019
Hedonic Motivation	.089	.065	.094	1.368	.173
Perceived Value	.129	.044	.148	2.906	.004
Habit	.283	.042	.392	6.664	.000
Trust	.176	.080	.120	2.195	.029
Adjusted R2			.429		
ANOVA			F = 29.329, P= 0.000		

5. Discussion

The results indicated that IB adoption was largely influenced by performance expectancy, habit, price value, facilitating condition, trust, and social influence. Habit was positively influenced on IB adoption. The relationship between habit and IB adoption have been documented and the results confirmed the importance of the link between them. These findings indicate that when an extended period of repeated interaction with IB working hours, a consumer may have developed a positive view towards IB and an associated behavioral intention. This is consistent with the findings of Alalwan, Dwivedi, Rana, Lal, & Williams, (2015).

The findings also suggested that facilitating condition has a significant positive effect on IB adoption. As suggested by previous studies of Foon, & Fah, (2011), this implies that once an individual perceive that IB services offers them ample opportunities to perform their tasks more efficiently and effectively they are more likely to use it. Moreover, in consistency with previous findings (Roy, Kesharwani, & Bisht, 2012), this study found that trust has a significant effect on IB adoption. This finding means that when employees are confident on using IB service over their security, the level of usage is increased. This study also confirms the importance

of social influence and price value in predicting customers' IB adoption and confirm the validity of UTAUT model in the context of Internet banking adoption. These findings are consistent with previous studies of Chaouali, Yahia, & Souiden, (2016).

This study also found empirical support for the relationship between performance expectancy and IB adoption. This means, once an individual perceive that IB services offers them ample opportunities to perform their tasks more efficiently and effectively they are more likely to use it. This confirms the similar results of the previous studies (Foon, & Fah, 2011; Zhou, Lu, & Wang, 2010). However, statistically significant relationship was not found this study for effort expectancy, hedonic motivation with IB adoption. This result is not consistent with the proposed theory in UTAUT. This may imply that customer' feelings about effort effectiveness and hedonic motivation will not become a more influential factor in comparison to other factors in determining IB adoption.

5.1. Implications

This research study is conducted based on UTAUT2 model proposed by Venkatesh et al. (2012) integrating Trust as an independent variable. This model was not previously tested in developing economy setting i.e. Sri Lankan context in general as well as in areas of internet banking acceptance. Therefore, this research study contributes to fill the theoretical gap between developed and developing context and research findings were contributed to the existing literature by providing insights on the determinants of Internet banking usage. This research provided a model for test intention to use IB services, which can also be applied for explaining other e-banking usage behavior studies such as mobile banking or other e-banking services. Moreover, the study contributes with the revelation that Habit is the most significant factor affecting intention to use internet banking out of the selected independent variables. As a whole, this research has provided extended knowledge in the domain of technology acceptance literature for a developing country like Sri Lanka.

NSB is facing major challenge of low usage of its IB service by the vast customer group of nearly 13 Mn. According to Curran & Meuter (2007), as customers continue to become more familiar and comfortable with banking technologies, it is critical that firms understand how to manage Self-Service Technologies in a better manner. Hence, it is important to help NSB to develop a suitable marketing strategy that will enhance the acceptable level of IB adoption among their customers. Such results will allow NSB to identify the most suitable marketing strategy that will encourage customers to use Internet banking as a more convenient and innovative channel.

In the Performance Expectancy aspect, it can be identified that online users are highly concerned about the effectiveness of what they perform using IB. Therefore, it is necessary to

create marketing campaign on awareness of IB services in NSB among the customers about the benefits of IB specially focusing on convenience and availability.

Facilitating condition is statistically proven that it is an important variable on intention to IB usage. Therefore, NSB should invest on improving the operational convenience and simplicity of their IB platforms to ensure their services in a more user-friendly manner. Furthermore, the banks should educate their customers on how to do their day to day banking activities through the IB service and make the service more familiar to the customers. When customer visits the branch, it will be beneficial if the staff members are able to convince and educate them on how to use IB service (Alalwan et al., 2014). Thereby, the bank will be able to resurrect customer hesitancy towards using Internet banking service due to lack of knowledge on how it works.

Price value of IB service is affecting for the intention to use IB in NSB. To have rapid IB usage penetration levels among its customers, NSB should devise an effective pricing strategy on their products. For example, the bank should promote discounts or wave off service charges to online utility bill payments. Thereby, the bank will be able to increase customer on-boarding to the IB services.

According to the survey findings, habit has been the most important factor of determining Intention to use IB services. To increase the repetition of the user behavior bank should be a constant reminder to online users via regular SMS or email messages. Thereby, bank will be able to be in the mind of the user and will be able to increase frequency of using.

Finally, Trust has been playing pivotal role affecting on intention to use IB services in NSB. Therefore, it is necessary to persuade customers that, using IB is trustworthy and less risky. Presently, NSB has obtained necessary security certificates on its website and guarantees to provide a safe and secure internet banking experience. Nevertheless, this can be improved upon by providing enough knowledge and information on how to use IB properly and safely along with improving their websites' design (Gefen et al., 2003). Furthermore, it is necessary to facilitate structural assurances such as legal and regulatory compliance, warranty documents, etc. Thereby, it will ease the customers' apprehension regarding the probability of fraud, hacking, uncertainties that are related with Internet banking.

5.2. Limitations and Future Research

This study was conducted in the context of Sri Lanka targeting subset of IB users of Colombo City from the NSB which will hinder the generalizability. Colombo city is the technologically most advanced area in the country. Further, by narrow downing the sample, the sample size was limited to 450 individual respondents without considering business entities. Hence, the

findings may not apply to the entirety of NSB nor financial sector of Sri Lanka, as there is a vast disparity in technological advancement when compared to Colombo city to other areas of the country.

Further, the usage of IB in Sri Lanka is showing exponential growth over the last few years, hence it may be too early to conclude in this regard. Thus, a longitudinal study could circumvent this problem and the extent of how much the effect of the proposed factors could be stable or change over time.

Finally, this report doesn't consider regulatory and security aspect of the IB which create significant impact on customer perception. On the security aspect, it is necessary to identify key challenges posed by the spread of information and communication technologies and new opportunities arise with the resulting digital transformation. On the regulatory aspect, it will be worthwhile to identify government policies and public investments that are needed to bridge the various digital divides and reap digital dividends.

With the limitations that were identified several beneficial areas for future research remain to be explored and some of those areas are as follows. Future research may apply or replicate this research in other electronic banking services, such as mobile banking, ATMs, telephone banking, and credit cards. This would be valuable in establishing the external validity of model.

Further, this study is about human behavior, which is subjected to change during the time passed by. Also, this data collection in this study was carried out by using closed ended questions which may not be able to capture the full response of the participant. Therefore, it will be beneficial to conduct longitudinal study to gain valuable inside into the behavioral intention of the online users.

This research was conducted using UTAUT model, which is one of the technology acceptance models. Therefore, it will be interesting for future research to test and explore different constructs from other technology acceptance models to test in the Sri Lankan context. Another area for Future research could also be conducted to expand the research model by including additional factors such as regulatory and security aspects. Finally, the sample size could be made greater by covering a substantial area of Sri Lanka which will help to generalize the research findings.

References

Aboobucker, I., & Bao, Y. (2018). What obstruct customer acceptance of internet banking? Security and privacy, risk, turst and website usability and the role of moderators. *The Journal of High Technology Management Research, 29*(1), 109-123.

AbuShanab, E., & Pearson, J. M. (2007). Internet banking in Jordan: The unified theory of acceptance and use of technology (UTAUT) perspective. *Journal of Systems and information Technology*, *9*(1), 78-97.

ADB. (2009). Why was Japan Hit So Hard by the Global Financial Crisis? Asian Development Bank.

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes, 50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Prentice-Hall.

Alwan, H. A., & Al-Zu bi, A. I. (2016). Determinants of Internet Banking Adoption Among Customers of Commercial Banks; An Empirical Study in th Jordanina Bankin Sector. *International Journal of Business Management, 11(3)*, 95-104.

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Algharabat, R. (2018). Examining factors influencing Jordanian customers' intentions and adoption of internet banking: Extending UTAUT2 with risk. *Journal of Retailing and Consumer Services*, *40*, 125-138.

Arner, D. W., Barberis, J. N., & Buckley, R. P. (2016). FinTech, RegTech and the Reconceptualization of Financial Regulation. Northwestern Journal of International Law & Business, Forthcoming, 51.

Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, *50*, 418-430.

Berger, A. (2003). The Economic Effects of Techonological Progress: Evidence from the Banking Industry. *Journal of Money, Credit and Banking, 35*(2), 141-176.

Boateng, H., Dorson, T. A., Adam, D. R., & Okoe, A. F. (2016). Assessing the determinants of internet banking adoption intentions: A social cognitive theory perspective. *Computer in Human Behavior, 65*, 468-478.

Bradley, L., & Steward, K. (2002). A Delphi study of the drivers and inhibitors of Internet Banking. *International Journal of Bank Marketing, 20*(6), 250-260.

Central Bank of Sri Lanka. (2017). 2017 Annual Report. Colombo.

Chaouali, W., Yahia, I. B., & Souiden, N. (2016). The interplay of counter-conformity motivation, social influence, and trust in customers' intention to adopt Internet banking services: The case of an emerging country. Journal of Retailing and Consumer Services, 28, 209-218.

Crittenden, A. B., Crittenden, V. L., & Crittenden, W. F. (2019). The Digitalization Triumvirate: How incumbents survive. *Business Horizons, 62*(2), 259-266.

Cudjoe, A. G., Anim, P. A., & Nyanyofio, J. G. (2015). Determinants of Mobile Banking Adoptionin the Ghanaian Banking Industry: A Case of Access Bank Ghana Limited. *Journal of Computer and Communications*, 1-19.

Curran, J. M., & Meuter, M. L. (2007). Encouraging Existing Customers to Switch to Self-Service Technologies: Put a Little Fun in their lives. *Journal of Marketing Theory and Practice, 15*(4), 283-298.

Davis, F. D. (1989, September). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly, 13*(3), 319-340.

Davis, F. D., Bagozzi, P. R., & Warshaw, P. R. (1992). Extrinsic and Intrinsic Motivation to Usec Computers in the Workplace. *Journal of Applied Social Psychology, 22*(14), 1111-1132.

Dwivedi, Y. K., Tamilmani, K., William, M. D., & Lal, B. (2014). Adoption of m-commerce : examining factors affecting intention and behaviourof Indian consumers. *International Journal of Indian Culture and Business Management, 8*(3), 345-360.

EY Global. (2016). The upside of Disruption - Megatrends shaping 2016 and beyond.

Foon, Y. S., & Fah, B. C. Y. (2011). Internet banking adoption in Kuala Lumpur: an application of UTAUT model. *International Journal of Business and Management*, *6*(4), 161.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly, 27*(1), 51-90.

Gopalakrishnan, S., Wischnevsky, J. D., & Damanpour, F. (2003). A multilevel analysis of factors influencing the adoption of internet banking. *IEEE Transactions on Engineering Management, 50*(4), 413-426.

Grimm, M., Harttgen, K., Klasen, S., & Misselhorn, M. (2010). Inequality in Human Development: An Empirical Assessment of 32 Countries. *Social Indicator Research, 97(2)*, 191-211.

Hamadi, C. (2010). The Impact of Quality of Online Banking on Customer Commitment. CIBIMA.

Kariyawasam, N. J., & Jayasiri, N. K. (2016). Awareness and usage of internet banking facilities in Sri Lanka. *International Journal of Scientific and Innovative Technology*, *6*(6), 173-190.

Hutchinson, D., & Warren, M. (2003). Security for internet banking: a framework. *Logistics information management*, *16*(1), 64-73.

Khater, A. H. O. (2016). *Customers' Acceptance of Internet Banking Service in Sudan by Using Unified Theory of Acceptance and Use of Technology (UTAUT) model* (Doctoral dissertation, Sudan University of Science and Technology).

Kotler, P. T., & Keller, K. L. (2016). *Marketing Management*. Pearson.

Kuisma, T., Laukkanen, T., & Hiltunen, M. (2007). Mapping the reasons for resistance to Internet Banking; a means-end approach. *International Journal of Infromation Management, 27*(2), 75-85.

Lee, M. C. (2009). Factors influancing the adoption of internet banking: an integration of TAM and TPB with percieved risk and perceived benefit. *Electronic Commerce Research and Application, 8*(3), 130-141.

Liao, S., Shao, Y. P., Wang, H., & Chen, A. (1999). The adoption of virtual banking: an emperical study. *International Journal of Infromation Management*, 63-74.

Mamode, N., Emmambokus, N., & Khan, N. A. (2011). Customer Adoption of Internet Banking in Mauritius. Global Business and Management Research: An International Journal, 2(2).

Martins, C., Oliveira, T., & Popovic, A. (2014). Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management, 34*, 1-13.

Munir, H., Runeson, P., & Wnuk, K. (2018). A theory of openness for software engineering tools in software organizations. *Information and Software Technology*, *97*, 26-45.

Murray, A., K. Skene, and K. Haynes. (2015). "The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context." *Journal of Business Ethics* 140: 369–380.

Nasri, W. (2011). Factors influancing the adoptionof internet banking in Tunisia. *International Journal of Information Management, 6*(8), 143-160.

Nor, K. M., & Pearson, J. M. (2015). The influence of trust on internet banking acceptance. *The Journal of Internet Banking and Commerce*, *2007*.

Omar, A., Sultan, N., Zaman, K., Bibi, N., Wajid, A., & Khan, K. (2011). Customer perception towards online banking services: Empirical evidence from Pakistan. *Journal of Internet Banking and Commerce*, *16*(2).

Popkova, E. (2014). New Propsects of Economic Growth in Context of Underdevelopment Whirlpools Phenomena. *Applied Econometircs and International Development*(14(1)), 5-25.

Premarathne, W., & Gunathilake, M. M. (2016). Consumer Adoption of Internaet Banking in Sri Lanka. International Jouranl of Advanced Research, 4(11), 758-765.

Priyangika, R. D., Perera, M. S., & Rajapakshe, D. (2017). An Emperical Investigation on Customer Attitude and Intention Towards Internet Banking: A Case of Licensed Commerical banks in Colombo District, Sri Lanka. *13th International Conference on Business Management (ICBM) 2016*. Colombo: University of Sri Jayawardenapura.

Rahi, S., & Abd. Ghani, M. (2019). Investigating the role of UTAUT and e-service quality in internet banking adoption setting. *The TQM Journal*, *31*(3), 491-506.

Rahi, S., Ghani, M., Alnaser, F., & Ngah, A. (2018). Investigating the role of unified theory of acceptance and use of technology (UTAUT) in internet banking adoption context. *Management Science Letters*, *8*(3), 173-186.

Rahmath, S., & Hema, D. (2011). Internet Banking adoption in an emerging economy: International Arab journal of e. *Technology*, *2*(1), 250-289.

Reis, Z. A., Gulsecen, S., & Bayrakdar, B. (2011). To develop an eductaion system for secure internet banking: GIBES. *Procedia Computer Science, 3*, 1333-1340.

Rogers, E. M. (1985). The diffusion of home computers among households in Silicon Valley. *Marriage & Family Review*, *8*(1-2), 89-101.

Roy, S. K., Kesharwani, A., & Bisht, S. S. (2012). The impact of trust and perceived risk on internet banking adoption in India. International Journal of Bank Marketing.

Safeena, R., Date, H., & Kammani, A. (2011). Internet Banking Adoption in an Emerging Economy: Indian Consumer's Perspective. International Arab Journal of e-Techonology, 2(1), 56-75.

Samarasinghe, R. (2012). The Influence of Cultural Values and Environmental Attitudes on Green Consumer Behaviour. *International Journal of Behavioural Science, 7(1)*, 83-98.

Shankar, V., Venkatesh, A., Hofacker, C., & Naik, P. (2010). Mobile Marketing in the Retailing Environment: Current Insights and Future Research Avenues. *Journal of Interactive marketing, 24*(2), 111-120.

Singhal, D., & Padhmanabhan, V. (2008). A Study on Customer Perception Towards Internet Banking: Identifying Major Contributing Factors. The Journal of Nepalese Business Studies, 1, 101-111.

Singh, N., & Keating, B. M. (2018). Hyper-localizing e-Commerce strategy: An emerging market perspective. In *Emerging Markets from a Multidisciplinary Perspective* (pp. 89-94). Springer, Cham.

Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International Journal of Research in Marketing, 12*(2), 137-155.

Toufaily, E., Daghfous, N., & Toffoli, R. (2009). The Adoption of "E-Banking" by Lebanese Banks. *IJESMA*, 65-91.

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science, 46*(2), 186-204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly, 27*(3), 425-478.

Venkatesh, V., Thong, J. Y., & Xin, X. (2012). Consumer Acceptance and Use of Information Technology: Extending The Unifined Theory of Acceptance and Use of Technology. *MIS Quarterly, 36*, 157-178.

Wang, Y. S., Wang, Y. M., Lin, H. H., & Tang, T. I. (2003). Determinants of user acceptance of Internet banking: an empirical study. *International journal of service industry management*, *14*(5), 501-519.

Weir, C. S., Douglas, G., Carruthers, M., & Jack, M. (2009). User perceptions of Security, Convenience and usability for ebanking authentication tokens. *Computer & Security, 28*(1-2), 47-62.

Wu, J.-H., & Wang, S.-C. (2005, July). What Drives mobile commerce?: An emperical evaluation of teh revised Technology Acceptance model. *Information & Management, 42*(5), 719-729.

Yuan, S., Liu, Y., Yao, T., & Liu, J. (2014, March 21). An investigation of users' continuance intention towards mobile banking in China. *SAGE Journal*.

Zahir, M., & Gharleghi, B. (2015). Adoption of internet banking in maldives, the most important determinants. *Asian Social Science*, *11*(2), 181-189.

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. Computers in human behavior, 26(4), 760-767.

Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2010). Business research methods (8th ed.): South Western, Cengage Learning.