

**FACTORS AFFECTING ONLINE BANKING CUSTOMER
SATISFACTION IN THE CASE OF LOCAL
COMMERCIAL BANKS IN SRI LANKA**

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Degree of Master of Business Administration in Information Technology

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The dissertation was submitted to the Department of Computer Science and Engineering of the University of Moratuwa in partial fulfilment of the requirement for the Degree of Master of Business Administration in Information Technology.

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DECLARATION

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ABSTRACT

Online banking has become an essential feature for a bank in today's world to allow customers to fulfil their banking needs without a physical visit to a branch. When all banks have introduced an online portal for their customers and customer adoption of online banking was higher, the competition was to retain the customer by providing a high level of satisfaction. This study discusses the factors that influence the customer satisfaction in online banking. The primary objective of this study is to identify the influential factors and the impact of those factors on customer satisfaction. The objectives of this study can be obtained by data collection using a structured questionnaire distributed among the selected sample and based on the responses the results can be derived.

The researcher identified seven factors influencing customer satisfaction based on previous studies conducted on the same field of study. The seven factors are Ease of Use, Privacy and Security, Technological Innovation, Perceived Usefulness, Perceived Value, Perceived Quality and Complaint Management. This study is based on quantitative methodology. Data collection was carried out by distributing a structured online questionnaire among 400 randomly selected respondents. The results were derived from 385 valid responses.

The results of this study reveal that in the Sri Lankan context, the most influential factors of customer satisfaction in online banking are Technological Innovation, Privacy and Security and Perceived Quality. While Ease of Use, Perceived Usefulness and Perceived Value have moderate influence on customer satisfaction Complaint Management has considerably low influence on customer satisfaction. In light of this finding, few recommendations are provided for online banking in Sri Lanka with the expectation of enhancing customer satisfaction by enhancing customer experience in online banking. Sri Lankan commercial banks need to seek new technological advancements to provide new functions for the online banking application apart from the generic functions such as bill payment and balance inquiry. With the growing concerns on privacy and security, the banks need to decide to publish their privacy and security policy regarding online banking and to make sure they use the latest security features. Moreover, the need of making all online services available on 24 hours and providing a mechanism to customers to

communicate with the bank online will enhance the customer satisfaction in online banking in the Sri Lankan context.

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LIST OF ABBREVIATIONS

CBSL	Central Bank of Sri Lanka
LCB	Licensed Commercial Bank
LSB	Licensed Specialized Bank
SMS	Short Message Service

Chapter 01

INTRODUCTION

1.1 Background

In the new digital age, people no longer seek new financial products and services by visiting a bank or by using a brochure, rather they would use their computer, or more easily mobile phones which bring the world to their fingertips. Though people are still mindful about the financial benefits offered by the banks, the busy lifestyle has forced them to look for a way of fulfilling their banking needs without a physical visit to the bank. With such requirement rising, the banks could not resist but move on to digitalizing in order to retain as well as expand their customer base.

Today banks around the world have adopted online banking and they are even in high competition in providing more attractive services through internet. Internet banking, also known as Online Banking or Web Banking is an e-payment system which enables the bank's customers to perform a range of financial transactions through a web portal provided by the bank. This portal is typically connected with the core banking system of the respective bank. In certain countries the internet banking concept has gone as far as virtual or direct banking where some banks rely completely on internet. These banks are called "online banks" where they maintain no physical branches. In this research, the researcher is focusing on "online banking services" offered by banks operating a physical branch network.

Online banking offers a range of services to its customers. Account balance inquiry, bill payment, fund transfers, opening new accounts and statement inquiry can be classified as basic services offered by almost all online banking services. The banks now-a-days tend to be innovative in online services they offer in order to create competitive advantage as millennials seek their financial needs through technological innovations. With the emerging trend of mobiles and tablets, the online banking services have extended to mobile banking where an app is introduced by the banks rather than using online banking web

application. Mobile banking has made the banking experience even more personal and secure.

Online or e-banking has been recognized as a convenient and efficient way of fulfilling personal banking needs 24/7 from any part of the world. On the other hand, online banking comes with certain risks. Uncertainty can be one risk depending on the situation. Unless we receive a confirmation email or SMS from the funds receiving account we cannot be certain that the fund transfer is successful. Sometimes due to system failures or network issues certain transactions may fail without the customer being notified. Secondly, a theft can take place if a third party receives the login credentials. Many security precautions have been taken by almost all online banking service providers but the risk remains. But when we compare the risk to the convenience, most customers believe the use of online banking services is worth the risk.

Central Bank of Sri Lanka has declared that 26 licensed commercial banks (LCBs) are registered by the end of June 2019. Table 1.1 shows the licensed commercial banks of Sri Lanka and the banks offer online banking facility are denoted with an asterisk (*).

1) Amana Bank *	10) Habib Bank *	19) Peoples' Bank *
2) Axis Bank *	11) Hatton National Bank *	20) Public Bank Berhad *
3) Bank of Ceylon *	12) ICICI Bank *	21) Sampath Bank *
4) Bank of China	13) Indian Bank *	22) Seylan Bank *
5) Cargills Bank *	14) Indian Overseas Bank *	23) Standard Chartered Bank *
6) Citibank	15) MCB Bank *	24) State Bank of India *
7) Commercial Bank *	16) National Development Bank *	25) Hongkong & Shanghai Banking Corp. Ltd *
8) Deutsche Bank	17) Nations Trust Bank *	26) Union Bank of Colombo *
9) DFCC Bank *	18) Pan Asia Bank *	

Table 1.1: LCBs of Sri Lanka offering Online Banking Facility (Source: CBSL website)

According to table 1.1 almost all licensed commercial banks offer online banking facility and that can be considered as a significant indicator customers' preference in online banking usage in Sri Lanka. In the current context the banks in Sri Lanka are at competition in offering innovative facilities for e-banking in order to attract millennials who always seek tech supportive services for their life styles. Apart from online banking, the banks offer not only mobile banking apps which support both android and iOS devices, but also newer concepts such as SMS banking.

1.2 Research Justification

Banks today are at a tipping point as the digital revolution has begun in Sri Lanka. With the typical competitions such as high interest rates and low lending rates, the banks are now competing to offer various innovative products to their customers via online banking in order to attract more tech seeking customers.

The banks are trying to attract younger crowd via online banking with the expectation of maintaining a long term, profitable relationship with the customer. But when introducing new online features and products the banks should keep more focus on customer satisfaction. If the customers are not aware of the features or if the feature is difficult to understand and operate, the use of online banking may decrease. Customer loyalty on online banking services is purely depended on the customer satisfaction. Previous researches have been done on online banking such as Popularity of E-banking (Jayasiri & Weerathunga, 2008) and Factors Affecting Online Banking Usage (Perera, M., 2013) but a research on customer satisfaction in online banking has not been done recently.

Therefore in this research researcher aims to find out although there are numerous online banking services from almost all banks, whether the customers are truly satisfied with them. Furthermore researcher expects to seek the factors which affects customer satisfaction in online banking. Even though online banking in Sri Lanka has started in 1999 with Commercial Bank and Sampath Bank joined in 2000, banks joined the group in the recent past. Therefore the researcher believes 2020 is an ideal year for a research on

customer satisfaction in online banking as internet users in Sri Lanka have had time to get some hands-on experience in online banking by the time of the research.

1.3 Problem Statement

Though almost all banks adapt to online banking, the success of the services depends on the number of customers who are taking the benefit out of it. Customers sometimes refrain from using online banking services due to various reasons. Unawareness of the services, lack of confidence in using online services, lack of IT experience are some reasons why customers refrain from using online banking. Therefore at first the banks should make their customers aware about the online banking services and encourage them to use the online services as it saves a huge sum of money to the bank. Certain banks in the world have closed down branches in certain areas as their online banking service has become highly successful.

Once the customers start using the services, customer satisfaction rises as the important aspect. Customers will continue to use the services only if the customer receives a positive experience with online banking service. The banks will have lower return from a huge investment if the customers are not willing to use the online banking service provided.

Online banking has two components: products and the delivery of products. When considering the products, they are almost the same in any online banking application. Products can be either savings accounts, term deposits, loans against deposits, current accounts or credit and debit cards. Even though there can be slight differences in the products, in most instances the products can be categorised under one of the categories stated above. But the delivery of products and services is where the online banking services play differently among the competitors. Therefore, the researcher is focusing on the delivery component of products and services of online banking in this research.

The researcher aims to identify the factors influencing customer satisfaction of the delivery of products and services in online banking and whether customer prefers to use online banking application or the equivalent mobile app. Customer satisfaction is a broader concept than customer adoption and usage. In this research the researcher focuses on the

satisfaction of online banking in the consumers' point of view and the researcher aims to identify the factors influencing online banking consumers' satisfaction based on consumer behaviour.

1.4 Research Questions

The following questions were derived based on Research Justification and Problem statement. The researcher aims to find out answers for these by conducting the research.

1. What are the factors affecting customer satisfaction in online banking?
2. What is the impact of influencing factors on online banking customer satisfaction?
3. What are the new strategies that can be employed to enhance customer satisfaction?

1.5 Research Objectives

Objectives of this research can be summed up as follows.

- a) Identify the influencing factors for customer satisfaction in online banking.
- b) Determine the impact of the influencing factors on online banking customer satisfaction.
- c) Propose new strategies to increase the online banking usage within Sri Lanka by providing higher customer satisfaction.

1.6 Nature of Results

This research is expected to pursue answers for the questions stated with the intention of achieving the objectives stated in section 1.5. The results of this research will provide certain recommendations for the banking industry in Sri Lanka and the parties directly and indirectly involved in developing online banking solutions. The findings of this research will be beneficial for the foreign banks who are willing to commence their business in Sri Lanka. In addition, the outcomes of this research will shed a light on future research in the same field of study.

1.7 Importance and Benefits of the Study

Sri Lankan banks have identified the importance of online banking solutions to attract tech-seeking youth and to provide customized solutions to customers the banks need to identify customer intentions and expectations in online banking. The outputs of this research will provide recommendations for the banking industry in Sri Lanka to understand the satisfying and dissatisfying factors of customers in order to enhance the quality of online banking services and increase their customer base using online banking. The findings of this research will be beneficial for the corporate management in Sri Lankan banks as well as foreign banks to understand the values and expectations of Sri Lankan customers.

1.8 Assumptions and Limitations

According to the Central Bank of Sri Lanka, there are 24 licensed commercial banks (where 13 out of them are overseas banks) and 6 licensed specialized banks in Sri Lanka. In a background study done on the banking sector of Sri Lanka the researcher has found that not all the licensed specialized banks in Sri Lanka are having an online banking portal. This study focuses on the consumer's point of view of customer satisfaction and the researcher is trying to extract only the factors influence online banking customer satisfaction based on Sri Lankan consumer's viewpoint of online banking. Therefore, the researcher has limited the study to 11 local licensed commercial banks in Sri Lanka.

Secondly the method of data collection is survey where the researcher distributed a questionnaire through email and social media to collect data. The questionnaire was mainly distributed to online banking users in Western Province, Southern Province and Central Province therefore the collected data may not represent the entire community in Sri Lanka.

The education background and understanding capabilities may not be same with all respondents therefore the researcher created the survey questionnaire in simple, easily understandable language in order to retrieve the honest opinions of the online banking customers as possible.

1.9 Chapter Summary

This chapter provides background information for the research and the history and the importance of the role played by online banking in the modern world. The chapter then describes the competition created in the banking industry in providing better services through online banking and the significance of customer satisfaction in online banking. Then the research questions and objectives of the study are described where the main objective is to identify the factors behind customer satisfaction in online banking in Sri Lanka. The chapter concludes highlighting the assumptions and the limitations of the study.

Chapter 02

LITERATURE REVIEW

2.1 Chapter Overview

This chapter includes the background study conducted for the research and consists of brief descriptions of Sri Lankan banking sector in the first section. The second and third sections describe the concepts of online banking and customer satisfaction. The fifth and sixth sections provide an introduction to some industry recognised standards regarding customer satisfaction measurement. The chapter concludes highlighting the findings of previous studies on factors influencing customer satisfaction in online banking.

2.2 Banking Industry in Sri Lanka

The Central Bank of Sri Lanka (CBSL) has declared that the financial system of Sri Lanka comprises of the Central Bank, Licensed Commercial Banks (LCBs), Licensed Specialised Banks (LSBs), Licensed Finance Companies (LFCs), Primary Dealers (PDs), Specialised Leasing Companies (SLCs), insurance companies, stock brokers, rural banks, market intermediaries, provident funds and pensions, credit and thrift co-operative societies, unit trusts, major financial markets (such as foreign exchange market, capital market, money market) and the financial infrastructure which is the legal framework related to the financial system and payments and settlements. CBSL states that the banking sector dominates the financial system of Sri Lanka and possesses the largest share of the total assets in the financial system. Compared to LSBs, LCBs are the most important category in the banking sector in terms of the extent of the services provided and the asset base. LCBs dominate the financial system with the highest market share of the entire financial system assets. Therefore the health of the Sri Lankan financial system depends largely on the soundness of the LCBs, especially six largest LCBs (CBSL, 2018).

According to CBSL (2018), there are 26 Licensed Commercial Banks and 6 Licensed Specialised Banks in Sri Lanka as at 31st December, 2019. Within the 26 Licensed

Commercial Banks, 13 are overseas banks. Table 2.1 shows a list of Licensed Commercial Banks in Sri Lanka. Overseas banks are denoted with an asterisk (*).

Amana Bank	Indian Overseas Bank *
Axis Bank *	MCB Bank *
Bank of Ceylon	National Development Bank
Bank of China *	Nations Trust Bank
Cargills Bank	Pan Asia Bank
Citibank *	People's Bank
Commercial Bank	Public Bank Berhad *
Deutsche Bank *	Sampath Bank
DFCC Bank	Seylan Bank
Habib Bank *	Standard Chartered Bank *
Hatton National Bank	State Bank of India *
ICICI Bank *	HSBC *
Indian Bank *	Union Bank

Table 2.1: Licensed Commercial Banks of Sri Lanka (source: CBSL)

2.3 The Concept of Online Banking

Online banking has been identified as one of the most profitable online applications in the last decade (Lee, 2009). Online banking is an online portal, where a specific bank's customers receive the benefit of using different banking facilities from balance inquiry to making investments. Thus the web site of a particular bank which offer only information without the possibility to perform any transaction cannot be categorised under the online banking category (Pikkarainen et al., 2004). According to Jun & Cai (2001), online banking has been used by the banks as a new market channel to offer different kinds of services to its customers 24 hours a day. Online banking has many differences from traditional banking but the main difference is the ability the online banking provides its customers to access the bank's information processing system from anywhere in the world (Pikkarainen et al., 2006). Online banking is efficient than other mediums in a bank's

perspective as banks always look forward to increasing their customer base (Alsajjan et al., 2006). Online banking has given a new appearance to the banking process by reducing human to human interaction and increasingly replacing traditional branch banking to internet-only banks (Ganguli & Roy, 2011).

At the introduction of online banking, it has been used as an information presentation medium where banks market their products and services online. But with the introduction of new secured e-transaction technologies and asynchronous technologies banks gradually started moving on to providing online transaction capabilities to their customers (Tan & Teo, 2000). The necessity of replacing the physical customer - bank relationship using the latest technology is the greatest challenge faced by the online banking services and the banks were successful in dealing with the particular challenge allowing the customers to enjoy almost all of their banking activities with minimum human intervention (Jayawardhena & Foley, 2000).

With online banking, bank customers receive the possibility of managing their banking activities from work place, home or anywhere in the world. Using online banking customers can perform a vast range of banking activities from balance inquiry to making investment (Pikkarainen et al., 2004). Many banks according to Jayawardhena & Foley (2000), provide basically the facility of balance inquiry, bill payments and fund transfers between accounts. On the other hand, Tan & Teo (2000) states that online banking permits its users to perform a vast range of transactions from balance inquiry and fund transfers to writing cheques. Moreover online banking has a remarkable impact on e-payments by providing a platform for e-commerce applications such as online auction, online shopping and internet stock trading (Lee, 2009).

A study on Asian online banking users shows even though many services are offered by online banking, most Asian customers only use online banking for very basic banking activities such as balance inquiry and bill payment. Only 6% of the Asian online banking users are using the online banking for trading securities, applying for credit cards and insurance. The most popular online banking function within Asian customers is online bill payment which accounts for 30% of the total Asian online banking customers Pasa & Sherman (2001). A study based on Iranian banks have suggested that most of the customers

tend to use the online banking services of Iranian government banks. The researchers suggest that it may be due to the trust and loyalty the Iranians have placed on the government banks. Furthermore the study has shown that online banking service usage in Iran is highly depend upon Iranians' level of education; online banking services have been used by a fairly educated crowd (Sadeghi & Hanzaee, 2010).

Pikkarainen et al. (2004) have highlighted two main reasons for the development and escalation of online banking. Cost saving in providing services to the customers rather than the traditional banking and the reduction of staff due to reduced branch network. Moreover, the benefit of increased customer base can also be a benefit as once the bank's services are distributed among multiple distribution channels such as mobile banking, internet banking and branch network, it would enable the bank to reach out to different demographic segments and provide a variety of target products to each group (Jayawardhena & Foley, 2000). According to Sadeghi & Hanzaee (2010), banks could save their operational and marketing costs considerably by reducing their branch network, downsizing the number of staff members and organizing marketing campaigns over the internet.

Throughout the past two decades, internet technologies have emerged in a way to increase the speed of data transfer which has provided the opportunity for the online banking applications to improve the speed of online transactions. This has inspired the banks to provide high quality products and services through online banking which would attract a lot more to the bank's customer base (Sadeghi & Hanzaee, 2010). In addition to the specified factors, freedom of place and time and cost savings for the customers have highly influenced the usage of online banking (Howcroft et al., 2002).

2.4 Customer Satisfaction

Customer satisfaction is the emotional state of customers who are using a product or service (Yoon, 2010). Customer satisfaction has been subjected to many e-commerce and marketing researches due to its positive effects on repurchase patterns and 'word-of-mouth' behaviours of customers (Yoon, 2010). According to Casaló, Flavián, and Guinalú (2008), the previous online banking interactions have had positive effects on customer loyalty.

Some scholars define customer satisfaction as a measure of performance of the products and services offered by an organization in relation to the requirements and the needs of the customers. Despite of whether the organization belongs to manufacturing or service sector or any other sector, customer satisfaction is considered a fundamental objective of all industries as it is one of the key factors behind revenue generation (Hill & Alexander, 2000).

A study conducted in the hotel industry has confirmed the positive relationship between customer satisfaction and loyalty and the power of extremely satisfied customers. The study showed that the hotel managers should seek for extremely satisfied customers for a better word-of-mouth and loyalty. It also revealed that a slight improvement in customer satisfaction can boost customer loyalty and apart from the repeat patronage of highly satisfied customers, the hotels can save the marketing expenses to a great deal with the marketing power of extremely satisfied customers (Bowen & Chen, 2001). Another study by Zahorik & Rust (1993) on banking industry's Customer Satisfaction and Retention, described on how to improve on customer satisfaction elements. According to the study in the service-oriented sectors, if the organisation has already established a strong customer service orientation and intend to improve on customer satisfaction they need to address specific remaining weaknesses by additional programs such as training programs for staff to be more responsive to customers, upgrading information systems and upgrading facilities which need expenditure of funds. On the other hand, an organisation with weak customer service orientation could rather benefit from the way they do the business than spending money on other improvements. For example, a slight change in procedures can have a high impact on customer experience with the services offered (Zahorik & Rust, 1993).

When turning to online banking, Yoon (2010) described that the information and the security of online banking are the two main role players for customer satisfaction. Providing additional information services such as personal financial planning in online banking can gain competitive advantage through customer satisfaction. Moreover the continuous investment on improving internet based technologies and security features will have a high impact on customer satisfaction (Yoon, 2010). According to Unyathanakorn

& Rompho (2014) online banking customer satisfaction and loyalty depends on the customer expectations towards the value and the quality offered by the online banking services. It further explains that the importance of service quality, ease of use and reasonable service charges can lead to customer satisfaction which will bring loyal customers to the online banking services (Unyathanakorn & Rompho, 2014). A study by Sadeghi & Hanzaee (2010) on online banking customer satisfaction of Iranian banks revealed that reliability, accuracy, image, impression of the bank and website design were the main underlying factors of customer satisfaction in Iran. It is interesting to note that the security of the online banking application had not been a significant factor of satisfaction among Iranian bank customers (Sadeghi & Hanzaee ,2010).

2.5 Measuring Online Banking Service Quality and Customer Satisfaction (SERVQUAL Model)

Initially Parasuraman et al. (1985) introduced a ten dimension model namely reliability, responsiveness, competence, access, courtesy, communication, credibility, security, tangibles and understanding the customer to access the service quality of a firm. As a result of extensive research on service quality, Parasuraman et al. (1988, 1991) introduced SERVQUAL to evaluate the service quality which refined all ten dimensions into a five dimension model. These dimensions are Reliability, Responsiveness, Empathy, Assurance and Tangibles (Parasuraman et al., 1988, 1991). According to Parasuraman et al. (1988) when the perceived service is higher than the customer's expectation, the customer tends to be satisfied with the service quality of the firm.

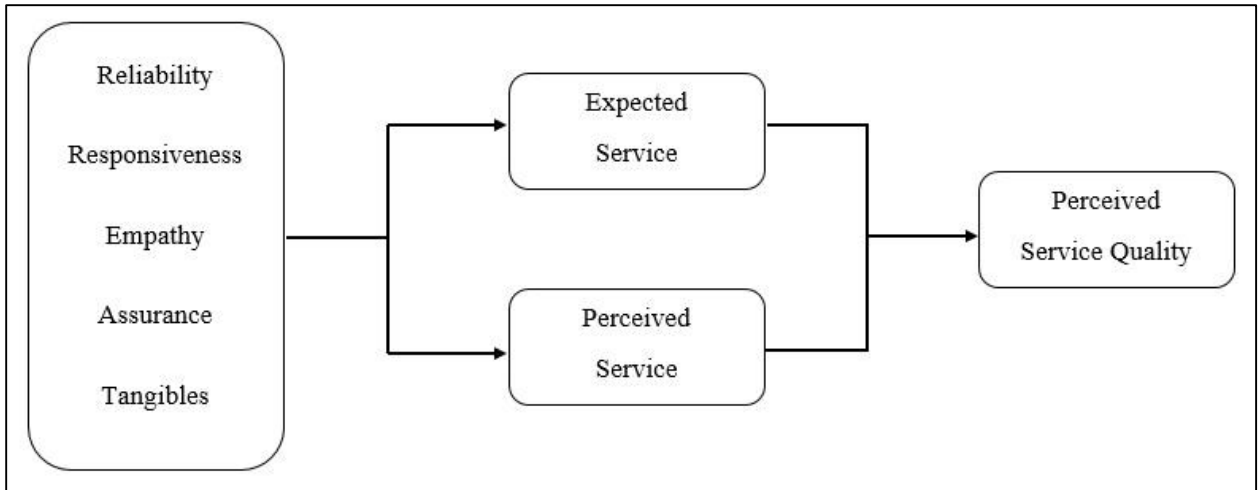


Figure 2.1: SERVQUAL Model (Source: Parasuraman et al. (1988))

Reliability is defined as the ability to perform a promised task accurately, dependably in a timely manner (Rod et al., 2009, Raza et al., 2015). Responsiveness refers to the ability to provide help and prompt service to a firm’s customers (Rod et al., 2009). With regards to the online banking concept responsiveness includes the ease of access and convenience of online banking services as well as the ability of the service provider to respond to any inquiries related to customers’ bank accounts (Raza et al., 2015). Empathy is defined as the ability of providing individualized attention to the customers (Rod et al., 2009) and when considering online banking services the ability of understanding the customer needs and provide for the best interests of the customers such as convenient transaction time (Raza et al., 2015). Assurance is identified as the civility and the knowledge of a firm’s employees with which they can build trust and confidence within their customers (Rod et al., 2009). Providing confidence for the customers on the privacy and the security measures of the service and minimizing erroneous transactions can be considered as Assurance within the online banking services (Raza et al., 2015). Tangibles are equipment, physical facilities, communication methods and staff while with online banking tangibles can be attractive website design, frequent updates and information and contents provided in the site (Raza et al., 2015).

Han & Baek (2004) suggested a four-factor model of SERVQUAL with Tangibles, Reliability, Responsiveness and Empathy which was proven to be an appropriate model for measuring service quality of online banking with related to customer satisfaction,

loyalty and customer retention. In this study the assurance dimension was dropped with the explanation that the online banking users do not interact with the Information System personal or banking staff but only be working with non-human interface of the bank. Therefore the researchers pointed out that the customers would not be able to accurately evaluate the “Assurance” dimension as they would only be interested in the features and security provided in the online banking service, which essentially would be covered with reliability and responsiveness.

Rod et al. (2009) in their study on online banking service quality and customer satisfaction in New Zealand have also dropped the “Assurance” dimension quoting the reasoning of Han & Baek (2004). The four-factor model was also proven in the study of Raza et al. (2015) and Ravichandran, Mani, Kumar & Prabhakaran (2010) where they have tested all five dimensions but found out that although the “Assurance” dimension had a positive impact on customer satisfaction the impact was insignificant compared to other four dimensions. Therefore these studies identified other four dimensions had a significant impact on customer satisfaction on online banking service quality.

With emerging web technologies Parasuraman, Zeithaml, & Malhotra (2005) introduced an E-SERVQUAL model to measure the e-SQ (service quality). Reliability, Responsiveness, Privacy, Efficiency, Fulfilment, Assurance and Empathy are the seven dimensions introduced in the E-SERVQUAL model. Many studies have proven the accuracy of the E-SERVQUAL model in the web context (Ariff et al. (2013), Zavareh et al. (2012) and Dennis et al. (2009)).

2.6 Measuring Customer Satisfaction with Customer Satisfaction Index models

Comprehensive measures of customer satisfaction introduced by United States, European Union or other country provide policy-makers and higher management with broad benchmarks of a firm’s performance from how a specific firm performs within the category, a specific industry in the economy and an economy against other economies (Johnson et al., 2001). A study comparing the customer satisfaction indices across countries and industries suggests that the customer satisfaction indicators can vary upon the economy

and the culture of the country and moreover the indicators can be industry specific. Customer satisfaction with services are comparatively lower compared with the customer satisfaction with physical products (Johnson, Herrmann & Gustafsson, 2002). Yeung et al. (2013) has pointed out that since the Sweden Customer Satisfaction Barometer (SCSB) was introduced in 1989, many countries have introduced customer satisfaction indices; some of them are listed below.

- American Customer Satisfaction Index (ACSI)
- European Customer Satisfaction Index (ECSI)
- Korean Customer Satisfaction Index (KCSI) by South Korea
- Norway Customer Satisfaction Barometer (NCSB)
- Singapore Customer Satisfaction Index (CSISG)
- Malaysian Customer Satisfaction Index (MCSI)
- Japanese Customer Satisfaction Index (JCSI)
- Taiwan Customer Satisfaction Index

According to Yeung et al. (2013), most of the above customer satisfaction indices are based on two most renowned indices, namely; American Customer Satisfaction Index (ACSI) and European Customer Satisfaction Index (ECSI). Moreover it is noteworthy that even though the customer satisfaction index depends upon the economy, no country with a similar economy as Sri Lankan economy has developed a customer satisfaction index. Therefore in this study the researcher will only discuss about ACSI and ECSI; the two main customer satisfaction indices.

2.6.1 American Customer Satisfaction Index (ACSI)

The American Customer Satisfaction Index (ACSI) was inspired by the success of the Swedish Customer Satisfaction Barometer (SCSB) introduced in 1989. ACSI model was developed based upon two theories; the exit-voice theory and the quality, satisfaction and performance (QSP) paradigm (Hsu, 2008). The quality of goods and services is measured by the ACSI as experienced by the consumer of the goods and services. The model covers

over 200 firms and has introduced as a representative of the entire economy (Fornell et al., 1996).

As shown in figure 2.2, the ACSI model has three antecedents namely; Perceived Quality, Perceived Value and Customer Expectations. Perceived Quality is considered the first determinant of the overall customer satisfaction which is the recent customer experience of the goods or services. Perceived Value being the second determinant, is the level of product quality received by the customer compared to the price paid. The third determinant is the customer's expectations on the product or service. All the three antecedents have positive and direct effect on Customer Satisfaction. While Customer Complaints or Complaint Behaviour has a negative effect on Customer Satisfaction, a satisfied customer will be a loyal customer. Therefore Customer Satisfaction has a strong positive effect on Customer Loyalty (Fornell et al., 1996, Johnson et al., 2001).

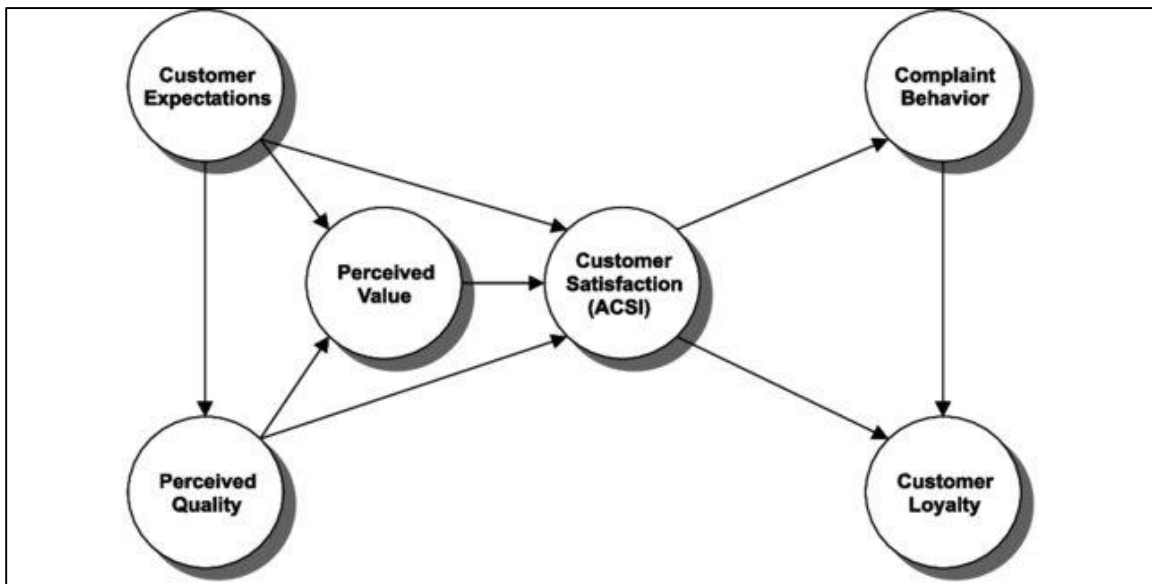


Figure 2.2: American Customer Satisfaction Index (ACSI) Model (Source: Johnson et al., 2001)

Unyathanakorn & Rompho (2014) have applied the ACSI model on the Thailand online banking services and have identified that the Customer Expectation has an indirect effect on online banking customer satisfaction through Perceived Value and Perceived Quality. Even though Customer Expectation determinant differs with the original ACSI model the

remaining model has proven to be mostly coincide with the original ACSI model. When Perceived Value and Perceived Quality lead to online banking customer satisfaction, Customer Loyalty has shown a high dependency on Customer Satisfaction. Customer Complaints also shows a significant relationship with Customer Loyalty and Customer Satisfaction even though the effect is negative.

Hsu (2008) has introduced an e-Customer Satisfaction model based on the ACSI. According to Hsu (2008) the antecedents of the model are e-Service Quality, Trust and Perceived Value which lead to e-Customer Satisfaction and Loyalty. Customer Complaints have a negative effect on both satisfaction and loyalty. Although Trust has a strong positive impacts on customer satisfaction, customer loyalty and perceived value, the study has identified that e-Service Quality is the most important factor that determines e-customer satisfaction.

2.6.2 European Customer Satisfaction Index (ECSI)

European Customer Satisfaction Index (ECSI) was evolved from the ACSI and has variations from the ACSI model. European Organisation for Quality (EOQ) and European Organisation for Quality Management (EOQM) jointly developed the ECSI model which is a measurement of customer satisfaction across industries (Grigoroudis & Siskos, 2004).

As shown in the Figure 2.3, ECSI contains of four antecedents; Perceived Quality, Perceived Value, Image and Customer Expectation with two consequences of satisfaction; Loyalty and Complaints. A study on ECSI in Lithuania and Poland has revealed that perceived quality, perceived value and customer expectation have strong positive effect on customer satisfaction while the brand image has a strong positive effect on both customer satisfaction and customer loyalty. But the effect of image on satisfaction is purely based on the culture of the country or the region. Moreover the study has identified that in both countries customer expectation has not shown a direct and significant impact on customer satisfaction (Biesok & Wyród-Wróbel, 2018).

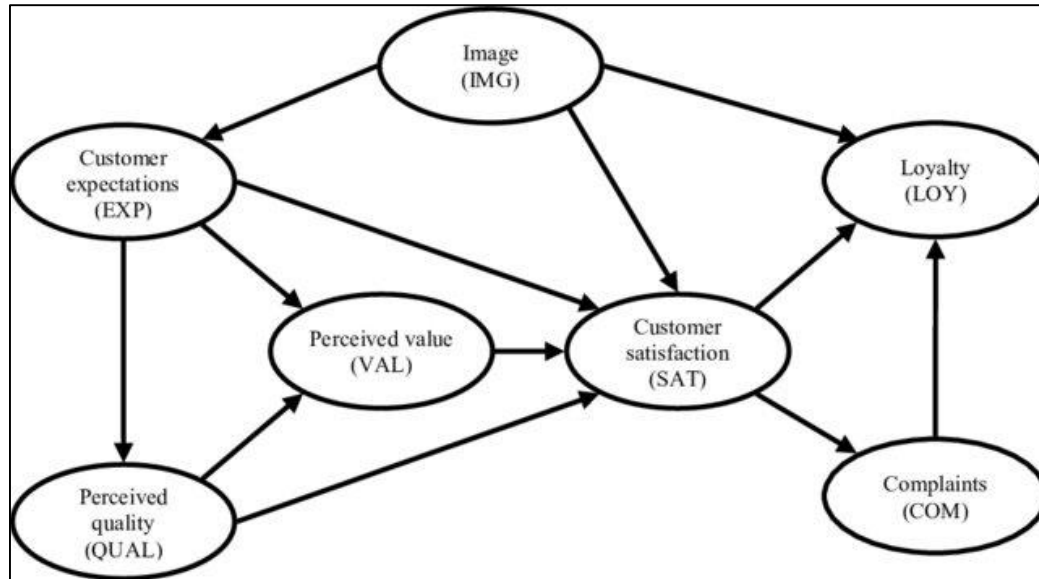


Figure 2.3: European Customer Satisfaction Index (Source: Cassel & Eklöf, 2001)

With time the ECSI model have had many subsequent elements added to the model by studies conducted in different industries. Haq (2012) has introduced two elements for the ECSI model in his study on the Auto-mobile industry in Pakistan. The two elements namely Trust and Customer Education and trust has proven to have a negative impact on customer loyalty in the Pakistani community while Customer education has a positive impact on both customer loyalty and satisfaction. Another study conducted by Ciavolino & Dahlgard (2007) on customer satisfaction modeling, has introduced two antecedents to the ECSI model as “Hardware” and “Software” and their results have proven that the introduced elements have strong positive impact on perceived value and indirect impact on customer satisfaction and loyalty. The study has also revealed customer expectation having a negative impact on customer loyalty while identifying “image” as having a very strong positive impact on customer satisfaction. Kaveh et al. (2012) has introduced a significantly alternative model for customer satisfaction based on a study on Iranian five-star hotels. Five antecedents namely; perceived value, image, technical dimension, functional dimension and price where the image also has a positive impact on perceived value unlike in the original ECSI model. The researchers have identified new consequences namely; trust and repurchase intention which have replaced the original ECSI consequences.

2.7 Factors Influencing Customer Satisfaction in Online Banking

Researchers have come up with a number of factors influencing online banking in their respective studies done in geographically and culturally divergent areas. The researcher has found out seven factors that influence customer satisfaction by preliminary literature review. Many studies including Pikkarainen et al. (2004), Dootson et al. (2016), Parasuraman et al. (2005), Howcroft et al. (2002), Unyathanakorn and Rompho (2014) and Zeithmal et al. (2000) have revealed the importance of the following variables in determining customer satisfaction which was further confirmed by the researcher using a background studies carried out on the Sri Lankan banking sector. This section will describe in detail the findings of similar studies regarding online banking adoption and customer satisfaction under the seven influencing factors.

2.7.1 Ease of Use

Davis (1989) has defined ease of use as “the degree to which a person believes that using a particular system would be free of effort”. According to the self-efficacy theory by Bandura (1982) ease of use was defined as one of the basic determinant of user behaviour. Sathye (1990) has also identified that the information technologies used must be easy to use in order for the online banking acceptance and adoption by customers. Davis, Bagozzi and Warshaw (1989) recognised ease of use as a significant determinant of people’s intention to use computers and computer applications. According to Musiime and Biyaki (2010) customers’ intention of accepting or adopting an online banking application would be decided by the ease of use of the application as ease of use will determine the customer satisfaction on the online banking application.

A study conducted by Davis (1989) has revealed that ease of use comes as the second most critical factor for accepting an online application as customers are ready to cope with some level of difficulty in using an application as long as the application’s functions are critically needed. But if customers perceive no usefulness in the online application, ease of use itself would not make customers use the application thus ease of use will not be an influential factor of customer satisfaction without the usefulness. According to Davis (1989) despite

of how much user friendly or easy to use an application is, it cannot make up for the lack of usefulness of the application. Pikkarainen et al. (2004) has also agreed with above stating “users learn about PEOU, its impact becomes instrumental”. But the study also suggests that the more a customer uses an easy to use online application, he gets the chance to uncover more benefits of the application. Hence Pikkarainen et al. (2004) suggest Perceived Usefulness (PU) can be achieved through Perceived Ease of Use (PEOU). The findings of Martins et al. (2014) on ease of use contradicts with the above two studies and they have also identified ease of use as an influence for customers’ intention to use the online banking application.

Ganguli & Roy (2011) have stated that ease of use of the technology channel will enhance the customer’s consumption experience positively and keep customers satisfied in using technology-based banking by boosting their confidence. Parasuraman et al. (2005) have mentioned few ways of achieving ease of use in an online application. According to the study ease of use is about designing the web site or customer interface and achieving ease of navigation, ease of understanding and use of functions, fast loading of the site, well organized site and information, allowing to complete a transaction with fast, minimum steps would make sure that the web site will perceived to be easy to use (Parasuraman et al., 2005).

Ease of use is established based on factors such as ease of navigation, “user friendliness” of web application and convenience and it directly affects the behavioural patterns of the application users (Hoffman and Novak 1996). Bart et al. (2005), Davis (1989) and Pikkarainen et al. (2004) coincide alongside the above study in defining that ease of use has a direct effect on the behavioural pattern of the customers. When a customer visits a website with high information content he/ she will perceive the site to be easy to use if the customer is able to reach to the desired location with one or two mouse clicks (Bart et al., 2005). According to literature ease of use is considered an influencing factor for customer satisfaction.

2.7.2 Privacy and Security

Zeithmal et al. (2000) defines privacy as protecting customers' personal information and security as safeguarding customers from the risk of swindle and financial loss. Parasuraman et al. (2005) defines privacy as securing customer's login details, behavioural details and bank account details and that privacy has a significant influence on the customers' evaluation of the entire web site. Furthermore the study of Howcroft et al. (2002) identified the most significant factor of dissatisfaction in UK online banking customers is the privacy concerns and the likelihood of errors.

Parasuraman et al. (2005) further states that perceptions on privacy has a strong influence on customers' overall quality and value perceptions and the loyalty expectations highlighting the importance of taking measures to reassure the customers through proper web site designing and ensuring secure communication in the online banking applications. Banks should make their customers aware on the level of security and privacy measures they have taken to ensure the privacy and security of the web site. The study on Pakistani online banking customers conducted by Raza et al. (2015) also agrees with the above statement emphasizing the importance of taking effective measures to ensure privacy and security to strengthen the trust of customers to make sure a long-term relationship with the online banking service. According to Zeithmal et al, (2000) banks should focus on making customers believe that the site highly values the protection of privacy of its customers and that the site is free from the risk of fraud and financial loss.

Martins et al. (2014) has revealed that out of all risk factors in online banking, the most notable is privacy risk. They have suggested few tips on how banks can get over with privacy and security concerns of online banking customers. According to them banks need to make sure that the online banking platforms are technically sound with proper security practices to minimise the risk for their users. Moreover they should take proactive actions to prevent users' concerns of invasion of privacy, computer crimes and make sure all transactions can be performed error free and have proper mechanisms to correct if any errors occur. Furthermore Martins et al. (2014) describes the importance of utilizing secure channels for transmission of information, use of proper encryption methods and the

significance of communicating to the users that online banking facility are taking such measures to protect their information and privacy.

Although Yousafzai, Pallister, and Foxall (2005) stated the importance of providing detailed, timely and clear privacy and security policies accessible to customers on online banking websites, Vaithilingam et al. (2013) emphasised that having a firm legal background alone is insufficient but banks need to enforce such standards by implementing those in the online banking platforms in order to gain the trust of the customers. Yousafzai et al. (2005) also pointed out the significance of banks guaranteeing to undertake the responsibility of any security breach or loss of money the customers tend to place more trustworthiness on the online banking platform.

Even though many studies have proven that privacy and security factor affects customer satisfaction and acceptance of online banking, certain studies have proven that the privacy and security factor is insignificant in user satisfaction, acceptance and adoption (Davis, 1989 and Pikkarainen et al., 2004). According to Zeithmal et al, (2000) privacy and security concerns will be less significant among frequent users of websites.

2.7.3 Technological Innovations

Banking sector has seen a rapid growth in information technology and understanding the effects of innovation for different customer groups is a crucial factor for banks (Patsiotis et al., 2012). Berry et al. (2010) point out that financial institutions could benefit from investing in interactive service innovations. Interactive service innovations are novel ways of offering new benefits to existing customers. Arts et al. (2011) emphasize on the importance of customers accepting and using the new technological innovations in order to receive the benefit of innovations by both customers and the organisation. Furthermore Arts et al. (2011) show that customers will accept the innovations only if they are low in complexity, high in relative advantage and provide a lower level of uncertainty to the users.

The study by Berry et al. (2010) suggests that innovative technologies such as mobile technologies affects the consumer preference and behaviour in a positive manner. Furthermore the study has identified the benefit of using innovative technologies for

companies to strengthen the trust and relationship of the customers. Dootson et al. (2016) discuss the perceptions of Australian bank customers on using social media to interact with their banks. According to the study, banks can adopt new technological innovations, such as service delivery through social media (Facebook and

Twitter) to provide a satisfactory service to customers. Interacting through social media has found to be dependent on an individual's perception of value in the service delivery.

Parasuraman (2000) in his study on technology readiness states that the inclination of customers in accepting new technology purely depends on the power of negative or positive feelings on their technology beliefs. Patsiotis et al. (2012) have identified that innovation resistance can occur due to functional aspects such as product value, usage and risk of usage, psychological aspects such as traditional norms and most importantly due to consumers inability to change. While some studies show the importance of technology innovation (Berry et al., 2010 and Dootson et al., 2016) certain studies (Mbama & Ezepe, 2018) has identified that technological innovation may not have a significant impact on customer satisfaction in online banking.

2.7.4 Perceived Usefulness

Perceived usefulness has extensively referred to in literature as one of the most significant attributes in user acceptance, usage and customer satisfaction. Bandura (1982) in his self-efficacy theory, has defined perceived usefulness as one of the basic determinants of user behaviour. Davis (1989) defined usefulness as “the degree to which a person believes that using a particular system would enhance his or her job performance”. Dootsan et al. (2016) defined perceived usefulness as the degree to which a person expects that using a specific system would be useful in achieving a specific goal.

In the technology acceptance model (TAM) designed by Davis (1989) he stated that users accept a particular system mainly due to the services the system performs for them. Moreover he stated that Perceived usefulness has a strong correlation with user acceptance and should not be ignored when designing and developing any system. According to Davis (1989) perceived usefulness is the key to use acceptance of a system. Pikkarainen et al.

(2004) have proved the same in their study stating that the main reason behind consumers' use of online banking is the benefits provided by online banking compared to other delivery channels. In a study on Pakistani online banking users Zahid, Mujtaba and Riaz (2010) have found that perceived usefulness is the only attribute to have a strong influence on the use of online banking where the other tested factors security and privacy and the quality of internet connection which showed no significant influence. Lee (2009) has revealed that perceived usefulness has both a direct and indirect influence on user behaviour in online systems.

In a study on online banking popularity among mature customers Mattila et al. (2003) emphasize that low awareness of usefulness of online banking services is a major reason for low popularity of online banking among mature customers. They further described that if the online banking application perceived to be more useful than other delivery channels customers tend to adopt to online banking and be satisfied with the services provided by it. Pikkarainen et al. (2004) also described that customers are attracted to particular online banking services due to the benefits it provides compared to the other delivery channels. Howcroft et al. (2002) indicate that the young UK online banking customers were attached to online banking due to the 24 hour service provided by the service, hence the young customers have identified the usefulness of the service. Liang et al. (2009) have identified that a higher perceived usefulness of an online service can be achieved with personalized services rather than non-personalized services. Therefore banks must make sure to offer personalized banking services to their online banking customers in order to achieve customer satisfaction.

2.7.5 Perceived Quality

Perceived Quality can be identified as the attempt to provide error-free transactions and allocating sufficient amount of resources to correct any error, if necessary (Martins et al., 2014). Yee and Faziharudean (2010) defined perceived quality as the ability of an online banking service to meet their customer expectations and the consistency of their service delivery. Zeithaml et al. (2000) emphasize that in order for banks to offer high level of service quality, the banks must first understand how customers perceive and evaluate the

online banking service. According to Unyathanakorn and Rompho (2014) perceived quality referred to as the ability of the online banking service to respond to customers' personal needs and provide error-free transactions.

The study conducted by Chea and Luo (2005) has revealed that perceived quality is a strong determinant of customer satisfaction and that the customers expect high quality from the websites with the marketing campaigns carried out by the site owners. Yoo and Donthu (2001) stated that customers of a specific site or service are the ultimate judges of the quality of the site or service. Furthermore they explained that when measuring quality we need to capture customers' honest opinions therefore we should not force a definition of quality on the consumers. According to Yee and Faziharudean (2010) perceived quality is crucial for gaining customers' trust which will eventually turn into loyalty. Using benevolence, integrity, predictability and competence the banks need to establish an online image for the online banking service in order for customers to perceive its quality. In their study on Thailand online banking customers Unyathanakorn and Rompho (2014) identified that by being more informative and creating customer awareness online banking services can gain high perceived quality which is a main determinant of customer satisfaction and loyalty.

2.7.6 Perceived Value

Perceived value can be defined as the overall benefits a customer receives relevant to the sacrifices he makes (Yee and Faziharudean, 2010). The study also pointed out that customers' overall perception of value depend upon sub components of value such as performance value, emotional value and value for money. Unyathanakorn and Rompho (2014) stated that the value offered to the customers such as charging acceptable transaction fees, allowing within the bank fund transfers free of charge and charging low fees for inter-bank fund transfers would significantly affect customer satisfaction. Mbama and Ezepeue (2018) identified that perceived value of customers is gained by cost and time saving and enjoyment provided by the online banking service. According to Zeithaml et al. (2000) perceived value determines by costs or fees of the site, convenience and the control the site provides its users over the functions of the site.

Dootsan et al. (2016) in their study revealed that once customers have identified the perceived value (ease, convenience, time and cost saving etc.) of using social media to interact with their bank, the adoption of social media banking will increase in vast numbers. Howcroft et al (2002) have identified that an improved level of service at lower or no cost increases the satisfaction of online banking customers in the UK. Parasuraman et al. (2005) emphasized the importance of perceived value in determining customer loyalty and adoption in online context. Moreover they revealed that customers' assessment of online service quality is strongly linked with perceived value. Zeithaml et al. (2000) state perceived value influence both positive and negative behavioural intentions of customers and customer loyalty. Unyathanakorn and Rompho (2014) also emphasise the importance of service quality in enhancing perceived value. According to them convenience and ease of fund transfers, a wider range of bill payment options and a guaranteed accuracy of transactions along with clear help options would make sure the perceived value of online banking service.

2.7.7 Complaint Management

Literature on complaint management in online banking is very rare. Hsu (2008) defined a complaint as a conflict between a customer and an organisation. The study emphasised on the importance of having an effective complaint handling mechanism and importance of fast response to customer queries in order to gain customer satisfaction and loyalty towards the online banking service. Moreover it explained that if the level of customer complaints and the level of customer loyalty are positive, the online banking service is doing a good job in converting their complaining customers into loyal customers. Zeithmal et al. (2000) also declared the importance of designing a proper complaint management interface when designing the website in order for dissatisfied customers to report a complaint as customers' negative feedback of the site would allow the site owners to improve the site.

Yoon (2010) stated that responsiveness is an important factor in determining online banking customer satisfaction and responsiveness acts a crucial role in both complaint management and customer support. Wolfinbarger and Gilly (2001) suggested that the initial step of a customer creating a strong bond with the site starts when he has an issue

with his order; the vendor receives a golden opportunity to create a loyal customer by resolving the order issue as early as possible and communicate with the customer till he is satisfied with his order. Such a situation referred to as “paradox of service recovery” where providing an effective and speedy solution to a complaint and creating a satisfied and loyal customer is far better than having no complaints about the site.

2.8 Chapter Summary

This chapter describes the online banking concept and customer satisfaction with relevant references. It further gives a brief introduction to the Sri Lankan banking sector, defines and identifies the Licenced Commercial Banks. The concept of online banking and its significance in the modern world is extensively described and the role of customer satisfaction in online banking is also described with suitable references. Moreover it talks about the different accepted ways of measuring customer satisfaction across industries such as SERVQUAL model which measures service quality and customer satisfaction, E-SERVQUAL model to measure e-service quality and e-customer satisfaction. Among different customer satisfaction models in different countries, most commonly talked-about models; American Customer Satisfaction Index (ACSI) model and European Customer Satisfaction Index (ECSI) model are described. Finally the seven factors (Ease of Use, Security & Privacy, Technology Innovation, Perceived Usefulness, Perceived Quality, Perceived Value and Complaint Management) are described which are identified in literature as highly influential for online banking customer satisfaction.

Chapter 03

METHODOLOGY

3.1 Chapter Overview

This chapter will describe the concepts behind the research design, research sampling, questionnaire design, data collection and analysis. The first two sections will describe the conceptual framework of the study, the research model and the hypotheses generation. Under the conceptual framework each independent variable will be described with the relevant literature. The next section will describe the population and sampling along with the method use for sampling. The third section will describe the questionnaire design and the chapter will conclude describing the data validation and analysis methods used in this study.

3.2 Conceptual Framework of the Study

Conceptual framework of the study has been developed by the information collected in the literature survey. Conceptual framework of the study is shown in figure 3.1. Seven factors were identified as the influencing factors for customer satisfaction according to figure 3.1 and hypothesis generation is as follows.

3.2.1 Ease of Use

According to Davis (1989), ease of use is "the degree to which a person believes that using a particular system would be free of effort. Sathye (1999) stated that the new technologies "must be ease to use" for the customers to accept the said technology. According to Musiime and Biyaki (2010) customers' intention of accepting or adopting an online banking application would be decided by the ease of use of the application as ease of use will determine the customer satisfaction on the online banking application.

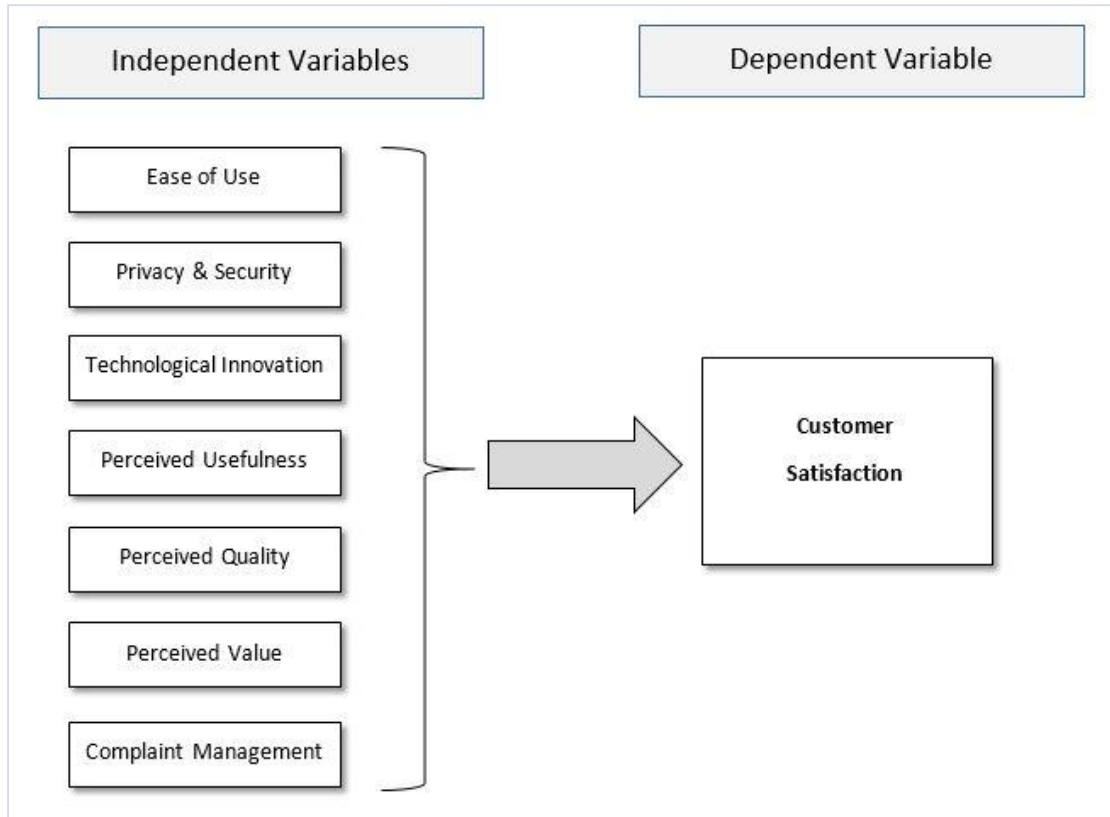


Figure 3.1: Conceptual Framework of the Study

3.2.2 Privacy and Security

Zeithmal et al. (2000) defines privacy as protecting customers' personal information and security as safeguarding customers from the risk of swindle and financial loss. According to Pikkarainen et al. (2004) online banking security is a more concerning factor affecting customer satisfaction. Martins et al. (2014) has revealed that out of all risk factors in online banking, the most notable is privacy risk. Jun and Palacios (2016) identified security as one of the key factors that affects service quality of mobile banking, where privacy and security has found to affect online banking usage in other countries (Akinici et al., 2003; Hanafizadeh et al., 2014).

3.2.3 Technological Innovation

In this study, Technology Innovation refers to using new technological advancements and technology-based innovations in order to provide a better consumer experience in online banking. Berry et al. (2010) point out that financial institutions could benefit from investing in interactive service innovations. Moreover they suggest that innovative technologies affect the consumer preference and behaviour in a positive manner. Arts et al. (2011) emphasize on the importance of customers accepting and using the new technological innovations in order to receive the benefit of innovations by both customers and the organization. Dootson et al. (2016) discuss the importance of innovative technologies on customer satisfaction in Australia in service delivery of banks.

3.2.4 Perceived Usefulness

Dootsan et al. (2016) defined perceived usefulness as the degree to which a person expects that using a specific system would be useful in achieving a specific goal. Davis (1989) perceived usefulness is the key to use acceptance of a system. Zahid, Mujtaba and Riaz (2010) have found that perceived usefulness is the only attribute to have a strong influence on the use of online banking. Lee (2009) has revealed that perceived usefulness has both a direct and indirect influence on user behaviour in online systems.

3.2.5 Perceived Quality

Yee and Faziharudean (2010) defined perceived quality as the ability of an online banking service to meet their customer expectations and the consistency of their service delivery. Chea and Luo (2005) has revealed that perceived quality is a strong determinant of customer satisfaction and that the customers expect high quality from the websites with the marketing campaigns carried out. Unyathanakorn and Rompho (2014) has also identified that perceived quality is a main determinant of customer satisfaction.²

3.2.6 Perceived Value

Mbama and Ezepue (2018) identified that perceived value of customers is gained by cost and time saving and enjoyment provided by the online banking service. Parasuraman et al. (2005) emphasized the importance of perceived value in determining customer loyalty and adoption. Many studies have identified the importance of perceived value on online banking customer satisfaction, customer loyalty and adoption (Yee and Faziharudean, 2010; Dootsan et al., 2016; Howcroft et al., 2002).

3.2.7 Complaint Management

Hsu (2008) defined a complaint as a conflict between a customer and an organisation and should be resolved as soon as possible. Studies have proved that complain management has an impact on online banking customer satisfaction, customer loyalty and adoption (Zeithmal et al., 2000; Yoon, 2010; Wolfinbarger and Gilly, 2001).

3.3 Research Model

Research model of the study is represented in figure 3.2 and it includes the seven (7) hypotheses in the study. The graphical model represents the relationships among the dependent and independent variables. Following hypotheses can be drawn from the model.

Let,

HA – Alternative Hypothesis

H0 – Null Hypothesis

Hypothesis 1 (H1)

H1_A – Ease of use has a positive impact on customer satisfaction in online banking.

H1₀ – Ease of use has no positive impact on customer satisfaction in online banking.

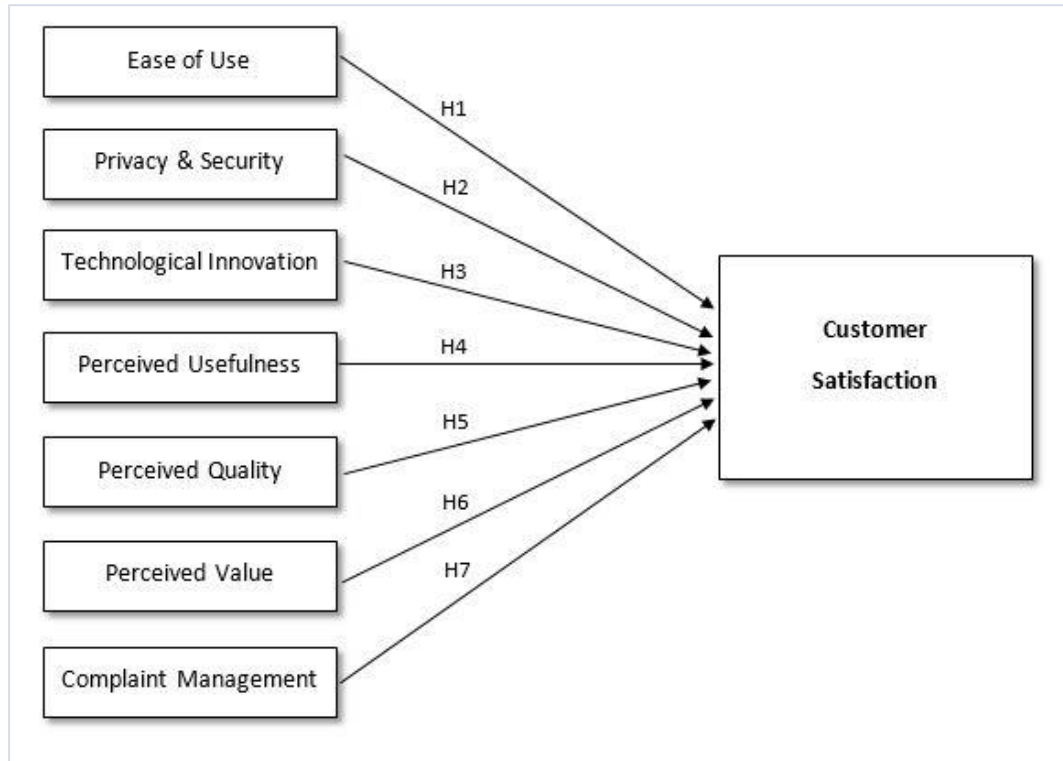


Figure 3.2: Research Model

Hypothesis 2 (H2)

H2_A – Privacy and Security has a positive impact on customer satisfaction in online banking.

H2₀ – Privacy and Security has no positive impact on customer satisfaction in online banking.

Hypothesis 3 (H3)

H3_A – Technological Innovation has a positive impact on customer satisfaction in online banking.

H3₀ – Technological Innovation has no positive impact on customer satisfaction in online banking.

Hypothesis 4 (H4)

H4_A – Perceived Usefulness has a positive impact on customer satisfaction in online banking.

H4₀ – Perceived Usefulness has no positive impact on customer satisfaction in online banking.

Hypothesis 5 (H5)

H5_A – Perceived Quality has a positive impact on customer satisfaction in online banking.

H5₀ – Perceived Quality has no positive impact on customer satisfaction in online banking.

Hypothesis 6 (H6)

H6_A – Perceived Value has a positive impact on customer satisfaction in online banking.

H6₀ – Perceived Value has no positive impact on customer satisfaction in online banking.

Hypothesis 7 (H7)

H7_A – Complaint Management has a positive impact on customer satisfaction in online banking.

H7₀ – Complaint Management has no positive impact on customer satisfaction in online banking.

3.4 Research Methodology

This study is based on the quantitative approach therefore questionnaires have been used for data collection in order to determine the factors affecting customer satisfaction in online banking in Sri Lanka. A Survey questionnaire has been created using the identified variables and a pilot study has been conducted among a selected group of respondents to

validate the questionnaire and modified based on the validation results and the feedback received before distributing the questionnaire among the sample.

Following steps have been carried out in order to achieve the objectives of the research mentioned in section 1.5 in the introduction chapter.

Step 1

A comprehensive literature survey has been carried out in order to identify the factors which influence customer satisfaction in online banking.

Step 2

A survey questionnaire has been created with the use of literature, validated the questionnaire and distributed among the research sample.

Step 3

Survey responses have been collected, validated and analysed using multiple analysis methods and derived conclusions in order to achieve the objectives of the research.

Step 4

Recommendations were derived based on the research findings in order to achieve the final objective of the research.

3.5 Questionnaire Design

Designing the questionnaire is one of the major steps in the research as the quality of the survey data depends on the quality of the questionnaire. When designing a questionnaire three facts should be kept in mind namely, the appropriate wordings, the measurement principle and the general appearance of the questions. The questionnaire used in this study consists of two sections, first section to collect demographic data and the second section to collect survey data.

The questionnaire has been designed based on the variables identified in the literature review. The data collection started during the time of the COVID – 19 pandemic in Sri Lanka and due to the lockdown the researcher was unable to reach respondents and distribute a physical questionnaire. Therefore researcher decided to create an online questionnaire to gather responses. The questionnaire was designed in English assuming that all the respondents are able to read, understand and respond in English. Demographic data section consists with seven questions and survey data section consists with twenty five (25) questions with 5-point Likert scale.

Variable	Item Count	Scale
Ease of Use	3	5-point Likert Scale
Privacy and Security	4	5-point Likert Scale
Technological Innovation	4	5-point Likert Scale
Perceived Usefulness	3	5-point Likert Scale
Perceived Quality	4	5-point Likert Scale
Perceived Value	3	5-point Likert Scale
Complaint Management	4	5-point Likert Scale

Table 3.1: Instrument Measures of Independent Variables

3.6 Unit of Analysis

3.6.1 Target Population

The target population of the research consists of people from different age groups, education levels, occupations as the target population is the online banking users of local commercial banks of Sri Lanka. A person with basic computer literacy who operates an account with a bank can receive the benefit of using the online banking application of the

bank with which they can fulfil their banking needs without making physical visits to the bank.

3.6.2 Sampling Method

Random sampling method was used in selecting the sample where the sample consists of respondents from different gender, age groups, education level and income levels. According to the CBSL Annual Report 2019, total online banking users in Sri Lanka by 2019 is 1.3 million which is 6.2% from the total population in the country. Based on the sample size selection rules by Roscoe(1975) the sample size was determined. By applying 95% confidence level with +/-5 margin of error to the population, the sample size was calculated as 384. The questionnaire has been distributed among 400 respondents and 385 valid responses were used for the analysis.

3.6.3 Survey Instruments

For data collection a structured questionnaire has been designed using the literature and distributed among the research sample. A questionnaire with a with a 5-point Likert scale was used to collect data. A Structured Questionnaire was the most appropriate method of data collection of data based on the reasons listed below.

- The importance of protecting the anonymity of the respondents
- The practical impossibility of conducting personal interviews with 384 respondents.
- The possibility of collecting the exact responses with the Likert scale.

3.7 Method of Data Collection and Analysis

The questionnaire designed as mentioned in section 3.6 was distributed among 20 respondents as a pilot study. With the feedback from the pilot study the researcher carried out few modifications to the questionnaire such as make some questions simpler in order

for the respondent to easily understand, allow respondents to go for multiple option selections when selecting the bank of which they are using online banking services.

After the pilot study the modified questionnaire was distributed among the research sample and 400 responses were received out of which 385 valid responses were used for analysis. Cronbach's alpha and Principal Component Analysis (PCA) were used to measure the reliability and validity of data. Data analysis was done using Pearson Correlation and Linear and Multiple Regression analysis. Responses were uploaded to SPSS statistical tool and the above statistical analyses were carried out.

3.8 Chapter Summary

This chapter discussed about the conceptual framework of the study and the hypotheses in the first two sections. The next section described the research methodology carried out in steps in order to achieve the research objectives. Third section described the research population, sampling method and the sample size chosen. The final section described the questionnaire design and the methods used for analysis and validation of the survey data.

Chapter 04

DATA ANALYSIS

4.1 Chapter Overview

Data analysis chapter will analyse the gathered survey data in order to measure the validity, reliability of data as well as whether the conceptual model is valid and the selected independent variables affect the dependent variable and how strong the relationship between independent and dependent variables. The first section will describe the demographic analysis of the research which is crucial in order to verify the sample against the population. The next section will describe the reliability and validity analysis of the survey data in order to measure the reliability and validity. Cronbach's Alpha and Principal Component Analysis (PCA) are used to analyse the reliability and validity respectively. The third section will describe in detail the statistical analysis of the study in order to identify the statistical significance of the relationships among the dependent and independent variables and to measure the validity and significance of the entire conceptual model. Correlation Analysis and Regression Analysis (Linear and Multiple) will be used as statistical analysis.

4.2 Demographic Analysis of Research Sample

The demographic analysis of research sample is crucial in order to verify whether the research sample is a true representation of the population as well as to understand the broad characteristics of the population. The researcher was able to collect 400 responses from different age groups, gender and education levels through an online survey distributed through emails and social media. Among the responses 15 responses were found to be invalid and after data cleansing 385 responses were used for the analysis.

4.2.1 Online Banking Users by Age

According to Figure 4.1 which represents the respondents by their age group, it is visible that most of the respondents are from the “19-30 years” group which is 51% from the total respondents (196 respondents) and the second highest respondents are from “31-45 years” group which is 36% from the total respondents (139 respondents). The respondents from “46-59 years” group are only 9% of the total respondents (35 respondents). The researcher has not received a single response from an online banking user who is above 60 years. When considering the Sri Lankan context this can be considered valid as Sri Lankans above 60 years of age tend to be technology averse. But not having a single response from a respondent above 60 years does not guarantee that there cannot be online banking users who are above 60 years but that the incident being very rare.

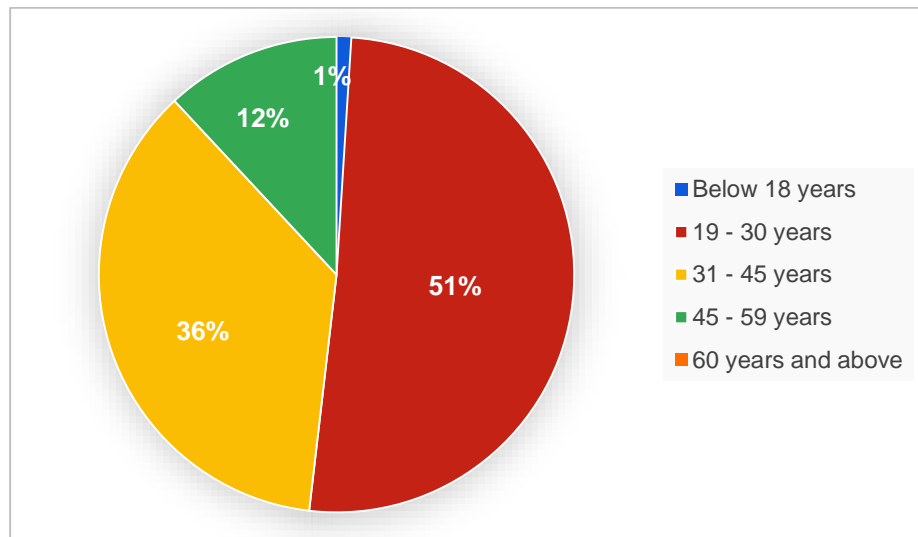


Figure 4.1: Online Banking Users by Age (Source: Survey Data)

This pie chart reveals that the survey data has been collected from almost all different age groups and that the selected sample represents the population. 1% of the respondents are below 18 years of age who can be considered as customers of “teen accounts” offered by banks. The respondents of age group below 18 years is less may be because even though they possess a smart phone and technology savvy they do not operate accounts as most of

them are not earning as they have not yet even completed their school education. It explains the lower usage of online banking in that age group though they are technology savvy. Figure 4.1 shows that the usage of online banking in Sri Lanka is popular among the youth. 87% of the total respondents are between 19 to 45 years of age. This scenario can be explained by the technology use of Sri Lanka as the middle-aged and elderly population of Sri Lanka are mostly technology averse while the young generation who are born and bred with technology are more likely to use technology than traditional ways in their everyday life. Therefore when considering online banking user satisfaction the banks need to focus more on the preferences of the youth in Sri Lanka as they will be the ultimate customers of online banking applications.

4.2.2 Online Banking Users by Gender

Figure 4.2 represents the responses by their gender and it shows that the 51% of the total respondents are male and 49% are female. This analysis reveals that the research sample consists of both male and female customers from the population. The banks need to focus on the needs of both male and female online banking customers.

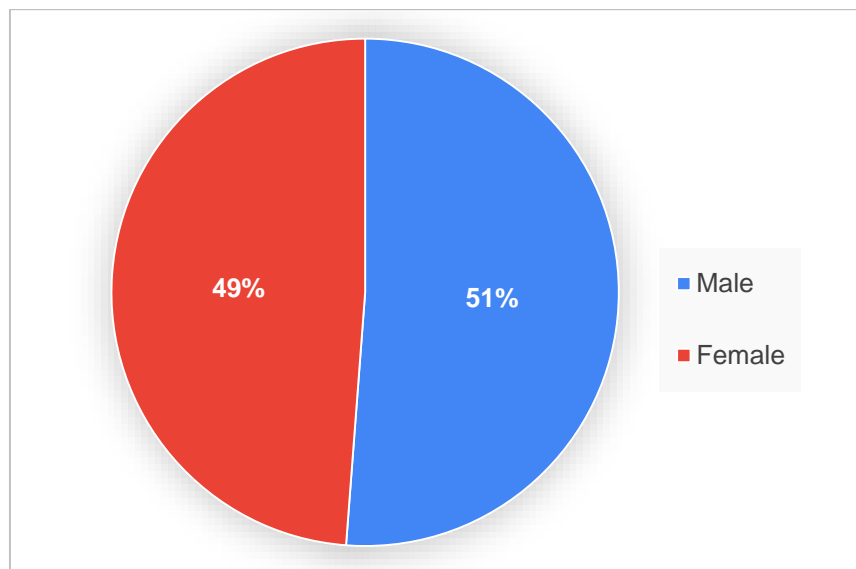


Figure 4.2: Online Banking Users by Gender (Source: Survey Data)

4.2.3 Online Banking Users by Level of Education

Figure 4.3 denotes the education level of the respondents. 38% of the total respondents have a degree and 26% have completed their postgraduate studies while 9% of the total respondents are PhD holders. 17% of the respondents have completed a diploma and 10% of the respondents have completed their Advanced Level examination. 1% of the total respondents have only completed their Ordinary Level examination and those respondents are below 18 years of age. Instead of that 1%, all respondents have at least completed their Advanced Level examination.

The sample has represented all levels of education and this analysis denotes that an online banking user need to have some level of education in order to operate the application but people from all education levels use online banking to fulfil their banking needs. Basic English literacy and a fair level of understanding of the functionality of the devices and the software is more than enough to use online banking applications.

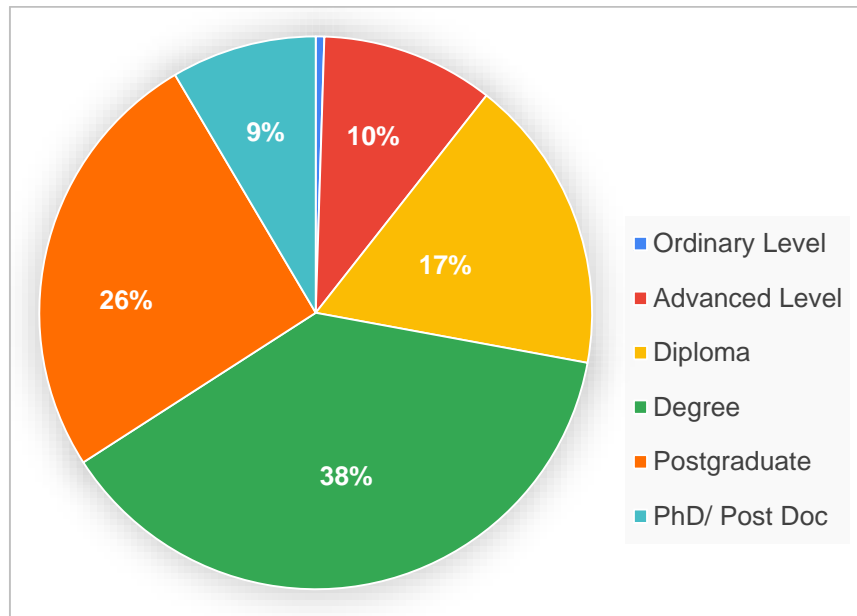


Figure 4.3: Online Banking Users by Level of Education (Source: Survey Data)

4.2.4 Online Banking Application Preference

This analysis shows the customers' preference in using online banking mobile application or online banking web application. According to table 4.1 the most number of respondents of the survey prefer to use the mobile application which accounts for a 44% of total respondents. While 30% of the total respondents prefer to use the web application, 26% of the total respondents prefer to use both web and mobile applications.

Preference	Number of Respondents	Percentage
Online Banking Mobile Application	169	44%
Online Banking Web Application	116	30%
Both Mobile and Web Applications	100	26%

Table 4.2: Online Banking Application Preference (Source: Survey Data)

The results in section 4.1 might have had an influence on the results of this section as 87% of the total respondents are in their youth and the youth prefer to use their mobile devices to fulfil their banking needs even without bothering to browse for a web application using their personal computers or even mobile devices.

4.2.5 Online Banking Usage Pattern

Figure 4.4 describes the usage patterns of online banking in Sri Lanka. According to the pie chart, 50% of the total respondents use online banking application whenever they required while 14% use the application daily. 27% of the total respondents use the application weekly while 9% of the respondents use the application only once a month.

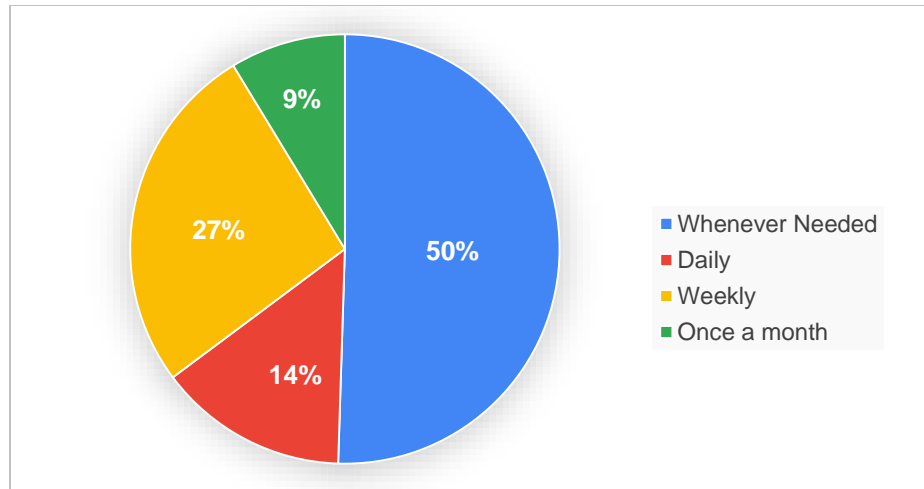


Figure 4.4: Online Banking Usage Patterns (Source: Survey Data)

4.2.6 Purposes of using Online Banking

According to the table 4.2 higher number of online banking users from the sample, perform Fund Transfers, Balance Inquiry and Bill Payment through their online banking application. Those are the most basic functions of online banking. On the other hand 46% of the total respondents use online banking for managing their credit cards while 22% use the account/ term deposit opening functions where 4% of the respondents open and manage their loans with online banking.

Purpose	Number of Respondents	Percentage
Fund Transfers	316	82%
Balance Inquiry	312	81%
Bill Payment	308	80%
Manage Credit Cards	177	46%
Open an account/ Term deposit	85	22%
Manage Standing Orders	81	21%
Open / Manage Loans	15	4%
Web Cards	4	1%

Table 4.1: Demographic of the Sample (Source: Survey Data)

4.2.7 Usage of Online Banking by Banks in Sri Lanka

Table 4.3 demonstrates the usage of online banking by banks in Sri Lanka. It should be noted that in the survey the respondents were allowed to choose more than one bank as most people are customers of more than one bank. According to the table it is visible that highest number of respondents are customers of Sampath and Commercial Banks while the two largest government commercial banks namely; Bank of Ceylon and People’s Bank are next. It should also be noted that HSBC being an overseas bank has more customers than NDB, Seylan, DFCC and Pan Asia Bank which are all local commercial banks in Sri Lanka. The table 4.1 describes that the survey has covered all local commercial banks as well as one overseas commercial bank therefore the sample can be considered as a valid representation of the population.

Bank	Number of Respondents	Percentage
Sampath Bank	230	60%
Commercial Bank	204	53%
Bank of Ceylon (BOC)	158	41%
People’s Bank	124	32%
Nations Trust Bank (NTB)	51	13%
Hatton National Bank (HNB)	45	12%
HSBC	39	10%
National Development Bank (NDB)	36	9.3%
Seylan Bank	28	7.2%
DFCC Bank	25	6.4%
Pan Asia Bank	12	3.1%

Table 4.3: Usage of Online Banking by banks in Sri Lanka (Source: Survey Data)

Results of this analysis is directly influenced by the customer bases of the each bank except for the two government commercial banks; BOC and People’s Bank. Even though the two government owned banks are having the largest customer bases, BOC and Peoples’ Bank

digitalization was far more recent than many privately owned commercial banks and they cater for a large elderly customer base. This explains their far lesser use of online banking but in the mean time they have organised huge promotional campaigns to attract more customers to use their online services.

4.3 Reliability and Validity Analysis

4.3.1 Reliability Analysis

Cronbach’s alpha is the most popular and commonly used measure of internal consistency (i.e. reliability) of a set of items. It is usually used in multiple question Likert scales to measure whether the surveys are reliable. In this research, a 5 point Likert scale has been used in the survey therefore Cronbach’s alpha is used to measure the internal consistency of all the factors in the research. Table 4.4 describes the alpha values for each factor and the total alpha value of all factors.

Factor	Alpha
Ease of Use	0.787
Privacy & Security	0.886
Technological Innovation	0.878
Perceived Usefulness	0.853
Perceived Quality	0.763
Perceived Value	0.858
Complaint Management	0.737
Total	0.935

Table 4.4: Reliability Analysis of all factors (Source: Survey Data)

According to the table 4.4 the first factor ‘Ease of Use’ which consists of three variables and has received an alpha value of 0.787 and ‘Privacy & Security’ has reported an alpha value of 0.886 which consists of four variables. “Technological Innovation” consists of

four variables and received an alpha value of 0.878 while “Perceived Usefulness” has received an alpha value of 0.853 which consists of three variables. The fifth factor “Perceived Quality” comprises five variables and has an alpha value of 0.763 where “Perceived Value: comprises three variables and received an alpha value of 0.858. Final factor “Complaint Management” has three variables and received an alpha value of 0.737. The total alpha value of all 26 variables is 0.935.

According to Pikkarainen et al. (2004) the acceptable value of Cronbach’s Alpha can vary between 0.5 and 0.95, where the acceptable alpha value of a scale is considered 0.7. According to table 4.4 the alpha value of all factors fall above 0.7, which indicates that all the questions in the survey are reliable to test the seven selected factors.

4.3.2 Validity Analysis

Validity (more precisely Construct Validity) refers to how much accurately the variables help the measurement of corresponding factors. As construct validity is also an important measure of a research data the researcher has decided to employ a validity analysis. In this research a factor analysis is used to determine whether the variables are associated with at most one factor from the seven selected factors. Principal Factor Analysis (PCA) was conducted using Varimax rotation with Kaiser Normalisation. The standard acceptance rate for construct validity is above 0.7.

Component	Questions	Validity
Ease of Use	Ability to perform banking transactions using my mobile phone/tablet from around the world makes me use online banking all times.	.722
	Ease of understanding and operating of functions gives me comfort in using online banking	.730
	Overall, I'm happy with the ease of use of my online banking application.	.741

Privacy & Security	I feel no uncertainty of losing my information and privacy every time I use online banking.	.704
	I am confident that my online banking app possess required security features to protect my information and privacy.	.776
	I believe my online banking will take necessary actions if in case of any breach of security.	.768
	Overall, I'm happy with the privacy and security provided by my online banking facility.	.779
Technological Innovation	I am confident that my online banking facility provides me with new features and functionality where a rare physical visit of bank is enough for me.	.719
	My online banking app improves constantly in providing new features and functionality.	.843
	I feel assured that my online banking uses latest technology to provide the users with the maximum security.	.783
	Overall, I'm happy with the technological innovations used by my online banking application.	.757
Perceived Usefulness	Online banking allows me to perform my banking transactions efficiently and effectively.	.751
	Online banking has increased my job productivity as it has limited my visits to the bank.	.717
	24 hour banking has made my interactions with the bank easier.	.785
Perceived Quality	My online banking app responds to my personal banking needs efficiently.	.706
	The smooth service provided by the online banking application is one of the reasons I tend to use it.	.697
	My online banking providing an error occasionally is not acceptable with me.	.701

	Overall, I'm happy with the service quality my online banking application.	.689
Perceived Value	When compared with the services offered, I believe the service fees/ transaction fees of online banking are appropriate.	.778
	When compared with the costs associate with a physical visit to the bank, I believe using online banking is appropriate.	.828
	Overall, I'm happy with the value added to my lifestyle by my online banking application.	.780
Complaint Management	I have made a complaint to the bank to express my dissatisfaction every time I'm dissatisfied with online banking.	.798
	The bank has positively responded to all my complaints regarding online banking.	.711
	My online banking facility has provided a feature to officially report a complaint.	.833
	Overall, I'm happy with the complaint management facility provided by my online banking application.	.757

Table 4.5: Component Matrix – Validity Analysis (Source: Survey Data)

According to the table 4.5 it is visible that almost all questions have received component analysis results above 0.7 (the standard acceptance rate of construct validity) except two questions in the Component “Perceived Quality”. Although the two questions have received results below 0.7 those two values are close to 0.7 therefore those two results can be considered acceptable. The results of the Principal Component Analysis carried out on all the variables in the survey have suggested that the questions are of higher construct validity.

4.4 Statistical Analysis

Statistical analysis is used to analyse a sample and extract meaningful relationships among the population. In this research correlation analysis and regression analysis is used to identify the relationships among independent and dependent variables and to test the hypothesis.

4.4.1 Correlation Analysis

Researcher has used Pearson Correlation in this study to identify the correlation between the dependent variable and the independent variables. The correlation analysis is shown in table 4.6.

		Satisfaction	Ease of Use	Privacy & Security	Technology Innovation	Perceived Usefulness	Perceived Quality	Perceived Value	Complaint Management
Satisfaction	Pearson Correlation	1	.620**	.691**	.784**	.685**	.745**	.604**	.487**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	N	384	384	384	384	384	384	384	384
Ease of Use	Pearson Correlation	.620**	1	.370**	.431**	.557**	.463**	.336**	.253**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	N	384	385	385	385	385	385	385	385
Privacy & Security	Pearson Correlation	.691**	.370**	1	.553**	.391**	.584**	.533**	.307**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000
	N	384	385	385	385	385	385	385	385
Technological Innovation	Pearson Correlation	.784**	.431**	.553**	1	.548**	.679**	.469**	.464**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000
	N	384	385	385	385	385	385	385	385
Perceived Usefulness	Pearson Correlation	.685**	.557**	.391**	.548**	1	.548**	.409**	.229**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000
	N	384	385	385	385	385	385	385	385
Perceived Quality	Pearson Correlation	.710**	.463**	.584**	.679**	.548**	1	.539**	.448**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000
	N	384	385	385	385	385	385	385	385
Perceived Value	Pearson Correlation	.604**	.336**	.533**	.469**	.409**	.539**	1	.306**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	384	385	385	385	385	385	385	385
Complaint Management	Pearson Correlation	.487**	.253**	.307**	.464**	.229**	.448**	.306**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	
	N	384	385	385	385	385	385	385	385

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

Table 4.6: Correlation Analysis (Source: Survey Data)

According to the correlation analysis table, it is visible that all variables (independent and dependent) are positively correlated with each other. But in the research, the researcher will mainly focus on the correlation between the independent variables with the dependent variable, "Satisfaction". Technological Innovation has a strong positive correlation with Satisfaction with $r = .784$. Perceived Quality and Satisfaction also shows a strong positive correlation is between with $r = .745$. Privacy and Security also shows a strong positive correlation with Satisfaction with $r = .691$ and Perceived Usefulness and Satisfaction show moderate positively correlated with $r = .685$. Moreover Ease of Use and Satisfaction show moderate positive correlated with $r = .620$ and Perceived Value shows a moderate positive correlation with Satisfaction with $r = .604$. Complaint Management and Satisfaction shows a weak positive correlation with $r = .487$ but as the r value is closer to $.5$, this correlation can also be acceptable as a moderate correlation.

Despite the independent variable-dependent variable correlation, certain independent variables are also show moderate correlations between each other. Among them only the most significant correlations are stated. Technological Innovation and Perceived Quality are positively correlated with $r = .679$. Privacy and Security and Perceived Quality are positively correlated with $r = .584$ while Technological Innovation and Privacy and Security are positively correlated with $r = .553$. Perceived Usefulness and Ease of Use are positively correlated with $r = .557$.

Apart from the correlation, the above analysis can determine the importance of each independent variable to the dependent variable. Based on the correlation results of this study it is visible that the most important independent variable to determine customer satisfaction (dependent variable) is Technological Innovation. The second most important independent variable in determining customer satisfaction is Perceived Quality. Privacy and Security is the third most important independent variable to customer satisfaction. Perceived Usefulness, Perceived Ease of Use and Perceived Value respectively show a considerable level of importance to the dependent variable while Complaint Management can be considered as the least important variable to customer satisfaction.

4.4.2 Linear Regression Analysis

Regression analysis was used in this study for hypothesis testing. Results of Linear Regression Analysis is shown in table 4.7. A positive β value and p value less than 0.05 will determine that the independent variable has a positive and significant impact on the dependent variable. A p value greater than 0.05 will indicate that there is no significant impact of the independent variable on the dependent variable. Alternative and null hypotheses of all seven (7) hypotheses identified in section 3.3 will be tested under this section.

H_0 – Null Hypothesis

H_A – Alternative Hypothesis

Coefficients ^a						
Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.004	.103		.036	.972
	Ease of Use	.163	.023	.182	7.102	.000
	Privacy & Security	.175	.021	.224	8.156	.000
	Tech Innovations	.226	.024	.291	9.381	.000
	Perceived Usefulness	.177	.024	.207	7.387	.000
	Perceived Quality	.111	.032	.112	3.467	.001
	Perceived Value	.075	.018	.111	4.251	.000
	Complaint Management	.085	.018	.111	4.653	.000

a. Dependent Variable: Customer Satisfaction

Table 4.7: Regression Analysis (Source: Survey Data)

4.4.2.1. Ease of Use

According to the conceptual framework of the study, the first hypothesis is the impact of Ease of Use on customer satisfaction. The alternative and null hypotheses are as follows.

H_{1A} – *Ease of Use has a positive impact on customer satisfaction in online banking.*

H_{10} – *Ease of Use has no positive impact on customer satisfaction in online banking.*

The results of the regression analysis according to table 4.7 revealed that Ease of Use has a significant and positive impact on customer satisfaction ($\beta = 0.182$, $p = 0.00$). With $p < 0.05$, the null hypothesis is rejected and the alternative hypothesis is accepted at 95% level of confidence.

4.4.2.2. Privacy and Security

The second hypothesis by referring to the conceptual framework is the impact of Privacy and Security on customer satisfaction. The alternative and null hypotheses are as follows.

H2_A – Privacy & Security has a positive impact on customer satisfaction in online banking.

H2₀ – Privacy & Security has no positive impact on customer satisfaction in online banking.

According to the table 4.7 the regression analysis results statistically claimed that Privacy and Security has a significant and positive impact on customer satisfaction ($\beta = 0.224$, $p = 0.00$). With $p < 0.05$, the null hypothesis is rejected and the alternative hypothesis is accepted at 95% level of confidence.

4.4.2.3. Technological Innovation

The third hypothesis is the impact of Technological Innovation on customer satisfaction in online banking. The alternative and null hypotheses are as follows.

H3_A – Technological Innovation has a positive impact on customer satisfaction in online banking.

H3₀ – Technological Innovation has no positive impact on customer satisfaction in online banking.

According to table 4.7 the results of the regression analysis statistically claimed that Technological Innovation has a positive and significant impact on customer satisfaction ($\beta = 0.291$, $p = 0.00$). With $p < 0.05$ the null hypothesis is rejected and the alternative hypothesis is accepted at 95% level of confidence.

4.4.2.4. Perceived Usefulness

The fourth hypothesis is the impact of Perceived Usefulness on customer satisfaction in online banking. The alternative and null hypotheses are stated below.

H4_A – Perceived Usefulness has a positive impact on customer satisfaction in online banking.

H4₀ – Perceived Usefulness has no positive impact on customer satisfaction in online banking.

The results of the regression analysis according to table 4.7 revealed that Perceived Usefulness has a significant and positive impact on customer satisfaction ($\beta = 0.207$, $p < 0.00$). With $p < 0.05$ the null hypothesis is rejected and the alternative hypothesis is accepted at 95% level of confidence.

4.4.2.5. Perceived Quality

The fifth hypothesis is the impact of Perceived Quality on customer satisfaction in online banking. The alternative and null hypotheses are as follows.

H5_A – Perceived Quality has a positive impact on customer satisfaction in online banking.

H5₀ – Perceived Quality has no positive impact on customer satisfaction in online banking.

According to table 4.7 the results of the regression analysis statistically claimed that Perceived Quality has a positive and significant impact on customer satisfaction ($\beta = 0.112$, $p = 0.001$). With $p < 0.05$, the null hypothesis is rejected and the alternative hypothesis is accepted at 95% level of confidence.

4.4.2.6. Perceived Value

The sixth hypothesis by referring to the conceptual framework is the impact of Perceived Value on customer satisfaction. The alternative and null hypotheses are stated below.

H6_A – Perceived Value has a positive impact on customer satisfaction in online banking.

H6₀ – Perceived Value has no positive impact on customer satisfaction in online banking.

According to the table 4.7 the regression analysis results statistically claimed that Perceived Value has a significant and positive impact on customer satisfaction ($\beta = 0.111$, $p = 0.00$). With $p < 0.05$, the null hypothesis is rejected and the alternative hypothesis is accepted at 95% level of confidence.

4.4.2.7. Complaint Management

The final hypothesis is the impact of Complaint Management on customer satisfaction in online banking. The alternative and null hypotheses are as follows.

H7_A – Complaint Management has a positive impact on customer satisfaction in online banking.

H7₀ – Complaint Management has no positive impact on customer satisfaction in online banking.

According to table 4.7 the results of the regression analysis statistically claimed that Complaint Management has a positive and significant impact on customer satisfaction ($\beta = 0.111$, $p < 0.00$). With $p < 0.05$ the null hypothesis is rejected and the alternative hypothesis is accepted at 95% level of confidence.

According to the regression analysis of the study it is visible that all the seven null hypotheses are rejected and the alternative hypotheses are accepted at a high level of confidence.

4.5 Examination of Overall Model

For the validation of the entire analysis, it is required to analyse the overall conceptual model. This was achieved using multiple regression in this study. Results of the statistically proven relationships among the dependent and independent variables are represented in table 4.8 and 4.9 below.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.917 ^a	.842	.839	.20417

a. Predictors: (Constant), Complaint Management, Perceived Usefulness, Privacy & Security, Ease of Use, Perceived Value, Tech Innovation, Perceived Quality

Table 4.8: Regression Model Summary (Source: Survey Data)

According to the above table, the statistical results show that the multiple regression coefficients (R) of the seven independent variables and the dependent variable is 0.917 where R Square is 0.842 (84%) and Adjusted R Square is .839 (83.9%). Multiple Regression analysis has revealed that 83.9% of variance (Adjusted R Square) of Customer Satisfaction is explained by the seven independent variables. Hence it shows a strong joint impact of the seven independent variables on the dependent variable; customer satisfaction.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83.223	7	11.889	285.202	.000 ^b
	Residual	15.674	376	.042		
	Total	98.897	383			

a. Dependent Variable: Customer Satisfaction
b. Predictors: (Constant), Complaint Management, Perceived Usefulness, Privacy & Security, Ease of Use, Perceived Value, Tech Innovation, Perceived Quality

Table 4.9: Analysis of Variance (ANOVA) (Source: Survey Data)

As shown in the table 4.9, the “F” value is a significant value of 285.202 as the observed significance (p value) is 0.00 which is below 0.05. Therefore it is statistically proven to have a strong predictive capability of Ease of Use, Privacy and Security, Technological Innovation, Perceived Usefulness, Perceived Quality, Perceived Value and Complaint

Management with regards to Customer Satisfaction. Hence the conceptual model can be considered as statistically significant ($t = 285.202$, $p < 0.01$) and that the model has a strong predictive capability in predicting customer satisfaction based on the seven independent variables.

4.6 Chapter Summary

The data analysis chapter began with the demographic analysis in order to identify whether the sample is a true and valid representation of the population. Seven demographic attributes were studied such as Age, Gender, Level of Education, Application Preference, Usage Patterns, Purposes of Usage and Usage of Online Banking by Banks of Sri Lanka. The next section was also related to the analysis of reliability and validity of the research sample. For reliability analysis Cronbach's Alpha was used and for validity analysis Principal Component Analysis (PCA) was used and both proved that the survey data are reliable and valid. After validating the survey data, it was statistically analysed using Correlation Analysis and Regression Analysis. Results of both revealed the strong relationship among the independent variables with the dependent variable and that hypotheses were valid and accepted. The chapter concluded with a Multiple Regression Analysis in order to validate the overall analysis. This validation also proved that the overall analysis is valid and dependable.

Chapter 05

RECOMMENDATIONS AND CONCLUSION

5.1 Chapter Overview

Being the final chapter of the research, the main purpose of this chapter is to conduct a discussion on the research findings and to provide recommendations based on the findings. The first section will provide a short discussion on the findings comparing the findings with similar studies found in literature. Then recommendations will be provided based on the findings in the next section. The third section will describe the limitations of the study while the fourth section will discuss on the future research based on this study. The chapter and the research concludes with the conclusion section which provide a summary on the entire research highlighting the achievement of the three objectives identified in section 1.5.

5.2 Discussion of the Findings

Demographic analysis of the research revealed that the usage of online banking is higher among the youth in Sri Lanka (19 – 45 years) and that customers' gender or level of education do not affect the usage of online banking in Sri Lanka. Moreover both online banking web application and mobile application are fairly equally used by the Sri Lankan customers. Online banking in Sri Lanka is used mostly to perform basic online banking facilities such as Bill Payments, Online Fund Transfers, Balance Inquiries, and Credit Card Management while a significantly lower population is using online banking for opening accounts and term deposits, managing standing orders and opening and managing loans (loans against deposits). Therefore it is visible that even though online banking is popular within Sri Lanka most of the customers are not taking the best advantages of it by exploring new facilities other than balance inquiry and fund transfers.

The linear regression analysis (section 4.4.2) of the data analysis chapter has statistically accepted all seven hypothesises of the conceptual model of this research and identified that

the factors identified by researcher based on the literature have strong positive impact on customer satisfaction in online banking in Sri Lanka. Correlation analysis (section 4.4.1) has statistically identified the relationship between identified independent variables and the dependent variable; customer satisfaction. Among the selected independent variables, the largest impact on customer satisfaction is from Technological Innovation. According to the study the second largest impact is from Perceived Quality. While Privacy and Security has the third largest impact followed by Perceived Usefulness, Ease of Use and Perceived Value, the lowest impact on customer satisfaction is from Complaint Management.

Technological Innovation having the strongest impact on customer satisfaction can be considered as a new finding as though certain previous studies (Berry et al., 2010 and Dootson et al., 2016) have identified technological innovation as a variable affecting online banking customer satisfaction none of them have identified it as the variable with the strongest impact. The tech seeking and technology savvy youth being the largest group of using online banking facilities in Sri Lanka explains this finding. As the youth need new technological innovations to make their day-to-day tasks easier they look forward to see technological advancements from their banks in order to bring their bank to their fingertips.

The finding of Perceived Quality having a strong impact on customer satisfaction gets in-line with the results of the studies conducted by Chea and Luo (2005) and Unyathanakorn and Rompho (2014). Along with new technological innovations, customers will seek both service and functional quality within their online banking applications in order for them to perform error-free transactions any time of the day. Through further discussions with certain respondents of the survey, the researcher was able to identify certain issues which affects the perceived quality of the facility. With certain online banking applications, opening of accounts or term deposits are not permitted after 7 p.m. which was inconvenient for most of the online banking users of the particular bank. These issues need to be addressed without delay in order to make the customers satisfied as the impact of Perceived Quality on customer satisfaction is huge.

While certain studies (Davis, 1989 and Pikkarainen et al., 2004) disapproves the finding of Privacy and Security having a strong impact on customer satisfaction, studies such as Howcroft et al. (2002) and Martins et al. (2014) align with this study. Privacy and Security

can affect the overall quality and value perceptions of the online banking facility (Parasuraman et al., 2005) and as Quality is also a determinant of customer satisfaction, high concerns on Privacy and Security of the online banking facility becomes crucial. The findings of both Davis (1989) and Pikkarainen et al. (2004) on the relationship between Perceived Usefulness and Ease of Use have proven in this study by both having considerably strong impact on customer satisfaction as well as having correlation between the two variables themselves. Therefore the study reveals that Perceived Usefulness and Ease of Use affect both customer satisfaction and each other.

Perceived Value having moderate impact on customer satisfaction reveals that in the Sri Lankan context even though customers have a significant consideration of the service charges and fees of online banking, it does not strongly affect their satisfaction level of online banking. The lowest impact on customer satisfaction in this study is from Complaint Management. In the Sri Lankan context customers will not make a complaint in most scenarios to express their dissatisfaction unless they experience a financial loss. Therefore even though having a proper complaint management system within online banking application is crucial, it does not guarantee a strong impact on customer satisfaction in online banking in the Sri Lankan context.

5.3 Recommendations

The results of this study presented in chapter 4 revealed the factors that influence customer satisfaction in online banking and the importance or the relevance of each variable to customer satisfaction. The recommendations were derived based on the results of the study, considering the importance received by each variable in determining customer satisfaction along with the use of suggestions from the previous studies on customer satisfaction in online banking. Moreover the findings from the background study conducted by the researcher on online banking in Sri Lanka was useful in deriving the following recommendations.

- 5.3.1 Banks must seek new technological innovations in order to provide customers with new features and functionality in online banking services which would allow the

customers to fulfil almost all of their banking needs without physically visiting a branch.

- 5.3.2 Management of banks need to make sure they have a strong privacy and security policy related to their online banking services and that they have disclosed it to their customers. Moreover they need to use latest security features in order to provide a trustworthy service to their customers.
- 5.3.3 In order to gain customer loyalty towards online banking application, banks must provide an error-free, personalised and smooth service to their customers in fulfilling their banking needs online.
- 5.3.4 Banks must take decisions to provide their online banking customers with the flexibility of using all the functions of online banking 24/7 without any restrictions in order to provide a much more useful and flexible service to the customers.
- 5.3.5 Banks must make sure to design online banking applications in such ways that a customer even with low IT literacy can easily navigate through the application and easily operate functions in order to get the required transaction completed within few steps.
- 5.3.6 Management of banks should take actions to only charge reasonable amounts of service fees for the services offered by online banking applications and to refrain from charging any annual fee for the usage of online banking as such annual fees and unreasonable service fees can dissatisfy the customers.
- 5.3.7 Online banking applications need to have a proper complaint management mechanism in order for a customer to properly express his/her dissatisfaction towards a particular service so that it gives way to the bank to develop the said service to reduce causing dissatisfactions in the future.

- 5.3.8 Apart from the complaint management mechanism, customers should be provided with a facility to inquire and communicate with the bank through the online banking portal. Moreover the bank should make sure to respond to customer inquiries within 24 hours in order make customers confident that the bank do respond to their personal needs.
- 5.3.9 In order to make customers aware about the special features and services provided by the online banking application, banks must organise proper marketing campaigns as most of the time customers use online banking in Sri Lanka for basic functions such as bill payment, balance inquiry and fund transfers.
- 5.3.10 Banks need to initiate promotional campaigns such as first month service-charge free for all services for new online banking customers in order to attract more customers to use online banking.
- 5.3.11 A proper user manual must be published so that customers with low IT literacy can easily get on with the online banking application which would make customers satisfied and ultimately loyal to the bank.

5.4 Limitations of the Study

Every study can have certain limitations such as time constrains and resource limitations. This study has two main limitations. First limitation can be considered as the study focusing only on online banking facilities of local commercial banks of Sri Lanka (except HSBC). The main reason behind the limitation is that the limited number of customers in most foreign commercial banks and the difficulty of reaching out to customers of foreign commercial banks. Mostly foreigners and companies are the customers of foreign banks and getting interviews or survey responses was difficult therefore the researcher only focused on the local commercial banks in this study. Moreover the study has excluded Licensed Specialised Banks (LSBs) as most of them do not have a proper online banking

facility except for National Savings Bank (NSB) which has an online banking web portal with basic functionality.

The second and most important limitation is with data collection. Due to the COVID -19 outbreak in the country by the time of data collection the researcher was unable to physically reach out to diverse customers for survey distribution. Therefore all data collection was conducted online and the questionnaire was shared through emails and social media. Moreover the questionnaire was only prepared in English. This may have had an impact on the results of this study as much diversity could not be expected.

5.5 Directions for Future Research

Online banking has been a topic of attraction from few decades in the world but considering the Sri Lankan context online banking has been introduced within the last decade and has created a new competition among banks which has had a boost with the new smart mobile revolution. Customer satisfaction and usage of online banking are two most talked-of topics and the determinant factors of both change with the time when the priorities of the focused community changes. Therefore conducting the same study after another 5 -10 years would discover another new set of determinants which would explain the priorities of the online banking users.

Moreover this study only focuses on the online banking facilities offered by Sri Lankan local commercial banks in which the international level service offering online banking facilities of foreign banks may have missed out. A future researcher has the opportunity to understand the priorities and satisfaction indicators of the local community from this study and conduct a more elaborated study on online banking facilities offered by all commercial banks in Sri Lanka which may bring about some new concepts.

This study is a general study on online banking facilities which considered both web and mobile application users. But in the recent years with the introduction of smart phones, a huge amount of online banking users in Sri Lanka has moved on to using the online banking mobile application. Therefore a researcher can conduct a further study on the usage and customer satisfaction in mobile banking platform which may uncover new determinants of

customer satisfaction, usage and loyalty. Finally this study will provide a basis for many research areas in the field of online banking and mobile banking customer satisfaction, usage and loyalty.

5.6 Conclusion

This study on online banking customer satisfaction in the context of Sri Lankan local commercial banks was conducted with the three main objectives as mentioned in section 1.5. The first objective was to identify the contributory factors of customer satisfaction in online banking. Several factors were identified by studying the literature and a questionnaire with a 5 point Likert scale was developed in order for data collection. Questionnaire was the data collection method out of the 400 responses collected 385 were used for analysis. The analysis in chapter 4 revealed that Technological Innovation, Perceived Quality, Privacy and Security, Perceived Usefulness, Ease of Use, Perceived Value and Complaint Management as the contributory factors of online banking customer satisfaction in the Sri Lankan context. Therefore the first objective was achieved.

The second objective was to determine the impact of the influencing factors on customer satisfaction. This was achieved in section 4.4 (statistical analysis) of the data analysis chapter. According to the statistical results it was determined that all factors have a positive impact on customer satisfaction in online banking where Technological Innovation has the highest positive impact and Complaint Management has the lowest positive impact.

The third and the final objective of the study was to provide suitable recommendations for the banking industry related to online banking customer satisfaction. According to the analysis of the study results, the banks in Sri Lanka must focus on their technological advancements to provide their online banking customers with new functionality. Secondly, banks need a privacy and security policy disclosed to their customers and use latest security features in their online application. Moreover the banks must make sure all online functions are available 24/7 and to design the application in a way that even a customer with low IT literacy can complete a transaction within few steps. Lastly the banks must also make sure to charge reasonable service charges and to come up with a complaint handling mechanism

for their online banking services. Therefore the third objective of the study is also achieved. Finally it is visible that all objectives of the research were achieved through the study.

5.7 Chapter Summary

As Recommendations and Conclusion being the final chapter of this study, it is expected to discuss about the research findings and provide suitable recommendations which was achieved in the first two sections. A summarized discussion has conducted comparing the research findings with other studies found in the literature. Thirteen recommendations have been provided for the banking industry based on the research findings. Under the limitations of the study section, two main limitations of the study have been discussed. The next section has explained the directions for future research based on the findings of this research. Finally a summary of the research is provided in the conclusions section highlighting the achievement of all identified objectives by this research.

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APPENDIX A: QUESTIONNAIRE

Survey on Online Banking Customer Satisfaction in Sri Lanka

This is a survey on Customer Satisfaction indications in Online banking in Sri Lanka conducted as a requirement for my MBA. Please be kind enough to spare 10 - 15 minutes from your valuable time to provide your responses to my questionnaire. Your contribution is highly appreciated. Please kindly note that your responses will be purely used for academic purposes and will be kept strictly confidential.

Section 1 - Your Information

1. Your Age

- 18 years and below
- 19 – 30 years
- 31 – 45 years
- 46 – 59 years
- 60 years and above

2. Your Gender

- Female
- Male

3. Your Highest Education Qualification

- Ordinary Level
- Advanced Level
- Diploma
- Degree
- Postgraduate

- PhD / Post-Doc
 - Other
- Specify.....

4. You prefer to use *(multiple option selection)*
- Online Banking Web Application
 - Online Banking Mobile Application

5. Your Bank *(multiple option selection)*
- People's Bank
 - Bank of Ceylon
 - Sampath Bank
 - Commercial Bank
 - Hatton National Bank
 - DFCC Bank
 - Pan Asia Bank
 - Nations Trust Bank
 - National Development Bank (NDB)
 - Seylan Bank
 - HSBC

6. How often do you use online banking?
- Daily
 - Weekly
 - Once a month
 - Whenever Needed
 - Other
- Specify

7. On which purpose(s) do you use online banking? (*multiple option selection*)

- Bill Payment
- Balance Inquiry
- Fund Transfers
- Open an account/ a term deposit
- Manage Credit Cards
- Manage Standing Orders
- Other

Specify

Section 2 – Survey data collection

All questions are given a five-point Likert scale according to the following format.

Strongly Agree

Agree

Moderate

Disagree

Strongly Disagree

- Ease of Use
 1. Ability to perform banking transactions using my mobile phone/tablet from around the world makes me use online banking all times.
 2. Ease of understanding and operating of functions gives me comfort in using online banking.
 3. Overall, I'm happy with the ease of use of my online banking application.

- Privacy and Security

4. I feel no uncertainty of losing my information and privacy every time I use online banking.
5. I am confident that my online banking app possess required security features to protect my information and privacy.
6. I believe my online banking will take necessary actions if in case of any breach of security.
7. Overall, I'm happy with the privacy and security provided by my online banking facility.

- Technological Innovation

8. I am confident that my online banking facility provides me with new features and functionality where a rare physical visit of bank is enough for me.
9. My online banking app improves constantly in providing new features and functionality.
10. I feel assured that my online banking uses latest technology to provide the users with the maximum security.
11. Overall, I'm happy with the technological innovations used by my online banking application.

- Perceived Usefulness

12. Online banking allows me to perform my banking transactions efficiently and effectively.
13. Online banking has increased my job productivity as it has limited my visits to the bank.

14. 24 hour banking has made my interactions with the bank easier.
15. Overall, I'm happy with the usefulness of my online banking application.

- Perceived Quality

16. My online banking app responds to my personal banking needs efficiently.
17. The smooth service provided by the online banking application is one of the reasons I tend to use it.
18. My online banking providing an error occasionally is not acceptable with me.
19. Overall, I'm happy with the service quality my online banking application.

- Perceived Value

20. When compared with the services offered, I believe the service fees/ transaction fees of online banking are appropriate.
21. When compared with the costs associate with a physical visit to the bank, I believe using online banking is appropriate.
22. Overall, I'm happy with the value added to my lifestyle by my online banking application.

- Complaint Management

23. I have made a complaint to the bank to express my dissatisfaction every time I'm dissatisfied with online banking.
24. The bank has positively responded to all my complaints regarding online banking.
25. My online banking facility has provided a feature to officially report a complaint.
26. Overall, I'm happy with the complaint management facility provided by my online banking application.

APPENDIX B: OPERATIONALIZATION OF VARIABLES OF THE STUDY

Variable	Source	Level of Measurement	Question Number
Ease of Use	Pikkarainen et al. (2004)	5-point Likert Scale	1
		5-point Likert Scale	2
		5-point Likert Scale	3
Privacy and Security	Parasuraman et al. (2005)	5-point Likert Scale	4
	Howcroft et al. (2002)	5-point Likert Scale	5
	Parasuraman et al. (2005)	5-point Likert Scale	6
		5-point Likert Scale	7
Technological Innovation	Patsiotis et al. (2012)	5-point Likert Scale	8
	Berry et al. (2010)	5-point Likert Scale	9
	Arts et al. (2011)	5-point Likert Scale	10
		5-point Likert Scale	11
Perceived Usefulness	Dootsan et al. (2016)	5-point Likert Scale	12
		5-point Likert Scale	13
		5-point Likert Scale	14
		5-point Likert Scale	15
Perceived Quality	Chea and Luo (2005)	5-point Likert Scale	16
	Martins et al. (2014)	5-point Likert Scale	17
	Unyathanakorn and Rompho (2014)	5-point Likert Scale	18
		5-point Likert Scale	19
Perceived Value	Unyathanakorn and Rompho (2014)	5-point Likert Scale	20
	Howcroft et al (2002)	5-point Likert Scale	21
	Unyathanakorn and Rompho (2014)	5-point Likert Scale	22

Complaint Management	Hsu (2008)	5-point Likert Scale	23
	Yoon (2010)	5-point Likert Scale	24
	Wolfenbarger and Gilly (2001)	5-point Likert Scale	25
		5-point Likert Scale	26