FACTORS AFFECTING THE ADOPTION OF MOBILE MONEY PAYMENT SYSTEM IN SRI LANKA

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Degree of Master of Business Administration in Information Technology

Department of Computer Science and Engineering

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DECLARATION

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ABSTRACT

Mobile money has become a major technology which makes a great impact in improving the livelihood of people by further extending the financial facilities. There is a lower demand for the mobile money services in Sri Lanka when compared with other countries. Therefore, it's very important to identify the factors which influence the behavioral intention of users and non-users to use mobile money.

The main objective of this study was to identify the factors affecting the adoption of mobile money payment system in Sri Lanka. Quantitative research methodology was used to conduct the research. Seven factors were considered; perceived usefulness, perceived ease of use, perceived cost, perceived credibility, facilitating conditions, awareness and promotions in order to develop research model for the study. This conceptual model is based on the concepts proposed by theoretical models such as Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Trust Enhanced Technology Acceptance Model and Unified Theory of Acceptance and Use of Technology (UTAUT) Model.

The target population for this study was the mobile money users and non-users who use mobile phones in Sri Lanka. Based on the conceptual model, hypotheses were defined and two questionnaires were distributed among mobile money users and non-users separately. There were 385 effective responses from mobile money-non users and 102 responses from mobile money users for this study after eliminating incomplete responses. According to the binary logistic regression, perceived credibility and perceived cost are the most significant factors affect for the behavioral intention of users to use mobile money continuously. In addition, facilitating conditions, awareness, education qualification and occupation affect for the behavioral intention of non-users to use mobile money in future.

Based on the research findings, mobile money service providers should enhance the trust of the users on the mobile money services, make fair charges, and ensure the sufficient mobile money outlets and merchants who accept mobile money. Further, they should enhance the awareness on mobile moneys services.

Keywords: Mobile money, Mobile money transfer, Technology Adoption, Sri Lanka

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LIST OF ABBREVIATIONS

ATM	Automated Teller Machine
B2B	Business to Business
B2C	Business to Consumer
IDT	Innovation Diffusion Theory
IFC	International Finance Corporation
KYC	Know Your Customer
LCPL	Lanka Clear (Pvt) Ltd
MNO	Mobile Network Operator
NFC	Near Field Communication
POS	Point of Sale
RTGS	Real Time Gross Payment System
SIM	Subscriber Identity Module
SLIPS	Sri Lanka Interbank Payment System
SMS	Short Message Service
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
USSD	Unstructured Supplementary Service Data
UTAUT	Unified Theory of Acceptance and Use of Technology

1 INTRODUCTION

Payment methods plays a vital role in the country to enhance the economy while facilitating several financial services for the consumers. Efficient, secure and effective payment methods ensure the rapid growth of the economy in the world. People have been adopted to these payment methods in order to cater their business needs. Nowadays, financial institutions have been inspired to replace traditional payment methods using electronic payment methods. Similarly, they have introduced mobile commerce which further encourages use of performing transactions via mobile phones. Mobile phone based money transfer is a rapidly growing payment method as service of mobile commerce in several developing countries.

1.1 Background and Motivation

1.1.1 Payment Methods in Sri Lanka

The payment methods in Sri Lanka can be mainly categorized as cash and non-cash payment methods. Central Bank of Sri Lanka has been authorized to issue notes and coins on behalf of the government for the circulation among citizens. Cash plays a significant role in the retail payment system in Sri Lanka. According to the payment bulletin published by the Central Bank of Sri Lanka (2016, First quarter), there are two types of non-cash payment methods. They accommodate large value payments and retail payment systems separately. Real Time Gross Payment System (RTGS) is the large value interbank - fund transfer system governed by the Central Bank. Meanwhile, cheques, Sri Lanka Interbank Payment System (SLIPS), payment cards, mobile phone based electronic payment mechanisms, Internet based payment mechanisms, telebanking and postal instruments are the retail payment systems and instruments which facilitate non-cash payment methods.

RTGS use to transfer money between banks which can be considered as a main payment system in the country. The total number of transactions facilitated through RTGS in 2015 has been 322,234 while average number of transactions per day has been 1,343. Lanka Clear (Pvt) Ltd (LCPL) is the main institution, which facilitates

cheque clearing functions in Sri Lanka through Cheque Imaging and Truncation (CIT) System. The total number of cheques cleared during year 2015 has been 49, 325,700. Low cost and efficiency of the system has enhanced the usability of the cheque clearing process for delivering an effective cheque clearing service. In addition, Lanka Clear (Pvt) Ltd (LCPL) operates US dollar cheque clearing system with the help of Sampath Bank, which provides settlement facilities. In addition, Sri Lanka Interbank Payment System (SLIPS) provides the facility to settle T + 0 basis for low value payments (up to Rs.5 Million per transaction) on each business day operated by Lanka Clear (Pvt) Ltd (LCPL) (Central Bank of Sri Lanka, 2016, First quarter).

Payment cards and mobile payment systems have been acknowledged as fast growing payment methods in Sri Lanka nowadays. Key stakeholders of payment methods should adhere to the regulations of Payment Cards and Mobile Payment Systems Regulations No. 1 of 2013. There are 61 financial acquirers and issuers of payment cards to facilitate the service in Sri Lanka. Payment cards can be accessed through Automated Teller Machines (ATMs) for conducting transactions such as cash withdrawals, balance inquiries, cheque book requisitions, fund transfers, cash and cheque deposits and utility bill payments. Similarly, Point of Sale (POS) provides the facility to use payment cards at merchant outlets. Meanwhile, mobile phone based payments can be categorized into two major types such as customer account based mobile payment systems and mobile phone based e-money systems. Mobile phone banking allows customers to perform their transactions using accounts through mobile phones. There is a huge growth of mobile banking adoption as mentioned in Table 1.1. Similarly, mobile phone based e-money system allows customers to store monetary value electronically in the mobile phone to be used in their payments. There are two licensed service providers including Dialog and Mobitel engaged in mobile phone based e-money systems in Sri Lanka as at end of the first quarter of 2016. The Central Bank of Sri Lanka has issued required regulations in "Mobile Payments Guidelines No. 1 of 2011" to administer mobile payment systems.

Internet banking has become a popular non-cash payment method in Sri Lanka, which allows banking institutions to enhance their efficiency in services. Moreover,

telebanking is not a fast growing method in comparison to other new methods in Sri Lanka (Central Bank of Sri Lanka, 2016, First quarter).

Table 1.1: Usage of mobile banking

	Description	**Total Transactions**
Volume	2015	1,980,289
	Q1-2015	306,432
	Q1-2016(a)	803,206
	Percentage Change Q1 16/15	162.1
Value (Rs. million)	2015	11,297
	Q1-2015	2,803
	Q1-2016(a)	3,401
	Percentage Change Q1 16/15	21.3

(Source: Central Bank of Sri Lanka, 2016, First quarter)

1.1.2 Mobile money

Mobile money is a form of electronic money, where value is virtually stored in a mobile wallet associated with a SIM card. It allows customers to perform financial transactions such as deposits, withdrawal of funds, or payment of bills using a mobile phone instead of paying in cash, cheques or credit cards. Internet facility is not required to perform these transactions via mobile phones. According to the study of Dahlberg (2015), mobile payment has four characteristics of money such as medium of exchange, means of payments, unit of account and storing value. Therefore, mobile money is an acceptable payment method similar to other valid payment methods. At present, ezCash(Dialog, 2016) and mCash(Mobitel, 2015) services which are provided by two leading mobile money service providers namely Dialog and Mobitel are the only forms of mobile money available at the consumer level in Sri Lanka. Therefore, in this study those two are considered as mobile money services in Sri Lanka.

1.1.2.1 How mobile money works?

The transaction flow includes the conversion of cash into electronic value and conversion of electronic value into cash, following with the movement of that value between the accounts of individuals, business and government. Therefore, mobile money transaction flow mainly consists of incoming transactions, circulating value and outgoing transactions. Mobile messaging technologies popular among people, such as Short Message Service (SMS) and Unstructured Supplementary Service Data (USSD) are used to establish this mobile transaction process among the key parties such as consumer, merchant, mobile network operator and custodian bank (Scharwatt et al., 2014). Figure 1.1 represents the flow of peer to peer mobile transfer.

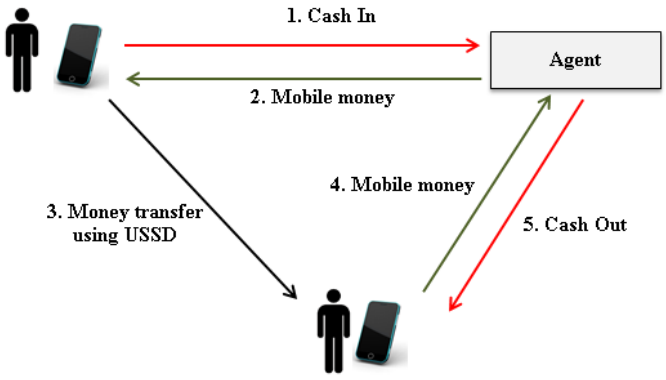

Figure 1.1: Regular P2P (Peer to Peer) transfer

1.2 Mobile money for financial inclusion

Mobile money has become a key factor in promoting the financial inclusion in developing countries. It was available in 61% of the developing countries by the end of 2014 (among 89 countries with 255 mobile services). Also there is a potential growth in mobile money usage since 300 million users have used the facility during year 2014 (Scharwatt et al., 2014). It's an effective tool comparable to the tools available in formal financial systems. It is easily accessible to the traders, farmers, businessmen, and migrant workers, who remit money to their family members especially in developing countries. There are certain benefits in using mobile money payment system such as cheaper cost, safety, high liquidity, accessibility, convenience and reliability. Since M-PESA in Kenya was routinely one third to one half expensive

than alternative systems, mobile payment system was popular among poor people (Donovan, 2012).

According to the study by Scharwatt et al. (2014), there is a trend to offer several services such as insurance, credit and savings through the mobile money payment system, which makes a great impact in improving livelihood of people. Donovan (2012) has emphasized the importance of contribution of businesses, governments and other institutions to improve the mobile money payment systems. Meanwhile, government would be able to monitor the cash flows, collection of tax revenues and reduction of unlawful activity with the use of mobile money services. In Sri Lanka, pensioners can use mobile money service named mCash (Mobitel, 2015) to collect the pension disbursement and it's a good trend to enhance the public services through mobile money services (Sunday Observer, 2014 October 12).

According to the Seventh Annual Building Household Survey (Fiserv, 2014), 27 million consumers in US use at least one mobile payment in each month and it shows a rapid growth in mobile payments in US. Figure 1.2 depicts the increasing of mobile money networks over different regions (Scharwatt et al., 2014).

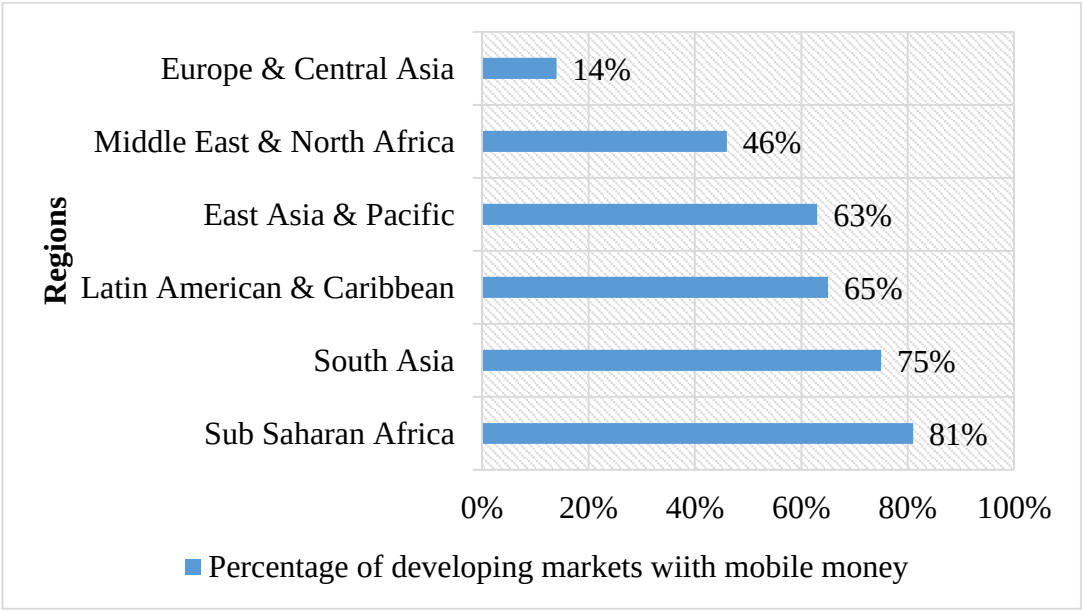

Figure 1.2: Percentage of developing markets with mobile money per region (December 2014)

(Source: Scharwatt et al., 2014)

The usage of mobile money service in both Sab Saharan African region and South Asian region are rapidly increasing respectively as depicted in Figure 1.2. It has a huge potential to expand the financial services effectively in South Asian region. However, there is a lower demand for the use of mobile money when compared with other developing countries as depicted in mobile money demand curve (Donovan, 2012). Therefore, identifying the factors which affect the adoption of mobile money payment system will help to enhance the rapid growth of the mobile money industry in Sri Lanka furthermore.

1.3 Research Problem Statement

Mobile money has become a significant factor which promotes the financial inclusion in several countries by further extending the financial facilities. The issuance of two separate guidelines by Central Bank of Sri Lanka for mobile service providers in 2011 made a great impact on the development of mobile money market in Sri Lanka. Now, there is a huge potentiality to expand the mobile money services in Sri Lanka, with the active contribution of two major services namely; ezCash(Dialog, 2016) and mCash(Mobitel, 2015). However, there is a low demand for the mobile money services in Sri Lanka when compared with other countries. And also, there is no any research conducted to identify the factors affecting the adoption of mobile money payments system in Sri Lanka. Therefore, it is very important to study the factors that affect the popularity of mobile money market in Sri Lanka. Because, it may have some hidden factors, barriers and issues which hinder the rapid growth of mobile money payments in Sri Lanka. It has a huge potential to expand the financial services effectively in South Asian region. Hence, identifying the factors which affect adoption of mobile money payment system will help to enhance the rapid growth of the mobile money industry in Sri Lanka.

1.4 Objective of the Research

The main objective of this research is to identify the factors affecting the adoption of mobile money payment system in Sri Lanka.

Detailed research objectives are,

- To develop a model that can be used to measure and investigate the factors affecting the adoption of mobile money payment system.
- Identify issues and barriers to promote the mobile money payment system in Sri Lanka
- To provide recommendations to populate the mobile money among customers in Sri Lanka
- Contribute to the existing research knowledge in the field of mobile money payment

1.5 Research Design

This research focuses on identifying the factors affecting the adoption of mobile money payment system in Sri Lanka and the perception of customers towards the use of mobile money. This research uses the quantitative research methodology. Using previous research papers on affecting the adoption of mobile money payment system, 7 factors; perceived usefulness, perceived ease of use, perceived cost, perceived credibility, facilitating conditions, awareness and promotions were selected in order to develop the preliminary research model of the study. This conceptual model is based on the concepts proposed by theoretical models such as Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Trust Enhanced Technology Acceptance Model and Unified Theory of Acceptance and Use of Technology (UTAUT) Model.

The target population was the mobile money users in Sri Lanka and non-users who use mobile phones in Sri Lanka. Therefore, the sample was calculated as 385 sample size for mobile money non users and 96 sample size for mobile money users.

By using the proposed conceptual model, 26 hypotheses for both users and non-users were defined. Two separate questionnaires were developed for mobile money users and non-users in order to ascertain the most significant factors affecting the adoption of mobile money payment system in Sri Lanka.

Both paper surveys and online surveys were distributed among randomly selected mobile money users and non-users. Preliminary interviews were conducted with 5 mobile money agents before preparing the questionnaire. Subsequently pilot surveys were conducted among 25 users and 40 non-users to gather details for correcting the final questionnaire. Binary logistic regression analysis was used to build the model. Based on the analysis and interpretation of data, conclusions and recommendations would be drawn.

1.6 Scope of the Research

The mobile money users are limited to two mobile money services since currently there are only two mobile money service providers in Sri Lanka; namely Mobitel & Dialog. The research also considered non-users of mobile money, yet who use mobile phones.

Convenience sampling method was used in this study to get the responses from both mobile money users and non-users. In addition, due to the practical issues of finding mobile money users, the effective sample size of the users was 102. Since six of them have stopped the use of mobile money further, sample size of the users was limited 96 for the statistical analysis.

1.7 Importance and Benefits of the study

1.7.1 Benefits for Mobile money service providers

They would be able to identify:

- Customer perception on mobile money payment system in Sri Lanka
- Significant factors affecting the customer to use the mobile money in Sri Lanka

- Significant factors hindering the use of mobile money
- Current issues related to the mobile money industry
- Behavioral intention of customers to use mobile money services
- Recommendations to populate mobile money among customers in Sri Lanka

Therefore, they can make better decisions in order to populate the mobile money among Sri Lankans.

1.7.2 Benefits for the government

Government would be able to identify:

- Significant factors affecting the adoption of the mobile money payment system in Sri Lanka
- Current issues related with the mobile money payment system
- Customer perception on mobile money payment system in Sri Lanka

Government would be able to ensure a secure, robust payment method while increasing the financial inclusion. In addition, research outcome will help to identify the customer perception on mobile money in order to make regulations and policies for stable & secure payment & settlement system in Sri Lanka.

1.7.3 Benefits for the citizens

Both users and non-users would be able to get the benefit of a more useful, secure and robust mobile money payment system, if mobile money service providers and regulators take necessary actions according to the research outcome. Therefore, they will be able to expand their financial services and get maximum benefit from the use of mobile money.

1.7.4 Benefits for the mobile money agents

If mobile money service providers and regulators will take necessary actions according to the research outcome, they would be able to populate the mobile money among customers which enhance the customer base of mobile money. Ultimately it helps to increase the income gains through the commission of mobile money business.

1.8 Nature and the Form of the Results

- Identification of the factors encouraging the use of mobile money
- Recognition of the customer perception on the use of mobile money
- Identification of current issues with the mobile money payment system
- Identification of enhancements to be carried out by respective stakeholders

1.9 Structure of the Rest of the Thesis

This thesis contains five chapters and a brief account of each chapter will be as follows.

Chapter Two – Literature review: This chapter provides an insight to diverse literature associated with the use of mobile money. It explains the mobile money payment system in Sri Lanka, identified challenges, barriers and issues on mobile money payment system, factors affecting the acceptance of electronic payment method & theoretical models such as Theory of Reasoned Action, Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology Model (UTAUT).

Chapter Three - Methodology: Chapter 3 discusses the research methodology adopted for this research, factor selection, builds up the conceptual model and research hypotheses. Data collection method is also discussed in latter part of the chapter.

Chapter Four- Data analysis and results: It provides observations and results associated with the statistical analysis which have been employed to test the research hypotheses. Detailed analysis for user and non-users analysis would be provided in this chapter.

Chapter Five – Conclusion and Recommendation: Chapter 5 provides conclusions on the total research outcome, which interprets results and major findings. It also provides recommendations, limitations of the present study along with directions for future research.

2 LITERATURE REVIEW

2.1 Chapter Overview

This chapter includes a detail description of mobile money payment system in Sri Lanka. In addition, section 2.2 discusses the demand and opportunity for the mobile moneys services. Moreover, challenges, barriers and issues on mobile money payment system are included in section 2.3. Meanwhile section 2.4 discusses the factors affected for the adoption of mobile money payment system in several countries. In addition, theoretical models are discussed in the last section such as TRA, TAM and UTAUT.

2.2 Mobile money payment system in Sri Lanka

2.2.1 Establishment

According to the payment bulletin published by the Central Bank of Sri Lanka (2012, Second quarter), very first mobile money service in Sri Lanka was eZ Pay which was initiated by the National Development Bank in collaboration with Dialog, a well-known Mobile Network Operator(MNO). Successively other commercial banks such as Seylan Bank PLC, Micro Finance Institution, Lanka ORIX Leasing Company PLC joined the eZ Pay. According to the study of Castri(2013), it was not successful in Sri Lanka due to minimal marketing and no clear value proposition to consumers.

Central Bank of Sri Lanka, Dialog and key management of some commercial banks engaged to identify the issues with existing system and to identify solutions to establish more effective mobile money payment system in Sri Lanka. Subsequently, the Central Bank of Sri Lanka issued two separate set of guidelines for mobile service providers in 2011. After that, e-money has been identified as a well-known payment mode in Sri Lanka which allows the consumers to convert physical money into electronic value (Cash In) and electronic money into cash (Cash out) for transactions as depicted in Figure 2.1. It is required to open and maintain a custodian account with a custodian

bank by mobile network operators, which helps to enhance public confidence on mobile money payment system by ensuring the safety of public funds.

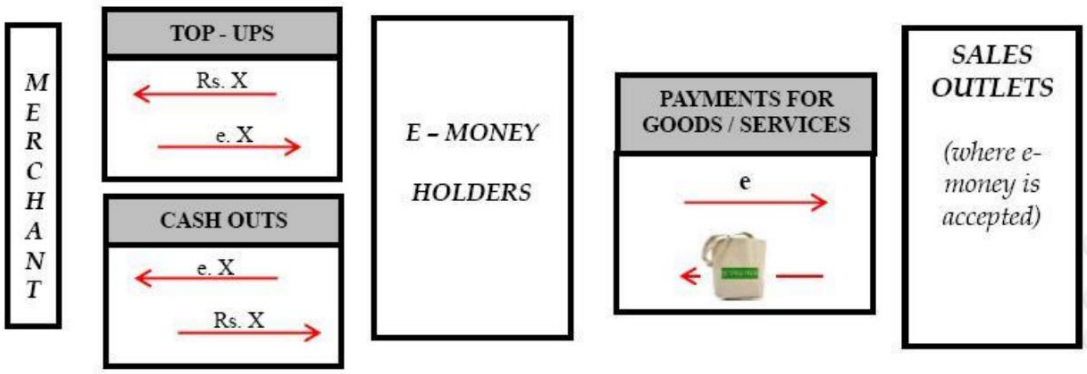

Figure 2.1: Flow of mobile payment system in Sri Lanka
(Source: Central Bank of Sri Lanka, 2012, second quarter)

Mobile network operators should be responsible for appointing and supervising the merchants who work as their agents to perform the Cash In and Cash Out functions of mobile transaction process. According to issued guidelines, the custodian bank should be responsible for maintaining Know Your Customer (KYC) and Customer Due Diligence procedures to be accepted by mobile network operators. In addition, custodian banks should audit the e-money accounts and ensure the adherence of mobile network operators to the Central Bank guidelines. It leads a stable and sound mobile money payment system in Sri Lanka (Central Bank of Sri Lanka, 2012, Second quarter).

2.2.2 The Rise of Mobile money

According to Castri(2013) , ezCash has been launched in 2012 as a result of granting the license for Dialog Axista PLC (Dialog) by Central Bank of Sri Lanka to establish mobile money market. EzCash offers several services to consumers such as sending money, bill payments and utility payments, pay merchant, institute payment, internet payment and purchase product. One million users have been registered as ezCash users by June, 2013. Among them, 200,000 users have been identified as active users.

Moreover, there were 330,000 transactions by May 2013 which generated over Rs. 435 million revenues for the company.

In addition, mCash has been launched in 2013 by Mobitel and it has led the expansion of the mobile payment system in Sri Lanka. Etisalat and Hutch, two other mobile network operators in Sri Lanka partnered with both ezCash and mCash(Hutch, 2016). Therefore, their subscribers can use mobile money through ezCash and mCash services. It helps to extend the mobile money market in Sri Lanka further. Subsequently, ezCash customer base exceeded 2.2 million and they have transacted a total of Rs.11.9 billion during 2015. There is a significant growth in the use of mobile money in Sri Lanka (Dialog Axiata PLC, 2016)

2.3 Mobile money demand and opportunity

According to a survey, conducted by International Finance Corporation (IFC)(2013), 63.8% of people are aware of the mobile money services in Sri Lanka while 2.1% of respondents were aware of the service which they used is under category of mobile money. Meanwhile, they have found that 71.3% and 63.9% of people were aware of person to person fund transfers and bill payments respectively as depicted in Figure 2.2.

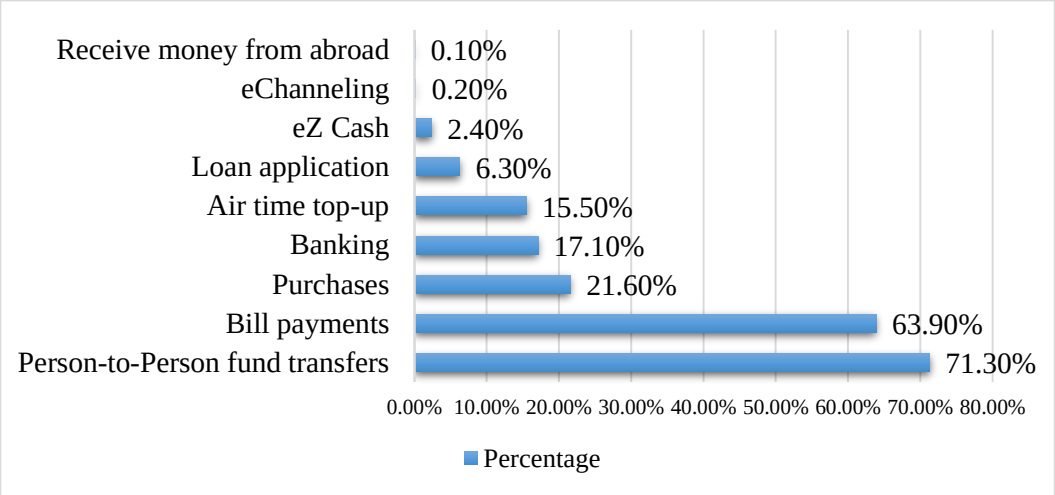

Figure 2.2: Awareness of Specific Mobile Money Services

(Source: International Finance Corporation (IFC), 2013)

Table 2.1: Composition of Mobile Phone based e-money Transactions Q4 2015

Transaction Type	**Volume terms**	**Value terms**
Utility bill payments	89.3%	80.5%
Money transfers	4.8%	10.0%
Institutional payments	1.9%	6.0%
Purchase product	0.6%	1.1%
Internet transactions	0.2%	0.7%
Other	3.2%	1.7%

According to the payment bulletin published by the Central Bank of Sri Lanka (2015, Fourth quarter), most Sri Lankans have used mobile money for paying utility bills when compared to other transaction types during the fourth quarter 2015 as mentioned in Table 2.1.

According to a survey conducted by IFC (2013), majority of mobile money users were between 21 to 26 years. Furthermore, they have identified the ease of use, money security, awareness of the service and wide accessibility as the driving factors for the demand for mobile money services respectively. Figure 2.3 depicts the demand for mobile money services according to the results of the survey.

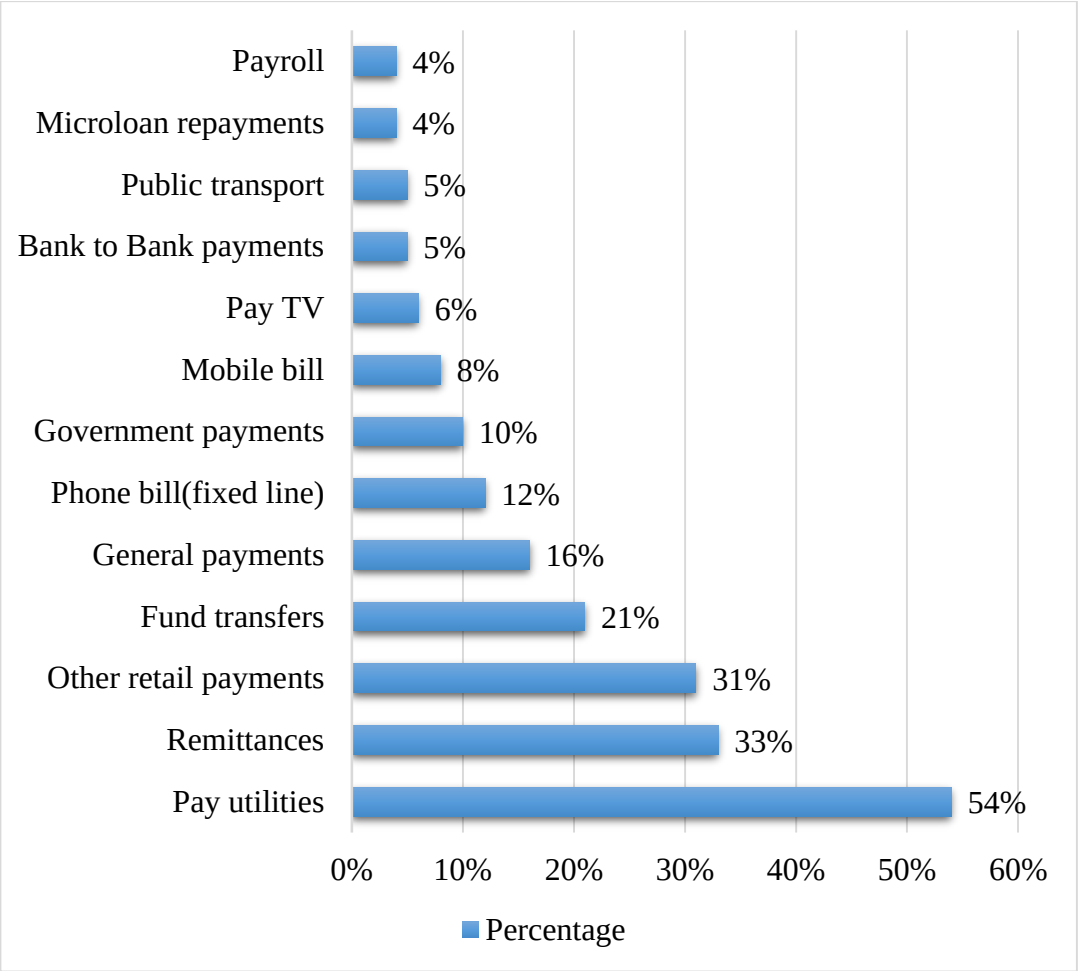

Figure 2.3: Demand for Different Types of Mobile Transactions

(Source: International Finance Corporation (IFC), 2013)

It shows that pay utilities, remittances, other retail payments and fund transfers have acquired high demand from mobile money consumers.

International Finance Corporation has developed mobile money demand curve after combining key driven factors of the mobile money market such as players with the strongest incentive to develop mobile money, the primary value proposition for target customers, regulations, demand, and partnership requirements. Figure 2.4 shows the mobile money demand in several countries including both developing and developed economies. Sri Lanka has comparatively low demand for both low cost, low speed, infrequent transactions and high speed high volume transactions with other countries (Donovan, 2012).

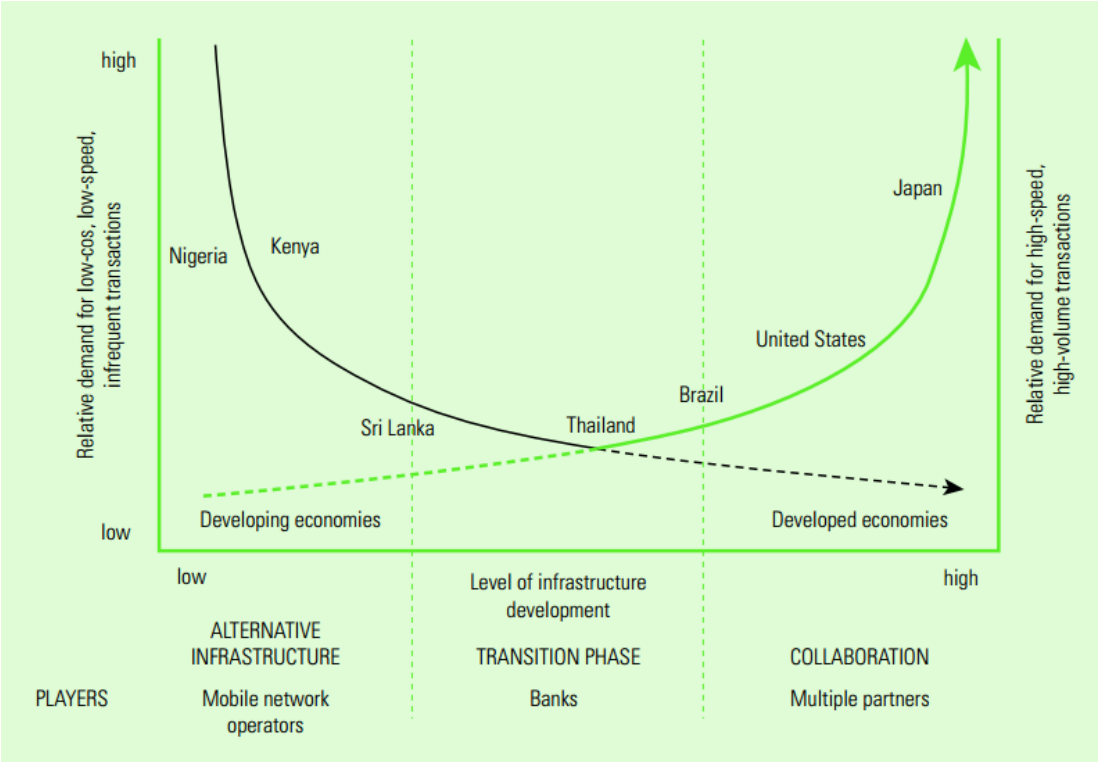

Figure 2.4: Mobile Money Demand curve

(Source: Donovan, 2012)

2.4 Identified challenges, barriers and issues on mobile money payment system

2.4.1 Challenges

Although there is a considerable growth in the mobile money payment system, several challenges have been identified as barriers for the system to develop further. According to the study of Donovan (2012), properly building the agent network, maintaining adequate liquidity at the outlets, winning customer and retaining customer-trust on transactions, establishing well-structured regulations and user perception and skills on mobile money systems are the notable challenges. Similarly, Pichai (2013) has identified five key challenges which will help to make a stable system. He has pointed out that switching customers and merchants from traditional

payments methods to mobile payment system as a key challenge. They can improve privacy services if they keep granular information of consumers. Furthermore, he has mentioned that the universality and interoperability, security and regulations are also challenges for the mobile market industry. Mobile money systems should facilitate to establish transactions between B2C, B2B, local and international remittances under the challenge of interoperability.

Meanwhile, according to the studies of Nicholaus et al. (2013) and Kyeyune et al. (2012), lack of financial capital problems of agents, unavailability of network coverage, expensive transaction charges, fraud/risk in mobile money transfer, limited mobile money service varieties, regulatory barriers to mobile money payment system, avoiding frauds and control against misuse of credentials were identified as the main challenges for mobile network operators. Furthermore, the study has revealed that poor knowledge on mobile money services and various applications, technical barriers and network problems as the challenges of customers. To overcome these challenges, they have proposed to focus the business in different areas.

When considering the Sri Lankan industry, similar to other countries, IFC (2013) have revealed that the liquidity problems of small merchants as a major challenge for the Dialog. Furthermore, building a cost effective system to channel international remittance inwards and expanding mobile money services to enable bulk payments and Near Field Communication (NFC) are also the challenges for Dialog (Castri, 2013).

2.4.2 Barriers and issues

The mobile money markets in developing countries have some barriers to expand the mobile money services effectively. Since it's difficult to attract the investors to mobile market, the market size is comparatively low. Difficulty to achieve scale, lower costs and low profitability were identified as the main reasons for having a small size of mobile market. Moreover, regulatory barriers would lead to decrease the market growth and customer usage (Scharwatt, 2014). According to the study of Donovan

(2012), technological issues can be created through the development of smart phones, near field communication and biometrics. Study has revealed that the changing role of agent network, internationalization of mobile money, competition and interoperability, universal access, and product innovation for meaningful financial inclusion as the emerging issues on mobile money.

When considering the Sri Lankan industry, low level of awareness, perceived lack of need, trustworthiness of the system, and difficulties in using the system, and availability and affordability of services have been identified as the barriers IFC (2013). Furthermore, according to the study by Colombage (2012) it has been revealed that the lack of knowledge on mobile banking act was a big reason to hinder the expansion of mobile money systems. Similar to the findings of IFC (2013), he has identified that majority of people are not aware of the mobile money services.

We can observe an overlap between the identified challenges, barriers and issues on mobile money payment system of several researches according to their different contexts. But many countries are facing the same challenges, issues and barriers even though it comes under different categories. However, these circumstances lead to hinder the fast growth of mobile money payment system. Therefore, mobile network operators should consider on regulation issues, interoperability, network issues, technological challenges, liquidity problems, lack of awareness of the services, internationalization of mobile money, frauds and security risks which can be identified as common challenges, issues and barriers according to the findings of above researches to establish a stable mobile market.

2.5 What factors affected to the acceptance of electronic payment methods?

Electronic payment methods facilitate to perform transactions through an electronic communication channel with several benefits such as convenience and low cost. According to the study conducted by Teoh et al. (2013), for the Malaysian context, benefit, self-efficacy and ease of use significantly influence the customer adoption while trust and security have a significant effect on the customer perception towards

e-payment. It is required to educate the consumers about the way that the technology should be used since self-efficacy strongly influences the attitude of the consumer. In addition, service providers should have provided efficient and effective service with user friendly facilities while examining the consumer's feedback in order to attract more consumers.

2.5.1 Internet Banking

Internet banking has been acknowledged as one of the most coherent and cost effective channel for enhancing the financial inclusion in many countries. There are several significant factors which impact on customer satisfaction with Internet banking service quality. According to the study of Roche (2014), corporate image is the most significant factor which reflects the customer satisfaction on Internet banking. Therefore, banks should have to pay attention to develop their own image to attract more customers. Assurance provided by the bank employees has been identified as the second important factor which enhances the user adoption of Internet banking. In addition, customers need the help to handle their problems on the use of the service because of the lack of physical interaction with the customers and bank employees. Most of the customers expect individual attention and it has positive impact on the customer satisfaction. Moreover, reliability, responsiveness and security effects to retain the customers of the service. According to their study, bank managers should provide priority to corporate image, assurance, problem handling, empathy, reliability, security and privacy to enhance customer satisfaction and to gain high revenue for the bank in return.

According to the findings by Al-Qeisi et al. (2015), performance expectancy and the effort expectancy directly affect the usage behavior of Internet banking while facilitating conditions and social influence weakly affect usage behavior and behavior intentions respectively in three non-western countries namely, Egypt, Saudi Arabia, and Jordan.

2.5.2 Mobile Banking

There are several factors affecting the attraction of customers to use mobile banking. According to the study by Yu (2012), social influence, perceived financial cost, performance expectancy, consumer intention, facilitating conditions which provide technical support to consumers and perceived credibility have strong impact on the consumer intention for mobile banking adoption. But perceived self-efficacy is not a salient factor which affects the user behavior. In addition, gender and age are moderating variables for the adoption behavior of consumers in Taiwan.

There is an increasing trend of mobile banking usage in India. Indians can access the mobile banking service through several different channels including SMS channel, USSD channel, and mobile banking application available in app stores such as Google. According to the research Dash et al. (2014), innovation attributes such as trial ability and compatibility with mimetic forces which leads to attitude formation, significantly affect customer adoption of mobile banking in India. Therefore, the customers required to be provided knowledge of using mobile banking technology. It causes to build an attitude towards the use of mobile banking technology because Indians tend to use trials before the adoption. Further, they have identified that the relative advantage doesn't impact on the attitude towards use of mobile banking technology even though, it has been identified as an influential factor by many researches. In order to attract more customers, banks should find solutions for the compatibility and trail ability issues which hinder the adoption of customers towards mobile banking technology. Moreover, enhancing the customer awareness of mobile banking, educating the customers on mobile banking technology and enhancing the security of transactions will positively impact the customer adoption.

2.5.3 Electronic Cards

Credit card is not used by Indians very often due to lack of trust on the payment mode. Therefore, credit card issuing companies should promote the benefits of the use of credit card further. The credit card users have accepted it as a convenient method when compared with other methods.

The majority of credit card users in India are younger people while male users represent the larger portion of users. Since credit card payment is settled during a considerable period, sense of belonging negatively effects to the use of credit card in India. But the sense of fulfillment positively affects the credit card usage since people feel that the use of credit card as an achievement of their life. Among above factors, use and convenience have been identified as the main factors which effect to the customer adoption India (Khare et al. (2012).).

According to the study of Wang et al. (2014), reliability, tangible benefits which represent the physical evidence of the service, responsiveness, assurance and empathy significantly impact for the customer satisfaction in Vietnam. The level of customer satisfaction depends on education attainment and income level of the customers. In order to enhance customer satisfaction, banks should have to provide interactive customized services for customers using emerging technologies with high quality physical facilities such as comfortable and user friendly ATM operations. Similarly, they should provide reliable online or offline services which ensure the accuracy of the banking services to attract more customers. Promptness of card delivery and services, resolving customer problems and providing efficiency services are some of key factors which enhance the responsiveness of the service.

2.5.4 Crypto currencies

According to the research conducted by Spenkelink, H.F. (2014), there are eight significant factors which affect the customer acceptance of the use of cryptocurrencies. Low cost to convert crypto currencies into fiat currencies which have been established as money by government regulations and fast transaction speed influence the adoption of cryptocurrency while price stability hinders customer adoption. Moreover, ease of use, result demonstrability which expresses the tangible results and crimes negatively impact while visibility, compatibility, trial ability and voluntariness of use influence the user adoption of crypto currency. There are several possibilities of doing criminal activities through crypto currency such as stealing of wallets, illegal mining and money laundering which tarnish the image of crypto currency as a payment method. In

addition, they have identified some external forces which strongly effect transactions in businesses which accept crypto currency as an acceptable payment method, such as currently adopted users, the publicity given by media, government policy and role models for the users.

2.5.5 Mobile money

Most of the developing countries use mobile money due to the low transaction cost, speedy process and safety of money. Chauhan, S. (2015) has identified that the perceived usefulness, trust and attitude towards usage positively effect to the intention of accepting the mobile money in India while perceived ease of use doesn't influence on it. In addition, Thakur et al. (2014) have identified the functional relationship between adoption readiness (AR), perceived risk (PR) and usage intention for mobile money payments in India. Furthermore, adaption readiness(AR) which is the degree to which an individual believes himself/herself to be ready to adopt a new technology, is a critical factor which make intention to use mobile money. It is a multi-dimensional construct which has four dimensions such as perceived usefulness, perceived ease of use, facilitating conditions and social influence as depicted in Figure 2.5. Furthermore, there is a higher influence of innovativeness on behavioral intention for using mobile money from users when compared to non-users. Even though, they have considered security risk, privacy risk and monetary risk for the model under perceived risk, monetary risk has not been recognized as a significant dimension according to the results of the analysis. The adoption readiness, personal innovativeness and perceived risk affect for the behavioral intention of people to use mobile money.

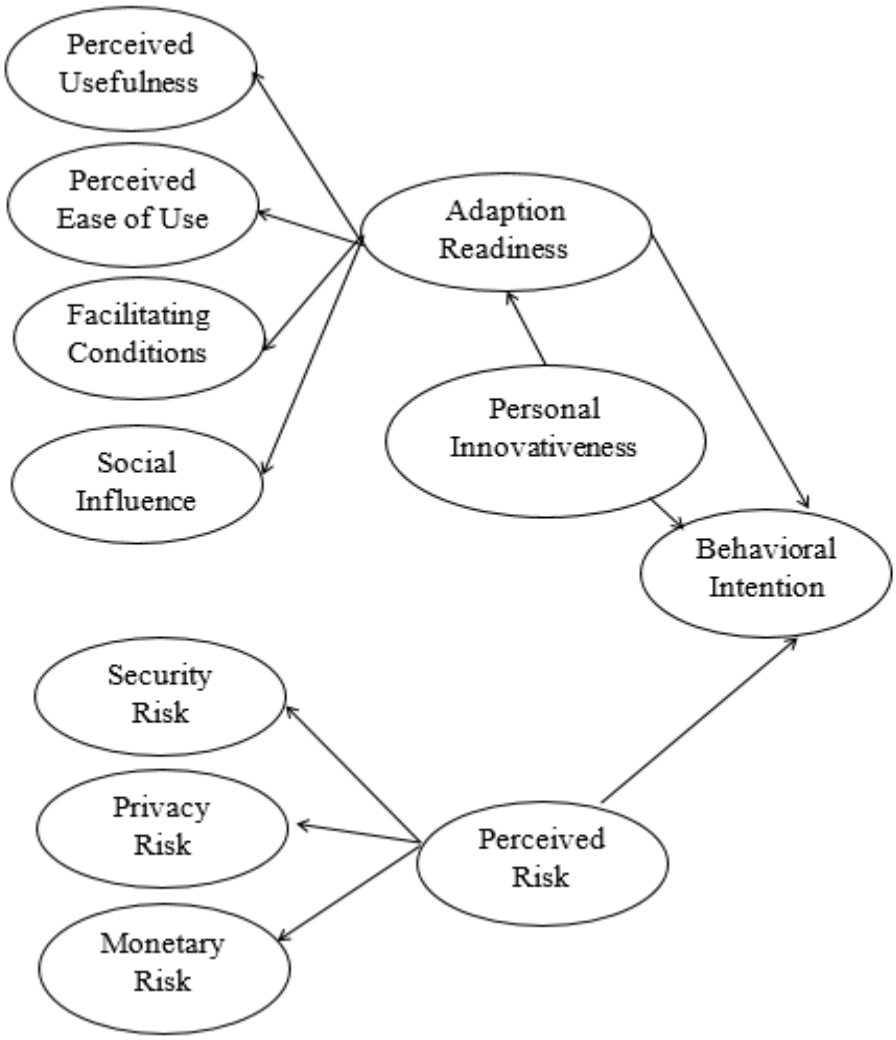

Figure 2.5: Conceptual model for the study by Thakur et al. (2014)

Meanwhile, Upadhyay et al. (2016) have identified the impact of technical & technological characteristics such as system quality, task technology fit, connectivity and discomfort apart from user specific characteristics such as perceived usefulness and perceived ease of use. In addition, structural assurance which refers to the existence of technological and legal institutions has been recognized as a significant factor. Even though, Thakur et al. (2014) have identified the personal innovativeness as a significant factor on mobile money adoption in India, Upadhyay et al. (2016) have indicated that people are giving priority for the basic functionality rather than innovations in India.

Moreover, Marumbwa et al. (2013) have identified the main factors which effect for the customer adoption of mobile money payment system in Zimbabwe. According to their findings, perceived ease of use, consumers' perceived usefulness of the service, perceived trust and the perceived relative advantage effect for the adoption of mobile money.

According to the results of the study, conducted by Tobbin et al. (2011) using Innovation Diffusion Theory (IDT), they have concluded that the perceived Ease of Use and perceived usefulness, Perceived Trust, Trial ability and Perceived Risk significantly effect for the behavioral intention of consumers in Ghana. They have emphasized the importance of trail ability which allow the potential users to trial the use of mobile money. Meanwhile, Assibey (2014) has conducted a study to identify the behavioral intention of the users of Susu saving operation in Ghana using Innovation Diffusion Theory (IDT) and Technological Adoption Model (TAM) conceptual frameworks. He has identified that the perceived risk, education level, relative advantage, and the age of the collector critically effects for the adoption of mobile money transfer while trial ability, observability or awareness, compatibility or education attainment significantly effect for influencing mobile money for the Susu users in Gahana. The young Susu collectors have positive behavioral intention than older people who like to use traditional methods.

Lesa et al. (2016) in Zambia have identified that the social influence as the most significant factor which influence the perception of usefulness and behavioral intention to use mobile money payments. It indicates that the people's image and social status are key factors which cause to change the attitude of people on use of mobile money payments. In addition to social influence, perceived usefulness and perceived ease of use significantly influence on the users' decision to adopt to mobile money payment system. Even though, most of the researchers have confirmed that the perceived risk significantly influences on the behavioral intention, Lesa et al. (2016) mentioned it as an insignificant factor. They have identified that the perceived risk and perceived cost fairly negatively effect on behavioral intention insignificantly.

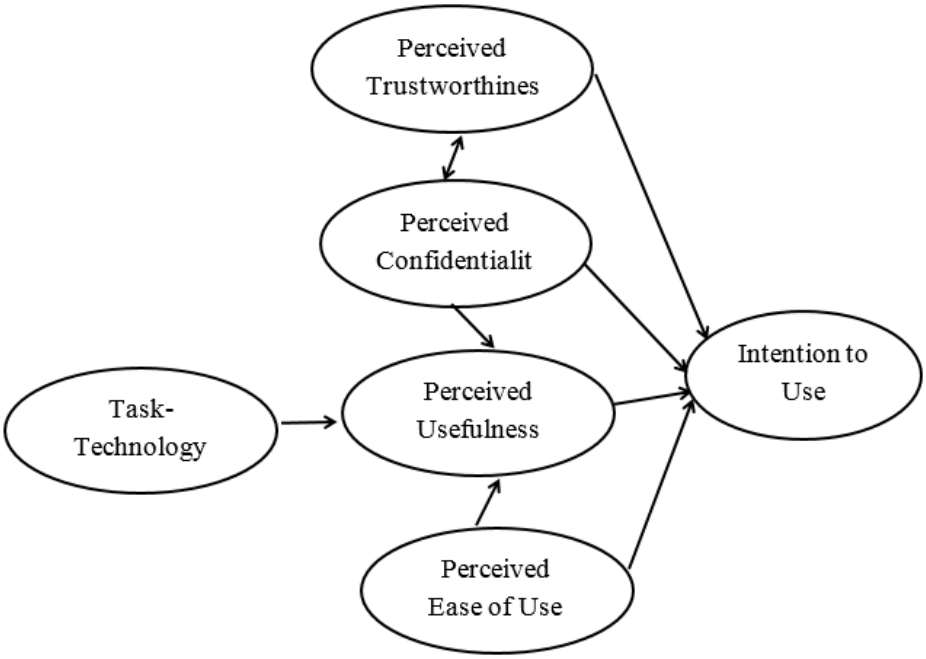

Figure 2.6: Conceptual framework for the study by Pousttchi et al. (2006)

Pousttchi et al. (2006) have conducted a study to identify the significant factors which influences consumers' intention to use mobile money payments in Germany. They have examined perceived usefulness, perceived ease of use, perceived trustworthiness, perceived confidentiality and task-technology fit as depicted in Figure 2.6. According to the results, perceived usefulness and perceived ease of use critically affect mobile money adoption with task technology fit. In addition, perceived confidentiality, perceived trustworthiness and perceived cost don't affect mobile money adoption which has been confirmed by Lesa et al. (2016) for Zambia.

According to the research conducted by Oyefolahan et al. (2014) there is a significance impact of perceived ease of use, perceived usefulness and perceived trust on behavioral intention of the users. Perceived trust is a crucial factor to accept the mobile transfer services in Somaliland. Moreover, gender doesn't affect the intention of adopting mobile money transfer services. Chauhan (2015) has emphasized the importance of raising awareness in mobile money's usefulness to enhance the use by poor citizens.

In addition, service providers should convey the message of usefulness of mobile money to the customers in order to attract more mobile money consumers.

The mobile money transfer service in Uganda has not been able to gain higher customer satisfaction (Kyeyune et al. 2012). The mobile money users in Ugnada expect reliability and efficiency of services, response time, customer service, network security and multi lingual features when they use the service. Therefore, mobile money systems in Uganda should facilitate the customers by considering these parameters as well. Table 2.2 includes a summary of adoption factors for several technologies in several countries.

Table 2.2: Adoption factors for several technologies

Country	**Target Audience**	**Considered Factors for Adoption**
Sri Lanka	Internet Banking	Corporate image, assurance, problem handling, empathy, reliability and security/ privacy
Egypt, Saudi Arabia, Jordan	Internet Banking	Perceived usefulness, perceived ease of use, facilitating conditions, social influence
Taiwan	Mobile Banking	Perceived usefulness, facilitating conditions, social influence, perceived financial cost, consumer intention, perceived credibility Moderating variables: gender & age
Vietnam	Electronic Cards	Tangible factors, reliability, responsiveness Moderating variables: Income level & educational attainment
European market (Focus on Netherland)	Crypto currencies	Tangible benefits, compatibility, discomfort, transactional cost, reliability, price stability
India	Mobile Banking	Compatibility, trial ability, awareness, security
	Electronic Cards	Perceived usefulness, social influence, observability, convenience, sense of fulfillment, gender

	Mobile Money	Perceived usefulness, perceived ease of use, perceived trust, facilitating conditions, social influence, security risk, privacy risk, personal innovativeness, discomfort, system quality, task technology fit, connectivity, structural assurance, attitude towards usage
Somaliland	Mobile Money	Perceived usefulness, perceived ease of use, perceived trust
Uganda	Mobile Money	Reliability and efficiency of services, response time, customer service, network security, handling customer complaints and multi lingual features Fast network, need for laws and policies governing mobile money, efficient ICT infrastructure, security handling customer complaints and multi lingual features, low cost,
Zimbabwe	Mobile Money	Perceived usefulness, perceived ease of use, perceived trust, relative advantage
Ghana	Mobile Money	Perceived usefulness, perceived ease of use, perceived trust, perceived risk, trial ability, relative advantage, educational attainment, age, awareness
Zambia	Mobile Money	Perceived usefulness, perceived ease of use, social influence, perceived risk, transactional cost
Germany	Mobile Money	Perceived usefulness, perceived ease of use, task technology fit

2.6 Models

The most popular models are discussed in this section. Such analysis will help service providers to come up with optimal strategies to enhance the adoption of the service.

2.6.1 Theory of Reasoned Action (TRA)

Theory of Reasoned Action model is one of the most acknowledged models in the field of social psychology which is developed by Martin Fishbein and Icek Ajzen in 1975. According to their theory, behavioral intention impacts the performance of a specified user behavior associated to the use of a particular technology. Meanwhile, behavioral intention is determined by user attitude towards behavior and subjective norms. The user attitudes refer to positive or negative feeling they get when performing the target behavior. Further, subjective norm has been defined as "person's perception that most people who are important to him think he should or should not perform the behavior in question". Moreover, user attitude towards behavior depend on the set of user beliefs evaluations while subjective norms depend on the normative beliefs and motivation as depicted in Figure 2.7. This model can be used to effectively explain the factors which influence the process of customer adoption (Davis et al., 1989).

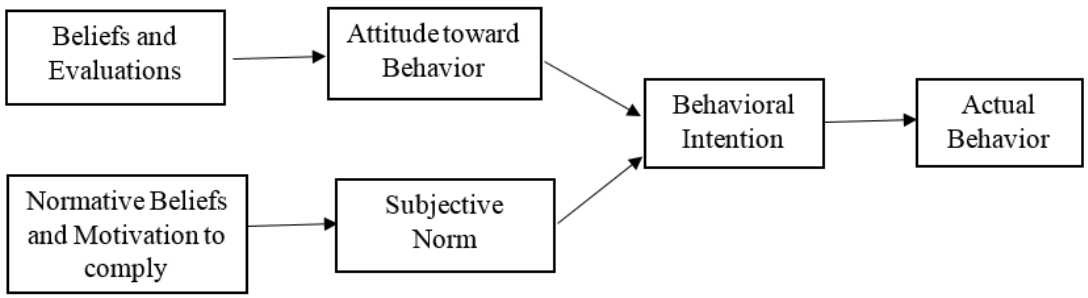

Figure 2.7: Theory of Reasoned Action (TRA) Model

(Source: Davis et al., 1989)

2.6.2 Technology Acceptance Model (TAM)

Technology acceptance model has been developed by Davis et al. (1989) based on the theory of reasoned action in 1986 to identify the acceptance of new technologies by end users. It allows identifying the influence of the external factors on internal beliefs, user attitudes and intentions related to the use of technology. Perceived ease of use and perceived usefulness have been used as the beliefs in this model which associated with acceptance of information systems. Perceived usefulness can be defined as the degree to which a user believes that using a particular information system would enhance his or her job performance. Similarly, perceived ease of use can be defined as the degree to which a user believes that using a target system would be free from effort. These two factors are the most significant factors in technology acceptance model which can be used to examine system actual use.

Behavioral intention effects for the system usage like theory of reasoned action model. In addition, behavioral intention is determined by user's attitude towards using the system and perceived usefulness as depicted in Figure 2.8. Perceived ease of use and perceived usefulness are influenced by external factors such as social factors, cultural factors and political factors. Moreover, perceived usefulness is determined by the perceived ease of use for a particular system (Davis et al., 1989; Surendran, 2012).

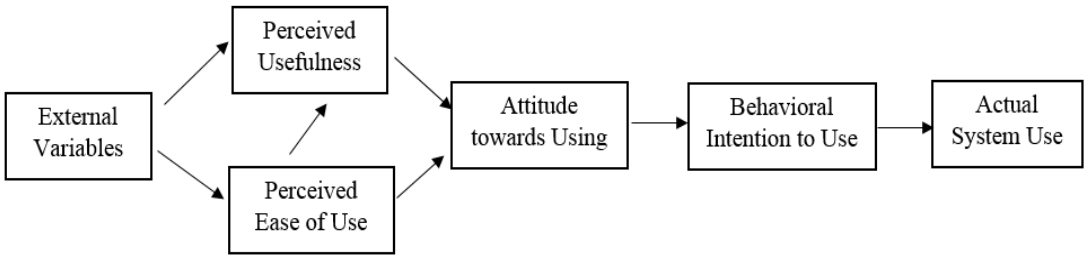

Figure 2.8: Technology Acceptance Model

(Source: Davis et al., 1989)

Many researches have used the TAM to predict the acceptance, adoption, and use of a particular information system or technology. Chauhan (2015), Oyefolahan (2014) and Dahlberg (2003) have used this model to identify the influencing factors for customer

adoption of mobile money transfer service. Some researchers have proposed new models based on the TAM after doing some modifications appropriately. Dahlberg, Mallat, & Oorni (2003) have proposed Trust Enhanced Technology Acceptance Model by integrating the original model using security and trust factors to identify the significant factors for consumer acceptance of mobile payment solutions as depicted in Figure 2.9.

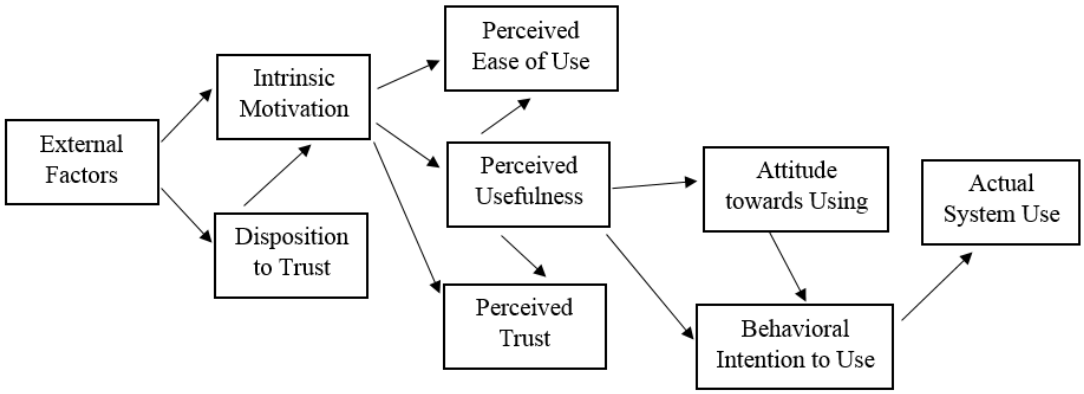

Figure 2.9: Trust Enhanced Technology Acceptance Model

(Source: Dahlberg, Mallat, & Oorni , 2003)

2.6.3 Unified Theory of Acceptance and Use of Technology (UTAUT) Model

UTAUT has been introduced by Venkatesh et al. (2003) to identify the influencing factors of technology acceptance based on eight technology acceptance theories. It has been formulated using four core determinants such as performance expectancy, effort expectancy, social influence and facilitating conditions which explain the behavioral intentions and use behavior of a particular system. In addition, they have used four key moderators including gender, age, experience, and voluntariness of use when formulating UTAUT as depicted in Figure 2.10 (Venkatesh et al. 2003).

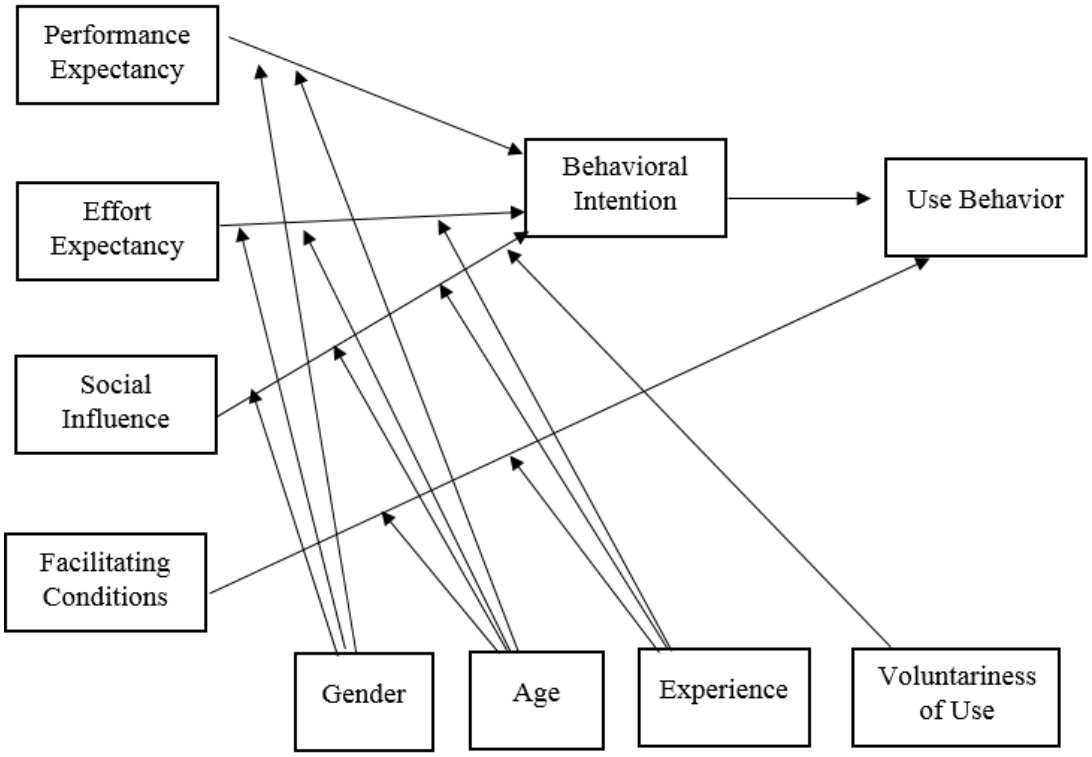

Figure 2.10: Unified Theory of Acceptance and Use of Technology (UTAUT) Model (Source: Venkatesh et al, 2003)

Many researchers have used UTAUT model to identify the significant determinants which affect customer adoption of a particular technology. Al-Qeisi et al. (2015) and Yu (2012) have used UTAUT model to determine the factors which impact the customer adoption of Internet banking and mobile baking technologies respectively.

3 METHODOLOGY

3.1 Overview of chapter

The research methodology used in this study will be described in this chapter. The flow of the research methodology is described under section 3.2. Section 3.3 describes the population, sample selection and the calculation of sample size for the survey. Respective theoretical framework and selection of factors considered for the conceptual framework are described under the sections 3.4 and 3.5. Binary logistic regression is discussed in 3.6. The questionnaire and relevant measurement are discussed in section 3.7 and relevant hypotheses are shown in the next section, 3.8 and 3.9.

3.2 Research Methodology

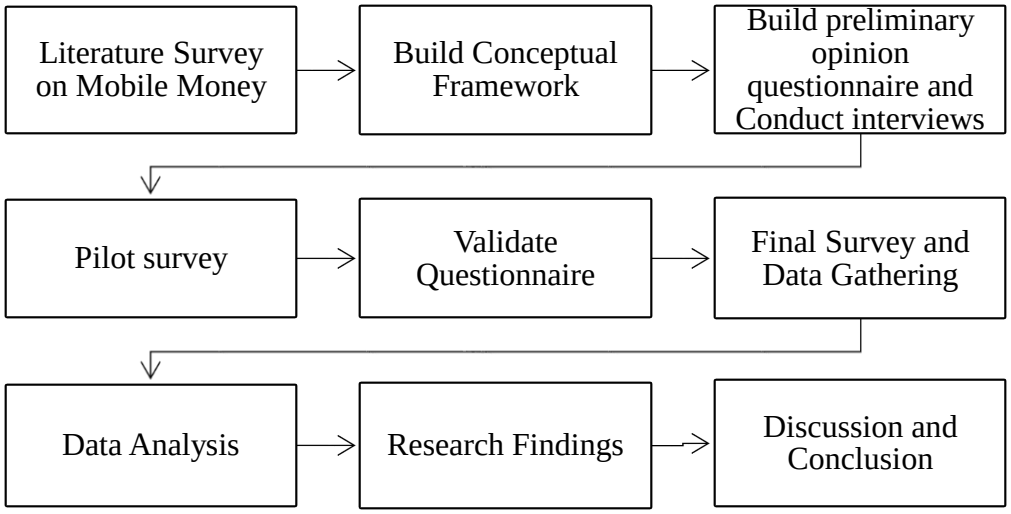

Figure 3.1: Research Strategy

3.3 Population and Sample Size

ezCash customers and mCash customers were considered for this research as mobile money users since only Dialog and Mobitel were the only mobile money service providers in Sri Lanka by the end of 2016. There is over 2.2 million ezCash customer base in Sri Lanka (Dialog Axiata PLC, 2016).

According to Castri(2013) , one million users have been registered as ezCash users by June, 2013. Among them, 200,000 users have been identified as active users. Therefore, there is 20% of chance to be an active user according to the behavior of ezCash users in 2013. Therefore, 10% confidence interval can be considered for calculating the sample size for mobile money users. In addition, due to difficulties to find users for the study, 10% confidence level was considered to get lower sample size for this study as mentioned in Table 3.1.

Table 3.1: Sample size calculation for mobile money users

User	**Population**	**Confidence Level**	**Confidence Interval**	**Sample Size**
ezCash users	2,200,000	95%	10	96

In addition to mobile money users, this research examines the perception of mobile money non-users in Sri Lanka who use mobile phones. According to the Central Bank Annual Report 2015, the number of mobile phone subscribers in Sri Lanka is 24,384,544, which is larger than the total population in Sri Lanka. Therefore, total population of mobile money-non users can be calculated after subtracting the mobile money users from mid-year population as mentioned in Table 3.2.

Table 3.2: Sample size calculation for mobile money users

Non-User	**Population**	**Confidence Level**	**Confidence Interval**	**Sample Size**
Mobile phone subscribers who don't use mobile money	20,966,000 - 2,200,000 = 18,766,000	95%	5	384

According to Table 3.1 and Table 3.2, the minimum sample sizes for mobile money users and non-users are 96 and 384 respectively.

3.4 Building Conceptual Framework

The conceptual framework describes and depicts the key constructs, variables, relationships and context in the research. Therefore, it includes the most significant factors affecting the adoption of mobile money payment system in Sri Lanka. The facts that used in Theory of Reasoned Action (TRA) Model, Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT) Model are widely used and further extended in order to build the conceptual framework for the research.

Table 3.3: Selected literature on consumer adaption factors of various technological transaction modes

Authors	**Country**	**Significance factors considered in the literature**																								
		Perceived Usefulness	Perceived ease of use	Facilitating Conditions	Social Influence/Social Norm	Security Risk	Privacy Risk	Compatibility	Trial ability	Perceived financial cost	Assurance	Awareness	Tangible Benefits	Problem Handling/Customer service	Reliability	Corporate image	Empathy	Consumer Intention	Convenience	Sense of belonging	Sense of fulfillment	Responsiveness	Price Stability	Gender	Age	Education Attainment	Income Level
Internet Banking																											
Roche	Sri Lanka					√	√				√			√	√	√	√										
Al-Qeisi	Egypt, Saudi Arabia, Jordan	√	√	√	√																						
Mobile Banking																											
Yu	Taiwan	√		√	√	√	√			√								√						√	√		
Dash	India					√		√	√			√															
Electronic Cards																											
Khare	India	√			√													√	×	√			√	√			
Wang	Vietnam												√		√							√			√	√	
Crypto currencies																											
Spenkelink	Netherland							√	√	√			√		√								√				

Table 3.3 summarizes the factors influencing the consumer behavior of various technological applications such as Internet banking, mobile banking, electronic cards and crypto currencies. It can be observed that perceived usefulness, social influence, security risk and reliability as the common factors which influence to the adoption for mentioned different technological contexts.

Table 3.4: Selected literature on consumer adaption factors of mobile money payment system

Authors	**Country**	**Significance factors considered in the Literature-Mobile Money**																					
		Perceived Usefulness	Perceived ease of use	Facilitating Conditions	Social Influence/Social	Security Risk	Privacy Risk	Perceived Trust	Relative Advantage	Trial ability	Discomfort	Personal Innovativeness	System Quality	Task Technology fit	Connectivity	Structural assurance	Transactional cost	Observability(Awareness)	Attitude towards usage	Problem Handling	Reliability	Efficiency	Age	Education Attainment
Chauhan	India	√						√										√	√					
Oyefolahan	Somalil and	√	√					√																
Kyeyune	Uganda			√		√	√									√	√			√	√	√		
Thakur, R., & Srivastava, M	India	√	√	√	√	√	√					√												
Marumbwa, J., & Mutsikiwa, M	Zimbab we	√	√					√	√															
Upadhyay, P., & Jahanyan, S.	India	√	√								√		√	√	√	√								
Tobbin, P., & Kuwornu, J. K. M	Ghana	√	√			√	√	√		√														
Lesa, E., & Tembo, S	Zambia	√	√		√	√																		
Pousttchi, K. & Wiedemann , D	Germany	√	√											√										
Assibey, E. O.	Ghana						√		√	√								√					√	√

In addition, Table 3.4 summarizes factors prompting use of mobile money payment services in several countries. It can be clearly observed that perceived usefulness, perceived ease of use, security risk, privacy risk and perceived trust are the most popular and influential factors in the domain of mobile money services. According to Technological Acceptance Model (TAM), attitude towards using a technological application, is determined by both perceived usefulness and perceived ease of use, and therefore, both of them can be selected instead of 'attitude'.

Apart from the most influential factors perceived cost, promotions, facilitating conditions and awareness may affect the mobile money adoption in Sri Lanka according to the preliminary interviews which were conducted among mobile money agents. Therefore, the following factors can be selected as the most significant factors affecting the adoption of mobile money payment system in Sri Lanka.

- Perceived usefulness
- Perceived ease of use
- Perceived credibility
- Perceived cost
- Facilitating conditions
- Promotions
- Awareness

In addition, following demographic variables could be selected to investigate the effects to adopt mobile money payment system in Sri Lanka.

- Gender
- Age
- Educational Qualifications
- Income level
- Occupation

Above mentioned factors are considered as independent variables and the 'behavioral intention for the adoption of mobile money payment system in Sri Lanka' can be considered as a dependent variable. Figure 3.2 represents the proposed conceptual framework for this research.

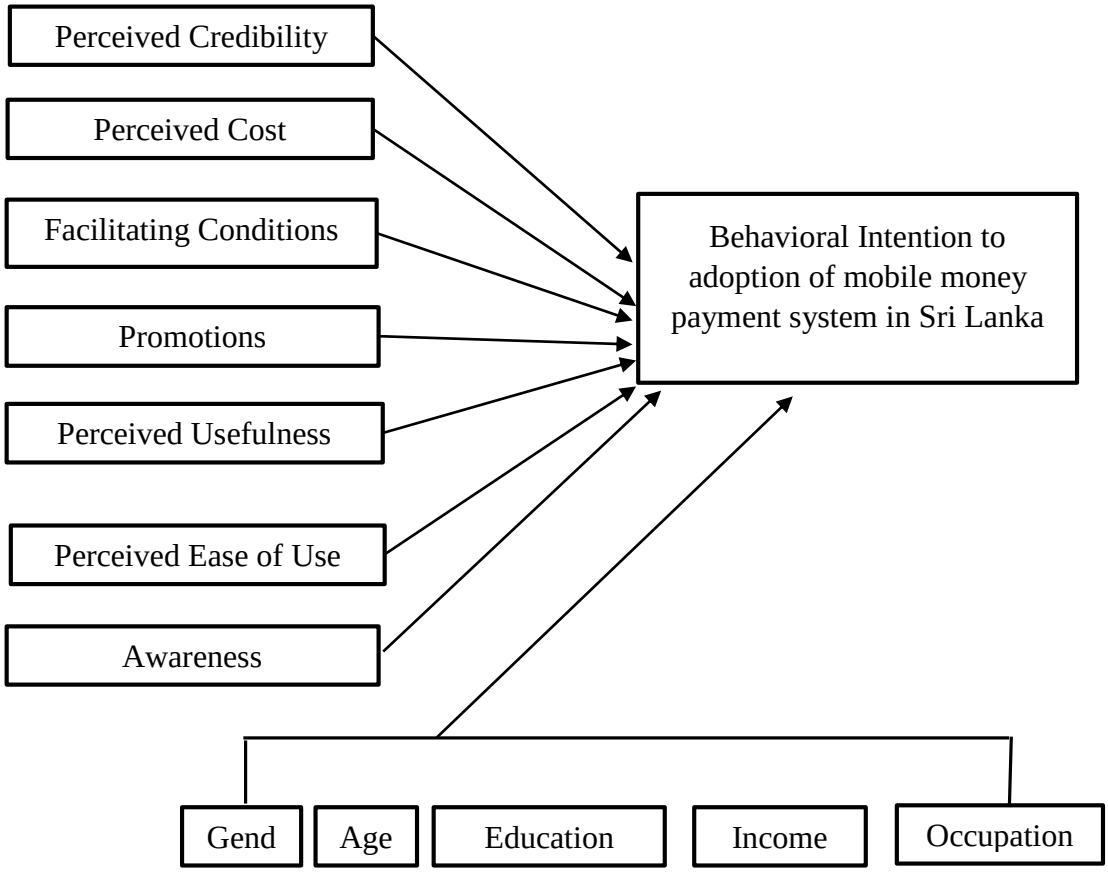

Figure 3.2: Conceptual Framework

Perceived usefulness (PU)

Davis (1989) has defined that the PU is the degree to which a user believes that using a particular information system would enhance his or her job performance. Therefore, PU can be identified as a benefit of using mobile money payment system. In this study, perceived usefulness of an individual was measured by using four beneficial areas:

1) Time Saving
2) Easy accessibility
3) Availability
4) Opportunity to use for day to day financial transactions

Perceived ease of use (PEOU)

According to the study of Davis (1989), PEOU is a degree to which a user believes that using a target system would be free from effort. In this study, perceived ease of use has been measured by following dimensions:

1) Easy to learn
2) Easy to use
3) User friendliness
4) Easy to access to customer service

Perceived Credibility (PCr)

Security and privacy issues are major concerns in both Internet and mobile platforms. Perceived risk and perceived trust are the most associated terms with mobile money transactions. Perceived Risk is defined as a consumer's belief on the potential uncertain negative consequences of using mobile money payments. According to the studies of Bauer et al, (2005), consumer's expectation is to avoid the potential risks rather than maximize utility and thus their subjective risk perception strongly determines their behavior. Therefore, perceived risk is defined as the extent to which people think that mobile money payment system is a risk free, error free, safe (high security and privacy) and reliable payment system.

Moreover, several studies have employed the trust in the TAM by integrating the original model using security and trust factors (Dahlberg, Mallat, & Oorni (2003)). According the Zucker(1986) , trust is a set of expectations shared by all those in an exchange. Hence perceived trust can be defined as the belief that mobile money service providers and agents will perform some activity in accordance with consumer's expectations (Marumbwa et al., (2013)). In general, perceived credibility is a collective meaning of perceived risk and perceived trust.

In this context, perceived credibility was measured by using six sub areas:

1) Privacy
2) Security of transactions

3) Reliability of transactions
4) Trustworthiness of mobile money service providers
5) Trustworthiness of mobile money agents
6) Trustworthiness of using mobile money transaction

Perceived Cost (PC)

According to Laurn and Lin (2005), perceived financial cost is defined as the extent to which an individual believes that using mobile banking would cost money. Thus it would create negative effect on behavioral intention to use mobile banking. Similarly, in this research context, PC is referred to as the extent to which an individual believes that using mobile money payment system would cost money. It was measured by using transactional charges for withdrawing mobile money and utility bill payment charges.

Facilitating conditions

Facilitating conditions has been defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support technology use by Venkatesh et al. (2003). In this study facilitating conditions was measured by following determinants:

1) Existence of mobile money outlets
2) Existence of merchants who accept mobile money

Awareness

Awareness for this research context can be defined as the existing knowledge or understanding of the mobile money payment system. It was measured by using following determinants:

1) Benefits of mobile money payment system
2) Charges for mobile money transactions

3) Available offers
4) Merchants/Institutes/Web sites which accept mobile money

Promotions

Promotions for this research context can be defined as the methods raising customer attraction on mobile money services taken by mobile money service providers. It was measured by availability of offers and loyalty programs for mobile money services.

3.5 Independent and Dependent Variables and Measurement

3.5.1 Variables

The proposed conceptual framework presents, twelve independent variables and one dependent variable as shown in the Table 3.5.

Table 3.5: Selected independent and dependent variables

Independent Variables	Dependent Variables
Perceived Credibility(PCr)	Behavioral Intention to adopt mobile money payment system
Perceived Cost(PC)	
Facilitating Conditions(FC)	
Promotions	
Awareness	
Perceived Usefulness(PU)	
Gender	
Age	
Educational Qualification	
Income Level	
Occupation	
Perceived Ease of Use(PEOU)	

In this research, the relationship between mentioned independent variables and dependent variables would be evaluated to identify the factors affecting the adoption of mobile money payment system in Sri Lanka. This dependent variable is measured by three factors such as “intent to continue”, “intent to increase” and “intent to reduce”

the using mobile money payment system with respect to the users. In addition, the dependent variable of non-user analysis is measured using two factors as 'intent' and 'desire', to use mobile money payment system in the future. The term 'intent' measures, how favorable the mobile money non-user is to use the mobile money services while the term 'desire' measures the respondents' willingness to use mobile money payment system in future.

3.5.2 Measurement

Table 3.6 and Table 3.7 include the descriptions of the main variables and their classifications which were used for the binary logistic regression analysis for users and non-users separately

Table 3.6: Descriptions of the Main Variables and their Classifications for the analysis of mobile money non-users

Main Variable	**Description**	**Type of Variable**
Dependent variables		
Behavioral intention(BI)	Whether non-user has intention to use mobile money in future	Dummy (1 for yes, 0 otherwise)
Independent variables		
Perceived ease of use(PEOU)	Whether non-user believes that using mobile money system should be free of effort	Dummy (1 for yes, 0 otherwise)
Perceived Credibility (PCR)	Whether non-user believes that using mobile money system is risk free , safe and reliable system	Dummy (1 for yes, 0 otherwise)
Perceived Cost (PC)	Whether non-user believes that using mobile money system incur fair cost	Dummy (1 for yes, 0 otherwise)
Promotions(PROMOTIONS)	Whether non-user believes that mobile money system should provide sufficient offers	Dummy (1 for yes, 0 otherwise)
Perceived Usefulness (PU)	Whether non-user believes that using mobile money	Dummy (1 for yes, 0 otherwise)

	system should enhance job performance	
Facilitating Conditions	Whether non-user believes that mobile money services has sufficient organizational and technical infrastructure.	Dummy (1 for yes, 0 otherwise)
Awareness(AWARENESS)	Whether non-user has knowledge on mobile money system	Dummy (1 for yes, 0 otherwise)
Gender		Dummy (1 for male, 0for female)
Age	Five groups of age: 1: Less than 18 years 2: 18 - 25 years 3: 26 - 40 years 4: 41 - 60 years 5 : Above 60 years	Discrete variable (1, 2, 3, 4, 5)
Education Qualification	Six groups of education: 1: Up to grade 5 2: Below O/L 3: O/L 4: A/L 5: Any degree/diploma 6 : Post Graduate or above	Discrete variable (1, 2, 3, 4, 5, 6)
Income	Five groups of income: 1: Less than Rs. 30,000 2: Rs. 30,000 – Rs. 50,000 3: Rs. 50,000 – Rs. 100,000 4: Rs. 100,000 – Rs. 200,000 5 :Greater than Rs.200,000	Discrete variable (1, 2, 3, 4, 5)
Occupation	Six groups of Jobs: P: Private Sector G: Government Sector B: Business F: Farmer S: Student N:None- any other Job	Discrete variable (P, G, B, F, S, N)

Table 3.7: Descriptions of the Main Variables and their Classifications for the analysis of mobile money users

Main Variable	**Description**	**Type of Variable**
Dependent variables		
Behavioral intention(BI)	Whether user has intention to use mobile money continuously	Dummy (1 for yes, 0 otherwise)
Independent variables		
Perceived ease of use(PEOU)	Whether user believes that using mobile money system is free of effort	Dummy (1 for yes, 0 otherwise)
Perceived Credibility (PCR)	Whether user believes that using mobile money system is risk free , safe and reliable system	Dummy (1 for yes, 0 otherwise)
Perceived Cost (PC)	Whether user believes that using mobile money system incur fair cost	Dummy (1 for yes, 0 otherwise)
Promotions(PROMOTIONS)	Whether user believes that mobile money service provides sufficient offers	Dummy (1 for yes, 0 otherwise)
Perceived Usefulness (PU)	Whether user believes that using mobile money system enhance job performance	Dummy (1 for yes, 0 otherwise)
Facilitating Conditions	Whether user believes that mobile money services has sufficient organizational and technical infrastructure.	Dummy (1 for yes, 0 otherwise)
Awareness(AWARENESS)	Whether user has knowledge on mobile money system	Dummy (1 for yes, 0 otherwise)
Gender		Dummy (1 for male, 0for female)
Age	Five groups of age: 1: Less than 18 years 2: 18 - 25 years 3: 26 - 40 years 4: 41 - 60 years 5 : Above 60 years	Discrete variable (1, 2, 3, 4, 5)

Education Qualification	Six groups of education: 1: Up to grade 5 2: Below O/L 3: O/L 4: A/L 5: Any degree/diploma 6 : Post Graduate or above	Discrete variable (1, 2, 3, 4, 5, 6)
Income	Five groups of income: 1: Less than Rs. 30,000 2: Rs. 30,000 – Rs. 50,000 3: Rs. 50,000 – Rs. 100,000 4: Rs. 100,000 – Rs. 200,000 5 :Greater than Rs.200,000	Discrete variable (1, 2, 3, 4, 5)
Occupation	Six groups of Jobs: P: Private Sector G: Government Sector B: Business F: Farmer S: Student N:None-any otherJob	Discrete variable (P, G, B, F, S, N)

3.6 Questionnaire Preparation and Measurements

Research questionnaires published in literature, were helpful to build questionnaires for this research. In addition, the preliminary interviews have been conducted among mobile money agents before preparing questionnaires to get an idea on the current situation. Based on ideas given by mobile money agents and previous researches, two preliminary questionnaires have been developed separately for mobile money users and mobile money non-users in order to investigate the relationship between independent variables, one dependent variable separately. They were validated through the pilot survey which was conducted among 25 mobile money users and 40 mobile money-non users. The variables, it's measuring indicators, scale and relevant questions in questionnaires were summarized in Table 3.8 and Table 3.9 for users and non-users respectively. Each question has been categorized according to one to five Likert scale with the responses ranging from strongly disagree, disagree, neither disagree nor agree, agree and strongly agree. The questions for measuring awareness have been categorized according to five Likert scale with the responses ranging from

not at all aware, slightly aware, somewhat aware, moderately aware and extremely aware.

Table 3.8: Variables, Measurements, Scales and Questions for mobile money users

Variables	**Measuring Points**	**Scale**	**Questions**
Perceived Usefulness(PU)	Time Saving	5 Likert scale	PU1, PU2, PU3, PU4, PU5 & PU6
	Easy accessibility		
	Convenience		
	Opportunity to use for day to day financial transactions		
Perceived Ease of Use(PEOU)	Easy to learn	5 Likert scale	PEOU1, PEOU2, PEOU3, PEOU4 & PEOU5
	Easy to use		
	User friendliness		
	Easy to access to customer service		
Perceived Credibility(PCR)	Privacy	5 Likert scale	PCR1, PCR2, PCR3, PCR4, PCR5, PCR6 & PCR7
	Security of the transactions		
	Reliability of the transactions		
	Trustworthiness of mobile money service providers		
	Trustworthiness of mobile money agents		
	Trustworthiness of using mobile money transaction		
Perceived Cost(PC)	Transactional charges for withdrawing mobile money	5 Likert scale	PC1, PC2, PC3, PC4 & PC5
	Utility bill payment charges		
Facilitating Conditions(FC)	Existence of mobile money outlets	5 Likert scale	FC1, FC2
	Existence of merchants who accept mobile money		
Awareness(A)	Benefits of mobile money payment system	5 Likert scale	AWARENESS1, AWARENESS2, AWARENESS3 & AWARENESS4
	Charges for mobile money transactions		
	Available offers		
	Merchants/Institutes/Websites which accept mobile money		

Promotions	Availability of offers	5 Likert scale	PROMOTIONS 1, PROMOTIONS 2 & PROMOTIONS 3
	Availability of loyalty programs		
Behavioral intention to adopt	Intent to continue using mobile money	5 Likert scale	BI1, BI2 & BI3
	Intent to increase using mobile money		
	Intent to reduce using mobile money		

Table 3.9: Variables, Measurements, Scales and Questions for mobile money non-users

Variables	**Measuring Points**	**Scale**	**Questions**
Perceived Usefulness(PU)	Time Saving	5 Likert scale	PU1, PU2, PU3, PU4, PU5 & PU6
	Easy accessibility		
	Convenience		
	Opportunity to use for day to day financial transactions		
Perceived Ease of Use(PEOU)	Easy to learn	5 Likert scale	PEOU1, PEOU2, PEOU3, PEOU4 & PEOU5
	Easy to use		
	User friendliness		
	Easy to access to customer service		
Perceived Credibility(PCr)	Privacy	5 Likert scale	PCR1, PCR2, PCR3, PCR4, PCR5, PCR6 & PCR7
	Security of the transactions		
	Reliability of the transactions		
	Trustworthiness of mobile money service providers		
	Trustworthiness of mobile money agents		
	Trustworthiness of using mobile money transaction		
Perceived Cost(PC)	Transactional charges for withdrawing mobile money	5 Likert scale	PC1, PC2, PC3, PC4, PC5, PC6 & PC7
	Utility bill payment charges		
	Existence of mobile money outlets		FC1, FC2

Facilitating Conditions(FC)	Existence of merchants who accept mobile money	5 Likert scale	
Awareness(A)	Benefits of mobile money payment system	5 Likert scale	AWARENESS1, AWARENESS2, AWARENESS3 & AWARENESS4
	Charges for mobile money transactions		
	Available offers		
	Merchants/Institutes/Websites which accept mobile money		
Promotions	Availability of offers	5 Likert scale	PROMOTIONS 1, PROMOTIONS 2 , PROMOTIONS 3 & PROMOTIONS 4
	Availability of loyalty programs		
Behavioral intention to adopt	Intent to use mobile money	5 Likert scale	BI1 & BI2
	Desire to use mobile money		

3.7 Binary Logistic Regression Analysis

Multivariate binary logistic regression has been used to identify, whether any relationship exists among several independent variables and one dependent variable in the study. It is a leading popular technique which has been used for modeling a binary dependent variable.

In the proposed conceptual model, the dependent variable is a dichotomous variable which distinguishes between adoption and non-adoption of mobile money. The two categories are coded as “0” and “1”. The category being “non-user/user who has been adopted to use mobile money” is coded as “1” and the remaining group is considered as a “non-user/user who has not been adopted to use mobile money “as "0”.

Independent variables such as gender, age, income, education and occupation are also in the form of ordinal or nominal scale.

Behavioral Intention (BI) of users and non-users to use mobile money is given by;

$$BI_{user} = \begin{cases} 1 = success & if\ user\ has\ decided\ to\ continuosly\ use\ mobile\ money \\ 0 = faliure & if\ users\ has\ not\ decided\ to\ continuosly\ use\ mobile\ money \end{cases}$$

$$BI_{non-user} = \begin{cases} 1 = success & if\ non-user\ has\ decided\ to\ \ use\ mobile\ money\ in\ future \\ 0 = faliure & if\ non-users\ has\ not\ decided\ to\ use\ mobile\ money\ in\ future \end{cases}$$

If the nominal scaled variable has k possible values, then k-1 design dummy variables (design variables) should be needed. Therefore, the j^{th} independent variable which is in nominal scale, X_j has K_j levels, K_j-1 design variables should be needed. These design variables will be denoted as D_{ju} with coefficients; $\beta_{ju}; u = 1,2, \dots \dots, k_j - 1$
The regression model with n variables and the j^{th} variable being discrete is:

$$BI = \beta_0 + \beta_1 X_1 + \cdots . + \sum_{u=1}^{k_j-1} \beta_{ju} D_{ju} + \cdots + \beta_n X_n$$

$$\beta_0 = Constant;\ \beta_1 \to \beta_n = coeficients\ for\ n\ explanotary\ variables\ X_1 \to X_n$$

The logit transformation of the regression model is:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \cdots . + \sum_{u=1}^{k_j-1} \beta_{ju} D_{ju} + \cdots + \beta_n X_n$$

P = probability of being user/non-users who has been adopted to the use of mobile money

$$\frac{p}{1-p} = odd\ ratio$$

$$\frac{P}{1-P} = \exp\left(\beta_0 + \beta_1 X_1 + \cdots . + \sum_{u=1}^{k_j-1} \beta_{ju} D_{ju} + \cdots + \beta_n X_n\right), \qquad 0 < p < 1$$

If probabilities of the event of interest happening for individuals are needed, the logistic regression equation can be written as:

$$P = \frac{\exp(\beta_0 + \beta_1 X_1 + \cdots . + \sum_{u=1}^{k_j - 1} \beta_{ju} D_{ju} + \cdots + \beta_n X_n)}{1 + \exp(\beta_0 + \beta_1 X_1 + \cdots . + \sum_{u=1}^{k_j - 1} \beta_{ju} D_{ju} + \cdots + \beta_n X_n)}, \qquad 0 < P < 1$$

3.8 Research Hypotheses for analysis of mobile money users

1. Association between perceived ease of use(PEOU) and behavioral intention to use mobile money continuously

   Null hypothesis ($H1_0$): There is no association between PEOU and customer's intention to use mobile money continuously

   Alternative hypothesis ($H1_A$): There is an association between PEOU and customer's intention to use mobile money continuously

2. Association between perceived credibility(PCr) and behavioral intention to use mobile money continuously

   Null hypothesis ($H1_0$): There is no association between PCr and customer's intention to use mobile money continuously

   Alternative hypothesis ($H1_A$): There is an association between PCr and customer's intention to use mobile money continuously

3. Association between perceived usefulness(PU) and behavioral intention to use mobile money continuously

   Null hypothesis ($H3_0$): There is no association between PU and customer's intention to use mobile money continuously

   Alternative hypothesis ($H3_A$): There is an association between PU and customer's intention to use mobile money continuously

4. Association between facilitating conditions (FC) and behavioral intention to use mobile money continuously

   Null hypothesis ($H4_0$): There is no association between FC and customer's intention to use mobile money continuously

   Alternative hypothesis ($H4_A$): There is an association between FC and customer's intention to use mobile money continuously

5. Association between perceived cost (PC) and behavioral intention to use mobile money continuously

   Null hypothesis ($H5_0$): There is no association between PC and customer's intention to use mobile money continuously

   Alternative hypothesis ($H5_A$): There is an association between PC and customer's intention to use mobile money continuously

6. Association between awareness(AWARENESS) and behavioral intention to use mobile money continuously

   Null hypothesis ($H6_0$): There is no association between awareness and customer's intention to use mobile money continuously

   Alternative hypothesis ($H6_A$): There is an association between awareness and customer's intention to use mobile money continuously

7. Association between promotions(PROMOTIONS) and behavioral intention to use mobile money continuously

   Null hypothesis ($H7_0$): There is no association between promotions and customer's intention to use mobile money continuously

   Alternative hypothesis ($H7_A$): There is an association between promotions and customer's intention to use mobile money continuously

8. Association between customer's gender and behavioral intention to use mobile money continuously

   Null hypothesis ($H8_0$): There is no association between customer's gender and behavioral intention to use mobile money continuously

Alternative hypothesis ($H8_A$): There is an association between customer's gender and behavioral intention to use mobile money continuously

9. Association between customer's age and behavioral intention to use mobile money continuously

   Null hypothesis ($H9_0$): There is no association between customer's age and behavioral intention to use mobile money continuously

   Alternative hypothesis ($H9_A$): There is an association between customer's age and behavioral intention to use mobile money continuously

10. Association between customer's education qualification and behavioral intention to use mobile money continuously

    Null hypothesis ($H10_0$): There is no association between customer's education qualification and behavioral intention to use mobile money continuously

    Alternative hypothesis ($H10_A$): There is an association between customer's education qualification and behavioral intention to use mobile money continuously

11. Association between customer's income level and behavioral intention to use mobile money continuously

    Null hypothesis ($H11_0$): There is no association between customer's income level and behavioral intention to use mobile money continuously

    Alternative hypothesis ($H11_A$): There is an association between customer's income level and behavioral intention to use mobile money continuously

12. Association between customer's occupation and behavioral intention to use mobile money continuously

    Null hypothesis ($H12_0$): There is no association between customer's occupation and behavioral intention to use mobile money continuously

    Alternative hypothesis ($H12_A$): There is an association between customer's occupation and behavioral intention to use mobile money continuously

13. Association between perceived ease of use and perceived usefulness

Null hypothesis ($H13_0$): There is no association between perceived ease of use and perceived usefulness

Alternative hypothesis ($H13_A$): There is an association between perceived ease of use and perceived usefulness

3.9 Research Hypotheses for the analysis of mobile money non-users

1. Association between perceived ease of use(PEOU) and behavioral intention of non-users to use mobile money in future

   Null hypothesis ($H1_0$): There is no association between PEOU and behavioral intention of non-users to use mobile money in future

   Alternative hypothesis ($H1_A$): There is an association between PEOU and behavioral intention of non-users to use mobile money in future

2. Association between perceived credibility(PCr) and behavioral intention of non-users to use mobile money in future

   Null hypothesis ($H1_0$): There is no association between PCr and behavioral intention of non-users to use mobile money in future

   Alternative hypothesis ($H1_A$): There is an association between PCr and behavioral intention of non-users to use mobile money in future

3. Association between perceived usefulness(PU) and behavioral intention of non-users to use mobile money in future

   Null hypothesis ($H1_0$): There is no association between PU and behavioral intention of non-users to use mobile money in future

   Alternative hypothesis ($H1_A$): There is an association between PU and behavioral intention of non-users to use mobile money in future

4. Association between facilitating conditions (FC) and behavioral intention of non-users to use mobile money in future

   Null hypothesis ($H1_0$): There is no association between FC and behavioral intention of non-users to use mobile money in future

   Alternative hypothesis ($H1_A$): There is an association between FC and behavioral intention of non-users to use mobile money in future

5. Association between perceived cost (PC) and behavioral intention of non-users to use mobile money in future

   Null hypothesis ($H1_0$): There is no association between PC and behavioral intention of non-users to use mobile money in future

   Alternative hypothesis ($H1_A$): There is an association between PC and behavioral intention of non-users to use mobile money in future

6. Association between awareness(AWARENESS) and behavioral intention of non-users to use mobile money in future

   Null hypothesis ($H1_0$): There is no association between awareness and behavioral intention of non-users to use mobile money in future

   Alternative hypothesis ($H1_A$): There is an association between awareness and behavioral intention of non-users to use mobile money in future

7. Association between promotions(PROMOTIONS) and behavioral intention of non-users to use mobile money in future

   Null hypothesis ($H1_0$): There is no association between promotions and behavioral intention of non-users to use mobile money in future

   Alternative hypothesis ($H1_A$): There is an association between promotions and behavioral intention of non-users to use mobile money in future

8. Association between non-user's gender and behavioral intention to use mobile money in future

   Null hypothesis ($H8_0$): There is no association between non-user's gender and behavioral intention to use mobile money in future

Alternative hypothesis ($H8_A$): There is an association between non-user's gender and behavioral intention to use mobile money in future

9. Association between non-user's age and behavioral intention to use mobile money in future

   Null hypothesis ($H8_0$): There is no association between non-user's age and behavioral intention to use mobile money in future

   Alternative hypothesis ($H8_A$): There is an association between non-user's age and behavioral intention to use mobile money in future

10. Association between non-user's education qualification and behavioral intention to use mobile money in future

    Null hypothesis ($H8_0$): There is no association between non-user's education qualification and behavioral intention to use mobile money in future

    Alternative hypothesis ($H8_A$): There is an association between non-user's education qualification and behavioral intention to use mobile money in future

11. Association between non-user's income level and behavioral intention to use mobile money in future

    Null hypothesis ($H8_0$): There is no association between non-user's income level and behavioral intention to use mobile money in future

    Alternative hypothesis ($H8_A$): There is an association between non-user's income level and behavioral intention to use mobile money in future

12. Association between non-user's occupation and behavioral intention to use mobile money in future

    Null hypothesis ($H8_0$): There is no association between non-user's occupation and behavioral intention to use mobile money in future

    Alternative hypothesis ($H8_A$): There is an association between non-user's occupation and behavioral intention to use mobile money in future

13. Association between perceived ease of use and perceived usefulness

Null hypothesis ($H13_0$): There is no association between perceived ease of use and perceived usefulness

Alternative hypothesis ($H13_A$): There is an association between perceived ease of use and perceived usefulness

3.10 Data collection method

Since the target population of mobile money non-users is large and the nature of the study is to identify the factors affecting the adoption of mobile money, the most appropriate techniques are quantitative methods. Previous researches have also carried out quantitative methods. Therefore, questionnaire is the most appropriate tool to gather data to identify the factors influencing users' and non-users' intention to use mobile money.

Both paper surveys and online surveys have been prepared for users and non-users of mobile money separately. Convenience sampling method was used in this study to get the responses from both mobile money users and non-users. Initially, a pilot surveys has been conducted for users and non-users separately among 25 users and 40 non-users to validate the questionnaires. Few open ended questions were included into the survey to identify any issues on use of mobile money and enhancements which they expect from mobile money services. The distributed questionnaires are available in Appendix A.

4 ANALYSIS AND INTERPREATION

4.1 Overview of Chapter

This chapter provides a detailed analysis and discussion on the observations and the statistical results derived from this research. Section 4.2 describes the characteristics of two samples and section 4.3 includes the reliability analysis of two data sets. Section 4.5 and 4.6 include detail analysis of results for users and non-users separately.

4.2 Characteristics of the two samples

Mobile money user

The effective sample size of mobile money users for this research was 102 after eliminating incomplete responses. But 6 users among them have already stopped the use of mobile money due to several reasons. Therefore, after subtracting those users from the sample, the responses from 96 users were analyzed in this chapter.

Mobile money non-user

There were 385 effective responses from mobile money-non users for this study after eliminating incomplete responses.

4.3 Reliability analysis of Data Set

Reliability analysis has been conducted by measuring the overall consistency of data to evaluate the quality of measurement procedure prior to the data analysis. Cronbach's Alpha test, one of the most popular techniques was used to estimate the internal consistency of data. The preferable value of Cronbach's Alpha coefficient is close to one which means that the questions measure the similar dimensions of factors. As a rule of thumb, the most appropriate value of Cronbach's Alpha coefficient should be greater than 0.7. Moreover, Nunnally and Bernstein (1994) have considered the value greater than 0.6 as acceptable measurement for social science research which has been

further identified by Luarn & Lin 2005; Wua & Wang 2005; Wang, Luarn & Lin 2006; Kazi & Mannan 2013; Nasri 2011). Therefore, acceptable lower bound for the Cronbach alpha coefficient for this research is 0.6.

4.3.1 Reliability analysis for Users Data Set

Perceived ease of use

Five items in the questionnaire has been used to measure the perceived ease of use in the questionnaire (PEOU1, PEOU2, PEOU3, PEOU4 and PEOU5). Overall Cronbach's Alpha value for perceived ease of use has been measured as 0.685 after eliminating PEOU2 and PEOU5. Therefore, it can be concluded that perceived ease of use has been measured by reliable items. Table 4.1 shows the reliability level of perceived ease of use.

Table 4.1: Items reliability in perceived ease of use for users

Cronbach's Alpha	N of Items
.685	3

Perceived credibility

Perceived credibility has been measured by seven items in the questionnaire (PCr1, PCr2, PCr3, PCr4, PCr5, PCr6, and PCr7). Overall Cronbach's Alpha for perceived credibility has been calculated as 0.694 and it has been higher than 0.6. Therefore, perceived credibility has been measured using reliable items. Table 4.2 shows the reliability level of perceived credibility.

Table 4.2: Items reliability in perceived credibility for users

Cronbach's Alpha	N of Items
.694	7

Perceived cost

Perceived cost has been measured using five items through the questionnaire (PC1, PC2, PC3, PC4 and PC5). It was required to eliminate PC5 to get an acceptable reliability level. Since the overall Cronbach's Alpha value has been greater than 0.6 as mentioned in Table 4.3, the reliability level for perceived cost can be accepted.

Table 4.3: Items reliability in perceived cost for users

Cronbach's Alpha	N of Items
.885	4

Perceived usefulness

Perceived usefulness has been measured using six items in the questionnaire (PU1, PU2, PU3, PU4, PU5 and PU6). Since the overall Cronbach's Alpha value was lower than the accepted level, PU3 has been excluded from the list of dimensions. Then new Cronbach's Alpha value for perceived usefulness has been recorded as 0.622. Since it is higher than 0.6, the reliability level for the perceived usefulness can be accepted. Table 4.4 shows reliability level of perceived usefulness.

Table 4.4: Items reliability in perceived usefulness for users

Cronbach's Alpha	N of Items
.622	5

Promotions

Two items have been used to measure the promotions through the questionnaire (PROMOTION1 and PROMOTIONS2). Since the reliability level has been lower than accepted level, only one dimension has been considered to measure the promotions.

Facilitating Conditions

Facilitating conditions has been measured using two items in the questionnaire (FC1 and FC2). The Cronbach's Alpha value for FC1 and FC2 has been greater than 0.6 and it can be concluded that facilitating conditions has been measured using reliable items. Table 4.5 shows the reliability level of facilitating conditions.

Table 4.5: Items reliability in facilitating conditions for users

Cronbach's Alpha	N of Items
.619	2

Awareness

Four items have been used to measure the awareness in the questionnaire (AWARENESS1, AWARENESS2, AWARENESS3, and AWARENESS4). Since overall Cronbach's Alpha value for awareness has been greater than 0.6, the reliability level for the awareness can be accepted. Table 4.6 shows the reliability level of awareness.

Table 4.6: Items reliability in awareness for users

Cronbach's Alpha	N of Items
.702	4

Behavioral Intention

This has been measured using three questions in the questionnaire (BI1, BI2 and BI3). Overall Cronbach's Alpha value for behavioral intention is calculated as 0.908 which is greater than 0.6. Therefore, the reliability of response among behavioral intention is at an acceptable level as depicted in Table 4.7.

Table 4.7: Items reliability in behavioral intention for users

Cronbach's Alpha	N of Items
.908	3

Table 4.8: Summary of items reliability

Variable	No of question items	Cronbach's Alpha Value
Perceived ease of use	3	.685
Perceived credibility	7	.694
Perceived cost	4	.885
Perceived usefulness	5	.622
Promotions	1	N/A
Facilitating conditions	2	.619
Awareness	4	.702
Behavioral intention	3	.908

According to the initial pilot survey among 25 users, the reliability for the promotions was greater than 0.6 with two dimensions. But finally, it's required to consider only PROMOTIONS1. Moreover, the reliability of perceived ease of use has been recorded as a lower value than the value obtained in pilot survey. But, perceived credibility and perceived cost showed a higher value compared to the overall Cronbach's Alpha value, obtained in pilot survey. Table 4.8 includes the summary of items reliability for the data set of mobile money users.

4.3.2 Reliability analysis for Non-Users Data Set

Perceived ease of use

Perceived ease of use (PEOU) has been measured using five items in the questionnaire such as PEOU1, PEOU2, PEOU3, PEOU4 and PEOU5. Since overall Cronbach's Alpha for PEOU is greater than 0.6, PEOU has been measured by reliable items. Table 4.9 shows the reliability level of perceived ease of use.

Table 4.9: Items reliability in perceived ease of use for non-users

Cronbach's Alpha	N of Items
.712	5

Perceived credibility

Seven items in the questionnaire have been used to measure the internal consistency of the perceived credibility (PCr) including PCr1, PCr2, PCr3, PCr4, PCr5, PCr6, and PCr7. Overall Cronbach's Alpha for perceived credibility has been calculated as 0.632 and it has been higher than 0.6. Therefore, perceived credibility has acceptable reliability without eliminating any items. Table 4.10 shows the reliability level of perceived credibility.

Table 4.10: Items reliability in perceived credibility for non-users

Cronbach's Alpha	N of Items
.632	7

Perceived cost

Perceived cost (PC) has been measured using seven items in the questionnaire (PC1, PC2, PC3, PC4, PC5, PC6 and PC7). Since the overall Cronbach's Alpha is greater than 0.6, the reliability level for the perceived cost can be accepted. Table 4.11 shows the reliability level of perceived cost.

Table 4.11: Items reliability in perceived cost for non-users

Cronbach's Alpha	N of Items
.672	7

Perceived usefulness

Six items have been used to measure the reliability level of perceived usefulness. Since overall Cronbach's Alpha value has been less than 0.6 for six items, two items have

been eliminated to get higher Cronbach's Alpha value. Finally, four items gave a reasonable value which can be accepted as reliable items. Table 4.12 shows the reliability level of perceived usefulness.

Table 4.12: Items reliability in perceived usefulness for non-users

Cronbach's Alpha	N of Items
.750	4

Promotions

Promotions have been measured using four items in the questionnaire such as PROMOTIONS1, PROMOTIONS2, PROMOTIONS3 and PROMOTIONS4. It was required to eliminate third and fourth items to get an acceptable reliability level. Finally, Cronbach's Alpha value was 0.727 which can be accepted as reliable items. Table 4.13 shows the reliability level of promotions.

Table 4.13: Items reliability in promotions for non-users

Cronbach's Alpha	N of Items
.727	2

Facilitating Conditions

Two items have been used to measure the facilitating conditions such as FC1 and FC2. Since the overall Cronbach's Alpha value has been 0.748 as shown in Table 4.14, it can be concluded that the facilitating conditions has been measured by reliable items.

Table 4.14: Items reliability in facilitating conditions for non-users

Cronbach's Alpha	N of Items
.748	2

Awareness

Four items have been used to measure the awareness in the questionnaire (AWARENESS1, AWARENESS2, AWARENESS3, and AWARENESS4). Since overall Cronbach's Alpha value for awareness was 0.890 as mentioned in Table 4.15, the reliability level for the awareness can be accepted.

Table 4.15: Items reliability in awareness for non-users

Cronbach's Alpha	N of Items
.890	4

Behavioral Intention

Behavioral intention has been measured using two items in the questionnaire (BI1 and BI2). Since the overall Cronbach's Alpha value for behavioral intention is 0.850, it is at an acceptable reliability level as depicted in Table 4.16.

Table 4.16: Items reliability in behavioral intention for non-users

Cronbach's Alpha	N of Items
.850	2

Table 4.17 includes the summary of items reliability for the data set of mobile money non-users.

Table 4.17: Reliability analysis for non-user's data set

Variable	**Number of question items**	**Cronbach's Alpha Value**
Perceived ease of use	5	0.712
Perceived credibility	7	0.632
Perceived cost	7	0.672
Perceived usefulness	4	0.750
Promotions	2	0.727
Facilitating Conditions	2	0.748
Awareness	4	0.890
Non-users' intention to use mobile money	2	0.850

4.4 Results analysis for mobile money users

4.4.1 Descriptive Analysis of Users Using SPSS

This section is used to describe the distribution of responses for each variable. The data distribution is displayed using SPSS output.

Descriptive statistics of perceived ease of use

The perceived ease of use has been measured using "easy to learn", "easy to use" and "user friendliness". As shown in Table B.1 of Appendix B, the mean values for perceived ease of use are 4.59, 4.59 and 4.61. Since, all values lie above 4.5 and modes are 5, it can be concluded that using mobile money payment system is free from effort.

Descriptive statistics of perceived credibility

Perceived credibility has been measured using six dimensions such as privacy, security of transactions, reliability of transactions, trustworthiness of mobile money service providers, trustworthiness of mobile money agents and trustworthiness of using mobile money transactions. The data distribution of perceived credibility for users are shown in Table B.2 of Appendix B. Since, the mean value of each item has been higher than 3.5, and modes are above 4, most of users think that the mobile money system is safe and reliable system. Moreover, mobile money service providers and agents perform a trust and reliable service for the users.

But PCr5 which represents trustworthiness of using mobile money transaction and PCr4 and PCr6 which represent the privacy are comparatively lower than other items. Users have not strongly agreed to the ability to use mobile money transaction without any issue. Further, they do not strongly trust upon securing personal information without revealing it to external parties without their consent.

Descriptive statistics of perceived cost

Table B.3 of Appendix B includes the data distribution of perceived cost which has been measured by using the opinion of users on transactional charges for withdrawing mobile money and utility bill payment charges. Even though, the modes for PC1 and PC2 are 4 and 5 respectively, the mean values lie around 3. Therefore, majority of users have not either agreed or disagreed that the charges are not high when compared to the other payment methods and total transaction amount. In addition, according to PC3 users have not strongly mentioned that using mobile is not cost burden to them even though they have not decided it as a cost burden service. But it is likely that considerable amount of users believe quality of service is good enough compared to the charges since mean value is 3.81 which is close to 4.

Descriptive statistics of perceived usefulness

Table B.4 of Appendix B includes the data distribution of perceived usefulness which has been measured by four dimensions such as 1) time saving, 2) easy accessibility 3) convenience and 4) opportunity to use for day to day financial transactions. Since mean value for PU5 is 2.91 while mode is one, majority of users have not decided that the allowed maximum amount for the transaction as sufficient for their use. Since the mean value of PU4 is 3.46, the users have not strongly agreed on that mobile money is easily accessible. Apart from PU5, most of users think that using mobile money enhances their performance.

Descriptive statistics of promotions

Promotions have been measured using only one dimension which denotes the availability of offers from mobile money services. The mean and mode for this dimension are 2.71 and 3 as shown in Table B.5 of Appendix B. Therefore, most of the users have mentioned that there is only limited number of offers provided by mobile money service providers.

Descriptive statistics of facilitating conditions

Table B.6 of Appendix B consists of the data distribution of facilitating conditions which has been measured by the existence of outlets/ merchants which accept mobile money. The mean value for FC1 and FC2 are 1.86 and 1.85 respectively. Further, the modes for both items are 1. Therefore, the majority of users have mentioned that the available outlets which offer facility of loading and disbursing mobile money are not sufficient. Further, they are not satisfied with the number of merchants who accept mobile money.

Descriptive statistics of awareness

Awareness on mobile money has been measured using existing knowledge of users on benefits of mobile money payment system, charges for mobile money transactions, available offers and merchants/institutes which accept mobile money. Table B.7 of Appendix B, displays the data distribution of all four dimensions for awareness. Even though, the mean values for AWARENESS1 and AWARENESS2 are 3.6 and 3.4, the mean values of other two dimensions are 2.25 and 2.42. Therefore, the majority of users do not have much knowledge on available offers and merchants/institutes which accept mobile money. But they are somewhat aware on benefits of mobile money services and charges of mobile money transactions.

4.4.2 Data distribution of mobile money-users

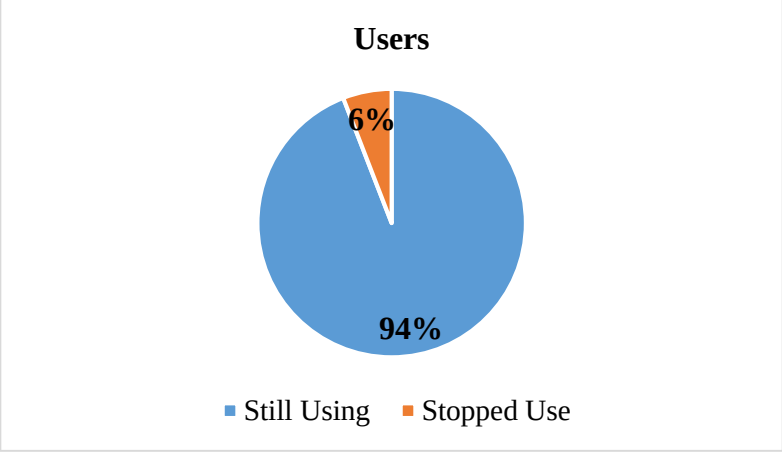

Figure 4.1: Mobile money users

6% of mobile money users in this sample have stopped the use of mobile money due to several reasons as depicted in Figure 4.1. Following reasons have been mentioned by them.

- Inadequate number of outlets which offer the facility to load and disburse mobile money
- Non-existing of relative advantage over other payment methods
- High charges
- Less trust on carrying out mobile money transactions success fully

In this research the users who still use mobile money have been considered for building regression model in order to identify the factors affecting for the adoption of mobile money payment system.

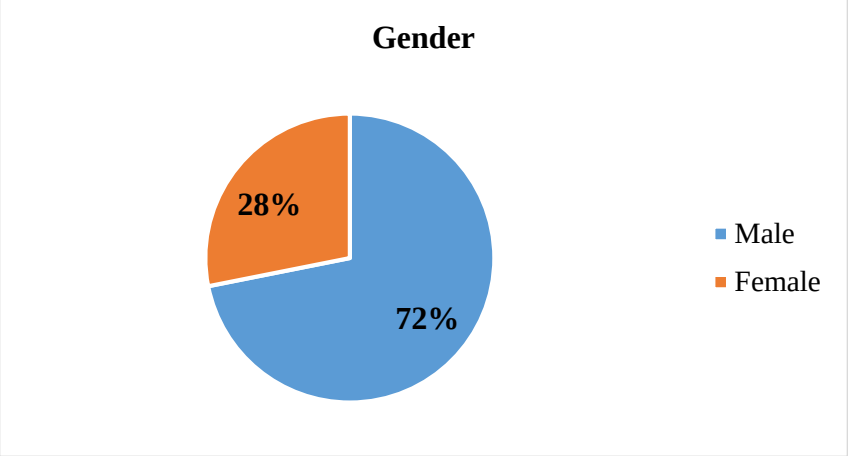

Figure 4.2: Gender wise data distribution of users

According to the Figure 4.2, there were 69(72%) male mobile money users and 27(28%) female mobile money users out of the n=96 data sample. It indicates that the majority of mobile money service users are males. This reveals that although mobile money services have started in Sri Lanka in 2012, females are somewhat reluctant to use mobile money services than males.

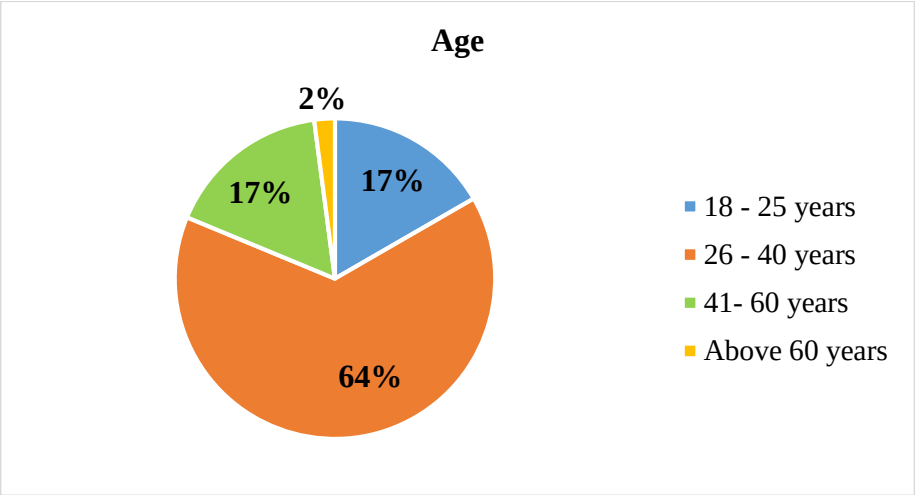

Figure 4.3: Age wise data distribution of users

According to Figure 4.3, which shows the data distribution of age groups, the age group of ’26 – 40’ has more tendency to use mobile money payment as it was recorded as 64%. The age groups of ‘18 – 25’ and ’41 - 60’ have reached the second place with 17%. Therefore, it can be concluded that mobile money service is more popular among the young group. Cumulatively, a large percentage (81%) represents the young and middle aged mobile money users.

Finding: Young and middle aged group (’18-25’,’26-40’) have more tendency in using mobile money payment services in Sri Lanka.

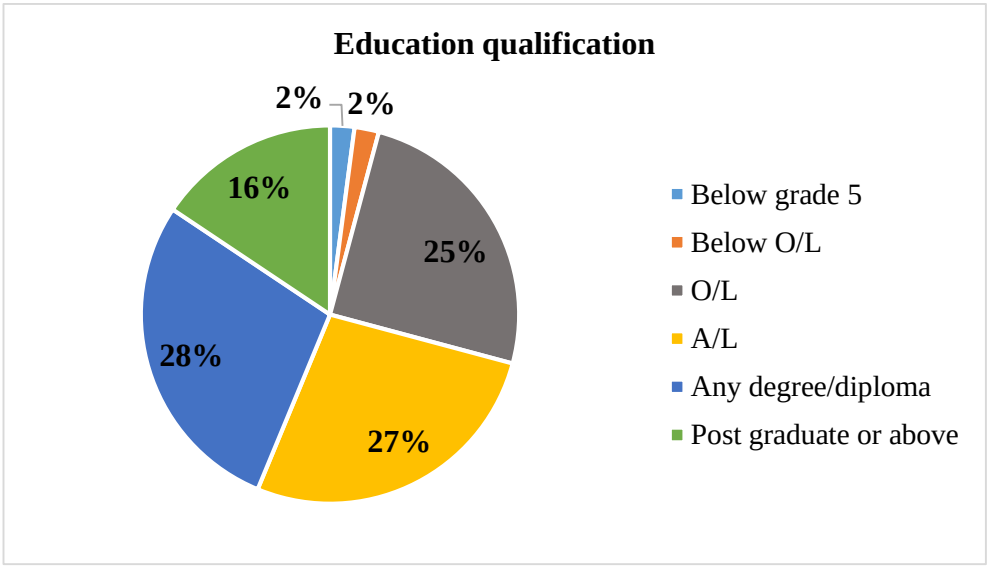

Figure 4.4: Education qualification wise data distribution of users

Figure 4.4 shows the data distribution of educational qualifications of mobile money users. The mobile money users with the educational qualification of "Any degree/diploma" and "A/L" have mostly used mobile money compared to other educational qualifications. But, cumulatively a large percentage (44%) is represented by educated people who are graduates or have obtained postgraduate education.

Finding: It can be concluded that both educated and less-educated people have a tendency to use mobile money in Sri Lanka.

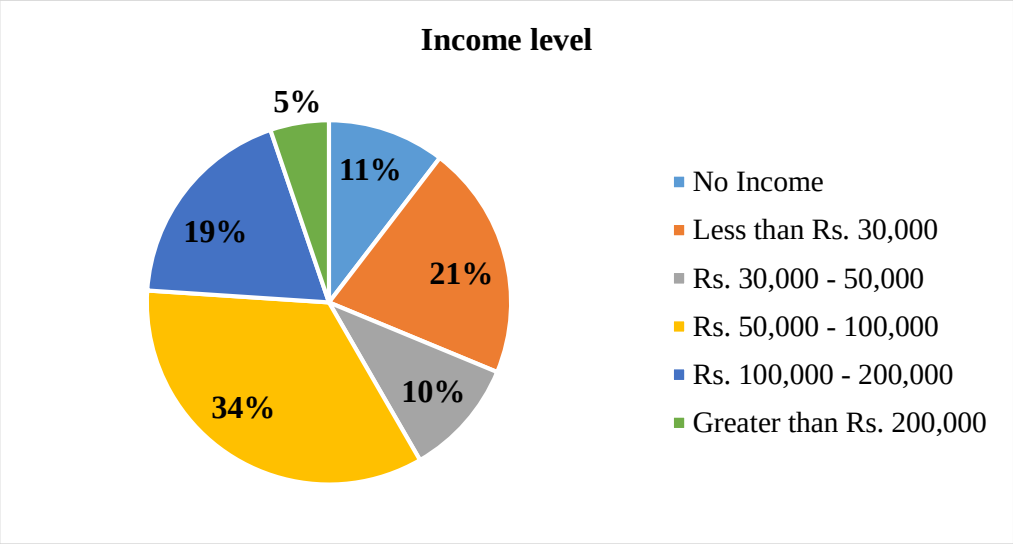

Figure 4.5: Income level wise data distribution of users

Figure 4.5 shows the income distribution of mobile money users in Sri Lanka. The income level of the majority is between Rs. 50,000 and Rs. 100,000. Cumulatively, the income of 58% users is greater than Rs. 50,000. But the income level of 32% of users is less than Rs. 30,000.

Finding: It can be concluded that both higher income and less income people have tendency to use mobile money.

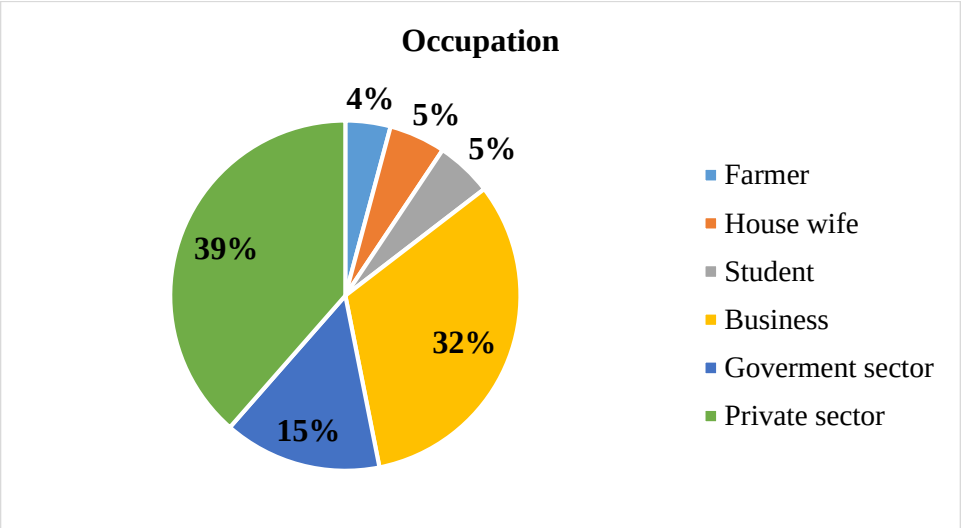

Figure 4.6: Occupation wise data distribution of users

According to the Figure 4.6, the majority of the users (39%) work in the private sector. Meanwhile, 32% of users do business while 15% of users are government officers. In addition, cumulatively, 14% of users are students, house wives and farmers.

Finding: It can be concluded that people who work in private sector and businessmen have more tendency in using mobile money.

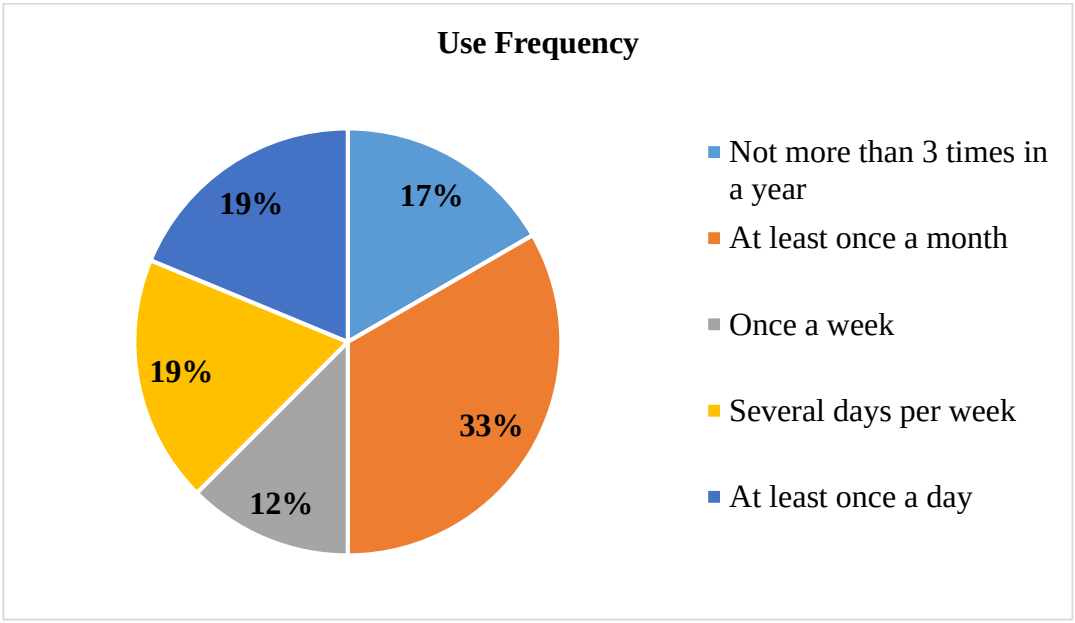

Figure 4.7: Use frequency of users

According to Figure 4.7, which shows the data distribution of the frequency of use of the mobile money users, 19% of users use mobile money at least once a day while another 19% of users use it several days per week. In addition, 12% of users use mobile money once a week while 33% of users use mobile money at least once a month. Meanwhile, 17% of users use mobile money not more than three times per year.

Finding: Cumulatively, 50% of users actively use mobile money services

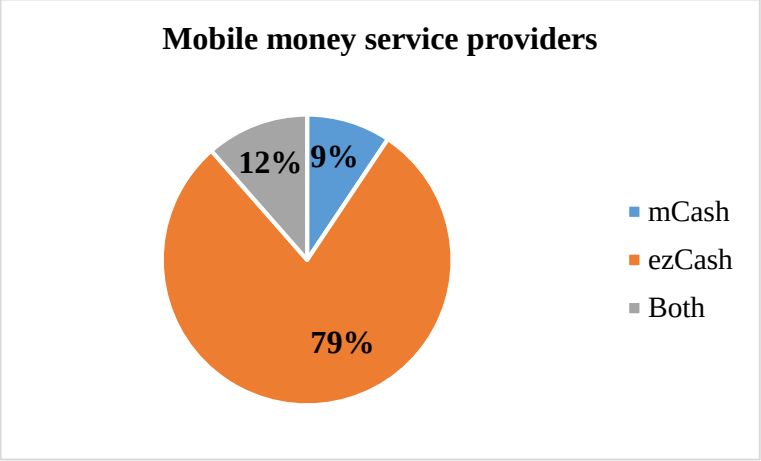

Figure 4.8: Mobile money service providers of users

Figure 4.8 shows the data distribution of mobile money services used by customers. The majority of mobile money users use only ezCash (79%) and 9% of users use only mCash service. Meanwhile 12% of users use both services for carrying out mobile money transactions.

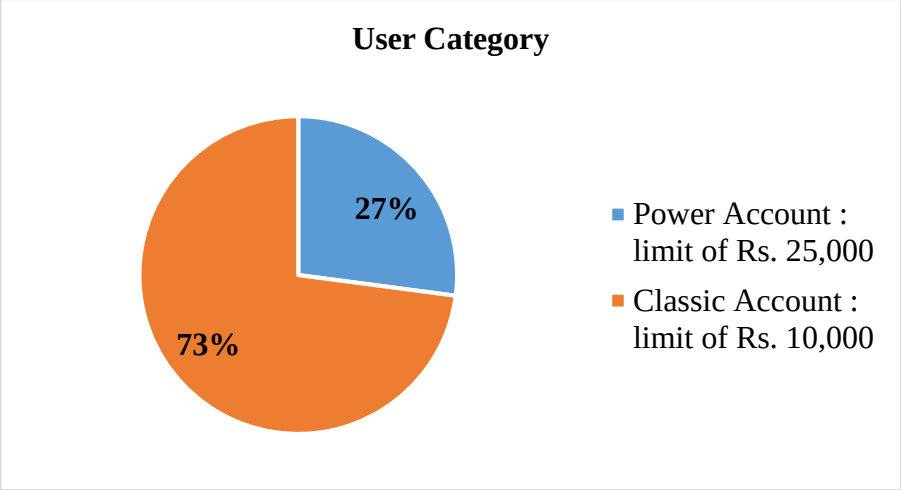

Figure 4.9: User category wise data distribution

According to the Figure 4.9, majority of users (73%) use the classic account with the limit of Rs. 10.000. Even though, there's facility to enhance the account limit up to Rs 25,000, most of users have not expanded. But majority of the users have not agreed with the allowed maximum amount for transaction as sufficient limit.

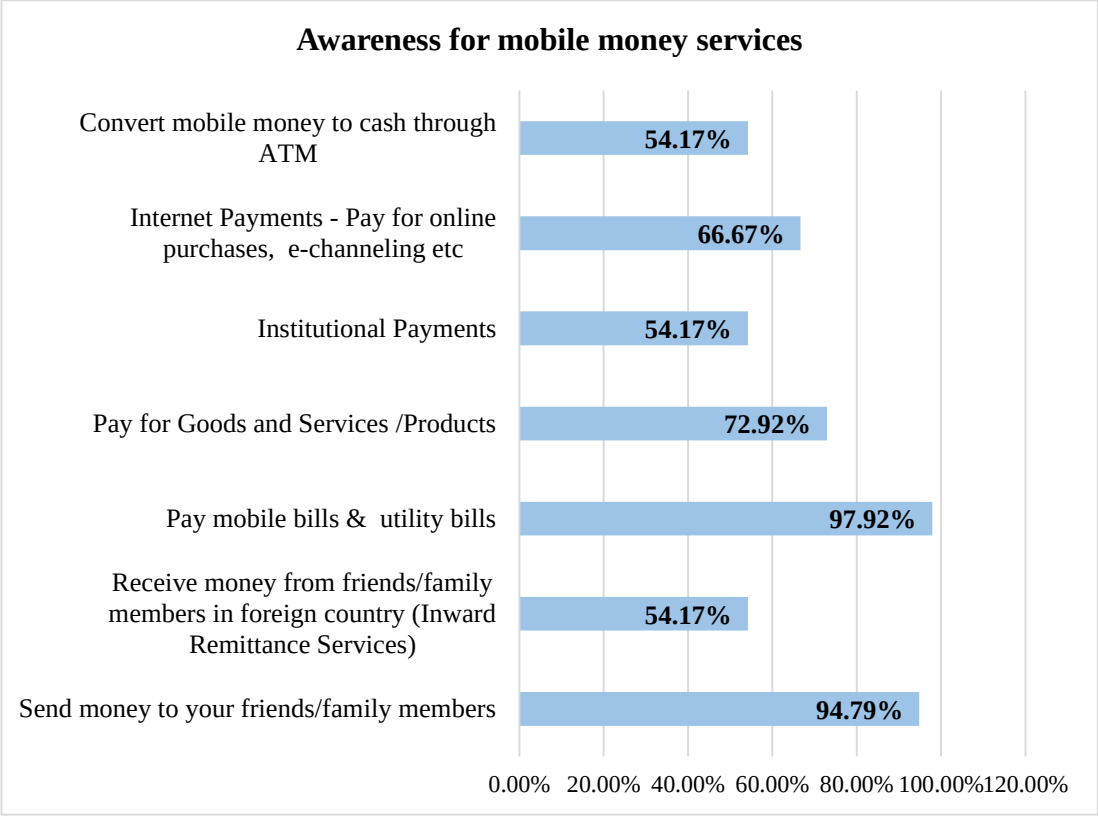

Figure 4.10: User awareness for mobile money services

According to the Figure 4.10, majority of users are aware on the services of "Pay mobile bills and utility bills" and "Send money". But they have less knowledge on the facility of converting mobile money to cash through ATM, institutional payments and inward remittance services. Therefore, mobile money service providers should promote those services further.

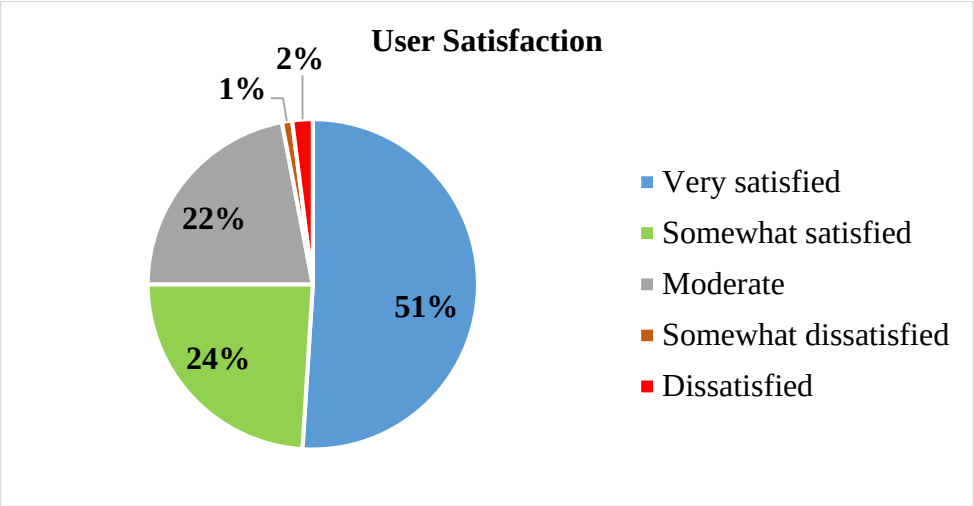

Figure 4.11: User satisfaction on mobile money service

Figure 4.11 shows the user satisfaction on use of mobile money services in Sri Lanka. Cumulatively 3% of users have dissatisfied with the mobile money services while 22% have moderate satisfaction with the service. Meanwhile, 51% of users are very satisfied with the service while another 24% of users are somewhat satisfied with the service. Therefore, cumulatively, 75% of users are satisfied with the use of mobile money services in Sri Lanka.

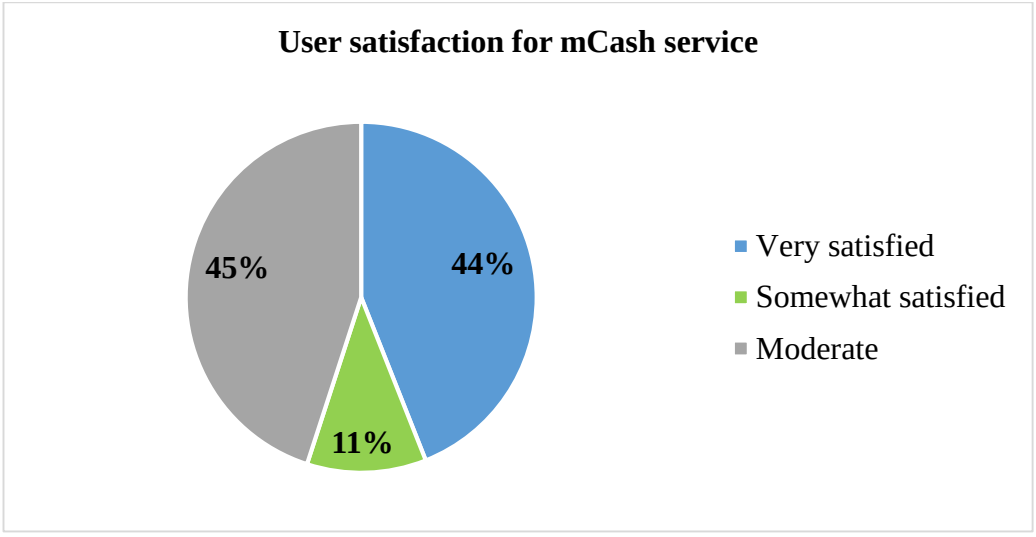

Figure 4.12: User Satisfaction for mCash service

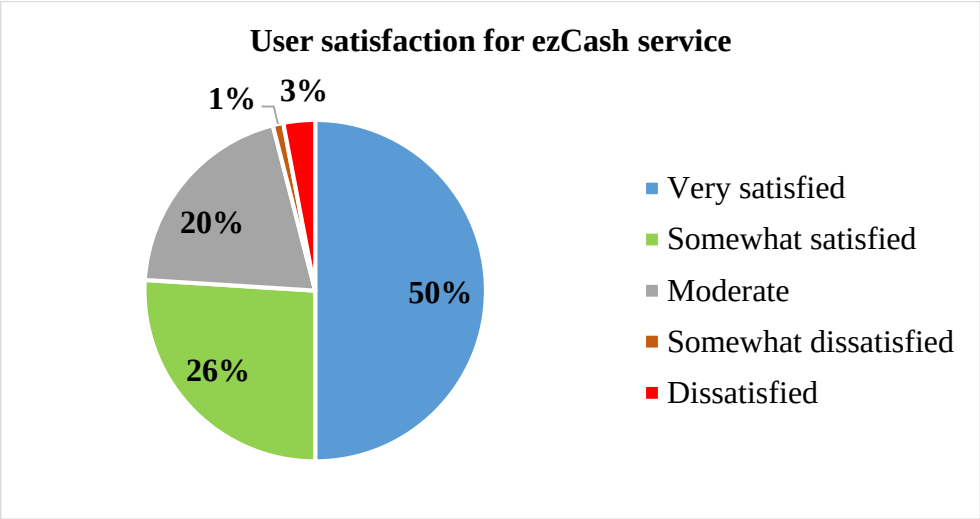

Figure 4.13: User Satisfaction for ezCash service

According to Figure 4.12 and Figure 4.13, cumulatively 55% and 76% of users are satisfied with the mobile money services of mCash and ezCash respectively. Therefore, ezCash users are satisfied with the service than the percentage of users who have satisfied with the mCash service. However, cumulatively 4% of ezCash users have dissatisfied with the service.

4.4.3 Hypotheses Analysis for Users

The main objective of this study was to identify the most significant factors affecting the adoption of mobile money payment system in Sri Lanka. A conceptual framework has been proposed after analyzing several literature sources. The aim of statistical analysis is to identify the most significant factors for the model.

For the purpose of applying binary logistic regression, the mean value of each factor which generated from their reliable dimensions, have been converted in to the binary form separately for each consumer as depicted in Table 3.7. Univariate analysis is commonly used in the first stage of the research, subsequently inferential bivariate or multivariate analysis will be conducted (Cooper et al., 1983). It is conducted to analyze each variable independently from other variables. Therefore, each binary variable for each significant factor is cross tabularized with binary-dependent variable “Behavioral

Intention". Pearson's chi-square test, whose results are evaluated by reference to the chi-square distribution (Wikipedia, 2016) is conducted to measure the strength of association between each factor and behavioral intention separately.

In addition, influence from demographic factors to the behavioral intention of users and non-users to use mobile money system will be tested. 5% tolerance rate has been fixed as the significance level of the analysis. Those are mentioned below:

Hypothesis 1

Association between perceived ease of use (PEOU) and behavioral intention to use mobile money continuously

Null hypothesis ($H1_0$): There is no association between PEOU and customer's intention to use mobile money continuously

Alternative hypothesis ($H1_A$): There is an association between PEOU and customer's intention to use mobile money continuously

Table C.1 of Appendix C includes the chi-square test for the association between perceived ease of use (PEOU) and behavioral intention of users. Since $P > .05$, $H1_0$ cannot be rejected. Therefore, there is no statistically significant association between perceived ease of use and behavioral intention to use mobile money continuously.

Hypothesis 2

Association between perceived credibility (PCr) and behavioral intention to use mobile money continuously

Null hypothesis ($H2_0$): There is no association between PCr and customer's intention to use mobile money continuously

Alternative hypothesis ($H2_A$): There is an association between PCr and customer's intention to use mobile money continuously

Since P < .05 according to the statistics in Table C.2 of Appendix C, $H2_0$ can be rejected. Therefore, there is a statistically significant association between perceived credibility and behavioral intention to use mobile money continuously. According to the Table B.8 of Appendix B, 80% of users who do not believe that using mobile money is risk free, do not intend to use mobile money continuously. In addition, 68.6% of users who believe that using mobile money is risk free, intend to use mobile money continuously. Therefore, perceived credibility has a significant influence on customer's intention to use mobile money payment system continuously.

Hypothesis 3

Association between perceived usefulness (PU) and behavioral intention to use mobile money continuously

Null hypothesis ($H3_0$): There is no association between PU and customer's intention to use mobile money continuously

Alternative hypothesis ($H3_A$): There is an association between PU and customer's intention to use mobile money continuously

Table C.3 of Appendix C includes the chi-square test for the association between perceived usefulness (PU) and behavioral intention of users. Since P < .05, $H3_0$ can be rejected. Therefore, there is a statistically significant association between perceived usefulness and customer's intention to use mobile money payment system.

According to the cross classification Table B.9 of Appendix B, 70.9% of users believe that using mobile money enhances their job performance, intend to use mobile money continuously. Further, 70.6% of users who believe that using mobile money as useless, do not intend to continue the use of mobile money. Therefore, perceived usefulness has a significant influence on customer's intention to use mobile money payment system continuously.

Hypothesis 4

Association between facilitating conditions (FC) and behavioral intention to use mobile money continuously

Null hypothesis ($H4_0$): There is no association between FC and customer's intention to use mobile money continuously

Alternative hypothesis ($H4_A$): There is an association between FC and customer's intention to use mobile money continuously

Table C.4 of Appendix C includes the chi-square test for the association between facilitating conditions (FC) and behavioral intention of users. Since $P > .05$, $H4_0$ cannot be rejected. Therefore, facilitating conditions does not have a statistically significant association with customer's intention to use mobile money continuously.

Hypothesis 5

Association between perceived cost (PC) and behavioral intention to use mobile money continuously

Null hypothesis ($H5_0$): There is no association between PC and customer's intention to use mobile money continuously

Alternative hypothesis ($H5_A$): There is an association between PC and customer's intention to use mobile money continuously

Since $P < .05$ according to the statistics in Table C.5 of Appendix C, $H5_0$ can be rejected. Therefore, perceived cost has a significant influence on customer's intention to use mobile money payment system. According to Table B.10 of Appendix B, 65.7% of users who have decided not to use mobile money continuously believe that using mobile money does not incur fair cost. In addition, 63.5% of users who have decided to use mobile money continuously, believe that mobile money services are affordable. Thus, it can be concluded that perceived cost has a significant influence on customer's intention to use mobile money continuously.

Hypothesis 6

Association between awareness (AWARENESS) and behavioral intention to use mobile money continuously

Null hypothesis ($H6_0$): There is no association between awareness and customer's intention to use mobile money continuously

Alternative hypothesis ($H6_A$): There is an association between awareness and customer's intention to use mobile money continuously

Table C.6 of Appendix C includes the chi-square test for the association between awareness and behavioral intention of users.

Since $P > .05$, $H6_0$ cannot be rejected. Therefore, there is no statistically significant association between awareness and customer's intention to use mobile money continuously.

Hypothesis 7

Association between promotions (PROMOTIONS) and behavioral intention to use mobile money continuously

Null hypothesis ($H7_0$): There is no association between promotions and customer's intention to use mobile money continuously

Alternative hypothesis ($H7_A$): There is an association between promotions and customer's intention to use mobile money continuously

Table C.7 of Appendix C includes the chi-square test for the association between promotions and behavioral intention of users. Since $P < .05$, $H7_0$ can be rejected. Therefore, there is a statistically significant association between promotions and customer's intention to use mobile money payment system.

According to the cross classification Table B.11 of Appendix B, 94.3% users who have decided not to use mobile money continuously believe that mobile money services do not provide sufficient offers/promotions. In addition, 87.5% of users, who believe that mobile money services provide sufficient offers/promotions, intend to use mobile

money continuously. Therefore, promotions have a significant influence on customer' intention to use mobile money continuously.

Hypothesis 8

Association between customer's gender and behavioral intention to use mobile money continuously

> **Null hypothesis ($H8_0$):** There is no association between customer's gender and behavioral intention to use mobile money continuously
>
> **Alternative hypothesis ($H8_A$):** There is an association between customer's gender and behavioral intention to use mobile money continuously

Since P > .05 as shown in Table C.8 of Appendix C, $H8_0$ cannot be rejected. Therefore, there isn't statistically significant association between gender and customer's intention. It implies that customer's gender does not influence his or her intentions to use mobile money continuously.

Hypothesis 9

Association between customer's age and behavioral intention to use mobile money continuously

> **Null hypothesis ($H9_0$):** There is no association between customer's age and behavioral intention to use mobile money continuously
>
> **Alternative hypothesis ($H9_A$):** There is an association between customer's age and behavioral intention to use mobile money continuously

Since P > .05 as shown in Table C.9 of Appendix C, $H9_0$ cannot be rejected. Therefore, customer's intention to use mobile money continuously in future doesn't statistically depend on the user's age group.

Hypothesis 10

Association between customer's education qualification and behavioral intention to use mobile money continuously

Null hypothesis ($H10_0$): There is no association between customer's education qualification and behavioral intention to use mobile money continuously

Alternative hypothesis ($H10_A$): There is an association between customer's education qualification and behavioral intention to use mobile money continuously

Since P > .05 as shown in Table C.10 of Appendix C, $H10_0$ cannot be rejected. Therefore, customer's educational qualification does not influence his or her intention to use mobile money continuously.

Hypothesis 11

Association between customer's income level and behavioral intention to use mobile money continuously

Null hypothesis ($H11_0$): There is no association between customer's income level and behavioral intention to use mobile money continuously

Alternative hypothesis ($H11_A$): There is an association between customer's income level and behavioral intention to use mobile money continuously

Since P > .05 as shown in Table C.11 of Appendix C, $H11_0$ cannot be rejected. Therefore, customer's income level does not influence his or her intention to use mobile money continuously.

Hypothesis 12

Association between customer's occupation and behavioral intention to use mobile money continuously

Null hypothesis ($H12_0$): There is no association between customer's occupation and behavioral intention to use mobile money continuously

Alternative hypothesis ($H12_A$): There is an association between customer's occupation and behavioral intention to use mobile money continuously

Since P > .05 as shown in Table C.12 of Appendix C, $H12_0$ cannot be rejected. Thus, there isn't statistically significant association between occupation and customer's intention to use mobile money continuously.

Hypothesis 13

Association between perceived ease of use and perceived usefulness

Null hypothesis ($H13_0$): There is no association between perceived ease of use and perceived usefulness

Alternative hypothesis ($H13_A$): There is an association between perceived ease of use and perceived usefulness

Since P < .05 as shown in Table C.13 of Appendix C, $H13_0$ can be rejected. Therefore, there is a statistically significant association between perceived ease of use and perceived usefulness.

Table 4.18 shows the results of univariate analysis which summarizes the association between independent variables and the dependent variable. According to the results in Table 4.18, the variables with their p-values less than .05 have been detected as significant variables for the regression analysis. Therefore, perceived credibility, perceived usefulness, perceived cost and promotions are the significant variables for the regression analysis.

Table 4.18: Results of Univariate Analysis at 5% Tolerance Level

Explanatory Variable	**Pearson's Chi-square Value**	**Degrees of Freedom**	**Asymptotic Level of Significance**	**Significant Variables at 5% level**
Perceived ease of use (PEOU)	1.761	1	0.184	
Perceived Credibility (PCr)	9.135	1	0.003	√
Perceived Usefulness (PU)	10.387	1	0.001	√
Facilitating Conditions(FC)	0.869	1	0.351	
Perceived Cost (PC)	8.734	1	0.003	√
Awareness	1.931	1	0.165	
Promotions	4.757	1	0.029	√
Gender	0.005	1	0.941	
Age	1.173	3	0.759	
Education Qualification	9.07	5	0.106	
Income Level	6.546	5	0.257	
Occupation	9.199	5	0.101	

4.4.4 Fitting a Statistical Model

Even though several factors have been considered for the conceptual framework, only four factors have been identified as significant for the carrying out of regression analysis for users. The modeling process would help to identify the significant factors which affect the adoption of mobile money payment system in Sri Lanka.

4.4.4.1 Binary Logistic Regression with all variables (The Enter Method)

The omnibus test regarding the hypotheses over the coefficients

Table 4.19: Omnibus Tests of Model Coefficients for users' data set

		Chi-square	df	Sig.
Step 1	Step	23.732	4	.000
	Block	23.732	4	.000
	Model	23.732	4	.000

H_0: $\beta 1 = \beta 2 = \ldots = \beta k = 0$

H_1: at least one pair $\beta j \neq \beta j'$

Where βj is the coefficient of the j^{th} independent variable in the model

The table 4.19 show the chi-square test statistics for test of the null hypothesis that all the coefficients are equal to zero. The chi-square value (23.732) indicates the difference between the null model and proposed model. Since p-value is less than 0.05, the null hypothesis, is rejected and it ensure the addition of independent variables to the model.

Model Summary

Table 4.20: Model summary for user analysis

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	102.222[a]	.219	.300

Table 4.20 includes thre measures which express how well binary logistic regression model fits the data. The Cox & Snell R-Square and Nagelkerke R Square which determine the percentage of variance in customer's intention to use mobile money explained by the independent variables in the binary logistic regression imply the fitness of the model. The Nagelkerke R Square is preferred because binary logistic

model accounts for 30% of variation in the dependent variable which is customer's intention to use mobile money continuously.

Hosmer-Lemeshow goodness of fit test for logistic regression

Table 4.21: Hosmer and Lemeshow Test for the users' model

Step	Chi-square	df	Sig.
1	.604	4	.963

H_0: Model fits the data

H_1: Model does not fit data

The Hosmer-Lemeshow test, which identifies the similarities in predicted probabilities between observed probabilities is shown in Table 4.21. When p-value is greater than 0.05, there is overall goodness of fit of the model. Since, p-value is greater than 0.05, there is not enough evidence to conclude that the model does not fit the data.

Classification Results

Table 4.22: Classification of the results for users' model

	Observed		Predicted		
			behavioral_intention_bin		Percentage Correct
			0	1	
Step 1	behavioral_intention_bin	0	13	22	37.1
		1	3	58	95.1
	Overall Percentage				74.0

The overall percentage accurate rate of the model is depicted in Table 4.22. The model has predicted 74% of cases accurately by the significant characteristics in the model.

Results of Logistic Regression Analysis

Table 4.23: Variables in the equation of users' model

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	pcr_binary	1.982	.999	3.936	1	.047	7.258
	pu_binary	1.044	.650	2.580	1	.108	2.841
	pc_binary	.977	.486	4.040	1	.044	2.655
	promotions_binary	1.782	.944	3.565	1	.059	5.939
	Constant	-2.779	1.034	7.221	1	.007	.062

Since the p-values of perceived credibility and perceived cost are less than 0.05, these independent variables are found to be statistically significant.

The Exp(B) 7.258 for perceived credibility as noted from Table 4.23 implies that the odds of being users who intend to use mobile money continuously is about 7.258 times greater for people who believe that using mobile money is risk free/safer than who do not believe it, after confounding for the other factors in the model.

The Exp(B) 2.655 for perceived cost as noted from Table 4.23 implies that the odds of being users who intend to use mobile money continuously is about 2.655 times greater for people who believe that using mobile money system is incurs fair cost than who do not believe it, after confounding for the other factors in the model.

4.5 Results analysis for mobile money non-users

4.5.1 Descriptive Analysis of Non-Users Using SPSS

This section is used to describe the distribution of responses for each variable. The data distribution is displayed using SPSS output.

Descriptive statistics of perceived ease of use

The perceived ease of use for non-users has been measured using “easy to learn”, “easy to use”, “user friendliness” and “easy access to customers’ service”. Since the mean

values for perceived ease of use are greater than 4 as shown in Table B.12 of Appendix B, non-users have mentioned that using mobile money system should be free from effort.

Descriptive statistics of perceived credibility

Six dimensions have been used to measure the perceived credibility which can be considered as collective meaning of perceived risk and perceived trust. Since the mean values of PCr1, PCr2, PCr3 and PCr4 are greater than 4.0, mobile money non-users expect trustworthiness of mobile money agents, reliability of transactions, privacy and security of transactions if they use mobile money in future as depicted in Table B.13 of Appendix B. Meanwhile, the mean values for PCr5, PCr6 and PCr7 are 3.1, 3.66 and 2.92 respectively. PCr5 and PCr6 represent for trustworthiness of using mobile money transactions and PCr7 represents for privacy of users. Mobile money non-users have not agreed or disagreed on having trust on mobile money transactions. Furthermore, they are concerned on revealing their personal/payment information to external parties if they use mobile money in future.

Descriptive statistics of perceived cost

Perceived cost has been measured using the opinion of non-users on transactional charges for withdrawing mobile money and utility bill payment charges. Even though, the mean values for PC1 and PC2 are greater than 4, other mean values are between 2.5 and 3 as depicted in Table B.14 of Appendix B. The majority of non-users have mentioned that transaction charges should equal with the charges of other payment methods and charges for utility bill payments should be free of charged according to the mean value of PC1 and PC2. Meanwhile, they feel that existing charges are comparative high with total transaction amount and charges of other methods according to PC3, PC4 and PC5. And also, they do not believe that quality of service is good enough compared to the charges and they believe that it as a cost burden method according to PC6 and PC7.

Descriptive statistics of perceived usefulness

Table B.15 of Appendix B, includes the data distribution of perceived usefulness for non-users which has been measured using four dimensions such as 1) time saving, 2) easy accessibility 3) convenience and 4) opportunity to use for day to day financial transactions. The mode and mean value for PU1, PU2 and PU4 are greater than 4. Meanwhile mean value for PU3 is very close to 4. It implies that the majority of non-users expect benefits from mobile money such as time saving, easy accessibility, convenience and ability to use for in day to day financial transactions.

Descriptive statistics of promotions

Availability of offers and loyalty programs for mobile money non-users were used to measure the promotions. The mean value for both PROMOTIONS1 and PROMOTIONS2 is around 4 as mentioned in Table B.16 of Appendix B. Therefore, most mobile money non-users have mentioned about the necessity of the offers and loyalty programs given by mobile money service providers.

Descriptive statistics of facilitating conditions

Facilitating conditions has been measured using the dimensions such as existence of outlets/ merchants which accept mobile money. The mean value for FC1 and FC2 are 2.33 and 2.31while modes are 2 as mentioned in Table B.17 of Appendix B. It implies that majority of mobile money non-users are not satisfied with the available outlets which offer facility of loading and disbursing mobile money and number of merchants who accept mobile money.

Descriptive statistics of awareness

Table B.18 of Appendix B, includes the data distribution of awareness of mobile money non-users. It has been measured by four dimensions such as existing knowledge of non-users on benefits of mobile money payment system, charges for mobile money transactions, available offers and merchants/institutes which accept mobile money.

The mean value for all four dimensions has been less than 2.5. Meanwhile the mode for AWARENESS1 is 2 and 1 for other dimensions. Therefore, it can be clearly concluded that mobile money non-users don't have much knowledge on available offers and merchants/institutes which accept mobile money, benefits of mobile money services and charges of mobile money transactions.

4.5.2 Data distribution of mobile money non-users

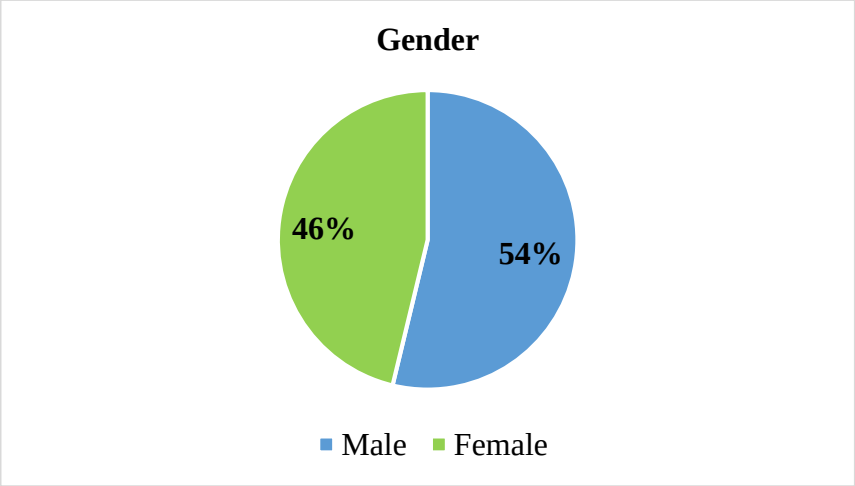

Figure 4.14: Gender wise data distribution of mobile money non-users

According to the Figure 4.14, there were 54% male mobile money non-users and 46% of female mobile money non-users out of the n=385 data sample.

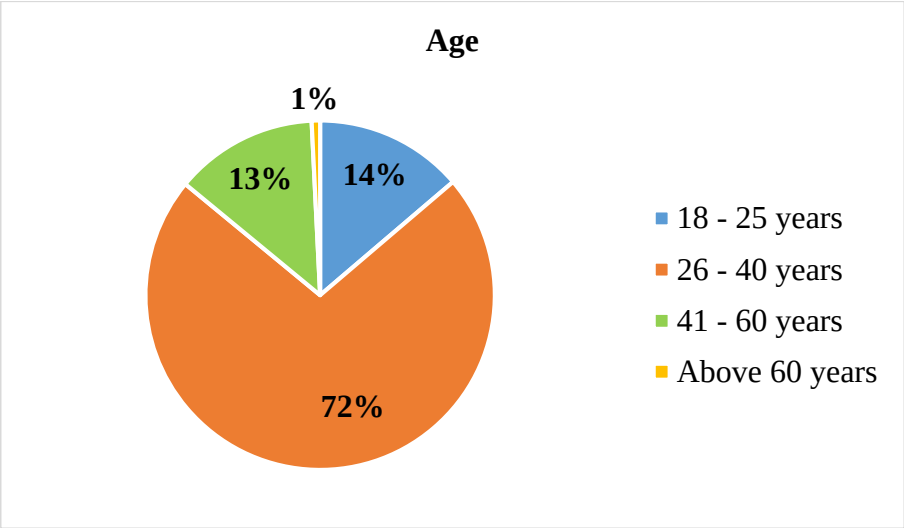

Figure 4.15: Age wise data distribution of mobile money non-users

Figure 4.15 shows the data distribution of age groups for the current sample. Majority of non-users represents the "26 - 40" age group.

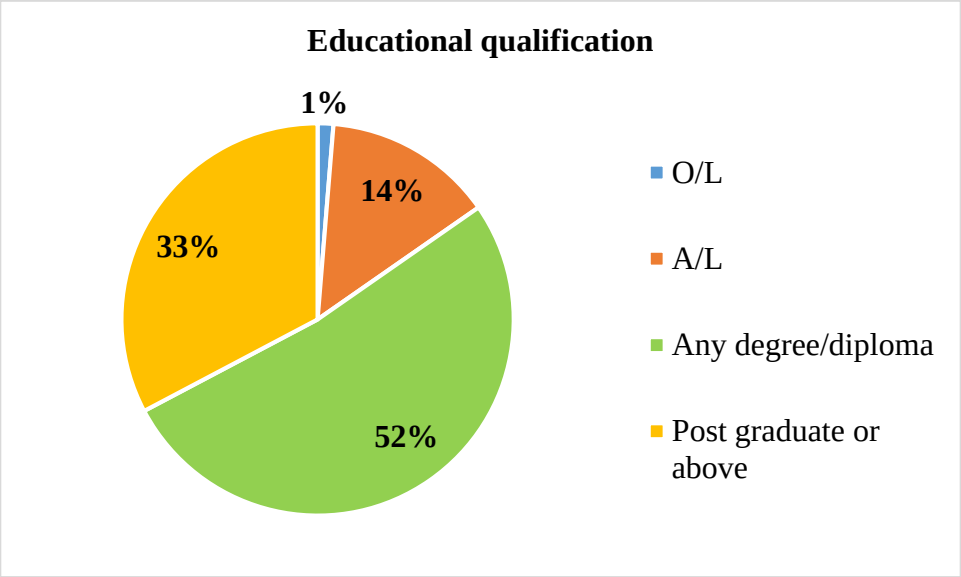

Figure 4.16: Education qualification wise data distribution for mobile money non-users

The Figure 4.16 depicts the educational qualification of mobile money non-users. It shows that 52% of non-users have degree / diploma while 33% of non-users have a Masters' degree.

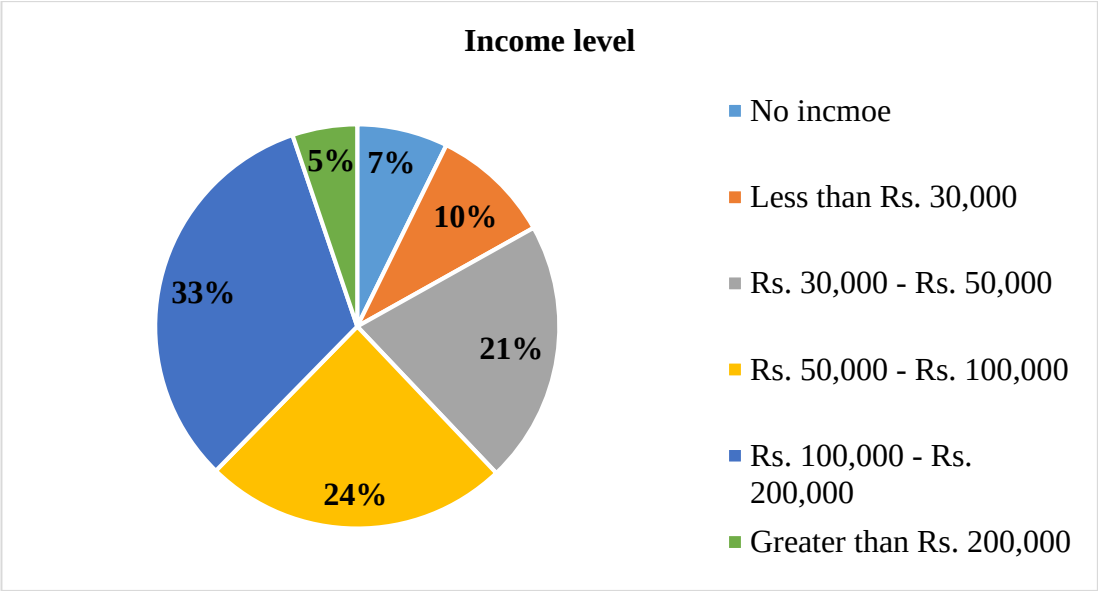

Figure 4.17: Income level data distribution of mobile money non-users

According to Figure 4.17, the income of 33% of non-users is between Rs. 100,000 and Rs. 200,000. And 24% of non-users earn between Rs. 50,000 and Rs. 100,000 while the income of 21% of non-users is between Rs. 30,000 and Rs. 50,000.

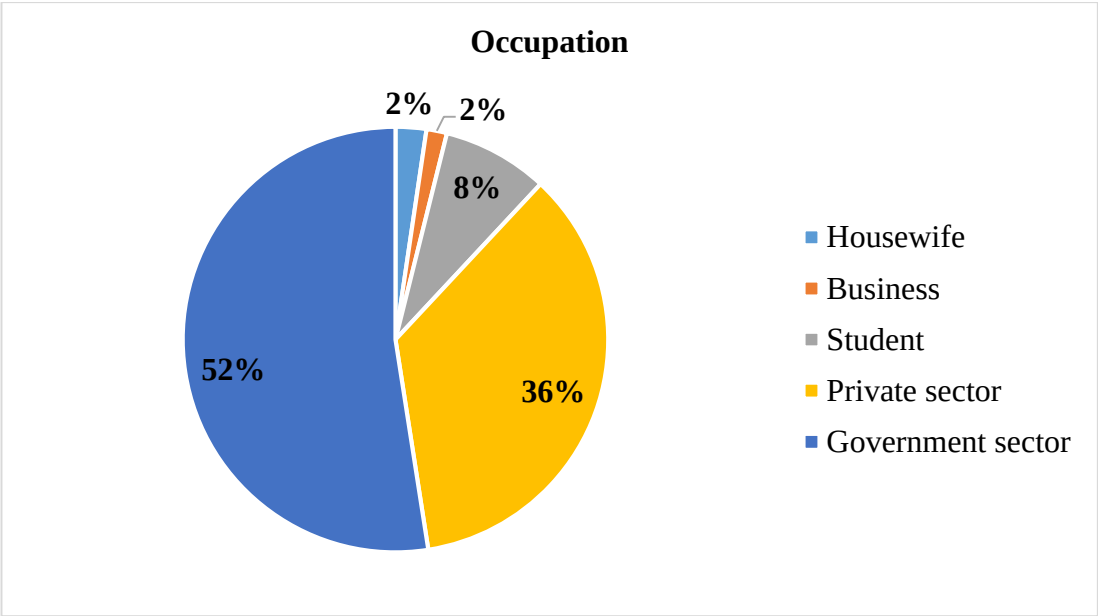

Figure 4.18: Occupation wise data distribution of mobile money non-users

According to the Figure 4.18 the majority of the non-users (52%) work in government sector. Meanwhile, 36% of non-users are from private sector. In addition, 8% of non-users represent students.

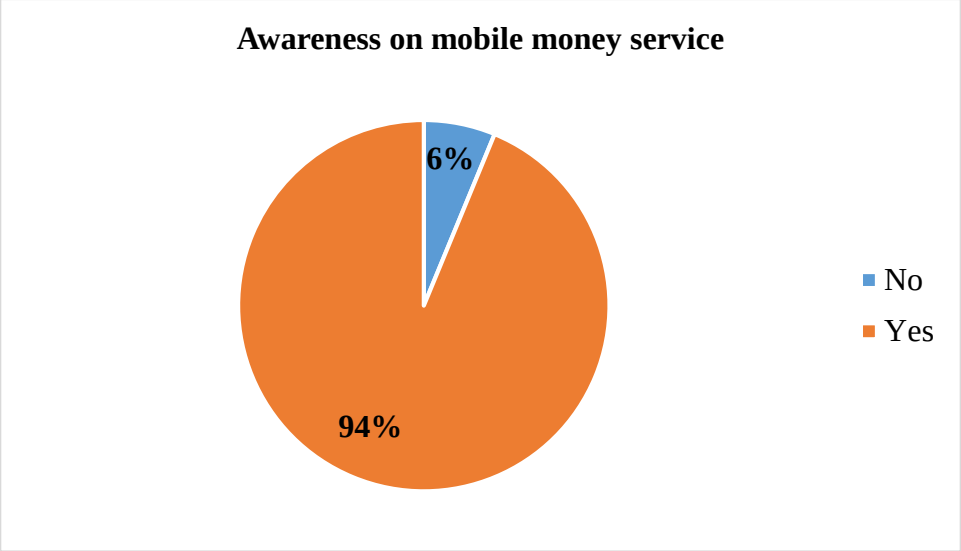

Figure 4.19: Awareness on mobile money service of mobile money non-users

As depicted in Figure 4.19, even though 94% of non-users have heard about mobile money service, 6% of non-users never heard on mobile money services.

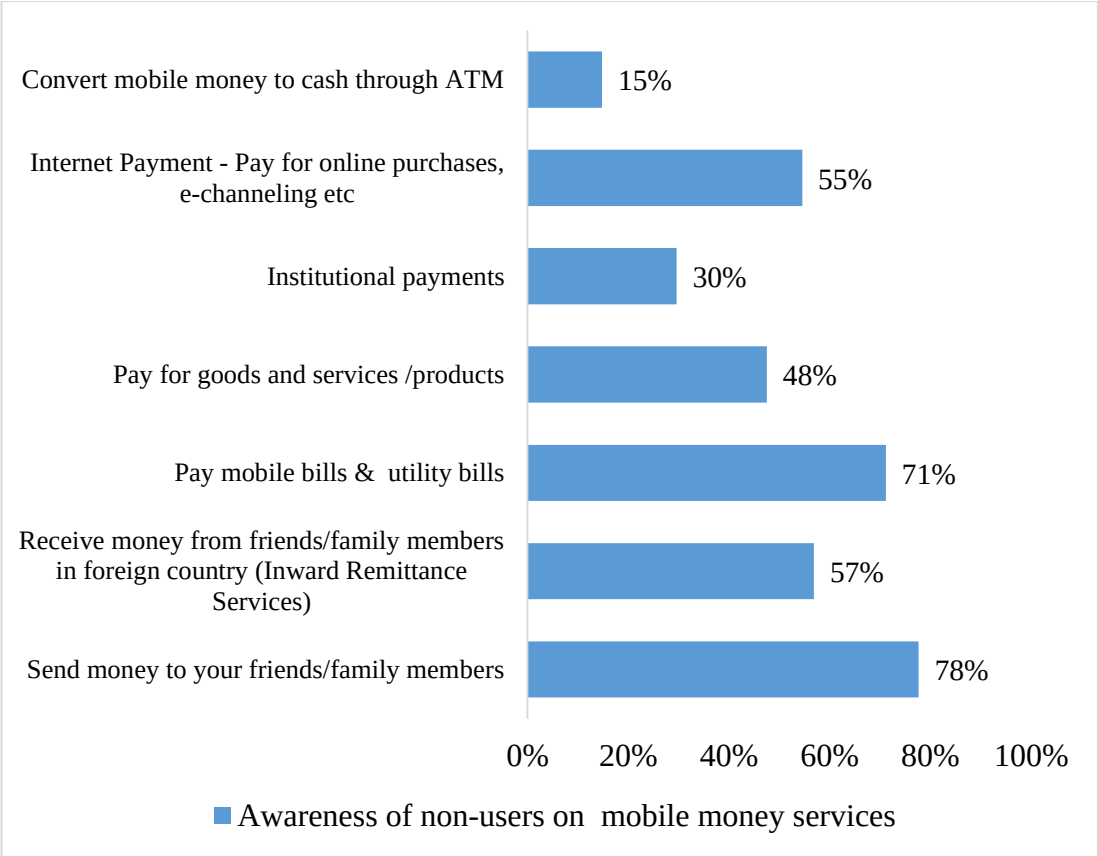

Figure 4.20: Awareness of mobile money non-users

According to Figure 4.20, majority of non-users are aware on the facility of "Send mobile money" and "Pay mobile bills & utility bills" respectively. But only 15% of non-users know about the facility of converting mobile money to cash through ATM while 30% of non-users aware about the institutional payments.

4.5.3 Hypotheses Analysis for Non-Users

It's required to generated binary variables in order to apply the binary logistic regression for statistical analysis of non-users. Therefore, the mean value of each factor which have been generated from the reliable dimensions have been converted into binary form each consumer as mentioned in Table 3.6. Similar to the user analysis, univariate analysis was used to analyze each variable independently from other variables. Moreover, each binary variable for each significant factor is cross

tabularized with binary-dependent variable “Behavioral Intention”. And also, pearson's chi-square test is conducted to measure the strength of association between each factor and behavioral intention of non-users separately

Hypothesis 1

Association between perceived ease of use (PEOU) and behavioral intention of non-users to use mobile money in future

> **Null hypothesis (H10):** There is no association between PEOU and behavioral intention of non-users to use mobile money in future
>
> **Alternative hypothesis (H1A):** There is an association between PEOU and behavioral intention of non-users to use mobile money in future

Since P > .05, $H1_0$ cannot be rejected according to the statistics in Table C.14 of Appendix C. Therefore, it can be concluded that there is not statistically significant association between perceived ease of use and behavioral intention of non-users to use mobile money in future.

Hypothesis 2

Association between perceived credibility (PCr) and behavioral intention of non-users to use mobile money in future

> **Null hypothesis ($H2_0$):** There is no association between PCr and behavioral intention of non-users to use mobile money in future
>
> **Alternative hypothesis ($H2_A$):** There is an association between PCr and behavioral intention of non-users to use mobile money in future

Since P > .05, $H2_0$ cannot be rejected according to the statistics in Table C.15 of Appendix C. Therefore, there isn’t statistically significant association between perceived credibility and behavioral intention of non-users to use mobile money in future.

Hypothesis 3

Association between perceived usefulness (PU) and behavioral intention of non-users to use mobile money in future

Null hypothesis ($H3_0$): There is no association between PU and behavioral intention of non-users to use mobile money in future

Alternative hypothesis ($H3_A$): There is an association between PU and behavioral intention of non-users to use mobile money in future

Since $P > .05$, $H3_0$ cannot be rejected according to the statistics in Table C.16 of Appendix C. Therefore, there isn't any statistical significant association between perceived usefulness and behavioral intention of non-users to use mobile money in future.

Hypothesis 4

Association between facilitating conditions (FC) and behavioral intention of non-users to use mobile money in future

Null hypothesis ($H4_0$): There is no association between FC and behavioral intention of non-users to use mobile money in future

Alternative hypothesis ($H4_A$): There is an association between FC and behavioral intention of non-users to use mobile money in future

Since $P < .05$, $H4_0$ can be rejected according to the statistics in Table C.17 of Appendix C. Therefore, it can be concluded that there is a statistically significant association between facilitating conditions and behavioral intention of non-users to use mobile money in future.

According to the cross classification Table B.19 of Appendix B, 63.4% of non-users who believe that mobile money system does not exist sufficient infrastructure, do not intend to use mobile money in future. In addition, 66.7% of non-users who believe that using mobile money ensure sufficient infrastructure, intend to use mobile money in future. Therefore, facilitating conditions influence on the decision of non-users to use mobile money future.

Hypothesis 5

Association between perceived cost (PC) and behavioral intention of non-users to use mobile money in future

Null hypothesis ($H5_0$): There is no association between PC and behavioral intention of non-users to use mobile money in future

Alternative hypothesis ($H5_A$): There is an association between PC and behavioral intention of non-users to use mobile money in future

Since the P-value is greater than 0.05, $H5_0$ cannot be rejected according to the statistics in Table C.18 of Appendix C. Therefore, there is no association between PC and non-users' intention to use mobile money in future.

Hypothesis 6

Association between awareness (AWARENESS) and behavioral intention of non-users to use mobile money in future

Null hypothesis ($H6_0$): There is no association between awareness and behavioral intention of non-users to use mobile money in future

Alternative hypothesis ($H6_A$): There is an association between awareness and behavioral intention of non-users to use mobile money in future

Since P-value is less than 0.05, $H6_0$ can be rejected according to the statistics in Table C.19 of Appendix C. Therefore, there is a statistically significant association between awareness and behavioral intention of non-users to use mobile money.

According to the cross classification Table B.20 of Appendix B, 92.8% of non-users who do not intend to use mobile money are not aware on mobile money. And also, 59.5% of non-users who aware on mobile money have intention to use mobile money in future. Therefore, awareness influence on the intention of non-users to use mobile money in future.

Hypothesis 7

Association between promotions (PROMOTIONS) and behavioral intention of non-users to use mobile money in future

> **Null hypothesis ($H7_0$):** There is no association between PROMOTIONS and behavioral intention of non-users to use mobile money in future
>
> **Alternative hypothesis ($H7_A$):** There is an association between PROMOTIONS and behavioral intention of non-users to use mobile money in future

Since P-value is greater than 0.05, $H7_0$ cannot be rejected according to the statistics in Table C.20 of Appendix C. Therefore, there isn't statistically significant association between PROMOTIONS and non-users' intention to use mobile money in future.

Hypothesis 8

Association between non-user's gender and behavioral intention to use mobile money in future

> **Null hypothesis ($H8_0$):** There is no association between non-user's gender and behavioral intention to use mobile money in future
>
> **Alternative hypothesis ($H8_A$):** There is an association between non-user's gender and behavioral intention to use mobile money in future

Since P > .05, $H8_0$ cannot be rejected according to the statistics in Table C.21 of Appendix C. Non-user's gender does not influence his or her intentions to use mobile money since there is no association between gender and non-users' intention.

Hypothesis 9

Association between non-user's age and behavioral intention to use mobile money in future

> **Null hypothesis ($H9_0$):** There is no association between non-user's age and behavioral intention to use mobile money in future

Alternative hypothesis ($H9_A$): There is an association between non-user's age and behavioral intention to use mobile money in future

Since P > .05, $H9_0$ cannot be rejected according to the statistics in Table C.22 of Appendix C. Therefore, non-user's age does not influence his or her intentions to use mobile money in future since there is no association between age and non-users' intention.

Hypothesis 10

Association between non-user's education qualification and behavioral intention to use mobile money in future

Null hypothesis ($H10_0$): There is no association between non-user's education qualification and behavioral intention to use mobile money in future

Alternative hypothesis ($H10_A$): There is an association between non-user's education qualification and behavioral intention to use mobile money in future

Since P-value is less than 0.05, $H10_0$ can be rejected according to the statistics in Table C.23 of Appendix C. Therefore, there is an association between non-user's education qualification and their intention to use mobile money in future.

Hypothesis 11

Association between non-user's income level and behavioral intention to use mobile money

Null hypothesis ($H11_0$): There is no association between non-user's income level and behavioral intention to use mobile money

Alternative hypothesis ($H11_A$): There is an association between non-user's income level and behavioral intention to use mobile money

Since P > .05, $H11_0$ cannot be rejected according to the statistics in Table C.24 of Appendix C. Therefore, there is no association between income level and non-user's

intention. Thus, non-user's income level does not influence his or her intentions to use mobile money.

Hypothesis 12

Association between non-user's occupation and behavioral intention to use mobile money

> **Null hypothesis ($H12_0$):** There is no association between non-user's occupation and behavioral intention to use mobile money
>
> **Alternative hypothesis ($H12_A$):** There is an association between non-user's occupation and behavioral intention to use mobile money

Since P-value is less than 0.05, $H12_0$ can be rejected according to the statistics in Table C.25 of Appendix C. Therefore, there is an association between non-user's occupation and his or her intention to use mobile money in near future.

Hypothesis 13

Association between perceived ease of use and perceived usefulness

> **Null hypothesis ($H13_0$):** There is no association between perceived ease of use and perceived usefulness
> **Alternative hypothesis ($H13_A$):** There is an association between perceived ease of use and perceived usefulness

Since P-value is less than 0.05, $H13_0$ can be rejected according to the statistics in Table C.26 of Appendix C. Therefore, there is an association between perceived ease of use and perceived usefulness.

Table 4.24 summarizes the results of univariate analysis for non-users at 5% Tolerance Level.

Table 4.24: Results of Univariate Analysis for non-users data set at 5% Tolerance Level

Explanatory Variable	Pearson's Chi-square Value	Degrees of Freedom	Asymptotic Level of Significance	Significant Variables at 5% level
Perceived ease of use (PEOU)	0.04	1	.841	
Perceived Credibility (PCr)	0.168	1	.682	
Perceived Usefulness (PU)	1.427	1	.232	
Facilitating conditions (FC)	10.502	1	.001	√
Perceived Cost (PC)	1.549	1	.213	
Awareness (AWARENESS)	8.382	1	.004	√
Promotions (PROMOTIONS)	2.570	1	.109	
Gender	1.258	1	.262	
Age	7.528	3	.057	
Educational Qualification	8.783	3	.032	√
Income Level	9.783	5	.082	
Occupation	13.015	4	.011	√

4.5.4 Fitting a Statistical Model

Even though several factors have been considered for the conceptual framework, only two factors have been identified as significant for carrying out the regression analysis for non-users with two moderating variables. The modeling process would help to identify the significant factors which affect the adoption of mobile money payment system in Sri Lanka.

4.5.4.1 Binary Logistic Regression with all variables (The Enter Method)

The omnibus test regarding the hypotheses over the coefficients

Table 4.25: Omnibus Tests of Model Coefficients for non-users' data set

		Chi-square	df	Sig.
Step 1	Step	43.386	9	.000
	Block	43.386	9	.000
	Model	43.386	9	.000

H0: $\beta 1 = \beta 2 = \ldots = \beta k = 0$

H1: at least one pair $\beta j \neq \beta j'$

Where βj is the coefficient of the j^{th} independent variable

The table 4.25 illustrates the chi-square test statistics for test of the null hypothesis that all the coefficients are equal to zero. The chi-square value (43.386) indicates the difference between the null model and proposed model. The null hypothesis, is rejected since p-value is less than 0.05. Therefore, the addition of independent variables to the model is valid.

Model Summary

Table 4.26: Model summary for non-user analysis

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	471.416[a]	.107	.145

The model summary Table 4.26, illustrates the measures of how well binary logistic regression model fits the data. The both Cox & Snell R-Square and Nagelkerke R Square express the percentage of variance in non-users' intention to use mobile money in near future explained by the independent variables in the binary logistic regression.

According to Nagelkerke R Square, binary logistic model accounts for 14.5% of variation in the dependent variable, which is non-users' intention to use mobile money.

Hosmer-Lemeshow goodness of fit test for logistic regression

Table 4.27: Hosmer and Lemeshow Test for the non-users' model

Step	Chi-square	df	Sig.
1	2.699	6	.846

H_0: Model fits the data

H_1: Model does not fit data

The Hosmer-Lemeshow test identifies the similarities of predicted probabilities between observed probabilities is shown in Table 4.27. Since, p-value is greater than 0.05, H_0 cannot be rejected. Therefore, there is not enough evidence to conclude that the model does not fit the data.

Classification Results

Table 4.28: Classification of the results for users' model

	Observed		Predicted		
			behavioral_intention_bin		Percentage Correct
			.00	1.00	
Step 1	behavioral_intention_bin	.00	208	27	88.5
		1.00	99	51	34.0
	Overall Percentage				67.3

The overall percentage accurate rate of the model is depicted in Table 4.28. The model has predicted 67.3% of cases accurately by the significant characteristics in the model.

Table 4.29: Variables in the equation of non-users' model

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	fc_binary	1.184	.430	7.579	1	.006	3.266
	awareness_binary	.970	.355	7.474	1	.006	2.638
	Education			7.150	3	.067	
	Education(1)	-20.991	17735.269	.000	1	.999	.000
	Education(2)	-.945	.414	5.220	1	.022	.389
	Education(3)	.081	.245	.108	1	.742	1.084
	JobTitle			15.555	4	.004	
	JobTitle(1)	1.060	.841	1.591	1	.207	2.887
	JobTitle(2)	-.525	1.122	.218	1	.640	.592
	JobTitle(3)	1.553	.431	12.954	1	.000	4.725
	JobTitle(4)	.489	.241	4.121	1	.042	1.631
	Constant	-.882	.224	15.486	1	.000	.414

The facilitating conditions and awareness are found to be statistically significant since the p-values are less than 0.05. Moreover, two demographic variables; education qualification and occupation, also affect the non-users' intention to use mobile money.

The Exp(B) 3.266 for facilitating conditions as noted from Table 4.29 implies that the odds of being non-user who intend to use mobile money in future is about 3.266 times greater for non-user, who believe that mobile money system has sufficient organizational and technological infrastructure, than who do not believe it, after confounding for the other factors in the model.

The Exp(B) 2.638 for awareness as noted from Table 4.29 implies that the odds of being non-user who intend to use mobile money in future is about 2.638 times greater for non-user who has knowledge on mobile money system than who does not have, after confounding for the other factors in the model.

According to the Figure 4.16, mobile money non-users have different four educational qualifications such as O/L, A/L, any degree/diploma and masters' degree. The statistics in Table 4.29 shows the results for O/L, A/L and degree/diploma compared

to the behavior of non-users who have master's degree. Education(1), Education(2) and Education(3) in Table 4.29 represent for O/L, A/L and degree/diploma respectively. The Exp(B) 0.389 is lower for the non-user who has "A/L" education qualification as mentioned in Table 4.29. For ease of interpretation, calculate the odds of being non-user who intend to use mobile money with "Masters' degree" over a non-user with "A/L" qualification using 1/.389 = 2.57. It implies that the odds of being non-user who intend to use mobile money in future is about 2.57 times greater for non-user who has education qualification "Masters' degree" than non-user who has education qualification "A/L", after confounding for the other factors in the model.

The statistics in Table 4.29 shows the results for housewives, businessmen, students and private sector employees compared to the behavior of the non-users who work in government sector. JobTitle(1), JobTitle(2), JobTitle(3) and JobTitle(4) in Table 4.29 represent for housewives, businessmen, students and private sector employees respectively. The Exp(B) 4.725 for job title(occupation) as noted from Table 4.29 implies that the odds of being non-user who intend to use mobile money in future is about 4.725 times greater for student than non-user who works in government sector, after confounding for the other factors in the model. The Exp(B) 1.631 for job title(occupation) implies that the odds of being non-user who intend to use mobile money in future is about 1.631 times greater for private sector employee than non-user who works in government sector, after confounding for the other factors in the model.

4.6 Final Model

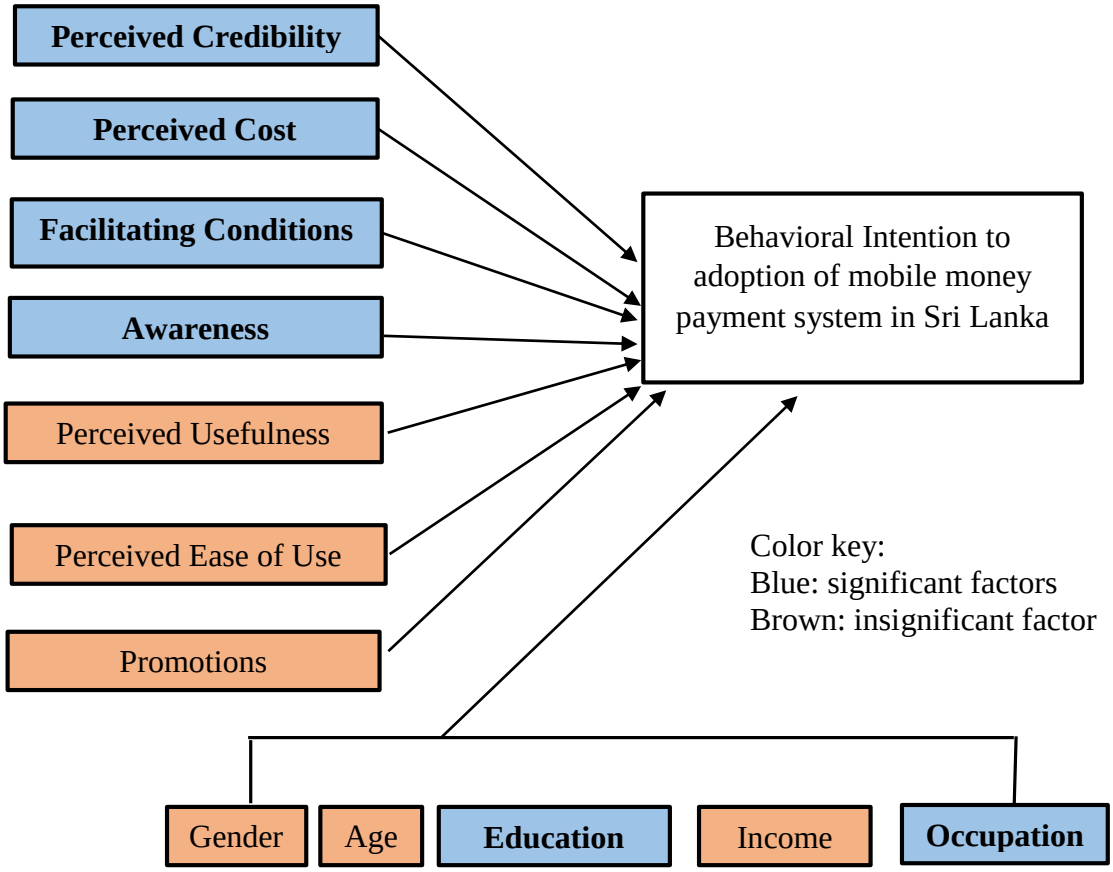

Figure 4.21: Final research Model

The final research model can be presented as Figure 4.21, based on the analysis of mobile money users and mobile money non-users.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Overview of chapter

This chapter provides conclusions and recommendations based on the results of statistical analysis. It includes the perception of mobile money users and non-users on mobile money, significant factors affecting the adoption of mobile money payment system and issues on mobile money payment system. In addition, it provides recommendations for mobile money service providers and government based on the findings of the analysis.

5.2 User and nonuser perception on mobile money

From the descriptive analysis of responses of both users and non-users, we can identify perception of users and non-users on mobile money services. According to the finding of Table B.1 of Appendix B, users feel that it is very easy to use mobile money services. Moreover, mobile money services are very reliable and safe services as per results in Table B.2 of Appendix B. They have less trust on mobile money service providers on securing their personal information and facilitating secure mobile money transactions. In addition, mobile money non-users expect trustworthiness of mobile money agents, reliability of transactions, ensuring security of personals and payment information if they use mobile money in future. Therefore, mobile money service providers should pay more attention to enhance trust of the users on securing personal information furthermore.

According to the descriptive analysis of perceived cost, they have not agreed or disagreed that the mobile money charges are not comparatively high with other payment methods and total transaction amount. But they do not believe that the mobile money services as cost burden services. Therefore, transaction charges are not a heavy burden for the users even though it is comparatively higher than other payment methods and total transaction amount. According to the Table B.14, the opinion of non-users on mobile money charges are comparatively different with the users. Mobile

money non-users believe that the existing charges are comparatively high with total transaction amount and charges. In addition, they believe that the charges should be equal with other payment methods while they perceive it as a cost burden method. Therefore, mobile money service providers should have to consider on charges to change the attitude on mobile money services.

According to the descriptive analysis on perceived usefulness, users have not strongly agreed or disagreed on the sufficiency of allowed maximum amount per transaction. Mobile money services are not easily accessible for some users. But on an overall measure, mobile money services enhance performance of the users. In addition, mobile money non-users expect benefits from mobile money such as time saving, easy accessibility, convenience and ability to use in day to day financial transactions if they use mobile money in future.

Majority of users have mentioned that there is only a limited number of offers exist for mobile money services. Meanwhile, mobile money non-users expect offers and loyalty programs provided by mobile money service providers. It implies that mobile money service providers should pay more attention to increase offers/promotions for users. In addition, both mobile money users and non-users have mentioned about inadequate number of outlets which offer the facility of loading and disbursing mobile money. Moreover, they expect more merchants who accept mobile money for transactions. Therefore, mobile money service providers should have to concern on this for catering the user requirements while assuring a stable infrastructure for the users.

When considering the awareness, mobile money users do not have much knowledge on available offers and merchants/institutes which accept mobile money even though they have considerable knowledge on benefits of mobile money services and charges of mobile money transactions. But non-users don’t have much knowledge on available offers and merchants/institutes which accept mobile money, benefits of services and charges of the transactions. Therefore, mobile money service providers should pay more attention in order to enhance the awareness on the service for the Sri Lankans.

When considering the 'demographic factors', as responses to the survey, they show that there are 72% of male mobile money users and 28% of female mobile money users currently engaged in mobile money transactions. Therefore, it may have high potentiality for males to use mobile money services. In age distribution, among mobile money users, age groups; Young and middle aged group ('18-25','26-40') have more tendency to use mobile money services in Sri Lanka. When considering the education qualifications, both well-educated and un-educated people have a tendency in using mobile money in Sri Lanka. Therefore, there is a tendency for both well-educated, people who have degrees and less educated people who just passed O/L examination to become mobile money users. According to the analysis of income level of users, both high income ('Greater than Rs. 50,000') and less income ('Less than Rs. 30,000') earners tend to use mobile money. According to the occupation distribution of users, majority of users are from the occupation groups of 'Private sector' and 'Business'. People who work in those categories have more tendency to use mobile money

5.3 Significant factors affecting the adoption of mobile money payment system in Sri Lanka

The purpose of the current study is to examine the factors affecting the adoption of mobile money payment system in Sri Lanka. In this study, adoption of mobile money payment system in Sri Lanka has been measured in different angels such as perceived ease of use, perceived credibility, perceived usefulness, facilitating conditions, perceived cost, awareness and promotions.

According to Table 4.18, four alternative hypotheses were accepted and it means that there has been a significant association between factors such as perceived credibility, perceived usefulness, perceived cost and promotions with customer's intention to use mobile money continuously. Meanwhile, there are associations between two independent variables and two moderating variables with behavioral intention of non-users' to use mobile money in future. According to Table 4.24, four alternative hypotheses were accepted and it means that there was a significant association

between facilitating conditions, awareness, education qualification and occupation with behavioral intention of non-users' to use mobile money in future.

According to the binary logistic regression for mobile money users, perceived credibility and perceived cost are the most significant factors affecting for the adoption of mobile services in Sri Lanka. The odds ratio of the perceived credibility, the odds of being users who intend to use mobile money continuously is about 7.258 times greater than people who believe that using mobile money is risk free/safer than the users who do not believe it. Therefore, perceived credibility is a major significant factor which affect the adoption of mobile money payment system in Sri Lanka. Perceived credibility is considered as collective meaning of perceived risk and perceived trust. According to the several studies, perceived trust and perceived risk have been identified as significant factors for mobile money users. Kyeyune et al. (2012) and Thakur et al. (2014) have identified both privacy risk and security risk as significant factors. In addition, the study conducted by Tobbin et al. (2011) have identified both perceived risk and trust as significant factors affecting for the adoption of mobile money services in Ghana. Hence, considering the past literature and the findings in the current study, perceived credibility is a significant factor affecting the adoption of mobile money payment system in Sri Lanka.

According to the odds ratio of perceived cost, the odds of being users who intend to use mobile money continuously is about 2.655 times greater than people who believe that using mobile money system is incur fair cost than who do not believe it. Even though, Lesa et al. (2016) have identified perceived cost as an insignificant factor in Zambia, Kyeyune et al. (2012) have identified the perceived cost as influential factors for adoption of mobile money services in Uganda. According to the study by Yu (2012) perceived cost is a significant factor for the adoption of mobile baking technology. Therefore, it can be concluded that perceived cost not only affect the adoption of mobile money but it influences for the other mobile related technologies as well. Similarly, perceived cost has become another significant factor in adopting mobile money payment system in Sri Lanka.

Facilitating conditions and awareness have been identified as significant factors for non-users to adopt mobile money services through the model fitted using binary logistic regression. In addition, educational qualifications and occupation influences the decision of non-users to use mobile money services in Sri Lanka. According to the odds of being non-user who intend to use mobile money in future is about 3.266 times greater than non-user who believe that mobile money system ensure efficient service with sufficient mobile money outlets and merchants who accept mobile money than who do not believe it. Facilitating conditions has been identified as a significant factor in the studies conducted by Kyeyune et al. (2012) and Thakur et al. (2014). Hence, considering the past literature and the findings in the current study, facilitating conditions is a significant factor which affect for the adoption of mobile money services in Sri Lanka.

According to the odds ratio of awareness, the odds of being non-user who intend to use mobile money in future is about 2.638 times greater than non-user who has knowledge on mobile money system than who does not have. When considering the other studies, Assibey(2014) and Chauhan (2015) have identified awareness as a significant factor for mobile money adoption. In addition to mobile money technology, Dash et al. (2014) have identified the importance of enhancing knowledge of users on mobile banking for the adoption of mobile banking technology. Moreover, when consider the Sri Lankan context, IFC (2013) and Colombage (2012) have identified low level of awareness of mobile money as a barrier to expand the mobile money service in Sri Lanka. Therefore, considering the past literature and the findings in the current study, awareness is a significant factor which affect for the adoption of mobile money services in Sri Lanka.

Only two demographic variables which influence the intention of non-users to use mobile money were identified in current study including educational qualification and occupation. According to the results, the odds of being non-users who intend to use mobile money in future is about 2.57 times greater than non-user who has the education qualification of a “Masters’ degree” than non-users who has the education qualification of “A/L”. It implies that there is high tendency to use mobile money by

well educated people in Sri Lanka. According to the study of Assibey(2014) , education qualification is a moderator variable which influence the consumers decision to use mobile money in future. In addition, Wang et al. (2014) have identified that the education qualification affects the adoption of using electronic cards in Vietnam. Hence past literature also support the findings of the current study. Therefore, education qualification, influence the decision of the non-user to use mobile money in future in Sri Lanka.

When considering the odds ratio for occupation, the odds of being users who intend to use mobile money in future is about 4.725 times greater for students than non-users who work in government sector. It indicates that there is high tendency to use mobile in future by students rather than government officers. Similarly, the odds of being users who intend to use mobile money in future is about 1.631 times greater for private sector employees than non-users who work in government sector. It indicates that there is high tendency to use mobile in future by private sector employees rather than government officers

This study concludes that perceived credibility and perceived cost affect the behavioral intention of users to use mobile money continuously. Meanwhile, facilitating conditions and awareness affect the behavioral intention of non-users to use mobile money in future. In addition, education qualification and occupation influence the decision of non-users to use mobile money services. Therefore, it can be concluded that the perceived credibility, perceived cost, facilitating conditions, awareness, education qualification and occupation affect the adoption of mobile money payment system in Sri Lanka.

5.4 Issues on mobile money payment system in Sri Lanka

The second most important objective of this research is to identify the issues faced by mobile money users. The questionnaire has an open-ended question about issues in mobile money users. There were different answers from people who already use mobile money services and people who do not. Following points are the major common issues:

1. Inadequate number of outlets to reload and disburse mobile money
2. Less number of registered merchants
3. Less knowledge and less awareness among users and non-users on mobile money services
4. High potentiality to use mobile money for illegal transactions
5. Low commission for the mobile money agents due to not to start mobile money outlets in communications
6. Less regulated financial service
7. Limited number of offers/promotions
8. Frequently occurred network failures
9. Since the maximum amount allowed to withdraw from ATM is Rs 5,000, it should have to withdraw several times in order to withdraw large amounts.
10. Some mobile money agents get more amount than the fee when withdrawing money
11. Some mobile money outlets refuse to withdraw money
12. Insufficiency of the allowed maximum amount (Rs. 25,000)
13. Less number of ATMs for withdrawing mobile money
14. Liquidity problems in mobile money outlets
15. Lack of trust with the leading mobile money service providers
16. Cheating among unknown parties through mobile money services

Therefore, it is important to take immediate action to address the above-mentioned issues. Service providers and government have a significant responsibility to address the mentioned issues immediately to retain and expand the current customer base while attracting more non-users for the service.

5.5 Recommendations to enhance the adoption of mobile money system in Sri Lanka

Based on the results generated in Chapter 4 and the response of users and non-users given for the open ended questions, some important points for mobile money service providers and government authorities can be recommended to enhance the mobile money service among mobile money users in Sri Lanka. The most significant factors are the perceived credibility, perceived cost, facilitating conditions and awareness according to the proposed model. Mobile money service providers should have to give more priority for the recommendations given for the significant factors in the proposed model.

Perceived credibility was found to be the most significant factor influencing to use mobile money services continuously in Sri Lanka. These findings emphasize the importance of ensuring trust of users on mobile money service providers, mobile money agents and mobile money transactions. In addition, securing personal and payment information of users is very important to build trust on the mobile money services among users. As per the issues mentioned by both users and non-users, some mobile money agents get more amount than the fee when withdrawing money. Therefore, these un-ethical behavior of mobile money agents damage the image of service while reducing the trust of the users on the service. Mobile money service providers can allow the customer to complaint such scenarios to identify those mistrust behaviors of mobile money agents. However, mobile money service providers and agents should provide trust and reliable service for the users to retain the customers and enhance the use of mobile money.

Perceived cost also found to be a significant factor influencing the use of mobile money services continuously in Sri Lanka. The findings emphasize the importance of having fair charges for mobile money transactions. Because when they feel mobile money charges are comparatively fair with other payment methods, mobile money users will retain and enhance the use of mobile money. Meanwhile, most users and non-users have mentioned that the mobile money transaction charges are high when compared with other payment methods and total transaction amount. Therefore, if

mobile money service providers reduce the charges as they expect, it will hugely impact the expansion of the mobile money industry. Furthermore, transaction charges should be fair with the transaction amount.

Facilitating conditions was considered as a significant factor influencing the use of mobile money services in future by mobile money non-users in Sri Lanka. According to the perception of both of mobile money users and non-users, there is very few mobile money outlets and merchants who accept mobile money. Therefore, mobile money service providers should have to pay more attention to increase the mobile money outlets as well as their official outlets. Further, mobile money non-users are willing to use it, if there exist sufficient mobile money merchants. Hence, mobile money service providers should introduce more merchants who accept mobile money for financial transactions. And also, most communications hesitate to facilitate mobile money services due to low commission. Therefore, mobile money service providers should have to retain the mobile money agents with the service by providing attractive benefits for them. Since most of users have mentioned on the liquidity problems in outlets, mobile money service providers should initiate to solve these practical problems to retain mobile money users further. Introducing ATMs for withdrawing mobile money is a good solution. But, users have revealed that the available ATMs for withdrawing mobile money is not sufficient because only one commercial bank allow that facility. Therefore, mobile money service providers should work with other commercial banks to expand the available ATMs for withdrawing mobile money. Furthermore, mobile money service providers should ensure efficient and effective service by providing the service without technical issues such as network failures when withdrawing money from ATM.

Awareness also found to be a significant factor affecting the adoption of mobile money payment system in Sri Lanka. Both mobile money non-users and users have less knowledge on mobile money services. Moreover, significant number of non-users have not even heard of mobile money services. Therefore, mobile money service providers should have to pay more attention to enhance the awareness of users. They

should have to conduct competitive advertising campaigns to get the attention of non-users for the mobile money services.

In addition, non-users who have masters' degree, have the intention of using mobile money in future. Therefore, mobile money providers should convert this non-user into users by introducing favorable services for them. In addition, students have high intention to use mobile money in future. Mobile money service providers should pay attention to grab this category by introducing favorable services for students. For an example, mobile money service providers can deal with educational institutions to allow the facility of paying examination fees through mobile money. Moreover, private sector employees also have tendency to use mobile money in future. Therefore, mobile money service providers should deal with private companies to introduce mobile money services in order to attract the employees.

Moreover, if mobile money service providers introduce more offers/promotions and loyalty programs for the users, it will help to attract more customers for the service. But it's not a most significant factor as per the proposed model from this study. And also, some people have mentioned about the insufficiency of the allowed maximum amount. Therefore, mobile money service providers should have to work with respective authorities to make policies in order to increase the maximum amount.

Meanwhile, there is high potentiality to use mobile money for illegal transactions as per the opinion of mobile money non-users. Government should strength the regulations to avoid these illegal transactions while ensuring a secure financial system. Mobile money service providers also should take necessary actions when the users perform illegal transactions to secure the image of the service.

5.6 Conclusion

Mobile money payment system is a rapidly growing payment method in several developing countries which makes a great impact in improving the livelihood of people. Sri Lanka has a great opportunity for developing mobile money payment system with the active participation of two mobile money service providers namely; ezCash and mCash. This study proposes significant factors and recommendation which affect the adoption of mobile money payment system in Sri Lanka.

Perceived credibility and perceived cost are the most significant factors which influence the users to use mobile money continuously. Moreover, facilitating conditions and awareness are the most significant factors which influence the non-users to use mobile money in future. In addition, two demographic variables, education qualification and occupation also effect the non-users' intention to use mobile money in future. Promotions/offers provide by mobile money service providers may positively impact the decision of both users and non-users.

As per the significant factors, mobile money service providers should ensure the security of personal and payment information of users. And they should enhance trust of the users on the service providers, mobile money agents and transactions. If mobile money service providers reduce the charges of the transactions, they would be able to enhance the customer base furthermore. Moreover, increasing the number of mobile money outlets and merchants who accept mobile money would be impact for both users and non-users. Conducting competitive advertising campaigns is very essential in order to attract both users and non-users while enhancing the awareness on mobile money. Meanwhile, government should have to strength the regulations to avoid the use of mobile money for illegal transactions.

The results of this study definitely help for the mobile money service providers, mobile money agents and government authorities to provide a better service for the mobile money users by implementing good strategies while increasing the use of mobile money in Sri Lanka.

5.7 Limitations and Future Research

This study has several limitations. The most challenging task in this research was the process of data gathering from users, which took considerably more time than estimated. It was very difficult to find mobile money users for the survey. Convenience sampling method was used in this study to get the responses from both mobile money users and non-users. Furthermore, there may be additional factors that can affect the adoption of mobile money payment system in Sri Lanka. For example, social norms, trial ability, structural assurance, task technology fit and problem handling etc. could be selected as further factors. Future studies may investigate on more factors which affect the adaption of mobile money payment system in Sri Lanka.

Further, this research identified the factors which affect the adoption of mobile money payment system in Sri Lanka for users and non-users separately. Binary logistic regression analysis was performed to evaluate the impact of individual variables on the dependent variable separately for users and non-users. For future research, it is suggested to build relationships among independent variables as well. For that, it would be necessary to build more hypotheses and develop a questionnaire according to that.

For this research, mobile money users and mobile money non-users have been considered. However, in future research work, the responses of mobile money agents can be evaluated for identifying the adoption factors. Further, it is very important to analyze more users with big sample size. In addition, this study measures the intention of non-users to use mobile money future and intention of users to use mobile money continuously by analyzing selected factors. But there is little awareness and knowledge among non-users and even users on the benefits of mobile money services. Therefore, it would be an interesting study to examine the long term effect of both mobile money users and non-users through a longitudinal research.

The validated research model and results can be used to enhance the mobile money service growth in Sri Lanka. This research would be used for further enhancement of other research areas on mobile context as well.

REFERENCES

Al-Qeisi, K., & Hegazy, A. (2015). Consumer Online Behavior: A perspective on Internet Banking Usage in Three Non-Western Countries. *Procedia Economics and Finance*, *23*, 386-390. doi : 10.1016/S2212-5671(15)00347-0

Assibey, E. O. (2014). What drives behavioral intention of mobile money adoption? The case of ancient susu saving operations in Ghana. *International Journal of Social Economics, 42*(11), 962-979. doi: 10.1108/IJSE-09-2013-0198

Castri, S. D. (2013). *Enabling Mobile Money Policies in Sri Lanka: The Rise of EZ Cash* (Report No. ID 2302736). Retrieved October, 2015, from http://www.gsma.com/connectedwomen/wp-content/uploads/2013/09/Enabling-Mobile- Money-Policies-in-Sri-Lanka-GSMA-MMU-Case-Study-July2013.pdf

Central Bank of Sri Lanka. (2016, First quarter). *Payments Bulletin*, Retrieved November, 2016, from http://www.cbsl.gov.lk/pics_n_docs/10_pub/_docs/periodicals/payment_bulletin/2016/Payments_Bulletin_1Q2016.pdf

Central Bank of Sri Lanka. (2012, Second quarter). *Payments Bulletin, 12*(2), Retrieved October, 2015, from http://www.cbsl.gov.lk/pics_n_docs/10_pub/_docs/periodicals/payment_bulletin/Payments_Bulletin_2Q2012.pdf

Chauhan, S. (2015). Acceptance of mobile money by poor citizens of India integrating trust into the technology acceptance model. *Info*, *17*(3), 58-68. doi: 10.1108/info-02-2015-0018

Colombage, S.S. (2012). The Potential of Using Mobile Money Systems for Enhancing Financial Inclusion in Sri Lanka. *Sri Lanka Journal of Advanced Social Studies*, *1*(2), doi: 10.4038/sljass.v1i2.4854

Cooper, R. A., & Weekes, A. J. (1983). Data, Models, and Statistical Analysis. *Rowman & Littlefield Publishers, Inc, USA*

Dahlberg, T., Mallat, N., & Oorni, A. (2003). Trust Enhanced Technology Acceptance Model-Consumer Acceptance of Mobile Payment Solutions. Proceedings of the Stock-holm Mobility Roundtable, Stockholm

Dahlberg, T. (2015). Mobile Payments in the Light of Money Theories-Means to Accelerate Mobile Payment Service Acceptance? *17th International Conference on Electronic Commerce 2015*, 1-7. doi:10.1145/2781562.2781584

Dash, M., & Tech, M. (2014). Determinants of Customers' Adoption of Mobile Banking: An Empirical Study by Integrating Diffusion of Innovation with Attitude. *Journal of Internet Banking and Commerce*, *19*(3), 1-21. Retrieved October, 2015, from http://www.arraydev.com/commerce/JIBC/2014-12/ManoranjanDashv2.pdf

Davis, F.D., Bagozzi, R. P., & Warshaw, P.R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), 982-1003. doi:10.1287/mnsc.35.8.982

Dialog. EZ Cash - Money in Your Mobile. (2016). Retrieved January 12, 2016, from http://www.ezcash.lk/

Dialog Axiata PLC. (2015). Annual Report 2015. Retrieved from https://www.dialog.lk/dialogdocroot/content/pdf/annual_reports/2015-annual-report.pdf

Donovan, K. (2012). Mobile Money for Financial Inclusion, *Information and Communication for Development 2012*, 61-73. Retrieved October/November, 2015, from http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTE CHNOLOGIES/Resources/IC4D-2012-Chapter-4.pdf

Etisalat. Etisalat joins Mobitel mCash. Retrieved October, 2015, from http://www.etisalat.lk/admin/pdf/1413778689tisalat.pdf

Fiserv. (2014, December 15). Fiserv Research Reveals Rapid Growth of Mobile Bill Payments, Multiple Billing and Payment Choices Key to Customer Satisfaction. Retrieved October, 2015, from http://newsroom.fiserv.com/releasedetail.cfm?ReleaseID=887655

Hussain, M. (2014, March 24). Dialog partners Etisalat to pool on eZ Cash. Read Me Blog. Retrieved October/November, 2015, from http://readme.lk/dialog-etisalat-pool-ez-cash/

Hutch. (2016). mCash. Retrieved October, 2016, from https://www.hutch.lk/vas/mobile-money/mcash/

International Finance Corporation (IFC). (2013). Market Demand Assessment of Mobile Money Services in Sri Lanka. Retrieved October, 2015, from http://trpc.biz/wpcontent/uploads/IFC_Mobile-Money-Services-Demand-11_07_2013.pdf

Kazi, A.K., & Mannan, M. A. (2013). Factors affecting adoption of mobile banking in pakistan, *International Journal of Research in Business and Social Science*.*2* (3), 54-64.

Kyeyune, R., Mayoka, K. G., & Miiro, E. (2012). ICT Infrastructure, Mobile Money Systems and Customer Satisfaction in Uganda. *International Scientific Research Journal*, *1*(1), 19-26. Retrieved October, 2015, from https://www.academia.edu/6605057/ICT_Infrastructure_Mobile_Money_Systems_and_Customer_Satisfaction_in_Uganda

Khare, A., Khare, A., & Singh, S. (2012). Factors affecting credit card use in India. *Asia Pacific Journal of Marketing and Logistics*, *24*(2), 236-256, doi: 10.1108/13555851211218048

Lesa, E., & Tembo, S. (2016). Study on Factors Affecting Mobile Payment Systems Diffusion in Zambia. *Management 2016*, *6*(2), 36-45.doi:10.5923/j.mm.20160602.02

Luarn, P., & Lin, H.H., (2005). Toward an understanding of the behavioural intention to use mobile banking, *Computers in Human Behaviour*. *21*, 873–891.

Marumbwa, J., & Mutsikiwa, M. (2013). An analysis of the factors influencing Consumers Adoption of Mobile money transfer services (MMTs) in Masvingo urban Zimbabwe. *British Journal of Economics, Management & Trade*, *3*(4), 489-512. doi:10.9734/BJEMT/2013/4670

Mobitel. My Mobitel Account. (2016). Retrieved January 12, 2016, from http://www.mobitel.lk/mcash

Nasri, W. (2011). Factors influencing the adoption of internet banking in Tunisia, *International journal of business and management*, *6*(8), 143- 160.

Nicholaus C. S., & Venkatakrishnan, V. (2013). Challenges of mobile-phone money transfer services' market penetration and expansion in Singida District. Tanzania.

IRACST International Journal of Research in Management & Technology (IJRMT), *3*(6), 205-215

Nunnally, J.C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.), New York: McGrawHill

Oyefolahan, I.O., Ahmed, S. A., & Abubakar, A. (2014). An Empirical study of Customers' Adoption of Mobile Money Transfer Services in Somaliland. *2014 The 5th International Conference on Information and Communication Technology for The Muslim World (ICT4M)*, 1-5. doi : 10.1109/ICT4M.2014.7020583

Pichai, H. (2013). *Opinion: Mobile money – five key challenges for 2013*. European Communications. Retrieved October, 2015, from http://www.eurocomms.com/features/opinion/8840-opinion-mobile-money-5-keychallenges-for-2013-

Pousttchi, K. & Wiedemann, D. (2006), What Influences Consumers' Intention to Use Mobile Payments*? Mobile Commerce Working Group, Chair of Business Informatics,* University of Augsburg, Germany

Roche, I. D. (2014). An Empirical Investigation of Internet Banking Service Quality, Corporate Image and the Impact on Customer Satisfaction; With Special Reference to Sri Lankan Banking Sector. *Journal of Internet Banking and Commerce*, *19*(2), Retrieved October, 2015, from http://www.arraydev.com/commerce/jibc/

Scharwatt, C., Katakam, A., Frydrych, J., Murphy, A., & Naghavi, N. (2014). 2014 State of the Industry Mobile Financial Services for the Unbanked. *GSMA's Mobile Money for the Unbanked (MMU)*.Retrieved October/November, 2015, from http://www.gsma.com/mobilefordevelopment/wpcontent/ uploads/2015/03/SOTIR_2014.pdf

Spenkelink, H.F. (2014). The Adoption Process of Cryptocurrencies - Identifying factors that influence the adoption of cryptocurrencies from a multiple stakeholder perspective (Master's thesis Industrial Engineering and Management).Retrieved October, 2015, from http://essay.utwente.nl/65677/

Sunday Island. (2014, December 15). *Hutch joins eZ Cash*. Retrieved October, 2015, from http://www.island.lk/index.php?page_cat=article-details&page=articledetails& code_title=115994

Sunday Observer. (2014, October 12). *Mobitel launches pension disbursements via mCash service*. Retrieved from http://www.sundayobserver.lk/2014/10/12/new04.asp

Surendran, P. (2012). Technology Acceptance Model: A Survey of Literature. *International Journal of Business and Social Research*. *2*(4), 175-178.

Teoh, W. M. Y., Chong, S. C. C., Lin B., & Chua, J. (2013). Factors affecting consumers' perception of electronic payment: an empirical analysis. *Internet Research*, *23*(4), 465- 485, doi: 10.1108/IntR-09-2012-0199

Thakur, R., & Srivastava, M. (2014). Adoption readiness, personal innovativeness, perceived risk and usage intention across customer groups for mobile payment services in India. *Internet Research, 24*(3), 369-392. doi:10.1108/IntR-12-2012-0244

Tobbin, P., & Kuwornu, J. K. M. (2011). Adoption of Mobile Money Transfer Technology: Structural Equation Modeling Approach. *European Journal of Business and Management, 3*(7), 59-77. Retrieved from http://www.iiste.org/Journals/index.php/EJBM/article/view/593

Upadhyay, P., & Jahanyan, S. (2016). Analyzing user perspective on the factors affecting use intention of mobile based transfer payment. *Internet Research, 26*(1), 38-56. doi:10.1108/IntR-05-2014-0143

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

Wang, C. N., Nguyen, N. T., & Tran, T. T. (2014). An Empirical Study of Customer Satisfaction towards Bank Payment Card Service Quality in Ho Chi Minh Banking Branches. *International Journal of Economics and Finance*, *6*(5), doi: 10.5539/ijef.v6n5p170

Wikipedia. Pearson's Chi-Square Test. Retrieved October, 2016, from http://en.wikipedia.org/wiki/Pearson's_chi-square_test

Wua, J. H., & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance mode, *Information and Management*. *42*, 719 -729

Yu, C. H. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model, *Journal of Electronic Commerce Research*, *3*(2), 104-121. Retrieved October, 2015, from http://www.jecr.org/sites/default/files/13_3_p01_0.pdf

APPENDIX A - QUESTIONNAIRE INSTRUMENT

Questionnaire for mobile money users

1. Gender
   - ☐ Male
   - ☐ Female

2. Age
   - ☐ Less than 18 years
   - ☐ 18 - 25 years
   - ☐ 26 - 40 years
   - ☐ 41 - 60 years
   - ☐ Above 60 years

3. Occupation(e.g. Teacher)

4. Highest level of education
   - ☐ Up to grade 5
   - ☐ Up to O/L
   - ☐ O/L
   - ☐ A/L
   - ☐ Any degree/diploma
   - ☐ Post Graduate or above

5. Monthly income
   - ☐ Less than Rs. 30,000
   - ☐ Rs. 30,000 –Rs. 50,000
   - ☐ Rs. 50,000 – Rs. 100,000
   - ☐ Rs. 100,000 – Rs. 200,000
   - ☐ Greater than Rs.200,000

6. What is the your user category

   ezCash
   - ☐ Classic Account - limit of Rs. 10,000.00
   - ☐ Power Account - limit of Rs. 25,000.00

   mCash
   - ☐ Normal Account - limit of Rs. 10,000.00
   - ☐ Enhanced Account - limit of Rs. 25,000.00

7. Are you aware of the following mobile money services?
   - ☐ Send money to your friends/family members
   - ☐ Receive money from friends/family members in foreign country (Inward Remittance Services)
   - ☐ Pay mobile bills & utility bills
   - ☐ Institutional Payments
   - ☐ Internet Payments - Pay for online purchases, e-channeling etc
   - ☐ Convert mobile money to cash through ATM

8. How often do you use your mobile money services
   - ☐ At least once a day
   - ☐ Once a week
   - ☐ Several days per week
   - ☐ At least once a month
   - ☐ Not more than 3 times in a year

9. Did you stop the use of mobile money due to any inconvenience?
   - ☐ Yes
   - ☐ No

If yes, Please specify the reason :

_____

10. Overall, how satisfied are you with your mobile money experiences?
    - ☐ Very satisfied
    - ☐ Somewhat satisfied
    - ☐ Moderate
    - ☐ Somewhat dissatisfied
    - ☐ Very dissatisfied

Indicate the degree to which you agree or disagree on the following statements which discusses the experiences in prompting you to use mobile money

SA: Strongly Agree **A:** Agree **N:** Neither agree or disagree **DA:** Disagree **SDA:** Strongly Disagree

	SA	**A**	**N**	**DA**	**SDA**
***PEOU1*:** I could learn to perform transactions easily by myself	☐	☐	☐	☐	☐
***PEOU2*:** Instructions are communicated clearly through the media	☐	☐	☐	☐	☐
PEOU3: I could understand the instructions in screens clearly	☐	☐	☐	☐	☐
PEOU4: I can complete a transaction using few steps	☐	☐	☐	☐	☐
PEOU5: I can easily contact the customer service in any time	☐	☐	☐	☐	☐
PCr1: I can trust the mobile money agents	☐	☐	☐	☐	☐
PU1: I can perform the transactions more quickly while saving my time	☐	☐	☐	☐	☐
PCr2: Receiving a SMS alert after completion of the transaction helps to keep a track of my payment records	☐	☐	☐	☐	☐

PU2: Service is available whenever I need it	☐	☐	☐	☐	☐
PU3: I use mobile money because I don't need to carry cash all the time	☐	☐	☐	☐	☐
PU6: Using mobile money payment make easy for me to conduct transactions	☐	☐	☐	☐	☐
PC5: Charges for utility bill payments (water & electricity bills) should be free of charged	☐	☐	☐	☐	☐

Indicate the level of acceptability on following statements which discusses your perception on mobile money services

SA: Strongly Agree **A:** Agree **N:** Neither agree or disagree **DA:** Disagree **SDA:** Strongly Disagree

	SA	**A**	**N**	**DA**	**SDA**
PCr3: I don't trust any electronic channels such as Internet banking, mobile banking and mobile money	☐	☐	☐	☐	☐
PCr4: Mobile money service providers can reveal my personal information/ payment information without my consent	☐	☐	☐	☐	☐

Indicate the degree to which you agree or disagree on the following statements which discusses the experiences which reduce the use of mobile money

SA: Strongly Agree **A:** Agree **N:** Neither agree or disagree **DA:** Disagree

SDA: Strongly Disagree

	SA	**A**	**N**	**DA**	**SDA**
PCr5: Mobitel/Dialog do not guarantee that all my transactions are executed without any issue	☐	☐	☐	☐	☐
PCr6: Subscribing to mobile money services, increased the likelihood of receiving spam SMS	☐	☐	☐	☐	☐
PCr7: I have no trust in the completion of mobile money transactions	☐	☐	☐	☐	☐
PC1: The fees and charges are too high when compared with other payment methods	☐	☐	☐	☐	☐

PROMOTIONS1: There is only limited number of offers for mobile money services ☐ ☐ ☐ ☐ ☐

PU4: It's hard to use mobile money whenever I need it ☐ ☐ ☐ ☐ ☐

PU5: Allowed maximum amount per transaction is not sufficient ☐ ☐ ☐ ☐ ☐

FC1: There is only limited number of outlets (communications) which offer the facility of loading and disbursing mobile money ☐ ☐ ☐ ☐ ☐

FC2: I am not satisfied with the number of merchants who accept mobile money ☐ ☐ ☐ ☐ ☐

PROMOTIONS2: There is no any loyalty programs for mobile money as credit cards ☐ ☐ ☐ ☐ ☐

PC2: Transaction charges are too high compared with total transaction amount. ☐ ☐ ☐ ☐ ☐

PC3: Using mobile money is cost burden to me ☐ ☐ ☐ ☐ ☐

PC4: Quality of services is not good enough compared to the charges ☐ ☐ ☐ ☐ ☐

Indicate the degree to which you aware or not aware on the following statements which discusses the level of awareness on mobile money services

AWARENESS1: Benefits of using mobile money financial services against other payment modes

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware
☐ Moderately Aware ☐ Extremely Aware

AWARENESS2: Charges for each mobile money transaction category

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware
☐ Moderately Aware ☐ Extremely Aware

AWARENESS3: Available offers for mobile money transaction

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware

☐ Moderately Aware ☐ Extremely Aware

AWARENESS4: Merchants/Institutes/Web sites which accept mobile money

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware

☐ Moderately Aware ☐ Extremely Aware

Indicate the degree to which you agree or disagree on the following statements which discuss the behavioral Intention to use mobile money services

BI1: I will continue using mobile payment services in the future

☐ Strongly Agree ☐ Agree ☐ Neither agree or disagree

☐ Disagree ☐ Strongly disagree

BI2: I will increase using mobile payment services in the future

☐ Strongly Agree ☐ Agree ☐ Neither agree or disagree

☐ Disagree ☐ Strongly disagree

BI3: I will reduce using mobile payment services in the future

☐ Strongly Agree ☐ Agree ☐ Neither agree or disagree

☐ Disagree ☐ Strongly disagree

Open ended Questions

1. Have you noticed any issues on mobile money payment system in Sri Lanka? Please specify below.

2. What are the enhancements /things that need to make it more attractive that you would like to suggest in popularizing mobile money payment system in Sri Lanka?

Questionnaire for mobile money non- users

1. Gender
   - ☐ Male
   - ☐ Female

2. Age
   - ☐ Less than 18 years
   - ☐ 18 - 25 years
   - ☐ 26 - 40 years
   - ☐ 41 - 60 years
   - ☐ Above 60 years

3. Occupation(e.g. Teacher)

4. Highest level of education
   - ☐ Up to grade 5
   - ☐ Below O/L
   - ☐ O/L
   - ☐ A/L
   - ☐ Any degree/diploma
   - ☐ Post Graduate or above

5. Monthly income
   - ☐ Less than Rs. 30,000
   - ☐ Rs. 30,000 –Rs. 50,000
   - ☐ Rs. 50,000 – Rs. 100,000
   - ☐ Rs. 100,000 – Rs. 200,000
   - ☐ Greater than Rs.200,000

6. What is/are your current modes of carrying out financial transactions?
   - ☐ Cash
   - ☐ Cheques
   - ☐ Internet Banking
   - ☐ Electronic cards (Credit card & Debit card)
   - ☐ Mobile banking
   - ☐ Mobile money(e.g., ezCash, mCash)

7. Have you ever heard about ezCash or mCash?
   - ☐ Yes
   - ☐ No

8. If yes, are you aware of the following mobile money services?(Please select all applicable)

- ☐ Send money to your friends/family members
- ☐ Receive money from friends/family members in foreign country (Inward Remittance Services)
- ☐ Pay mobile bills & utility bills
- ☐ Pay for Goods and Services /Products
- ☐ Institutional Payments
- ☐ Internet Payments - Pay for online purchases, e-channeling etc
- ☐ Convert mobile money to cash through ATM

Indicate the degree to which you agree or disagree on the following statements assuming that you will be using mobile money service in future

SA: Strongly Agree **A:** Agree **N:** Neither agree or disagree **DA:** Disagree **SDA:** Strongly Disagree

	SA	**A**	**N**	**DA**	**SDA**
PEOU1: I should be able to learn it easily by myself	☐	☐	☐	☐	☐
PEOU2: Instructions should be communicated clearly through the media	☐	☐	☐	☐	☐
PEOU3: I should be able to understand the instructions which are displayed in the screen	☐	☐	☐	☐	☐
PEOU4: I should be able to complete a transaction using few steps	☐	☐	☐	☐	☐
PEOU5: I should be able to easily contact the customer service in any time	☐	☐	☐	☐	☐
PCr1: Mobile money agents should be trustworthy	☐	☐	☐	☐	☐
PCr2: Mobitel/Dialog should guarantee that all my transactions will be executed without any issue	☐	☐	☐	☐	☐
PCr3: Subscribing to mobile money services should not increase the likelihood of receiving spam/ spam SMS	☐	☐	☐	☐	☐
PCr4: I should receive SMS alert after completion of the transaction	☐	☐	☐	☐	☐

PC1: Transaction charges should equal with other payment methods ☐ ☐ ☐ ☐ ☐

PROMOTIONS1: It should have several offers for mobile money such as credit cards offers ☐ ☐ ☐ ☐ ☐

PU1: I should be able to perform the transactions more quickly while saving my time ☐ ☐ ☐ ☐ ☐

PU2: Service should be available whenever I need it ☐ ☐ ☐ ☐ ☐

PU3: Using mobile money should allow me to not to carry cash all the time ☐ ☐ ☐ ☐ ☐

PROMOTIONS2: It should have loyalty programs for mobile money as for credit cards (e.g., special coupons, free merchandise) ☐ ☐ ☐ ☐ ☐

PU4: Using mobile money payment should easy for me to conduct transactions ☐ ☐ ☐ ☐ ☐

PC2: Charges for utility bill payments (water & electricity bill payments) should be free of charged ☐ ☐ ☐ ☐ ☐

Indicate the degree to which you agree or disagree on the following factors which discourage you from using mobile money service

SA: Strongly Agree **A:** Agree **N:** Neither agree or disagree **DA:** Disagree **SDA:** Strongly Disagree

	SA	**A**	**N**	**DA**	**SDA**
PCr5: I have no trust in the completion of mobile money transactions	☐	☐	☐	☐	☐
PCr6: I don't trust any electronic channels such as Internet banking, mobile banking & mobile money	☐	☐	☐	☐	☐
PCr7: Mobile money service providers may reveal my personal information/ payment information without my consent	☐	☐	☐	☐	☐
PC3: The fees and charges are too high	☐	☐	☐	☐	☐

PROMOTIONS3: There is very limited number of offers for mobile money services as for credit cards ☐ ☐ ☐ ☐ ☐

PROMOTIONS4: There are no any loyalty programs for mobile money as credit cards ☐ ☐ ☐ ☐ ☐

PU5: It's hard to use mobile money whenever I need it ☐ ☐ ☐ ☐ ☐

PU6: Allowed maximum amount per transaction is not sufficient ☐ ☐ ☐ ☐ ☐

FC1: There is only limited number of outlets (communications) which offer the facility of loading and disbursing mobile money ☐ ☐ ☐ ☐ ☐

FC2: I am not satisfied with the number of merchants which accepts mobile money ☐ ☐ ☐ ☐ ☐

PC4: Transaction charges are too high compared with total transaction amount ☐ ☐ ☐ ☐ ☐

PC5: Transactional charges are too high compared with other methods ☐ ☐ ☐ ☐ ☐

PC6: Using mobile money is cost burden to me ☐ ☐ ☐ ☐ ☐

PC7: Quality of services is not good enough compared to the charges ☐ ☐ ☐ ☐ ☐

Indicate the degree to which you aware or not aware on the following statements which discusses the level of awareness on mobile money services

AWARENESS1: Benefits of using mobile money financial services against other payment modes

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware
☐ Moderately Aware ☐ Extremely Aware

AWARENESS2: Charges for each mobile money transaction category

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware
☐ Moderately Aware ☐ Extremely Aware

AWARENESS3: Available offers for mobile money transaction

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware
☐ Moderately Aware ☐ Extremely Aware

AWARENESS4: Merchants/Institutes/Web sites which accept mobile money

☐ Not At All Aware ☐ Slightly Aware ☐ Somewhat Aware
☐ Moderately Aware ☐ Extremely Aware

Indicate the degree to which you agree or disagree on the following statements which discuss the behavioral Intention to use mobile money services

BI1: I will use mobile payment services in the future

☐ Strongly Agree ☐ Agree ☐ Neither agree or disagree
☐ Disagree ☐ Strongly disagree

BI2: It is likely that I will use mobile payment services in the future

☐ Strongly Agree ☐ Agree ☐ Neither agree or disagree
☐ Disagree ☐ Strongly disagree

Open ended Questions

1. Have you noticed any issues on mobile money payment system in Sri Lanka? Please specify below.

2. What are the enhancements /things that need to make it more attractive that you would like to suggest in popularizing mobile money payment system in Sri Lanka?

APPENDIX B - DESCRIPTIVE STATISTICS

Table B.1: Descriptive statistics of perceived ease of use for users

		PEOU1	PEOU3	PEOU4
N	Valid	96	96	96
	Missing	0	0	0
Mean		4.59	4.59	4.61
Median		5.00	5.00	5.00
Mode		5	5	5
Std. Deviation		.748	.762	.701
Variance		.560	.581	.492
Minimum		2	1	2
Maximum		5	5	5

Table B.2: Descriptive statistics of perceived credibility for users

		PCR1	PCR2	PCR3	PCR4	PCR5	PCR6	PCR7
N	Valid	96	96	96	96	96	96	96
	Missing	0	0	0	0	0	0	0
Mean		4.01	4.78	4.53	3.61	3.58	3.63	4.27
Median		4.00	5.00	5.00	4.00	4.00	4.00	5.00
Mode		5	5	5	5	5	4	5
Std. Deviation		1.138	.440	.781	1.410	1.499	1.275	1.010
Variance		1.295	.194	.610	1.987	2.246	1.626	1.021
Minimum		1	3	2	1	1	1	1
Maximum		5	5	5	5	5	5	5

Table B.3: Descriptive statistics of perceived cost for users

		PC1	PC2	PC3	PC4
N	Valid	96	96	96	96
	Missing	0	0	0	0
Mean		2.9479	3.0521	3.5729	3.8125
Median		3.0000	3.0000	4.0000	4.0000
Mode		4.00	5.00	5.00	5.00
Std. Deviation		1.53808	1.58526	1.47073	1.34800
Variance		2.366	2.513	2.163	1.817
Minimum		1.00	1.00	1.00	1.00
Maximum		5.00	5.00	5.00	5.00

Table B.4: Descriptive statistics of perceived usefulness for users

		PU1	PU2	PU4	PU5	PU6
N	Valid	96	96	96	96	96
	Missing	0	0	0	0	0
Mean		4.5833	4.1563	3.4688	2.9167	4.5104
Median		5.0000	5.0000	4.0000	3.0000	5.0000
Mode		5.00	5.00	4.00	1.00	5.00
Std. Deviation		.77686	1.07926	1.21355	1.62005	.82072
Variance		.604	1.165	1.473	2.625	.674
Minimum		1.00	1.00	1.00	1.00	2.00
Maximum		5.00	5.00	5.00	5.00	5.00

Table B.5: Descriptive statistics of promotions for users

PROMOTIONS2		
N	Valid	96
	Missing	0
Mean		2.7188
Median		3.0000
Mode		3.00
Std. Deviation		.97011
Variance		.941
Minimum		1.00
Maximum		5.00

Table B.6: Descriptive statistics of facilitating conditions for users

		FC1	FC2
N	Valid	96	96
	Missing	0	0
Mean		1.8646	1.8542
Median		1.0000	1.0000
Mode		1.00	1.00
Std. Deviation		1.12034	1.13304
Variance		1.255	1.284
Minimum		1.00	1.00
Maximum		4.00	5.00

Table B.7: Descriptive statistics of awareness for users

		Awareness1	Awareness2	Awareness3	Awareness4
N	Valid	96	96	96	96
	Missing	0	0	0	0
Mean		3.6667	3.4271	2.2500	2.4271
Median		4.0000	4.0000	2.0000	2.0000
Mode		4.00	4.00	1.00	1.00
Std. Deviation		1.06293	1.28755	1.24816	1.42714
Variance		1.130	1.658	1.558	2.037
Minimum		1.00	1.00	1.00	1.00
Maximum		5.00	5.00	5.00	5.00

Table B.8: Cross-tabulation statistics of perceived credibility and behavioral intention of users

			behavioral_intention_bin		Total
			0	1	
pcr_binary	0	Count	8	2	10
		% within pcr_binary	80.0%	20.0%	100.0%
		% within behavioral_intention_bin	22.9%	3.3%	10.4%
		% of Total	8.3%	2.1%	10.4%
	1	Count	27	59	86
		% within pcr_binary	31.4%	68.6%	100.0%
		% within behavioral_intention_bin	77.1%	96.7%	89.6%
		% of Total	28.1%	61.5%	89.6%
Total		Count	35	61	96
		% within pcr_binary	36.5%	63.5%	100.0%
		% within behavioral_intention_bin	100.0%	100.0%	100.0%
		% of Total	36.5%	63.5%	100.0%

Table B.9: Cross-tabulation statistics of perceived usefulness and behavioral intention of users

			behavioral_intention_bin		Total
			0	1	
pu_binary	0	Count	12	5	17
		% within pu_binary	70.6%	29.4%	100.0%
		% within behavioral_intention_bin	34.3%	8.2%	17.7%
		% of Total	12.5%	5.2%	17.7%
	1	Count	23	56	79
		% within pu_binary	29.1%	70.9%	100.0%
		% within behavioral_intention_bin	65.7%	91.8%	82.3%
		% of Total	24.0%	58.3%	82.3%
Total		Count	35	61	96
		% within pu_binary	36.5%	63.5%	100.0%
		% within behavioral_intention_bin	100.0%	100.0%	100.0%
		% of Total	36.5%	63.5%	100.0%

Table B.10: Cross-tabulation statistics of perceived cost and behavioral intention of users

			behavioral_intention_bin		Total
			0	1	
pc_binary	0	Count	23	22	45
		% within pc_binary	51.1%	48.9%	100.0%
		% within behavioral_intention_bin	65.7%	36.1%	46.9%
		% of Total	24.0%	22.9%	46.9%
	1	Count	12	39	51
		% within pc_binary	23.5%	76.5%	100.0%
		% within behavioral_intention_bin	34.3%	63.9%	53.1%
		% of Total	12.5%	40.6%	53.1%
Total		Count	35	61	96
		% within pc_binary	36.5%	63.5%	100.0%
		% within behavioral_intention_bin	100.0%	100.0%	100.0%
		% of Total	36.5%	63.5%	100.0%

Table B.11: Cross-tabulation statistics of promotions and behavioral intention of users

			behavioral_intention_bin		Total
			0	1	
promotions_binary	0	Count	33	47	80
		% within promotions_binary	41.2%	58.8%	100.0%
		% within behavioral_intention_bin	94.3%	77.0%	83.3%
		% of Total	34.4%	49.0%	83.3%
	1	Count	2	14	16
		% within promotions_binary	12.5%	87.5%	100.0%
		% within behavioral_intention_bin	5.7%	23.0%	16.7%
		% of Total	2.1%	14.6%	16.7%
Total		Count	35	61	96
		% within promotions_binary	36.5%	63.5%	100.0%
		% within behavioral_intention_bin	100.0%	100.0%	100.0%
		% of Total	36.5%	63.5%	100.0%

Table B.12: Descriptive statistics of perceived ease of use for mobile money non-users

		PEOU1	PEOU2	PEOU3	PEOU4	PEOU5
N	Valid	385	385	385	385	385
	Missing	0	0	0	0	0
Mean		4.3481	4.2805	4.5117	4.4935	4.5169
Median		4.0000	4.0000	5.0000	5.0000	5.0000
Mode		5.00	4.00	5.00	5.00	5.00
Std. Deviation		.73485	.72115	.61703	.60431	.71832
Variance		.540	.520	.381	.365	.516
Minimum		1.00	2.00	2.00	2.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00

Table B.13: Descriptive statistics of perceived credibility for mobile money non-users

		PCR1	PCR2	PCR3	PCR4	PCR5	PCR6	PCR7
N	Valid	385	385	385	385	385	385	385
	Missing	0	0	0	0	0	0	0
Mean		4.6753	4.6234	4.4390	4.6260	3.1013	3.6675	2.9221
Median		5.0000	5.0000	5.0000	5.0000	3.0000	4.0000	3.0000
Mode		5.00	5.00	5.00	5.00	3.00	4.00	2.00
Std. Deviation		.60470	.61743	.78531	.55934	.95067	.97554	1.10593
Variance		.366	.381	.617	.313	.904	.952	1.223
Minimum		2.00	2.00	1.00	1.00	1.00	1.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00

Table B.14: Descriptive statistics of perceived cost for mobile money non-users

		PC1	PC2	PC3	PC4	PC5	PC6	PC7
N	Valid	385	385	385	385	385	385	385
	Missing	0	0	0	0	0	0	0
Mean		4.2701	4.2052	2.7273	2.6026	2.6623	2.8390	2.7844
Median		4.0000	4.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Mode		5.00	4.00	3.00	3.00	3.00	3.00	3.00
Std. Deviation		.86588	.77525	.91053	.79745	.78080	.86001	.75881
Variance		.750	.601	.829	.636	.610	.740	.576
Minimum		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00

Table B.15: Descriptive statistics of perceived usefulness for mobile money non-users

		PU1	PU2	PU3	PU4
N	Valid	385	385	385	385
	Missing	0	0	0	0
Mean		4.5896	4.5974	3.9325	4.4026
Median		5.0000	5.0000	4.0000	4.0000
Mode		5.00	5.00	4.00	5.00
Std. Deviation		.57091	.61787	.91607	.63451
Variance		.326	.382	.839	.403
Minimum		2.00	2.00	1.00	2.00
Maximum		5.00	5.00	5.00	5.00

Table B.16: Descriptive statistics of promotions for mobile money non-users

		PROMOTIONS1	PROMOTIONS2
N	Valid	385	385
	Missing	0	0
Mean		4.0390	3.9584
Median		4.0000	4.0000
Mode		4.00	4.00
Std. Deviation		.82666	.82496
Variance		.683	.681
Minimum		1.00	1.00
Maximum		5.00	5.00

Table B.17: Descriptive statistics of facilitating conditions for mobile money non-users

		FC1	FC2
N	Valid	385	385
	Missing	0	0
Mean		2.3377	2.3117
Median		2.0000	2.0000
Mode		2.00	2.00
Std. Deviation		.82617	.84563
Variance		.683	.715
Minimum		1.00	1.00
Maximum		5.00	5.00

Table B.18: Descriptive statistics of awareness for mobile money non-users

		AWARENESS1	AWARENESS2	AWARENESS3	AWARENESS4
N	Valid	385	385	385	385
	Missing	0	0	0	0
Mean		2.4130	2.0182	2.0234	2.1844
Median		2.0000	2.0000	2.0000	2.0000
Mode		2.00	1.00	1.00	1.00
Std. Deviation		1.10790	1.10970	1.08348	1.06300
Variance		1.227	1.231	1.174	1.130
Minimum		1.00	1.00	1.00	1.00
Maximum		5.00	5.00	5.00	5.00

Table B.19: Cross-tabulation statistics of facilitating conditions and behavioral intention of non-users

			behavioral_intention_bin		Total
			.00	1.00	
sa_binary	.00	Count	225	130	355
		% within fc_binary	63.4%	36.6%	100.0%
		% within behavioral_intention_bin	95.7%	86.7%	92.2%
	1.00	Count	10	20	30
		% within fc_binary	33.3%	66.7%	100.0%
		% within behavioral_intention_bin	4.3%	13.3%	7.8%
Total		Count	235	150	385
		% within fc_binary	61.0%	39.0%	100.0%
		% within behavioral_intention_bin	100.0%	100.0%	100.0%

Table B.20: Cross-tabulation statistics of awareness and behavioral intention of non-users

			behavioral_intention_bin		Total
			.00	1.00	
awareness_binary	.00	Count	218	125	343
		% within awareness_binary	63.6%	36.4%	100.0%
		% within behavioral_intention_bin	92.8%	83.3%	89.1%
	1.00	Count	17	25	42
		% within awareness_binary	40.5%	59.5%	100.0%
		% within behavioral_intention_bin	7.2%	16.7%	10.9%
Total		Count	235	150	385
		% within awareness_binary	61.0%	39.0%	100.0%
		% within behavioral_intention_bin	100.0%	100.0%	100.0%

APPENDIX C – CHI-SQUARE TESTS

Table C.1: Chi-square test for the association between perceived ease of use(PEOU) and behavioral intention of users

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.761	1	.184		
Continuity Correction	.080	1	.777		
Likelihood Ratio	2.036	1	.154		
Fisher's Exact Test				.365	.365
Linear-by-Linear Association	1.743	1	.187		
N of Valid Cases	96				

Table C.2: Chi-square test for the association between perceived credibility(PCr) and behavioral intention of users

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.135	1	.003		
Continuity Correction	7.158	1	.007		
Likelihood Ratio	8.923	1	.003		
Fisher's Exact Test				.004	.004
Linear-by-Linear Association	9.040	1	.003		
N of Valid Cases	96				

Table C.3: Chi-square test for the association between perceived usefulness(PU) and behavioral intention of users

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.387	1	.001		
Continuity Correction	8.674	1	.003		
Likelihood Ratio	10.056	1	.002		
Fisher's Exact Test				.002	.002
Linear-by-Linear Association	10.279	1	.001		
N of Valid Cases	96				

Table C.4: Chi-square test for the association between facilitating conditions(FC) and behavioral intention of users

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.869	1	.351		
Continuity Correction	.323	1	.570		
Likelihood Ratio	.931	1	.335		
Fisher's Exact Test				.479	.293
Linear-by-Linear Association	.860	1	.354		
N of Valid Cases	96				

Table C.5: Chi-square test for the association between perceived cost(PC) and behavioral intention of users

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.734	1	.003		
Continuity Correction	7.513	1	.006		
Likelihood Ratio	8.866	1	.003		
Fisher's Exact Test				.005	.003
Linear-by-Linear Association	8.642	1	.003		
N of Valid Cases	95				

Table C.6: Chi-square test for the association between awareness and behavioral intention of users

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.931	1	.165		
Continuity Correction	1.378	1	.240		
Likelihood Ratio	1.961	1	.161		
Fisher's Exact Test				.198	.120
Linear-by-Linear Association	1.911	1	.167		
N of Valid Cases	96				

Table C.7: Chi-square test for the association between promotions and behavioral intention of users

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.757	1	.029		
Continuity Correction	3.597	1	.058		
Likelihood Ratio	5.456	1	.019		
Fisher's Exact Test				.044	.024
Linear-by-Linear Association	4.708	1	.030		
N of Valid Cases	96				

Table C.8: Chi-square test for the association between customer's gender and behavioral intention

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.005	1	.941		
Continuity Correction	.000	1	1.000		
Likelihood Ratio	.005	1	.941		
Fisher's Exact Test				1.000	.561
Linear-by-Linear Association	.005	1	.942		
N of Valid Cases	96				

Table C.9: Chi-square test for the association between customer's age and behavioral intention

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.173	3	.759
Likelihood Ratio	1.840	3	.606
Linear-by-Linear Association	.228	1	.633
N of Valid Cases	96		

Table C.10: Chi-square test for the association between customer's education qualification and behavioral intention

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.070	5	.106
Likelihood Ratio	9.399	5	.094
Linear-by-Linear Association	3.003	1	.083
N of Valid Cases	96		

Table C.11: Chi-square test for the association between customer's income level and behavioral intention

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.546	5	.257
Likelihood Ratio	6.757	5	.239
Linear-by-Linear Association	2.702	1	.100
N of Valid Cases	96		

Table C.12: Chi-square test for the association between customer's occupation and behavioral intention

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.199	5	.101
Likelihood Ratio	10.644	5	.059
Linear-by-Linear Association	4.390	1	.036
N of Valid Cases	96		

Table C.13: Chi-square test for the association between perceived ease of use and perceived usefulness

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.696	1	.030		
Continuity Correction	.723	1	.395		
Likelihood Ratio	3.512	1	.061		
Fisher's Exact Test				.177	.177
Linear-by-Linear Association	4.647	1	.031		
N of Valid Cases	96				

Table C.14: Chi-square test for the association between perceived ease of use and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.040	1	.841		
Continuity Correction	.000	1	1.000		
Likelihood Ratio	.041	1	.839		
Fisher's Exact Test				1.000	.663
Linear-by-Linear Association	.040	1	.841		
N of Valid Cases	385				

Table C.15: Chi-square test for the association between perceived credibility and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.168	1	.682		
Continuity Correction	.070	1	.792		
Likelihood Ratio	.167	1	.683		
Fisher's Exact Test				.770	.393
Linear-by-Linear Association	.167	1	.682		
N of Valid Cases	385				

Table C.16: Chi-square test for the association between perceived usefulness and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.427	1	.232		
Continuity Correction	.820	1	.365		
Likelihood Ratio	1.532	1	.216		
Fisher's Exact Test				.265	.184
Linear-by-Linear Association	1.424	1	.233		
N of Valid Cases	385				

Table C.17: Chi-square test for the association between facilitating conditions and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.502	1	.001		
Continuity Correction	9.276	1	.002		
Likelihood Ratio	10.211	1	.001		
Fisher's Exact Test				.002	.001
Linear-by-Linear Association	10.474	1	.001		
N of Valid Cases	385				

Table C.18: Chi-square test for the association between perceived cost and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.549	1	.213		
Continuity Correction	1.245	1	.265		
Likelihood Ratio	1.531	1	.216		
Fisher's Exact Test				.247	.133
Linear-by-Linear Association	1.545	1	.214		
N of Valid Cases	385				

Table C.19: Chi-square test for the association between awareness and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.382	1	.004		
Continuity Correction	7.439	1	.006		
Likelihood Ratio	8.146	1	.004		
Fisher's Exact Test				.007	.004
Linear-by-Linear Association	8.360	1	.004		
N of Valid Cases	385				

Table C.20: Chi-square test for the association between promotions and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.570	1	.109		
Continuity Correction	2.152	1	.142		
Likelihood Ratio	2.637	1	.104		
Fisher's Exact Test				.134	.070
Linear-by-Linear Association	2.563	1	.109		
N of Valid Cases	385				

Table C.21: Chi-square test for the association between non-users' gender and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.258	1	.262		
Continuity Correction	1.034	1	.309		
Likelihood Ratio	1.260	1	.262		
Fisher's Exact Test				.295	.155
Linear-by-Linear Association	1.255	1	.263		
N of Valid Cases	385				

Table C.22: Chi-square test for the association between non-users' age and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.528	3	.057
Likelihood Ratio	7.845	3	.049
Linear-by-Linear Association	6.649	1	.010
N of Valid Cases	385		

Table C.23: Chi-square test for the association between non-users' education qualification and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.783	3	.032
Likelihood Ratio	10.727	3	.013
Linear-by-Linear Association	2.596	1	.107
N of Valid Cases	385		

Table C.24: Chi-square test for the association between non-users' income level and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.783	5	.082
Likelihood Ratio	10.376	5	.065
Linear-by-Linear Association	1.632	1	.201
N of Valid Cases	385		

Table C.25: Chi-square test for the association between non-users' occupation and behavioral intention of non-users to use mobile money

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.015	4	.011
Likelihood Ratio	13.017	4	.011
Linear-by-Linear Association	3.410	1	.065
N of Valid Cases	385		

Table C.26: Chi-square test for the association between perceived ease of use and perceived usefulness

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	37.121	1	.000		
Continuity Correction	20.145	1	.000		
Likelihood Ratio	10.107	1	.001		
Fisher's Exact Test				.003	.003
Linear-by-Linear Association	37.025	1	.000		
N of Valid Cases	385				