

**A STATISTICAL ANALYSIS OF CUSTOMER
SATISFACTION ON INTERNATIONAL DIRECT
DIALING PREPAID CALL CARDS IN SRI LANKAN
MARKET**

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DECLARATION OF THE CANDIDATE

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ABSTRACT

Satisfying customers is an essential element to staying in business in this modern world of global competition. Hence, it is the key to the profitability of business sectors. Therefore, companies should have gained better understanding of the importance of customer satisfaction. International Direct Dialing (IDD) plays a major role in telecommunication industry in Sri Lanka as various IDD services are available for the customers. Therefore, at present the prepaid IDD call card market is one of the most competitive areas in the telecommunication industry in Sri Lanka. This research study, therefore mainly focused on to identify the association among demographic variables (gender, age group, marital status, employment status) with customer satisfaction variables (quality, perceived value, customer loyalty and customer support) also that with overall customer satisfaction and to identify the factors affected by the IDD prepaid call card market. The required data were acquired through a structured questionnaire and sampling method was purposive random sampling with a sample size of 222. To attain the customer satisfaction five different brands of prepaid IDD call cards were used. The chi-square analysis for 2-way categorical data confirmed that customer satisfaction with IDD prepaid cards was not significantly influenced by demographic variables. Each of the individual customer satisfaction variables were significantly positive correlated ($p < 0.05$) with overall customer satisfaction with IDD prepaid call cards. Furthermore, it revealed all four variables perceived quality, perceived value, customer loyalty and customer support have a positive significant effect and each variable increase the level of customer satisfaction. Factor Analysis found that irrespective of the significances, the six customer satisfaction variables can be explained by three common factors, namely Customer Loyalty, Value for Money and User Friendly. The percentage of overall satisfaction of the IDD prepaid call cards is 93.2%, irrespective of any demographic variables.

Keywords: Customer Satisfaction, Factor Analysis, International Direct Dialing, Prepaid Call Cards

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LIST OF ABBREVIATIONS

Abbreviation	Description
ACSI	American Customer Satisfaction Index
CBSL	Central Bank of Sri Lanka
CFA	Confirmatory Factor Analysis
DS	Divisional Secretariats
EFA	Exploratory Factor Analysis
EGO	External Gateway Operator
FA	Factor Analysis
IDD	International Direct Dialing
IVR	Interactive Voice Response
KMO	Kaiser-Meyer-Olkin Measure
MSA	Measuring of Sampling Adequacy
PC	Principal Component
SLT	Sri Lanka Telecom
SPSS	Statistical Package for the Social Sciences
TRCSL	Telecom Regulatory Commission in Sri Lanka



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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Today, it would be difficult to find a company that does not proudly claim to be a customer oriented, customer-focused or even customer driven enterprises. Increasing competition (whether for profit or nonprofit) is forcing businesses to pay much more attention to satisfy customers. The state of satisfaction depends on a number of both psychological and physical variables, which correlate with satisfaction behaviors. Customer satisfaction has now become a major concern of the mobile service providers in our country. International Direct Dialing (IDD) is a value added service provided by all the mobile and fixed telephone service providers in Sri Lanka. Different types of prepaid calling cards are also available in Sri Lanka to use for IDD calls. IDD service is a key revenue generating sector for all the telecom sector service providers in Sri Lanka. Hence, an extra marketing effort on this service is seen to increase the usage. The Sri Lankan government has imposed a new tax of Rs: 2 per minute on IDD paid call in 2011. Hence, IDD business is identified as an income source for the government since 2011. These factors clearly indicate the importance of IDD business in Sri Lanka.

IDD was a very expensive product for Sri Lankan people until 2003, when Telecom Regulatory Commission in Sri Lanka (TRCSL) liberalized the international telecommunications business by providing External Gateway Operator (EGO) license to private operators. Sri Lanka Telecom (SLT) dominated with their monopoly in this sector until 2003 and the market has changed, to the oligopolistic nature with the liberalization. The service was limited to one class of the society and others used telephone land lines in post offices to make IDD calls. An IDD call was made only for essential matters as the service was very expensive. But after 2003, around 33 private sector operators were given licenses to provide IDD service (TRCSL, 2009). These licenses were called EGO (External Gateway operator) licenses.

The operators are trying to place their brand in the market in several ways. Some are placed as the best quality providing products, while some of them are placed as the cheapest. But operators are yet to identify the exact success factors of this business as this is a growing business in Sri Lanka.

IDD is having limited options flat rates for fixed and mobile number levels are being introduced by service providers at present. It's also better to analyze customer satisfaction levels.

Currently, there is a high popularity level of the usage of IDD service within Sri Lanka with the globalization (CBSL, 2011). Especially it can be significantly seen that the growth of foreign investment, peaceful situation of the country and the engagement of the foreign employment level of the Sri Lankans are in a remarkable level. The importance of the international calls within the process of communication is playing a major role. From this point of view, this study mainly focusses on the relationship between the usage of various types of IDD Prepaid calling card and the customer satisfaction level.



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1.2 Present Status of IDD Business

IDD business contributes a significant share of all telecom service provider revenue lines. Dialog earned 17% of its revenue in 2013, from IDD business while SLT earned 14% (SLT and Dialog, 2013). In early 2003, satellite links were used to interconnect with foreign telecom operators. But the introduction of submarine cables such as SMW3 and SMW4, enabled service providers to enhance the quality and reliability of the service (Annual Reports, SLT). Prior to the introduction of these cables, no studies were carried out to identify the customer satisfaction of IDD prepaid call card market in Sri Lanka. However it has been telling that the people in Sri Lanka still prefer to use a fixed line to make IDD calls. The mobile telephone users in Sri Lanka have increased rapidly over the year 2011 with more than 105 telephone connections for 100 people. (Annual Report CBSL, 2011). Usage and perception of mobile phone connectivity has a humongous effect on economic activity. Generating more business opportunities for micro, small and medium entrepreneurs, for example.

Providing services and support to mobile phone users is another sector which is rapidly expanding. Nowadays, mobile phones have become a must for almost all the people from all over the world. An opportunity to stay in touch with friends and family members, access to email and business associates are just a few of the reasons for the boosting importance of cell phones.

Modern, technically advanced cell phones are able not just to receive and make mobile phone calls, but to take pictures, store data as well as utilize to your mobile phone as a walkie talkie. Further, there are a lot of various options that are available for users. When mobile phones were introduced, they were expensive, bulky and some of them are even required a base unit to be transported along with the mobile phone. During that time the major problem was the quality reception and in fact early cell phones could just be used in certain locations where the cell phone signal was quite strong. With the advances in mobile phone technology, the difficulty in utilizing them became easier. These days, cell phone reception has improved because of the use of satellites and wireless services. Because mobile phones are improved and became quite simple to use, the importance of mobile phones boosted as well. Today mobile phones are the best way to stay connected with others as well as provide the user with a sense of security. In case of an emergency, having a cell phone could allow anybody to reach you much faster and probably save lives. Today, cell phones are able to access the net, receive and send various files and photos and some of the mobile phones have inbuilt GPS technology and thus such mobile phones could be used in the most locations across the world. The importance of cell phones has caused a competition in the wireless service provider industry, making cell phones have quite affordable and easy to use. At present, it could be said that mobile phones are a status symbol together with the security and convenience that comes from owning people in the community.

Easy to access, user-friendliness and all above factors initiated community to use mobile phones largely to make IDD calls. International calls can be paid via telephone prepaid calling cards. These popular telecommunication products allow users to initiate an international call from almost anywhere in the world. These cards typically offer rates lower than most traditional long distance products and services, and can be

used via cellular phone. It seems the impression of the regulatory body is that the price is the key factor for IDD users. But the actual scenario may be different. There may be customers who need crystal quality for IDD calls based on the reason of using the service. Hence, it is a timely requirement to analyze the customer satisfaction of IDD call card market in Sri Lanka.

1.3 IDD Call Card Service and Products in Sri Lanka

The telecom service providers are actively promoting IDD as one of their main services. The operators are trying to place their IDD service in the market based on the way they expect to build their IDD brand image. The main customer service for IDD service is via prepaid calling cards. The calling card is referred as very popular mean of making IDD calls in the world. In Sri Lanka too it is a popular way of making IDD calls. Only few calling cards are available in the Sri Lankan market such as Sri Lanka Telecom (SLT) passport, Dialog IDD cards, SLT Mobitel Max Talk, Hutch unlimited IDD cards, and Lanka Bell Viza. IDD and these calling cards are handled Sri Lanka Telecom PLC, Dialog Axiata PLC, Mobitel (Pvt) Ltd, Hutchison Telecommunications Lanka and Lanka Bell Limited respectively.



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1.3.1 Sri Lanka Telecom (SLT) IDD

SLT was the first Sri Lankan operator who provided IDD service to the Sri Lankan community. Hence, SLT was considered as the leader in the IDD service sector of Sri Lanka for a long time. Further SLT claims, their service with lowest IDD rates. They advertised in the market as a high quality service with the theme “Premium IDD service will be provided”. SLT operates calling cards to provide IDD service to Sri Lankan community. It targets customers who are not having IDD service enabled phones. This is evident as they market the product saying “Now you can forget about searching for telephone with IDD facilities, because SLT’s new Globelink Gold Call cards first right in your purse. Just use any phone with a tone, and have the world in your wallet”. (Sri Lanka Telecom, 2010). SLT has provided its customers with a full proof security system. Customers need to remove the security label on the card in order to use the service. SLT provides a facility of choosing any of the languages used in the country (SLT, 2012). For international calls through these services types such as

Premium or Budget, the Premium IDD service is for crystal clear International voice communication. The Budget IDD service is for Economical International voice communication. SLT Budget IDD offers reasonable clarity voice services at the lowest rates to 50 most popular destinations.

Then we can simply call the desired point from any telephone using SLT Budget IDD prepaid card. Cards are available from Rs.100 onwards and SLT Budget IDD interactive voice service provides easy guidance on how to make IDD calls. These cards are now regionally available in many places in Sri Lanka and there are three types of cards (Table 1.1).

Table 1.1 Current types of micro-models for satisfaction

Card Denomination	Validity Period
Rs.100	10 days
Rs.200	20 days
Rs.500	30 days



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Value Added Services of IDD Offered by SLT

SLT Budget IDD prepaid card has introduced some new feature keys that can be used while using the Budget IDD prepaid card. If the destination number dial by the user and it is busy or unreachable then it will prompt to dial another number. After successful authentication with the Interactive Voice Response (IVR) system, dial the given codes to obtain below services. Some of the services are:

1. Check card balance
2. Transfer balance to a new card
3. Redial last number
4. Get card expiry date

The length of the security pin is 12 digits. After 3 consecutive failed attempts, card will be deactivated for 24 hrs. However, the user can activate the card before 24 hrs.

by contacting a Customer Care Officer. The customer can extend the validity period to another week by contacting a Customer support center.

1.3.2 Dialog IDD

Dialog is the leading mobile operator in Sri Lanka having the largest market share in the mobile telephone industry. It is advertised as the service for “Connecting you to your loved once abroad with competitive rates and numerous value proportions to ease your burden”. Dialog operates calling cards, namely Dialog budget IDD, Dialog iPhone is a different kind of service launched by Dialog in 2010 to capture IDD segment. This is a substitute for web based phone services such as Viber, Skype, etc. They try to place their service in the market as a high quality low price service. One of the tariff schemes for frequent IDD callers is MY 10. This is designated for pre-paid customers where they can call to 5 numbers at a lower rate (Dialog Axiata PLC, 2013).

Dialog Global is a disposable prepaid IDD calling card with the option of calling over 300 destinations which is starting from as low as Rs.2 per minute with an accuracy of per second for billing. It can be converted any phone into an IDD phone. Dialog Global IDD calling cards are available at Dialog GSM Head office, Branches, Supermarkets and Grocery Stores in Island wide and there are four types of cards (Table 1.2).

Table 1.2 Type of IDD cards of Dialog

Variable	Card Type 1	Card Type 2	Card Type 3	Card Type 4
Prices of the Card (Rs.)	98	198	598	798
Free IDD Talk Time (Rs)	140	325	1000	1400
Free IDD SMS	7	35	40	100
Total Value of the offer (Rs)	175	500	1200	1900

Value Added Services of IDD Offered by Dialog: Dialog Global IDD card offers a range of value added services that will make calling card more convenient to use. Some of the services are briefly described below.

Speed Dial: It allows assigning of short codes to favorite IDD numbers. Unique voice tags can be assigned to each short cord for easy identification and also can be edited or deleted the speed dial short codes.

Transfer Balance: It allows transferring credit balance of one Dialog Global IDD card or Kit eZ recharge card to current Dialog Global card.

Follow on Call: This service allows ending the current call and calling another IDD number by pressing ##. This will save customer hassle of going through the process of entering PIN again.

Check Balance: This allows checking the balance on Dialog Global IDD prepaid card.

Change Language: It allows for changing the language options.

Redial: If the number is busy or not answering, it can be redialed the number by pressing 1 or dial another number by pressing 2.

Call Management: While on a call it can be checked the available time (press * #), available credit balance (press # *) or even recharge the credit balance (press * *).

Service Messages: This informs of insufficient credit balance and card expiry. If balance is low while on a call, the caller will hear a beep at 30 seconds and 2 beeps at 10 seconds prior to the call being disconnected.

1.3.3 Mobitel IDD

This system is the second largest mobile operator in Sri Lanka and also provides different types of products to cater IDD requirements of the country. Mobitel operates calling cards namely Mobitel IDD prepaid cards. They too provide IDD calls at the lower rate while assuring the best quality. Hence this is suitable to make important business calls and get in touch with friends and family in important occasions (Mobitel, 2011). Mobitel IDD offers you a variety of recharge options to choose from: online, through bank, in store and many more. To recharge your Mobitel Prepaid

number, either use Top up cards or their Electronic Reload, available at most retail outlets across the country and there are five types of cards (Table 1.3)

Table 1.3 Type of IDD cards of Mobitel

Card Denomination	Validity Period
Rs.50	20 days
Rs.100	90 days
Rs.350	220 days
Rs.500	260 days
Rs.1000	365 days

Furthermore, Mobitel IDD prepaid cards offer a range of value added services that will make calling card more convenient to use. IDD is deposit free and pre-activated on all prepaid connections. Some of the services are briefly described below.

- i. In order to make an IDD Buddy call, IDD Buddy offers the most adorable way to call loved ones and friends in-abroad at per second billing by dialing the following number.

Dial	00 <Country Code><Recipient Number>
------	-------------------------------------

- ii. In order to make a Premier IDD call, Premier IDD offers the best quality with crystal clear clarity at per second billing and is especially suited to make all-important business calls. What's more, with Premier IDD, could also enjoy conferencing as well as video calling facilities. To active this facility the following number has to be dialed.

Dial	100<Country Code><Recipient Number>
------	-------------------------------------

1.3.4 Hutch Unlimited IDD cards

Hutch IDD offers the best IDD rates in the Sri Lankan market with crystal clear clarity and hassle free dialing. Take unlimited IDD calls to your family and friends overseas with Hutch Unlimited IDD is make you more comfortable.

Value Added Services of IDD Offered by Hutch

- ❖ Simply reload Rs. 2390 or buy a Hutch Unlimited IDD card at any Hutch retail point Island-wide. To Fixed and Mobile Lines in: Canada, China, Hong Kong, India, Singapore, Thailand and USA. To Fix Lines in: Cyprus, UK, Australia, Italy, New Zealand, France, Germany, Denmark, Netherland, Norway, Spain, Sweden and Switzerland.
- ❖ Valid for 30 days from date of reload
- ❖ For pre-paid SIMS only
- ❖ A fair user policy of 8 hours will apply

1.3.5 Viza IDD Card by Lanka Bell

The world just got smaller with Bell VIZA cards. Lanka Bell Viza IDD prepaid card had been introduced by the Lanka Bell in year 2007 (Lanka Bell Annual Report, 2010). VIZA IDD offers best clarity call option for IDD calling cards IDD to access from any phone from anywhere at unmatched call rates. It has many features such as pin-less dialing, speed dialing, and any number dialing for customers' convenience. Lanka Bell Viza IDD cards available at most retail outlets across the country and there are five types of cards (Table 1.4).



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Table 1.4 Denominations types of Lanka Bell Viza IDD Card

Amount (in Rs.)	Validity Period
150	20 days
350	90 days
500	220 days
1000	260 days
2500	365 days

1.4 Factors Affecting to the Customer Satisfaction

Though many agencies offer IDD prepaid calling cards with a variety of services, it is known that majority of Sri Lankans uses IDD prepaid cards offered by SLT and Dialog. However, the reasons why the customers prefer a particular brand is not known as such studies have not been reported. Nevertheless, based other literature (Chapter 2) it can be assumed the important factors which may influence the customer satisfaction of prepaid IDD calling cards are: quality, perceived value, customer loyalty and customer support. A brief description of each factors is given bellow.

Quality: Quality has been defined in various ways by many authors (Gonoroos, 1984; Parasuraman, Zeithmal and Berry, 1988 and Mc Dougall and Lievesque, 2000). However, in general it can be defined as, “satisfying or exceeding customer requirements and expectations”. It can be thought as a measure to judge the quality of a product or service by the customers (Ton and Shen, 2000).

Perceived Value: Perceived value is a “measure of quality relative to price paid”. Price (value for money) is often very important, in the customer’s first purchase. Customer perceived value has been given many definitions in the marketing literature (Woodruff, 1997; Holbrook, 1994; Zeithmal, 1988). Perceived value has been defined as “the consumers’ overall assessment of the utility of a product based on perceptions on what is received and what is given” (Zeithmal, 1988). It has been suggested that customer perceived value is formed of the trade-off between benefit and service (Monroe, 1990). The customer’s opinion of a product’s value to him or her, it may have little or nothing to do with the product’s market price depends on the product’s ability to satisfy his or her needs or requirements.

Customer Loyalty: Customer loyalty also has been defined in different ways by the authors (Andreassen and Lindestad, 1998; Hellier, 2003; Kumar and Sheh, 2004). In general, it can be defined as the degree to which the customer has exhibited, over recent years repeat purchase behavior or a particular company service. Customer loyalty is a Behavioral measure. Measures include a proportion of purchase, probability of purchase, the probability of product repurchase, purchase frequency,

repeat purchase behavior and leads to greater sales and revenue, better prediction of a sale, requires minimal marketing efforts, and create customers who are less sensitive to the marketing efforts of competitors (Jarvis and Wilcox, 1977). Raphael (1995) has claimed that it is easier to sell products to old customers than to new customers and the cost of selling a product to a new customer is fivefold that of selling to an old customer. Thus he concluded that besides searching for perspective customers, businesses should not ignore the old customers as maintaining old customers is an essential task to companies.

Customer Support: Customer support services today are seen as a proactive discipline of preventing customer concerns and dissatisfaction, rather than a reactive function of handling customer issues. According to the Lee & Freick (2001) there is a direct relationship between the quality of the customer support services and the customer satisfaction.

1.5 Objectives of the Study

In view of the above, the objectives of the present study are.

- To identify the association between customer satisfaction variables: quality, perceived value, customer loyalty and customer support and overall customer satisfaction
- To identify the significant factors on the IDD call card users' customer satisfaction
- To recommend new strategies to overcome customer satisfaction on IDD call cards

1.6 Significance of the Study

The research would be beneficiary for users in different ways. For users this would be helpful to obtain their expected service level through identifying the satisfaction level. Customer satisfaction, as a construct, has been fundamental to marketing for over three decades. As early as 1960, Keith (1960) defined marketing as “satisfying the needs and desires of the consumer”. Hunt (1982) reported that by the 1970s, interest in customer satisfaction had increased to such an extent that over 500 studies were

published. This trend continued and by 1992, Peterson and Wilson estimated the amount of academic and trade articles on customer satisfaction to be over 15,000.

Customer satisfaction is an evaluation by the customer, after buying their good and services. It is widely recognized as a key pressure in the formation of consumers' future purchase intentions (Taylor and baker, 1994). In today's highly competitive, increasingly consolidated world, offering personalized and differentiating services can be critical to a business's success. Customer satisfaction measurements are believed to give a better indication of future performance of service firms (Anderson and Fornell, 1999) than, for instance financial and accounting based measures (Kaplan and Norton 1996). At the same time it must be noted that not all the satisfied customers need to be profitable to a firm (Storbacka 1994). The service industry is growing at a pace that managers cannot cope. Long term plans are no longer advisable because of the volatility of the market and in a free economy, competition is fierce.

These issues strongly effect to the developing countries, including Sri Lanka. In any country the communication sector plays a major role in improving economic growth. Customer satisfaction is the key to the profitability of communication sector. It impacts the retention of customers for the long term, which is cheaper than attracting new customers. The knowledge of current levels of satisfaction and, in particular, the key determinants of satisfaction benefit those in the industry allowing them to focus and build upon key areas that lead to highly satisfied customers. All the developed countries strive to establish a customer satisfaction evaluation system (Guo, Jou and Huang, 2000). In the field of marketing, customer satisfaction is regarded as an attitude, which means a consistently behavioral tendency, or a long-term evaluation of an event and concept (Mccoll-Kennady and Schneider, 2000).

1.7 Outline of the Research

The structure of the dissertation consists five chapters. The first chapter is the introduction which deals mainly with the background of the study, the significance of the study, IDD call card service and products in Sri Lanka, and objectives of the study. The Chapter 2 presents a review of customer satisfaction on IDD. The Chapter 3

provides the research materials and methodology and Chapter 4 represents the results and discussion. Chapter 5 discusses the conclusion, recommendation and suggestions for future research.



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CHAPTER 2

REVIEW OF CUSTOMER SATISFACTION ON INTERNATIONAL DIRECT DIALING

2.1 Introduction

Some of the past studies carried out on identification factors influencing on customer satisfaction in Sri Lanka and other countries are critically reviewed and summarized here.

2.2 Definition of Customer Satisfaction

Customer satisfaction can be defined as “the customer’s perception that his or her expectations have been met or surpassed” (Gerson, 1993). Basically, one purchases goods and those are functioning in an expected way the buyer is satisfied. If the purchase is not functioning properly a buyer becomes dissatisfied and the task of the seller is to arrange a situation in a way that a buyer becomes satisfied (Gerson, 1993). Oliver (1997) stated satisfaction is the consumer’s fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided a pleasurable level of consumption-related fulfillment, including levels of under-or over-fulfillment”. Mahatma Gandhi expressed the importance of the customer by stating “Customer is the most important visitor on our premises. He is not dependent on us. We are dependent on him. He is not an interruption on our work. He is the purpose of it. He is not an outsider on our business. He is part of it. We are not doing him a favor by serving him. He is doing us a favor by giving us an opportunity to do so” (Holdway, 2001). A satisfied customer is a repeat customer, and their loyalty will ensure retailer profits. Hanan and Carp (1989) asserted “Customer satisfaction must be maximized if it is to count for anything as a competitive advantage”. Accordingly, once a satisfied customer is created, a source of profit made for the business.

Parker and Mathew (2001) expressed that there are two basic definitional approaches of the concept of customer satisfaction. The first approach defines satisfaction as a process and the second approach defines satisfaction as an outcome of a consumption

experience. These two approaches are complementary, as often one depends on the other. Parker and Mathews (2001) however, noted that the process of satisfaction definitions concentrates on the antecedents to satisfy rather than satisfaction itself.

Satisfaction as a process is the most widely adopted description of customer satisfaction and a lot of research efforts have been directed at understanding the process approach of satisfaction evaluations (Parker and Mathews, 2001). This approach has its origin in the discrepancy theory (Porter, 1961), which argued that satisfaction is determined by the perception of a difference between some standard and actual performance. Cardozo (1965) and Howard and Sheth (1969) developed the contrast theory, which showed that consumers would exaggerate any contrasts between expectations and product evaluations. Olshavsky and Miller (1972); and Olson and Dover (1979) developed the assimilation theory, which means that perceived quality is directly increasing with expectations. Assimilation effects occur when the difference between expectations and quality is too small to be perceived. Anderson (1973) further developed this theory into assimilation-contrast theory, which means if the discrepancy is too large to be assimilated then the contrast effects occur. The assimilation-contrast effects occur when the difference between expectations and quality is too large to be perceived and this difference is exaggerated by consumers.

According to Parker and Mathews (2001), the most popular descendant of the discrepancy theories is the expectation disconfirmation theory (Oliver, 1977, 1981), which stated that the result of customers' perceptions of the difference between their perceptions of performance and their expectations of performance. Positive disconfirmation leads to increased satisfaction, with negative disconfirmation having the opposite effect. Yi (1990) expressed that customers buy products or services with pre-purchase expectations about anticipated performance, once the bought product or service has been used, outcomes are compared against expectations. If the outcome matches expectations, the result is confirmed. When there are differences between expectations and outcomes, disconfirmation occurs. Positive disconfirmation occurs when product or service performance exceeds expectations.

Therefore, satisfaction is caused by positive disconfirmation or confirmation of customer expectations, and dissatisfaction is the negative disconfirmation of customer expectations (Yi, 1990). The outcome approach of the customer satisfaction is defined as the end-state satisfaction resulting from the experience of consumption. This post-consumption state can be an outcome that occurs without comparing expectations (Oliver, 1996). However, according to Vavra (1997) it may be a cognitive state of reward, an emotional response that may occur as the result of comparing expected and actual performance or a comparison of rewards and costs to the anticipated consequences.

2.3 Importance of Customer Satisfaction

Customer satisfaction has become a vital concern for companies and organizations in their efforts to improve product and service quality and maintain customer loyalty in a highly competitive marketplace. Kotler (2006) considered customer satisfaction to be the best indicator of a company's future profit. Anderson, Fornell and Lehman (1994) believed customer satisfaction had a direct outcome on the primary source of future revenue streams for most companies. Management and Marketing theorists underscore the importance of customer satisfaction for a business's success (Mccoll-Kennedy and Schneider, 2000; Reichheld and Sasser, 1990). Griffin (1995) states improvement in customer retention by even a few percentage points can increase profits by 25 percent or more. The University of Michigan found that for every percentage increase in customer satisfaction, there is an average increase of 2.37% of return on investment. (Keiningham & Vavra, 2001). Cardoz (1965) claims that customer satisfaction will increase repeat purchase behavior and other merchandise, Kotler (2003) indicated that keeping current customers satisfied reduces the costs and efforts of attracting new customers. The cost of gaining new customers is ten times greater than the cost of keeping a satisfied customer and the cost of obtaining new customers is about five times more than that of retaining existing customers (Giltomer, 1998).

This has become a fact which is recognized more comprehensively today. Philip Kotler (2003) discusses that "A buyer's satisfaction is a function of the product's

perceived performances and the buyer's expectations. Recognizing that high customer satisfaction leads to high customer loyalty, many companies today are aiming for total customer satisfaction. For such companies, customer satisfaction is both a goal and a marketing tool." If a company attains high customer satisfaction scores it is possible to use the results as a valuable and an advantageous marketing tool.

These companies are likely to mention the high rating in advertising in order to build more customer centered image and with that, win more customers. He further states that it is important to monitor and compare company's own customer satisfaction rates to competitors' performance. If a company can detect that 80% of their customers are very satisfied and this result seems to be very good and appealing. If the company monitors competitors' success in this area they might recognize that their biggest competitor attained 90% customer satisfaction result. Even if the difference is not that major, it can be crucial and certainly a point which requires improving (Kotler, 2003).

Customer satisfaction is tightly tied to the degree to which customer's needs and expectations are met. In order to reach the total customer satisfaction these needs and expectations have to be thoroughly understood and predicted which is not always easy because, for example, those needs and expectations might change over time, it can be difficult to interpret customer's expressions or some needs are unconscious so the customers do not really know what they desire (Bergman and Klefsjo, 2003; Kotler, 2003).

Naumann (1995) expressed that the reasons for measuring customer satisfaction may vary among companies, and the success of the measurement depends on if the measurement is incorporated into the firm's corporate culture or not. However, he suggested five reasons for measuring customer satisfaction or five important roles of customer satisfaction measurement. The five points are:

- The attributes that are most important to the customers.
- The effect on the customer's decision making on attributes.
- The relative importance of the attributes

- The performance evaluation of the firm delivery of each attribute
- The process to provide enabling communication with customers.

The important attributes of customers can be incorporated into the internal measurement to evaluate the value-added process in the company. This process involves comparing performance against internal standards (process control and improvement), and comparing performance against external standards (benchmarking).

The data collected from customers can be developed into sources of innovations and this can help to achieve customer driven improvement. This requires to maintain a comprehensive database and not just records of sales. This process helps to identify opportunities for improvement (quality costing).

Customer satisfaction is a measure of attitudes and perceptions of the quality and performance of a service (Bhote, 1996). In a study conducted by Edvardson and Gustafsson (1999) in Sweden claimed that customer satisfaction measurement provides significant information for modern management processes and the warning signal about the future business performance. In a study conducted by Oliver (1999) also claimed that in the last two decades till date, customer satisfaction measurement represents an important source of revenue for market research firms.

2.4 Measuring Customer Satisfaction

Customers express their satisfaction in many ways. When they are satisfied, they mostly say nothing, but return again and again. There exists a great amount of different theories, models and business tools which have been created to measure and improve the customer satisfaction, loyalty and company profitability. Many of these tools and models include not only the customer perspective, but also other aspects such as employee perspective. Besides these internal measurement models there are programs which enable the external recognition of the organization's performance (Szwarc, 2005). Gerson (1993) argues that when examining the level of customer satisfaction it is important to define what is measured and why it is measured?

This helps to choose the right techniques and further more interpret and analyze the outcome. Measuring of quality, and customer satisfaction provide immediate feedback from a customer and on the basis of that it is possible to define the areas which need to be improved. Measuring of customer satisfaction usually includes specific questions in order to attain the customer's opinion about the quality of the product or services. It is essential to find out areas which customer considers being more important, but which are the least satisfying.

2.4.1 Suggested Actions for Illustrate the Relation between Customer Importance and Customer Satisfaction

Bergman and Klefsjo (2003) claimed that companies should concentrate to improve the area which poses high customer importance but low satisfaction rates. The areas which are marked to have low importance and low satisfaction should be guarded. The areas with high customer satisfaction and low importance can be maintained as they are and the areas which have high rates in both satisfaction and importance require continuous work. Thus, it is possible to direct the resources to the areas which the customers consider to be most important and this concept is illustrated in Figure 2.1.

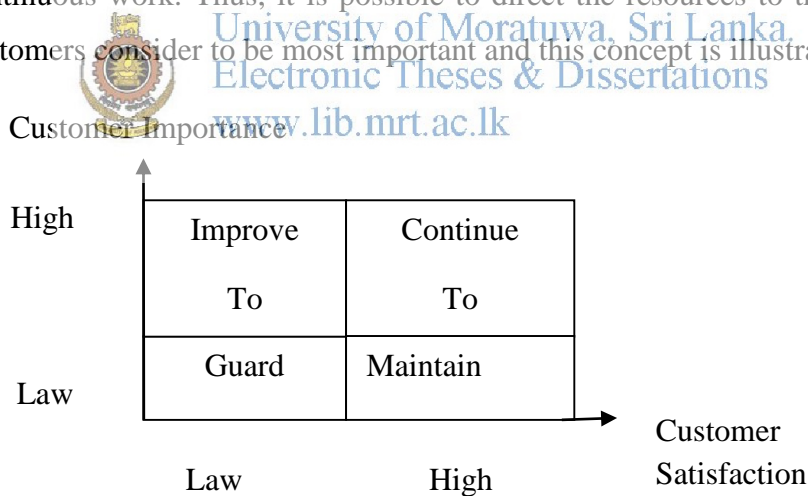


Figure 2.1 Relation between customer importance and customer satisfaction

Source: Burgman & Klefsjo (2003)

Several empirical findings of such studies have shown that the application of customer satisfaction measurement often does not accomplish the objectives of the company and the reasons for this shortcoming are as follows.

- ❖ Many organizations determine criteria for measurement internally without an accurate understanding of customer priorities and consequently this measurement is based on the value defined by organizations and not by the customers, thereby providing wrong information (Hill, 1996).
- ❖ Many companies do not measure customer satisfaction as manufacture component and those who claim to do so. Perform it an inadequate way and consequently find difficulty in translating the customer satisfaction data into action within the organization (Wiele et al., 2002).

However, Werth (2002) stated that many companies identify the level of customer satisfaction based on the number of product or service support problems, number of direct complaints by phone, email, etc. and number of returning products or services and the reason for their return, etc. The criteria for measurement should be customer defined so as to collect, analyze the appropriate data and provide relevant information. Thus, to obtain the right information, efforts should be made to filter out the irrelevant information and concentrate on the valuable dimensions. A convenient tool to achieve this goal is to conduct a simple pre-study and convert to a more effective study.



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2.4.2 Models for Evaluate the Outcome of Customer Satisfaction

2.4.2.1 American Customer Satisfaction Index

Fornell et al. (1996) has developed an index known as American Customer Satisfaction Index (ACSI) to evaluate the outcome about customer satisfaction by the particular consequence. The customer satisfaction and the conceptual model used by Fornell et al. as shown in Figure 2.2.

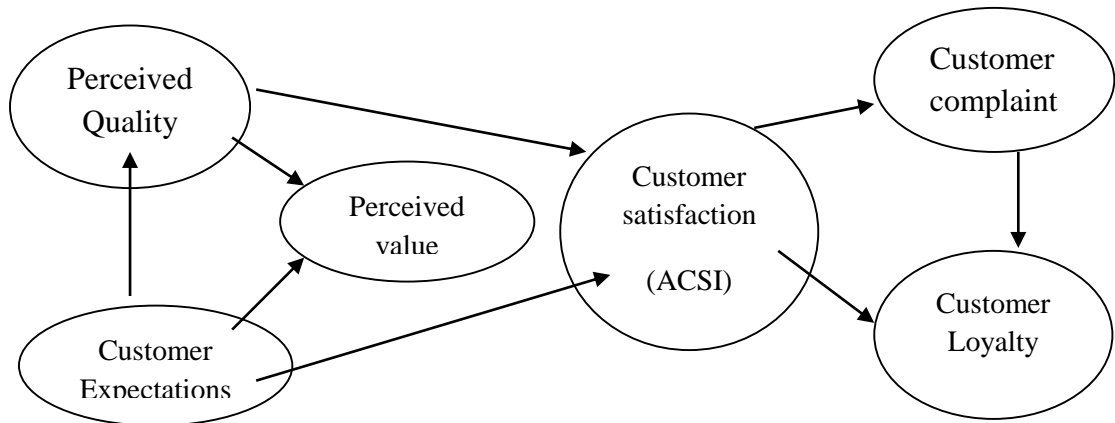


Figure 2.2 Conceptual model to find the American customer satisfaction index

Source: Fornell et al. (1996)

It could evaluate the customer satisfaction degree of product and service, also provided the directions on the service quality to strengthen the market competition and improved management performance. The ACSI is a uniform and independent measure of household and individual consumption experience. The ACSI model is a cause-and-effect model with indices for drivers of satisfaction at the center, and outcomes of satisfaction on the right side.

The indices are multivariable components measured by several questions that are weighted within the model. The questions assess customer evaluations of the determinants of each index. Indices are reported on a 0 to 100 scale. The survey and modeling methodology quantifies the strength of the effect of the index on the left to the one to which the arrow points on the right. These arrows represent “impacts”. The ACSI model is self-weighting to maximize the explanation of customer satisfaction on customer loyalty. Looking at the indices and impacts, users can determine which drivers of satisfaction, if improved, would have the most effect on customer loyalty.

According to this study based on this model, there is a positive association between perceived expectations, perceived quality, perceived value and satisfaction. In turn, satisfaction has a positive association with complaints. Loyalty is directly explained by customer satisfaction and customer complaints regarding the products or services. In order to operate this model, a set of constructs is defined. The perceived customer expectations construct represents both previous experiences with the service and

forward- looking beliefs regarding a provider’s ability to offer the desired quality. Perceived quality is the server market evaluation of recent service usage experience. It is derived from the degrees of customization and reliability of the service. Perceived value adds the price dimension to perceived quality and, therefore, addresses the perception of quality for the money. In addition, it controls for differences in income and budget constraints and enables cross- industry comparisons (Fornell, 1996). These three constructs lead to customer satisfaction, which is determined by the difference between the actual usage experience and service expectations.

Satisfaction is the subscribers’ reaction to their judgment of the state of fulfillment (Oliver, 1997). The ACSI model, as well as its adaptations, has been utilized in many studies in various industries such as in banking services (Mukherjee, Nath and Pal, 2003), conferences (Gorst, Wallace and Kanji, 1999), transportation and communication sectors (Grigoroudis and Siskos, 2004) and retailing industries (Arnett, Laverie and Meiers, 2003).

Calculation of American Customer Satisfaction Index (ACSI):



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ACSI is the most well-known national customer satisfaction index model, a type of economic indicator that assesses the overall satisfaction of consumers in a country. The ACSI is compiled in 1994 by the National Quality Research Center (NQRC) at the University of Michigan, United State of America. While intended as a macroeconomic measure of U.S. consumers in general, many corporations have used it to measure the satisfaction of their own customers. The heart of the ACSI is based on three questions that assess satisfaction, each on a different 10-point scale. The three questions are:


- i. What is your overall satisfaction with [our product or service]?

Very dissatisfied ● ● ● ● ● ● ● ● ● ● Very satisfied

- ii. To what extend has [our product or service] met your expectations?

Falls short of your expectation ● ● ● ● ● ● ● ● ● ● Exceeds your expectation

iii. How well did [our product or service] compare with the ideal [type of offering]?

Not very close to the ideal  Very close to the ideal

To obtain ASCI, organizations normalize and average the three ratings, like this:

$$\text{ASCI} = (\text{Satisfaction} + \text{Expectancy} + \text{Performance} - 3) / 27 * 100$$

2.4.2.2 Macro Model

There are various types of macro models. Some of them are traditional macro model, model for customer value, model for link overall satisfaction, model for customer satisfaction and model of service quality.

Traditional Macro Model

Woodruff and Gardial (1996) developed a different model known as a Traditional Macro Model of Customer Satisfaction to underlie the outcome about customer satisfaction by the particular consequence. This model underlies much of the research in customer satisfaction over the past decade and it is illustrated in figure 2.3.

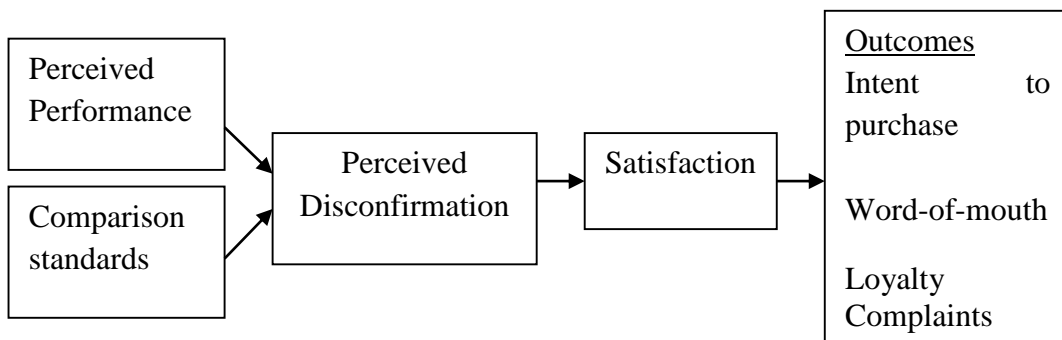


Figure 2.3 Traditional macro model of customer satisfaction

Source: (Woodruff and Gardial, 1996)

Perceived performance often differs from objective or technical performance, especially when a product or service is complex, intangible and when the consumer is unfamiliar with the product or service. Comparison standards can come from numerous sources that can vary widely by individual, by the situation, and by product or service type. Perceived disconfirmation is the evaluation of perceived performance, according to one or more comparison standards. Disconfirmation can have a positive effect a negative effect or a zero effect. Satisfaction feeling is a state of mind. Outcomes of satisfaction feelings may involve intent to repurchase, word-of-mouth and complaints. These outcomes also are moderated by other variables. For example, extreme dissatisfaction will not necessarily generate complaint behavior, especially if the consumer believes complaining will be futile.

Later research has produced a new model shown in Figure 2.4. The model highlights the concept of value as a driving force in product choice and satisfaction’s relationship to it as a brief psychological reaction to a component of a value chain (or “hierarchy”).

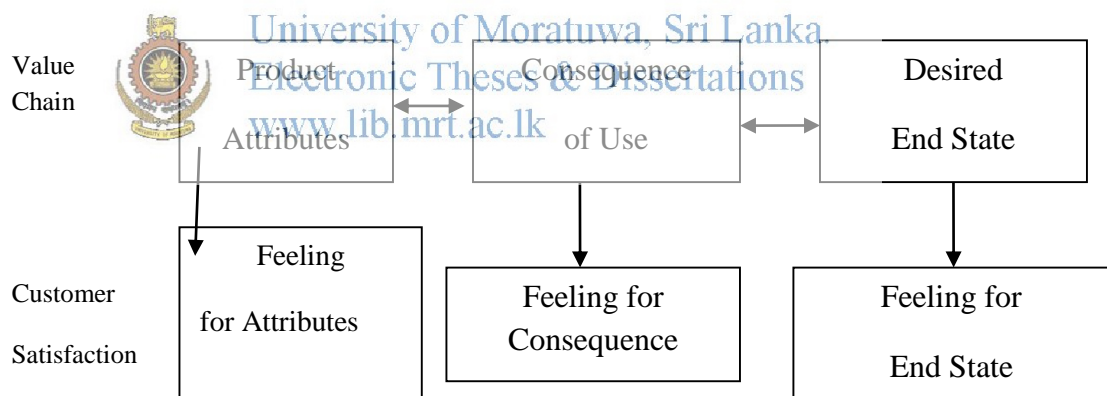


Figure 2.4 Model of linkage of customer value chain to customer satisfaction

Source: (Woodruff & Gardial, 1996)

Model for Customer Value

Oliver (1999) provides another version of this model which is shown in figure 2.5 to link satisfaction and value. An important point about customer value models is the use of gross benefit-cost judgments by consumers.

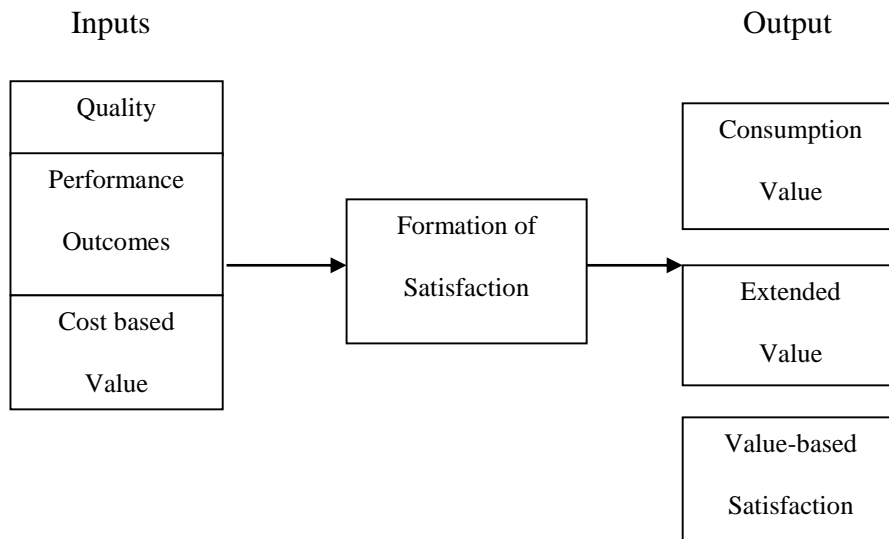


Figure 2.5 Model of link between satisfaction and value

Source: Oliver (1999)

Model for link Overall Satisfaction

Bitner and Hubbert (1994) introduced another important macro-model to understand the linkage of overall service satisfaction, encounter satisfaction, and perceived service quality, as shown in Figure 2.6. Research for this model supports the concept of perceived quality as a separate construct, distinct from satisfaction (Bitner & Hubbert, 1994). Furthermore, it highlights the construct of a “global” level of satisfaction (the overall service satisfaction) in contrast to the construct of a component level of satisfaction (the encounter service satisfaction). This model helps to explain survey results that indicate different levels of satisfaction for a service that one individual may experiences.

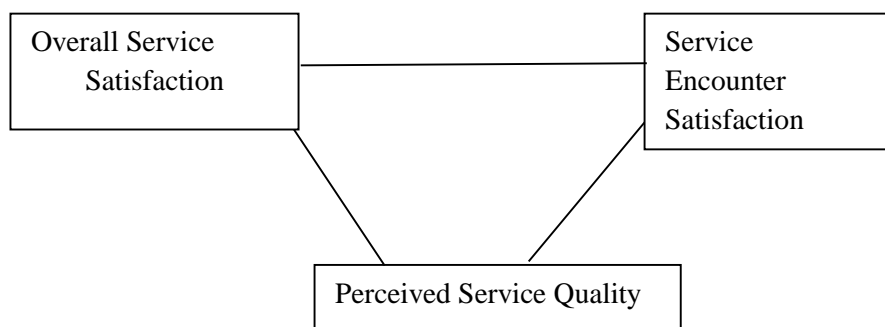


Figure 2.6 Model of two levels of satisfaction and perceived service quality

Source: Bitner & Hubbert (1994)

Model for Customer Satisfaction

Some models differentiate between technical service quality and perceived service [quality]. Bateson (1991) has introduced another model known as the Model of Sources of Customer Satisfaction (Figure 2.7) to explain survey results that indicate different levels of satisfaction for a service that one individual may experience.

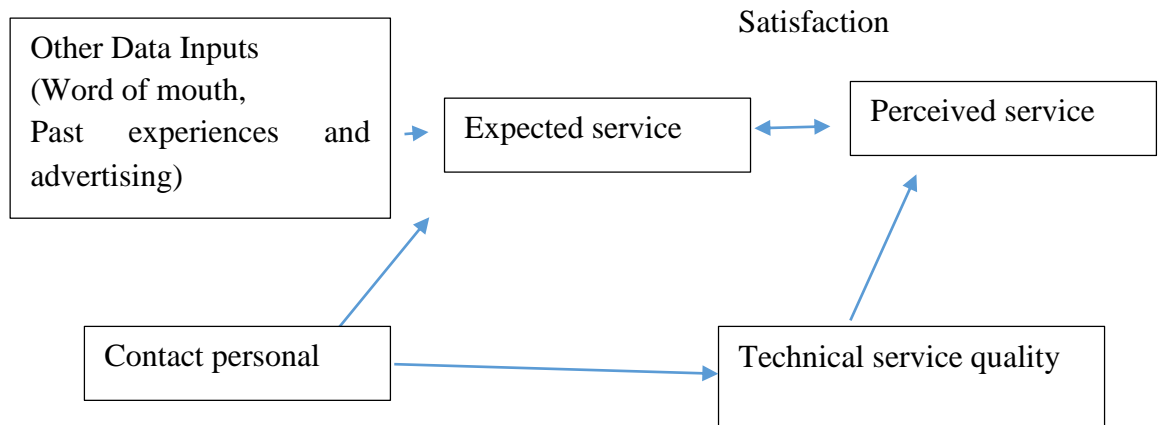


Figure 2.7 Model of sources of customer satisfaction

Source: Bateson (1991)

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Figure 2.7 indicates how satisfactory results are obtained from a comparison between expected service and perceived service. This model is explicit about the cyclical, feedback loop that affects satisfaction. A consumer's prior experience joins "other data inputs" to shape current satisfaction with a service.

Service Quality Model

Parasuraman, Zeithmal and Berry (1985) have introduced a model known as the Service Quality Model to explicit about the cyclical, feedback loop that affects satisfaction (Figure 2.8). It provides the basis for the measurement of customer satisfaction with a service by using the gap between the customer expectation of performance and their perceived experience of performance. The model defines customer satisfaction as perceived service quality, which is the gap between expected service and perception of service actually received.

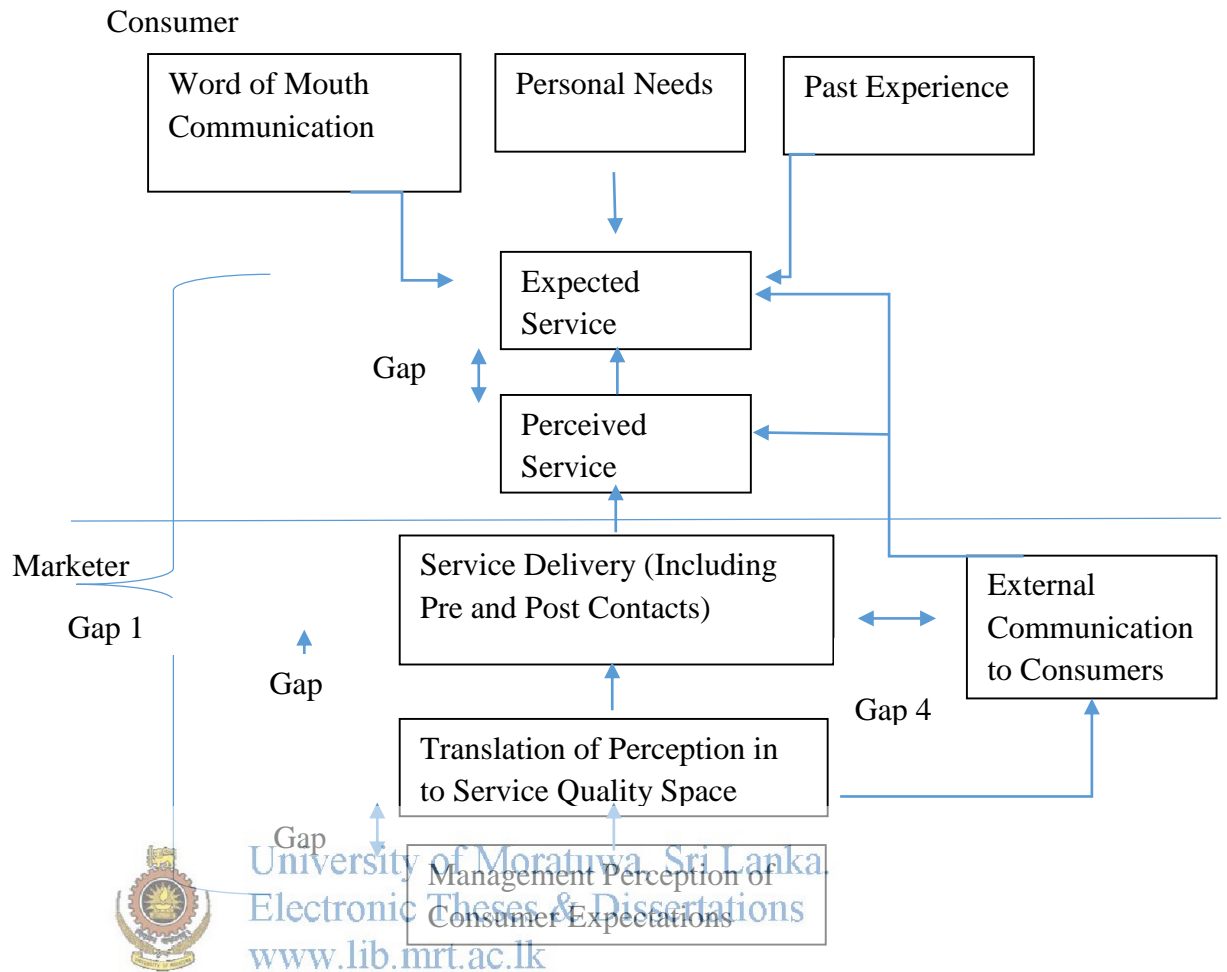


Figure 2.8 Model for service quality model

Source: Parasuraman, Berry and Zeithmal (1985)

This figure summarizes the key insights gained (through the focus group as well as executive interviews) about the concept of service quality and factors affecting it. Insights obtained from the executive interviews and the focus groups form the basis of a model summarizing the nature and determinants of service quality as perceived by consumers. The foundation of this model is the set of gaps shown in Figure 2.8. Service quality as perceived by a consumer depends on the size and direction of gap 5 which in turn depends on the nature of the gaps associated with the design, marketing and delivery of services. Gap 5 is considered as a function of Gap1-Gap4. That is

$$\text{Gap 5} = f(\text{Gap1, Gap2, Gap3, Gap4})$$

It is important to note that the gaps on the marketer side of the equation can be favorable or unfavorable from a service quality perspective. That is the magnitude and direction of each gap will have an impact on service quality. For instance, Gap 3 will be favorable when actual service delivery exceeds specifications; it will be unfavorable when service specifications are not met.

In essence, service, firm executives may not always understand what features connotes high quality to consumers in advance; what features a service must have. In order to meet consumer needs, and what levels of performance with those features are needed to deliver high quality service. This insight is consistent with previous research in services, which suggests that service marketers may not always understand what consumers expect in a service (Langeard et al. 1981, Parasuraman, Berry and Zeithmal, 1985).

2.4.2.3 Micro Models

Erevelles & Leavitt (1992) provide an excellent summary of micro-models. Table 2.1 lists the seven types of models and each type is described briefly.



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Table 2.1 Current types of micro-models for satisfaction

1	Expectations Disconfirmation Model
2	Perceived Performance Model
3	Norms Models
4	Multiple Process Models
5	Attribution Models
6	Affective Models
7	Equity Models

Expectations Disconfirmation Model

The Expectations Disconfirmation Model has been the dominant model in satisfaction research. The model has consumers using pre-consumption expectations in a comparison with post-consumption experiences of a product/service to form an attitude of satisfaction or dissatisfaction toward the product/service. In this model,

expectations originate from beliefs about the level of performance that a product/service will provide. This is the predictive meaning of the expectations concept.

Perceived Performance Model

The Perceived Performance Model deviates from the model 1 above in that expectations play a less significant role in satisfaction formation. The model performs especially well in situations where a product/service performs so positively that the consumer's expectations get discounted at her/his post-consumption reaction to the product/service.

Norms Models

Norms Models resemble the Expectations Disconfirmation Model in that the consumer compares perceived performance with some standard for performance. In this case, however, the standard is not a predictive expectation. Rather than considering what will happen in the consumption experience, the consumer uses what should happen as the comparison standard. This is the normative meaning of "should" rather than its occasional chronological connotation in the English language.



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Multiple Process Models

Multiple Process Models characterize the satisfaction formation process as multidimensional. That is, consumers use more than one standard of comparison in forming a (dis) confirmation judgment about an experience with a product/service.

Attribution Models

Attribution Models integrate the concept of perceived causality for a product/service performance in the satisfaction process. Consumers use three factors to determine attribution's effect in satisfaction. These are locus of causality, stability, and controllability. The locus of causality can be external (that is, the service provider gets the credit or blame) or internal (that is, the consumer is responsible for the product/service performance). Stable causes would tend to have more impact in satisfaction because consumers tend to be more forgiving of product/service failures

that appear to be rare events. Finally, controllability affects attribution in that a poor outcome in a consumption experience may mean that the consumer will be unsatisfied with the product/service provider if the consumer believes the provider had the capacity, that is, control, to perform in a better fashion.

Affective Models

Affective Models differ from previous models in that it goes beyond rational processes. In these models, emotion, liking, and mood influence (dis) satisfaction feelings following the consumption experience.

Equity Models

Equity Models emphasize the consumer's attitude about fair treatment in the consumption process. Fair treatment can use the concept of the equity ratio (that is, the amount of her/his return to her/his effort made) or the concept of social comparison (that is, the perceived, relative level of product/service performance that other consumer experience). Oliver (1997) breaks equity down further into three categories, procedural fairness; interactional fairness; and distributional fairness.



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2.5 Relationship between Customer Satisfaction and the Factors

2.5.1 Relationship between Customer Satisfaction and Quality

Fisk (1993) highlighted that the single most researched areas in marketing aspects is quality. The interest in service quality parallels the focus on quality, total quality management and satisfaction in business and claimed that quality can influenced to customer satisfaction. Bateson (1995) states that quality is generally conceptualized as an attitude, the customer's comprehensive evaluation of the service offered.

Oliver (1980) defines that satisfaction is a summery psychological state resulting when the motions surrounding disconfirmed expectations are coupled with the consumers' prior feeling about consumption experience. Early researches considered satisfactory as antecedent factors that affect service quality, different opinions of causal relationship discussed in the past, then consider the satisfaction generate service quality via word-of-mouth, service loyalty (Bitner. 1990; Balton and Drew, 1991;

Parasuraman, 1988). Later researchers, however, considered service quality is the important factor that affect customer satisfaction (Anderson and Sullivan, 1993; Cronin and Taylor, 1992; Oliver, 1993). Cronin and Taylor (1992) examined the interaction of “Service Quality” and “Customer Satisfaction”. The result appeared the effect of service quality is significant to Customer satisfaction, but it is not contrarily, find only have one way influence between service quality and customer satisfaction.

The direct link between service quality and customer satisfaction has been shown by many authors (Anderson and Sullivan, 1993; Caruna and Pitt, 1997; Johnston, 1995; McAlexander, 1994; Mittal and Lasser, 1998; Powpaka, 1996; Taylor and Baker, 1994; Taylor and Cronin, 1994). Recently, Gallarza and Saura (2006) confirmed a clear pattern in which satisfaction is the behavioral consequence of quality. Previous studies on telecommunication services, measured service quality by call quality, pricing structure, mobile devices, value-added services, convenience in procedures and customer support (Kim, 2000; Gerpott et al., 2001; Lee, & Freick, 2001).

2.5.2 Relationship between Customer Satisfaction and Perceived Value

Oliver (1997) addresses a question which integrates “value” and “satisfaction”, and also considered that value and satisfaction are interactive, that is previous product and service performance of consumption would affect customer and then get common result, such as loyalty, via the transformation of customer himself. Parasuraman (1988) mentioned the overall evaluation of service transaction is the sum of composite element and satisfaction. Present a positive relation to the service value, customer has perceived, delivered by enterprises.

2.5.3 Relationship between Customer Satisfaction and Customer Loyalty

According to Zeithmal and Bitner (2003) there is an important relationship between customer satisfaction and loyalty. Satisfaction has a positive effect on Loyalty. This relationship is particularly strong when customers are highly satisfied. Reichheld and Sasser (1990) considered that raising customer satisfaction can increase their future loyalty. Lovelock (1996) indicated that customer satisfaction stems from a customer’s comparison between his or her expectation of this product and his/her real experience

of using this product. Also customer satisfaction is the driving force of customer loyalty.

Apparently there is a positive relationship between customer satisfaction and customer loyalty. In other words, product or services with a higher customer satisfaction lead to better customer loyalty and customer maintenance. Anderson and Sullivan (1993) believed that customer satisfaction affects customers repurchase behavior in a positive way, and a customer's repurchase behavior and his / her buying intension are one kind of customer loyalty. Therefore, it was inferred that there is a positive relationship between these two elements. However, some academics hold different opinions. For example, Reicheld (1996) mentioned "satisfaction trap", which means that 65% - 85% of satisfied customers will still defect from businesses even with satisfying product and services. Neil (1999) said that the majority of loyal consumers are satisfied, but satisfied consumers are not always loyal, with the consistent change in human lifestyle. It's more difficult to understand consumer behavior. It is expected that the customer tailored service will become an important trend for businesses in the future. As a result, customer relationship management hinges on customer satisfaction and customer loyalty.



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2.5.4 Relationship between Customer Satisfaction and Customer Support

It is evident that a low quality customer support will cause a customer to seek an alternative product or service from a competitor. With an increased focus on retaining customers, employing advanced technologies, and robust processes it is obvious that the end-customers are expecting faster service resolutions and proactive minimization of product failures. And software vendors need to plan for a future, sans any support revenues, as predicted by several industry analysts. This implies that the ROI on tech-support should be continuously sustained along with the daily depreciation of tech-support revenues.

2.6 Reason of Making IDD call

There are scholar documents which explain the different reasons of making IDD calls. They may explained in general for the whole world and sometimes specific for as a

country. The following phrase describes the whole picture in Sri Lankan context. “As the largest external gateway operator in the country, SLT IDD services are designed to meet the communication needs of the business community, public services, social network communication as well as migrant workers and their loved ones. Making IDD calls will not be more cost effective and convenient for customers, with the company taking great strides in the future, enabling interaction among relatives, family members and business communities in Sri Lanka as well as overseas (SLT, 2010).

2.6.1 Driving Forces of IDD Industry

As any other businesses IDD is also driven by few forces which accounted for the growth of the business. Sri Lankan IDD business is driven by few key forces such as, foreign employment, Business Process Outsourcing (BPO), foreign investments in the country and tourism (Annual Reports, CBSL 2013).

2.7 Summary

Customers are the king of organizations and they play a vital role in the existence of the organization. Literature of studies related to customer satisfaction acquired a solid foundation for the current study. There are two common definitional approaches of the concept of customer satisfaction. The first approach defines satisfaction as a process and the second approach defines satisfaction as an outcome of a consumption experience. Customer satisfaction is the best indicator of how likely a customer will make a purchase in the future. In a competitive market place where businesses compete for customers. Customer satisfaction is considered as a key differentiator. Price is not the main reason for customer churn; it is actually due to the overall poor quality of customer service. By measuring and tracking customer satisfaction need put new processes in place to increase the overall quality of customer service. Customer satisfaction is tightly linked to revenue and repeat purchases. What often gets forgotten is how customer satisfaction negatively impacts on business. It's one thing to lose a customer because they were unhappy. It's another thing completely to lose customers because of some bad word of mouth. Tracking changes in satisfaction will help to identify if customers are actually happy with the product or service. There are no other researches have been done to identify the customer satisfaction on IDD prepaid call

card market in Sri Lanka. The most important factors related to customer satisfaction were discussed through past studies carried on service and production sector and the reviewing the theories which are related to measure customer satisfaction. As this study focuses on significant factors on IDD users' customer satisfaction, literature related to IDD products and services in Sri Lanka was reviewed to get good background knowledge about IDD business. Nevertheless, the results obtained from the research could help to achieve the objectives of this study.



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CHAPTER 3

MATERIALS AND METHODOLOGY

3.1 Introduction

This chapter brings out the collection of data and the statistical methodologies used in this study.

3.2 Research Design

In this study research, the main instrument is the preparation of a good questionnaire and it uses appropriate statistical analyses. A comprehensive questionnaire is designed in order to achieve the objectives of this study and to acquire necessary data. The questionnaire was pre-tested to assess the strengths and weaknesses of the questionnaire and to ensure that all the variables are included. At this stage, several modifications were made to the questionnaire in order to improve the flow of the questionnaire. The final version was distributed to the representatives of the sample and a copy of the questionnaire is attached in Appendix I.



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The questions were designed to test hypotheses based on the objectives of the research. Most of the questions are closed-ended. Respondents were asked to base their response on their usage experience of that particular IDD Prepaid Card. The questionnaire consisted of two main sections. In section 1, respondents were asked to fill in some personal information such as gender, age, marital status. Such information is used to determine their association with customer satisfaction factors. One open-ended question is also being included in section 2 and respondents were given the opportunity to indicate their comments. The questionnaire was prepared in Sinhala as well as in the English language to enhance the reliability of the study. Variables of the study constitute nominal, ordinal and ratio scales. Table 3.1 summarizes the scale and levels of measurement on each variable used in the study. In section two, the respondents are required to indicate the extent of their satisfaction / dissatisfaction with the statements provided in the survey, using the most suitable category. The questionnaire was

developed to measure the following five variables: Perceived Quality, Perceived Value, Customer Loyalty, Customer support and Overall Customer Satisfaction.



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Table 3.1 Basic details of the variables in the questionnaire

Variable	Scales of Measurement	Level
Perceived Quality	Ordinal	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree
Perceived Value	Ordinal	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree
Customer Loyalty	Ordinal	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree
Customer Support	Ordinal	1 = Excellent 2 = Generally Good 3 = Acceptable 4 = Not very Satisfactory 5 = Unacceptable
Overall Customer Satisfaction	Ordinal	1 = Very dissatisfied 2 = Somewhat dissatisfied 3 = Neither satisfied nor dissatisfied 4 = Somewhat satisfied 5 = Very satisfied
Gender	Nominal	1= Female 2= Male
Age	Nominal	1 = 18-24 2 = 25-34 3 = 35-44 4 = 45-54 5 = 55-64 6 = 65 or above
Marital Status	Nominal	1= Married 2=Unmarried
Employment Status	Nominal	1 = Government sector 2 = Private sector 3 = Self employed 4 = Retired 5 = Unemployed

3.3 Sampling Method

In any research project, the ideal would be to consider a complete population of interest. However, due to obvious reasons it is not possible to collect data from the entire population. Furthermore, due to constraints on manpower, time and cost a large sample size is not feasible. Therefore, a correct sampling method and the minimum sample size are very important in any survey.

In order to conduct the survey, five Divisional Secretariats (DS) in the district of Colombo were selected. As there were no information about the total number of each type of five types of IDD call card users within each DS, sampling units are taken as any type IDD users within the DS. Thus, the sampling method used is the purposive random sampling.

3.4 Sampling Size

Minimum number of sample size was derived using the formula suggested by Saunders et al., (2009), shown below.



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$$n = \frac{\{(Z_{\alpha/2})^2 \cdot P(1-P) + d^2\}}{d^2}$$

Where

n = minimum sample size for a given situation

$Z_{\alpha/2}$ = Standardized Normal Distribution value at the desired 95% confidence level

P = the population proportion (assumed to be 0.5 since $p(1-p)$ is maximized when $p = 0.5$)

d = the degree of accuracy expressed as a proportion (0.05)

However, as the population size (N) is not known, the minimum sample size for a given situation was

$$n = \frac{\{(1.96)^2 \cdot (0.5)^2 + (0.06210)^2\}}{(0.06210)^2} = 250$$

Table 3.2 Distribution of questionnaires among divisional secretariats

DS Division	Distributed
Colombo	50
Dehiwala	50
Thimbirigasyaya	50
Maharagama	50
Homagama	50
Total	250

3.5 Sampling Unit

The questionnaire was distributed to the customers through the communication centers, Dialog Arcades, SLT Teleshops, Hutch, Lanka Bell Customer Care outlets within the Colombo area. In addition, data were collected from IDD users in Small and Medium Enterprises and government organizations. Thus, any customers who uses IDD prepaid cards was identifies as a sampling unit.

3.6 Method of Analysis

Data collected from users was used to identify the association among customer satisfaction variables and to identify the significant factors in customer satisfaction of IDD call card users. Of 250 sampling units only 222 were responded. Data was analyzed using the statistical software package, Statistical Package for the Social Sciences (SPSS). Various techniques were used and a few methodologies utilized to analyze are briefly described below.

3.6.1 Association between Variables

The association between two categorical variable was tested using the maximum likelihood ratio chi-square test statistic under the null hypothesis H_0 : There is no association between overall customer satisfaction and demographic factors, customer satisfaction factors. The test statistic G^2 is given by $G^2 = \sum \left[O_{ij} - \text{Log} \left(\frac{O_{ij}}{E_{ij}} \right) \right]$ and under H_0 : $G^2 \sim \chi^2_{(r-1)(c-1)}$

3.6.2 Factor Analysis (FA)

Factor analysis is a broad term representing a variety of statistical techniques that allow to identify the reasons of having multicollinearity among observed variables (Gorsuch, 1983; Kim and Mueller, 1978). FA is an intricate representation of the covariance structure of a set of data (Johnson and Wichern, 2007). As stated by Johnson and Wichern (2007), FA can be considered as an extension of principal component analysis. In the principal component analysis, it attempts to explain the variability of a system using fewer dimension of orthogonal components. In contrast, in FA, it attempts to explain covariance of the original system using fewer unobservable factors. In both the cases, some information is lost.

There are two methods for factor analysis: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). EFA does not require any prior knowledge about the number of factors. CFA is commonly used for testing the identified FA models (Thompson, 2004). In this study EFA, is used.

The basic idea underlying factor analysis is that p observed random variables, (X_1, X_2, \dots, X_p) , can be expressed, as a linear function of m ($<p$) unobserved variables (latent variables) (say F_1, F_2, \dots, F_m). Unique factors for each X_1, X_2, \dots, X_p say $(\varepsilon_1, \varepsilon_2, \dots, \varepsilon_p)$. Thus m -factor model is written as:

$$X_1 = \lambda_{11}F_1 + \lambda_{12}F_2 + \dots + \lambda_{1m}F_m + \varepsilon_1$$

$$X_2 = \lambda_{21}F_1 + \lambda_{22}F_2 + \dots + \lambda_{2m}F_m + \varepsilon_2$$

⋮

$$X_p = \lambda_{p1}F_1 + \lambda_{p2}F_2 + \dots + \lambda_{pm}F_m + \varepsilon_p$$

Where λ_{jk} , ($j = 1, 2, \dots, p$; $k = 1, 2, \dots, m$) are the factor loadings (or pattern loading). The number of factors are commonly decided by the number of Eigenvalues extraction from observed correlated matrix greater than zero. The above equations can be rewritten in matrix form, as

$$X = \Lambda F + \varepsilon$$

Without loss of generality it can be assumed $E(X) = 0$. Further assumptions are made with factor models (Jolliffe, 2002).

1. $E(\varepsilon) = E(F) = E(X) = 0$ (This means observed variables, common factors and unique factors are zero.)
2. $E[\varepsilon\varepsilon'] = \psi$ (diagonal) (Unique factors are independent)
3. $E[F\varepsilon'] = 0$ (a matrix of zeros) (Common factors and unique factors are independent)
4. $E[FF'] = I_m$ (An identity matrix) (Common factors when factors are rotated using orthogonal factors)

Variance of X_i explained by the m common factors is given by $V(X_i) = \sum_{j=1}^m \lambda_{ij}^2$ and is known as communality of the i^{th} variable. According to Jolliffe (2002), the fourth assumption can be relaxed. Therefore the common factors may be correlated (oblique) rather than uncorrelated (orthogonal). But when factors are rotated using oblique transformation rather than orthogonal transformation in many techniques orthogonal transformation are used as orthogonal factors.



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There are several tests have to applied to validate data for Factor Analysis. They are Bartlett's test of sphericity for the Measuring of Sampling Adequacy (MSA), and the Kaiser-Meyer-Olkin Measure (KMO).

3.6.3 Bartlett's Test

The Bartlett's test (Snedecor and Cochran, 1983) checks if the observed correlation matrix $R = (r_{ij})_{(p \times p)}$ diverges significantly from the identity matrix. Thus the null hypothesis is $H_0: \Sigma_x = I_p$ Vs $H_1: \Sigma_x \neq I_p$. The FA can perform a compression of the available information only if rejects the null hypothesis. In order to measure the overall relationship between the variables, compute the determinant of the correlation matrix $|R|$. Under H_0 , $|R| = 1$; if the variables are highly correlated, we have $|R| \approx 0$. Thus the Bartlett's test statistic also indicates to what extent the correlation matrix deviate from the reference situation $|R| = 1$. The Bartlett's test statistic is:

$$\chi^2 = - \left[n - 1 - \left(\frac{2p+5}{6} \right) \right] \times \ln|R| \quad \text{Under } H_0, \chi^2 \sim \chi^2_{[p \times (p-1) / 2]}.$$

3.6.4 Kaiser-Meyer-Olkin (KMO) Index

The KMO index (Henry Kaiser, 1970) has developed to check whether it can be factorized efficiently the original variables. The KMO index compares the values of correlations between variables and those of the partial correlations. If the KMO index is high (≈ 1) then the PCA can act efficiently and if KMO is low (≈ 0) then the PCA is not relevant. Therefore KMO index measures the sample adequacy (MSA) for variable X_j is given by the formula

$$KMO_j = \frac{\sum_{i \neq j} r_{ij}^2}{\sum_{i \neq j} r_{ij}^2 + \sum_{i \neq j} u_{ij}^2}$$

Where the correlation matrix is $R = [r_{ij}]$ and the partial covariance matrix is $U = [u_{ij}]$. KMO takes values between 0 and 1. A value near 0 indicates that the sum of the partial correlations is large compared to the sum of the correlations, indicating that the correlations are widespread and so are not clustering among a few variables, indicating a problem for factor analysis. On the contrary, a value near 1 indicates a good fit for factor analysis. However the following rule has been suggested the use of FA.

3.6.5 Factor Extraction Methods

There are many different methods that can be used to extract factors, namely principal component factor, maximum likelihood, generalized least squares and unweight least squares (Jolliffe, 2002). Furthermore, alpha factoring, image factoring and Rao's canonical factoring can also identify as different types of factor extraction methods. However the most popular factor extraction methods are principal component method and maximum likelihood method (Jolliffe, 2002). However, in this analysis only principal component factor extraction method is used.

3.6.6 Number of Factors to be Retained

Several methods have been proposed for determining number of factors that should be retained for further analysis. Kaiser (1960) has suggested dropping factors whose eigenvalues are less than one since they produced less information. Cattell (1966) suggested keeping factors before the breaking point after deriving the scree-plot. However, scree plot is not very useful as it is purely subjective. Field (2005) has

suggested following three rules of thumb for determining the number of factors to be retained.

- i. Retain only the factors with an eigenvalue larger than 1 (Kaiser's Criterion)
- ii. Keep the factors which, account for about 70-80% of the variance
- iii. Keep all factors before the breaking point or elbow after deriving the scree-plot.

Of these methods, the most common method is Kaiser's Criterion.

3.6.7 Factor Rotation

Once the factor model has been extracted, it might be difficult to name the factors on the basis of factor loadings. In most variables have high loadings on the most important factors and small loadings on all other factors (Field, 2005). Thus, interpretation of the factors can be difficult. Thus unrotated factors extracted are rotated in order to simplify the interpretation of factors (Jolliffe, 2002). Factor rotation redistributes variances among factors and makes it easier to interpret the factors by investigating factor loadings (Thompson, 2004). Factors are rotated using orthogonal rotations so that rotated factors are independent and easy to interpret. There are a number of orthogonal rotation methods such as Varimax, Quartimax, Equamax and Orthomax. Among these rotation methods, according to Habing (2003), Varimax and Quartimax are the most popular orthogonal rotation methods. Both Varimax and Quartimax methods maximize the sums of the squared factor loadings; whereas Varimax focuses on columns and Quartimax focuses on rows.

The advantage of using an orthogonal rotation is the new factors are also independent and easy to interpret results. In contrast, oblique rotation factors are not independent and these such rotations are generally not used for many applied problems.

3.6.8 Factor Score Coefficients

Understandably, factors and factor scores are often confused. Factor analysis consolidates original measured variables into factors or latent variables, maximizing original data information (Hetzl, 1996; Thompson, 2004). Factors provide a means “for determining if there are a small number of underlying constructs which might

account for the main sources of variation in such a complex set of correlations”
(Stevens, 1996).



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CHAPTER 4

RESULTS AND DISCUSSION


4.1 Introduction

The purpose of this chapter is to analyze data and interpret the results obtained from statistical analyses using the methodologies described in Chapter 3.

4.2 Response Rate

Of the 250 sample, only 222 were responding indicating the response rate was 89%. Table 4.1 indicates that distribution of responses among five Divisional Secretariats of Colombo.

Table 4.1 Distribution of response rate among divisional secretariats

DS Division	Distributed	Received	Response Rate
Colombo 	50	49	98%
Dehiwala	50	45	90%
Thimbirigasyaya	50	44	88%
Maharagama	50	43	86%
Homagama	50	41	82%
Total	250	222	89%

According to results in Table 4.1, it can be seen that the response rate varies from 98% (Colombo) to 82% (Homagama). In fact, Babbie and Mouton (2002), has suggested a response rate with a 70% is considered to be good in customer satisfactory surveys.

4.3 Analysis of Association between Demographic Factors and Overall Customer Satisfaction

The demographic data is important because it helps to determine the sample characteristics and relate those variables to the customer satisfaction variables. The demographic variables used in the study are gender, age, marital status and employment status.

4.3.1 Association between Gender and Overall Customer Satisfaction with IDD Prepaid Call Cards

The two way table of column relative frequencies below (Table 4.2) shows data on gender and overall satisfaction with IDD prepaid call cards.

Table 4.2 Frequency table between gender and overall satisfaction

Gender	Overall Satisfaction with IDD Prepaid Call Cards			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Female	11 6.8%	44 27.2%	107 66.0%	162 100.0%
Male	4 6.7%	18 30.0%	38 63.3%	60 100.0%
Total	15 6.8%	62 27.9%	145 65.3%	222 100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_2 = 0.175$, $p = 0.916$)

These results indicate that there is no statistically significant association ($p = 0.916$) between the genders and overall satisfaction with IDD prepaid call cards. However, according to the statistics on the sample most of the responders (65.3%) were highly satisfied with IDD prepaid call cards irrespective gender. The highly satisfactory rate of females (66%) is slightly higher than that of by male responders (63.3%) though the difference is not statistically significant. Thus, it can be claimed that level of satisfaction for IDD prepaid call cards is equally distributed between females and males and further majority of both females and males highly satisfy with those cards.

Only about 6.8% (irrespective of gender) claimed that the level of satisfaction is below the average and this percentage is almost the same for both genders.

4.3.2 Association between Age Group and Overall Customer Satisfaction with IDD Prepaid Call Cards

The two way table of column relative frequencies below (Table 4.3) shows data on age groups and overall satisfaction with IDD prepaid call cards.

Table 4.3 Frequency table for age groups and overall satisfaction with IDD prepaid call cards

Age Group (years)	Overall Satisfaction with IDD Prepaid Call Cards			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
18-24	4	14	44	62
	6.5%	22.6%	71.0%	100.0%
25-34	6	34	68	108
	5.6%	31.5%	63.0%	100.0%
35-44	4	10	23	37
	10.8%	27.0%	62.2%	100.0%
>44	1	4	10	15
	6.7%	26.7%	66.6%	100.0%
Total	6.8%	27.9%	65.3%	222

(Likelihood Ratio Chi-Square Statistic $\chi^2_8 = 3.313$, $p = 0.913$)

These results imply that there is no statistically significant association ($p=0.913$) between age groups and overall satisfaction with IDD prepaid call cards. According to results in Table 4.3, it can be seen that the percentage of highly satisfied age group varies from 62.2% (35-44 years) to 71% (18-24 years). This implies that the overall satisfaction of IDD Prepaid cards is higher within the younger generation (<24 years) than elderly persons (> 44 years).

4.3.3 Association between Marital Status and Overall Customer Satisfaction with IDD Prepaid Call Cards

The results of the 2-way table with respect to above is shown in Table 4.4.

Table 4.4 Frequency table for marital status and overall satisfaction

Marital Status	Overall Satisfaction with IDD Prepaid Call Cards			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Married	9	28	65	102
	8.8%	27.5%	63.7%	100.0%
Unmarried	6	34	80	120
	5.0%	28.3%	66.7%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_{\epsilon} = 6.269$, $p = 0.394$)

These results indicate that there is no statistically significant association ($p = 0.394$) between marital statuses and overall Satisfaction with IDD prepaid call cards. The sample consisted of respondents of whom having a higher satisfaction level (66.7%) were unmarried, while the 63.7% of the respondents are married indicating that the highly satisfied IDD users are single.

4.3.4 Association between Employment Status and Overall Customer Satisfaction with IDD Prepaid Call Cards

In terms of employment status, Table 4.5 presents the distribution of employment status and the overall Customer satisfaction.

Table 4.5 Frequency table for employment status and overall satisfaction with IDD prepaid call cards

Employment Status	Overall Satisfaction with IDD Prepaid Call Cards			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Government Sector	2 13.3%	6 40.0%	7 46.7%	15 100.0%
Private Sector	7 5.6%	33 26.6%	84 67.7%	124 100.0%
Retired	1 50.0%	0 0.0%	1 50.0%	2 100.0%
Unemployed	5 6.2%	23 28.4%	53 65.4%	81 100.0%
Total	15 6.8%	62 27.9%	145 65.3%	222 100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_6 = 6.269$, $p = 0.394$)



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According to the results it implies that there is no statistically significant association between employment status and overall customer satisfaction with IDD Prepaid Call Cards. Results in Table 4.5, indicate that the employees who engage in Private sector have high overall satisfaction on IDD call cards (67.7%) followed by unemployed (65.4%). Also, it is interesting to note that a very high percentage of retired person (50%) has indicated that the satisfaction rate is below the average as against 50% of above average. Furthermore, it should be noted that the percentage of government sector employees satisfy above average (46.7%) is less compared to the corresponding rates by private sector employers and unemployed.

4.4 Association between Other Factors and Overall Customer Satisfaction with IDD Prepaid Call Cards

In addition to above four demographic factors the following factors were also obtained from the survey. These factors are the length of the time used, frequency of using, and major cause for purchasing and the source of the customer conviction.

4.4.1 Association between Length of the Time Used and Overall Customer Satisfaction with IDD Prepaid Call Cards

Table 4.6 Frequency table for length of the time used IDD prepaid card and overall satisfaction

Length of the time used IDD Prepaid Card	Overall Satisfaction with IDD Prepaid Call Cards			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
First Time	1	15	42	58
	1.7%	25.9%	72.4%	100.0%
Less than One Year	10	35	75	120
	8.3%	29.2%	62.5%	100.0%
More than One Year	4	12	28	44
	9.1%	27.3%	63.6%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_4 = 4.598$, $p = 0.331$)

The results indicate that there is no statistically significant association between the lengths of the time used and overall satisfaction with IDD prepaid call cards. About 72.4% of respondents have used the IDD Prepaid card as their first experience. Also, 62.5% of respondents have used a period of less than one year. Results in Table 4.6 clearly indicate the same percentage for the satisfactory rate for below average, average and above average for both groups, namely less than one year and more than one year. Thus, it can be postulated that there is no significant improvement among satisfactory rates, though customers use an IDD cards number of years.

4.4.2 Association between Frequency of using IDD Prepaid Call Cards and Overall Customer Satisfaction with IDD Prepaid Call Cards

In terms of frequency of using IDD prepaid calling cards, Table 4.7 presents the distribution of frequency of using IDD prepaid cards and the overall customer satisfaction.

Table 4.7 Frequency table for frequency of using IDD prepaid call cards and overall satisfaction

Frequency of using IDD Prepaid Cards	Overall Satisfaction with IDD Prepaid Call Cards			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Weekly	12	48	98	158
	7.6%	30.4%	62.0%	100.0%
Monthly	2	5	19	26
	7.7%	19.2%	73.1%	100.0%
Annually	1	9	28	38
	2.6%	23.7%	73.7%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_4 = 3.708, p = 0.447$)



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The analysis (Table 4.7) indicates that there is no statistically significant association between the frequencies of using IDD prepaid calling cards and overall customer satisfaction with IDD prepaid calling cards indicating that the level of satisfaction does not depend on the frequency of using IDD cards. However, it can be seen that percentage of highly satisfaction among those who use IDD cards annually and monthly is slightly higher (73.7%) than those who use IDD cards weekly (62%).

4.4.3 Association between Major Cause for purchasing IDD prepaid call cards and Overall Customer Satisfaction with IDD Prepaid Call Cards

In terms of the major cause for purchasing IDD prepaid calling cards, Table 4.8 presents the distribution of frequency of using IDD prepaid call cards and the overall Customer satisfaction with IDD Prepaid Calling Cards.

Table 4.8 Frequency table for major cause for purchasing IDD prepaid call cards and overall satisfaction

Major reason for purchasing IDD prepaid card	Overall satisfaction with this IDD prepaid card			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Quality	2	10	18	30
	6.7%	33.3%	60.0%	100.0%
Value	5	28	58	91
	5.5%	30.8%	63.7%	100.0%
Easy to Use	5	15	46	66
	7.6%	22.7%	69.7%	100.0%
Brand Name	3	8	20	31
	9.7%	25.8%	64.5%	100.0%
Value Added Services	0	1	3	4
	0.0%	25.0%	75.0%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_{8} = 2.891$, $p = 0.941$)

These results indicate that there is no statistically significant association between frequency of using IDD prepaid call cards and overall customer satisfaction with IDD prepaid call cards as p-value is less than 5% ($p = 0.941$). However, according to the percentage of highly satisfied major cause for purchasing IDD cards can be ranked as a value added service > easy to use > Brand Name > Value > Quality. In fact, no customer has rated value added as below average. Thus value added service can be considered as the most significant factor for the satisfaction of IDD prepaid card users.

4.5 Source of the Customer Conviction on IDD Prepaid Cards

The percentage of the source of the customer conviction on IDD prepaid call card is shown in Table 4.9 and the corresponding histogram is also shown in Figure 4.1.

Table 4.9 Source of the customer conviction on IDD prepaid cards

Source	Percent of customer conviction
Television	27.5%
Radio	53.6%
Newspaper or Magazine	9.0%
Friend or Relative	9.0%
Other	0.9%
Total	100.0%

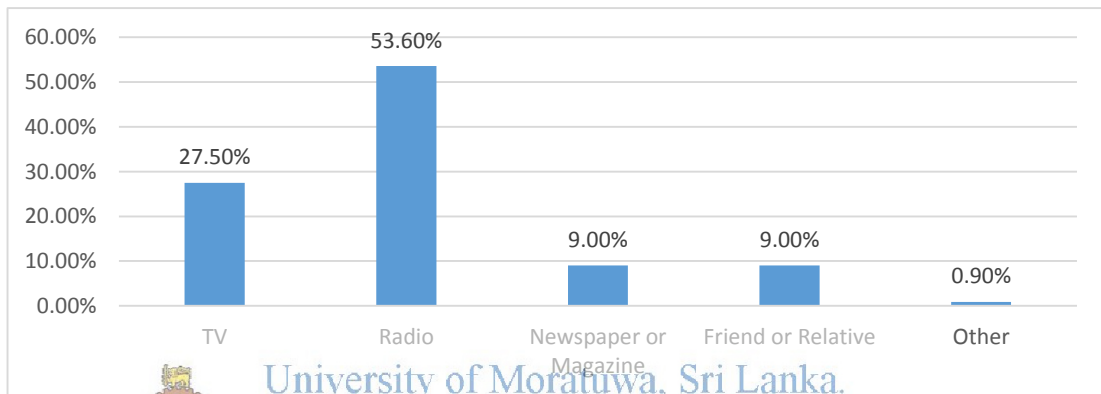


Figure 4.1 Source of the customer conviction on IDD prepaid cards

The above percentages were analyzed using the properties of Binomial distribution to compare the significant difference of the percentages among the five sources of the customer conviction. The hypothesis is $H_0: p_1 \leq p_2$ Vs $H_1: p_1 > p_2$ and the test statistic is:

$$Z = \frac{(\hat{p}_1 - \hat{p}_2) - (p_1 - p_2)}{\sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1} + \frac{\hat{p}_2(1-\hat{p}_2)}{n_2}}}$$

where p_1 and p_2 is the percentage of customer conviction on

IDD prepaid call cards for source 1 and 2 respectively. It was found that the Z statistic between radio and TV is significant based on the above hypothesis. Thus, it can be concluded that percentage of satisfaction when the source of customer conviction on IDD call cards is radio is significantly higher ($p < 0.05$) that of any other source. Thus, it can be concluded that the best source of conviction is radio followed by the television 27.5%.

4.6 Analysis of Customer Satisfaction Factors

4.6.1 Association between Perceived Quality and Overall Customer Satisfaction with IDD Prepaid Call Card

The two way frequency table with raw percentages on perceived quality and overall customer satisfaction with IDD prepaid call cards is shown in Table 4.10.

Table 4.10 Frequency table for perceived quality and overall satisfaction with IDD prepaid call cards

Perceived Quality	Overall Satisfaction with IDD Prepaid Card			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Below Average	2	14	16	32
	6.3%	43.8%	50%	100.0%
Average	5	26	43	74
	6.8%	35.1%	58.1%	100.0%
Above Average	8	22	86	116
	6.9%	19.0%	74.1%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_k = 10.68$, $p = 0.030$)

The results in Table 4.10 indicated that there is a significant association between perceived quality and overall customer satisfaction ($p = 0.030$) indicating that perceived quality significantly influence on overall customer satisfaction with the IDD prepaid call card. Of the perceived quality is above average the percentage of highly satisfied is significantly higher than that of the perceived quality is average or below average. It can be seen that when the perceived quality improves from below average to above average, the percentage highly satisfied customers for IDD prepaid call card increases from 50% to 74.1%.

4.6.2 Association between Perceived Value and Overall Customer Satisfaction with IDD Prepaid Call Card

Table 4.11 Frequency Table for perceived value and overall satisfaction with IDD prepaid call cards

Perceived Value	Overall Customer Satisfaction with IDD prepaid card			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Below Average	1	9	19	29
	3.4%	31.0%	65.5%	100.0%
Average	8	36	63	107
	7.5%	33.6%	58.9%	100.0%
Above Average	6	17	63	86
	7.0%	19.8%	73.3%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_4 = 29.38$, $p = 0.001$)

Results in Table 4.11 indicate that there is a significant association between perceived value and customer satisfaction ($p = 0.001$). Thus, it can be concluded that perceived value is a significant factor which influence the overall customer satisfaction with IDD prepaid call cards. Of the customers, having above average perceived value 73.3% highly satisfied with IDD cards while of the customer having average perceived value only 58.9% highly satisfied the IDD prepaid cards. In contrast, of the customers claimed perceived value is below average, 65.5% highly satisfied the overall customer satisfaction.

4.6.3 Association between IDD Rates (Price) and Overall Customer Satisfaction with IDD Prepaid Call Card

The two way frequency table with raw percentages on IDD rates (Price) and overall customer satisfaction with IDD prepaid call cards is shown in Table 4.12.

Table 4.12 Frequency table for IDD rate (price) and overall satisfaction with IDD prepaid call cards

IDD Rate(Price)	Overall Customer Satisfaction with IDD prepaid card			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Below Average	7	21	18	46
	15.2%	45.7%	39.1%	100.0%
Average	1	20	68	89
	1.1%	22.5%	76.4%	100.0%
Above Average	7	21	59	87
	8.0%	24.1%	67.8%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_4 = 23.364$, $p = 0.000$)



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The results in Table 4.12 confirmed that there is a significant association between IDD rates (price) and overall customer satisfaction ($p = 0.000$) indicating IDD rates (price) is also a significant factor which influence the overall customer satisfaction with IDD prepaid call cards. Of the customers having average IDD Rate (price), 76.4% highly satisfied with IDD cards. Of the customer having above average IDD Rate (price), only 67.8% highly satisfied with the IDD rates (Price).

4.6.4 Association between Repurchase and Overall Customer Satisfaction with IDD Prepaid Call Card

The two way frequency table with raw percentages on repurchase and overall customer satisfaction with IDD prepaid call cards is shown in Table 4.13.

Table 4.13 Frequency table for repurchase and overall satisfaction with IDD prepaid call cards

Repurchase	Overall Customer Satisfaction with IDD prepaid card			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Below Average	5	18	13	36
	13.9%	50.0%	36.1%	100.0%
Average	4	14	29	47
	8.5%	29.8%	61.7%	100.0%
Above Average	6	30	103	139
	4.3%	21.6%	74.1%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_4 = 18.27$, $p = 0.001$)



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repurchase and overall

According to the results in Table 4.13 it can be confirmed that there is a significant association between repurchase and overall customer satisfaction ($p = 0.001$). Thus, it is concluded repurchase factor is a significant factor which influence on overall customer satisfaction with IDD prepaid call cards. It can be seen that the repurchase improves from below average to above average, the percentage highly satisfied customers for IDD prepaid call card increases from 36.1% to 74.1%.

4.6.5 Association between Recommendation and Overall Customer Satisfaction with IDD Prepaid Call Card

The two way frequency table with raw percentages on recommendation and overall customer satisfaction with IDD prepaid call cards is shown in Table 4.14.

Table 4.14 Frequency table for recommendation and overall satisfaction with IDD prepaid call cards

Recommendation	Overall Customer Satisfaction with IDD prepaid card			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
No	6	13	16	35
	17.1%	37.1%	45.7%	100.0%
Not Sure	3	14	34	51
	5.9%	27.5%	66.7%	100.0%
Yes	6	35	95	136
	4.4%	25.7%	69.9%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_4 = 32.042$, $p = 0.001$)



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Results in Table 4.15 indicate that there is a significant association between recommendation and customer satisfaction ($p = 0.001$). Of the customers having do recommendation to others 69.9% highly satisfied with IDD cards while of the customer having do not recommended to others only 45.7% highly satisfied the IDD prepaid cards. Furthermore, the customers having not sure to recommend to others only 45.7% highly satisfied the IDD prepaid cards.

4.6.6 Association between Customer Support and Overall Customer Satisfaction with IDD Prepaid Call Card

The two way frequency table with raw percentages on customer support and overall customer satisfaction with IDD prepaid call cards is shown in Table 4.15.

Table 4.15 Frequency table for customer support and overall satisfaction with IDD prepaid call cards

Customer Support	Overall Customer Satisfaction with IDD prepaid card			Total
	Below Average (Less Satisfied)	Average (Satisfied)	Above Average (Highly Satisfied)	
Low Level of Acceptable	5	14	18	37
	13.5%	37.8%	48.6%	100.0%
Acceptable	6	29	26	61
	9.8%	47.5%	42.6%	100.0%
High Level of Acceptable	4	19	101	124
	3.2%	15.3%	81.5%	100.0%
Total	15	62	145	222
	6.8%	27.9%	65.3%	100.0%

(Likelihood Ratio Chi-Square Statistic $\chi^2_4 = 23.304$, $p = 0.025$)



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As the p value of the Chi-square statistic is less than 5%, it can be concluded that there is a significant association between customer support and customer satisfaction ($p = 0.025$) indicating customer support is significantly important factor on overall customer satisfaction with IDD prepaid call cards. It can be seen that the customer support improves from the low level of acceptable to high level of acceptable, the percentage highly satisfied customers for IDD prepaid call card increases from 48.6% to 81.5%.

4.7 Identification of Common Factors among variables of Customer Satisfaction

In section 4.6, it was identified that the variables of customer satisfaction: perceived quality, perceived value, IDD rates (Price), repurchase, recommendation and customer support are the significant variables on customer satisfaction on IDD prepaid call

cards. Therefore in this section Factor Analysis is carried out to find common factors among the system of 6-D of the above variables.

4.7.1 Association among Customer Satisfaction Variables

The results of correlation matrices among variables (Perceived Quality, Perceived Value, IDD Rates (Price), Repurchase, Recommendation, and Customer Support) obtained from SPSS are shown in Tables 4.16.

Table 4.16 Correlation matrix among six variables for customer satisfaction

Variables for Customer Satisfaction	Perceived Quality	Perceived Value	IDD Rates(Price)	Repurchase	Recommendation	Customer Support
Perceived Quality	1	0.506 0.000	0.176 0.008	0.338 0.000	0.188 0.005	0.212 0.000
Perceived Value	0.506 0.000	1	0.361 0.000	0.346 0.000	0.233 0.000	0.235 0.000
IDD Rates(Price)	0.176 0.008	0.361 0.000	1	0.475 0.000	0.451 0.000	0.435 0.000
Repurchase	0.338 0.000	0.346 0.000	0.475 0.000	1	0.716 0.000	0.379 0.000
Recommendation	0.188 0.005	0.233 0.000	0.451 0.000	0.716 0.000	1	0.244 0.035
Customer Support	0.212 0.001	0.235 0.000	0.435 0.000	0.376 0.000	0.492 0.000	1

It can be seen that all pairs are significantly different from zero ($p < 0.05$), and also a positive correlation among all pairs of variables, and thus data sets can be used for factor analysis. In order to test whether the correlation matrix is significantly different from identity matrix, Bartlett's Test for Sphericity was carried out and the results are shown in Table 4.17.

Bartlett's Test Hypothesis:

$$H_0 = \text{Original correlation matrix is an identity matrix} = I_p$$

$$H_1 = \text{Original correlation matrix is not an identity matrix} \neq I_p$$

Table 4.17 Results of KMO measure of sampling adequacy and Bartlett's Test for Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.713
Bartlett's Test of Sphericity	Approx. Chi-Square	419.337
	Df	15
	Sig.	0.000

Since p-value of the statistic of Bartlett's Test of Sphericity is approximately 0, it can be concluded that correlation matrix is significantly different from an identity matrix. In order to perform the FA, the suitability of data for FA was assessed using The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. It has been recommended to use data for FA, if KMO statistic is greater than 0.6 (Hutcheson and Sofroniou, 1999). According to result in Table 4.17, the KMO statistic for the observed variables is 0.713 (> 0.6) and therefore the data acquired from the survey are appropriate method for FA.


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4.7.2 Factor Analysis **Electronic Theses & Dissertations**
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 As factors are extracted using the Principle Component Factoring method and the number of factors are decided based on K's criteria (eigen values > 1). The eigen analysis was carried out for the correlation matrix of the observed six variables.

Table 4.18 Results of eigen analysis for customer satisfaction variables.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.89	48.11	48.11	2.89	48.11	48.11
2	1.13	18.89	66.99	1.13	18.89	66.99
3	0.69	11.48	78.48			
4	0.62	10.32	88.80			
5	0.43	7.10	95.90			
6	0.25	4.10	100.00			

Of the six eigenvalues, only two eigenvalues are greater than one. Thus the FA was started with 2-factor model. Results in Table 4.18 indicate that Factor 1 and Factor 2 acquired 48.11% and 18.89% of the total variance of the original system, respectively, and thus both factors are able to acquire nearly 65% of the total variability of the original system. Therefore, it is evident that original system of six dimension system can be reduced to two dimension system. In order to reconfirm the number of factors scree plot is used (Figure 4.2).

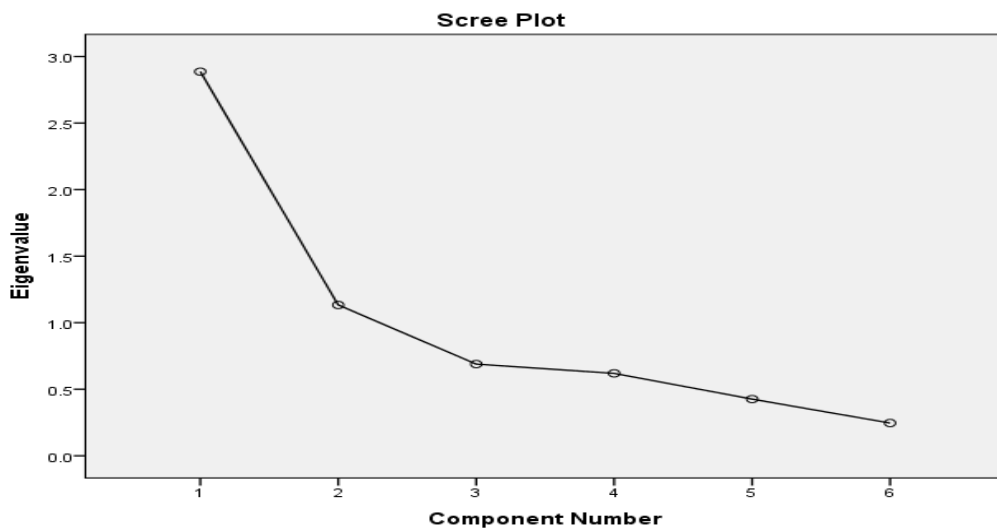


Figure 4.2 Scree plot for variables in customer satisfaction

As depicted in Figure 4.2, the curve begins to tail off after two factors. In other words the elbow shape in the scree plot occurred at the second component. Thus, it further justified to use 2-factor model to explain the original system. The unrotated factor loadings of the 2-factor model is shown in table 4.19

Table 4.19 Unrotated factor loading of the 2-factor model for the six observed customer satisfaction variables

Variable	Factor1	Factor2	Communalities
Perceived Quality	.529	.697	.766
Perceived Value	.608	.606	.738
IDD Rates(Price)	.713	-.179	.541
Repurchase	.817	-.153	.691
Recommendation	.783	-.388	.764
Customer Support	.668	-.271	.520

The communalities shown in Table 4.19 (column 4), indicate the proportion of each variable that can be explained by the selected two factors. It can be seen that none of communalities are close to one. In fact the two communalities of IDD Rates (price) and Customer Support are below 0.6. Thus, it was decided to consider a 3 - factor model even though the eigenvalue is 0.69 (Table 4.18). The 3-factor model is able to acquire a 78.5% of variability of the initial system. The communalities of the 3-factor model is shown in Table 4.20.

Table 4:20 Unrotated factor loading of the 3-factor model for customer satisfaction factors

Observed Manifest Variable	Factor 1	Factor 2	Factor 3	Communalities
Perceived Quality	.529	.697	-.170	.795
Perceived Value	.608	.606	.189	.773
IDD Rates(Price)	.713	-.179	.425	.721
Repurchase	.817	-.153	-.421	.869
Recommendation	.783	-.388	-.323	.868
Customer Support	.668	-.271	.403	.683

After extracting the three factor model, it can be seen that all communalities are close to one except for customer support. Thus, 3-factor model can be considered as the reduced best dimension system to explain the covariance of the initial 6-D system. However, unrotated factor loadings obtained for customer satisfaction variables, particularly in Factor 1 are very much similar. Thus, to make factors more meaningful, unrotated factors were rotated using three types of orthogonal transformation namely Varimax, Quartimax and Equamax. The corresponding factor loading resulting from each rotation is presented in Tables 4.21 to 4.23 respectively.

Table 4.21 Factor loadings of 3-factor model extracted from PCF method after Varimax rotation for customer satisfaction factors

Variable	Factor 1	Factor 2	Factor 3
Perceived Quality	.203	.868	-.026
Perceived Value	.047	.315	.820
IDD Rates(Price)	.242	.176	.795
Repurchase	.867	.262	.220
Recommendation	.864	.038	.346
Customer Support	.262	.780	.073

Table 4.22 Factor loadings of 3-factor model extracted from PCF method after Quartimax rotation for customer satisfaction factors

Variable	Factor 1	Factor 2	Factor 3
Perceived Quality	.203	-.016	.868
Perceived Value	.039	.322	.817
IDD Rates(Price)	.225	.801	.170
Repurchase	.862	.241	.261
Recommendation	.856	.365	.036
Customer Support	.244	.786	.068

Table 4.23 Factor loadings of 3-factor model extracted from PCF method after Equamax rotation for customer satisfaction factors

Variable	Factor 1	Factor 2	Factor 3
Perceived Quality	.202	.868	-.029
Perceived Value	.048	.312	.820
IDD Rates(Price)	.246	.177	.793
Repurchase	.868	.263	.215
Recommendation	.866	.039	.341
Customer Support	.265	.778	.075

Results in Table 4.21 – 4.23 clearly indicate that the loadings obtained after rotation make easier to identify observed variables into factors. Considering the critical value as 0.5 and not taking the same variable to be included for more than one factor, the selected variables for each factor under different rotation methods are summarized below in Table 4.24.

Table 4.24 Summary of variables to be included in the 3-factor model for customer satisfaction factors

Type of various rotations	Variables to be included into 3 – factor model		
	Factor 1	Factor 2	Factor 3
Varimax	Repurchase Recommendation	Perceived Quality Customer Support	Perceived Value IDD Rates(Price)
Quartimax	Repurchase Recommendation	IDD Rates(Price) Customer Support	Perceived Quality Perceived Value
Equimax	Repurchase Recommendation	Perceived Quality Customer Support	Perceived Value IDD Rates(Price)

Thus, it can be concluded that the identified variables for each factor are invariant of the type of Varimax and Equamax rotation methods. The variables selected for factor 2 and factor 3 under Quartimax are different than from other two rotations. In fact

Perceived Quality and Customer Support can form a better factor than IDD Rates (price). However, as Varimax is more popular (commonly used rotation method), factor loadings were chosen based on Varimax rotation. The three factors that emerged from this analysis can be labeled as; Customer Loyalty, Value for money and User Friendly. The results of factor score coefficients of the 3-factor model are shown in Table 4.25 Thus the three factors are considered as follows.

Factor 1 = f (Repurchase, Recommendation)

Factor 2 = f (Perceived Value, IDD Rates (Price))

Factor 3 = f (Perceived Quality, Customer Support)

Table 4.25 Factor score coefficients for customer satisfaction factors

Variable	Factor 1	Factor 2	Factor 3
Perceived Quality	.060	.632	-.264
Perceived Value	-.242	.163	.566
IDD Rates(Price)	-.196	-.031	.653
Repurchase	.642	.027	-.244
Recommendation	.614	-.164	-.081
Customer Support	.155	.646	-.110

4.7.3 Details of the Three Factors

According to the above results, it can be identified common three factors as follows.

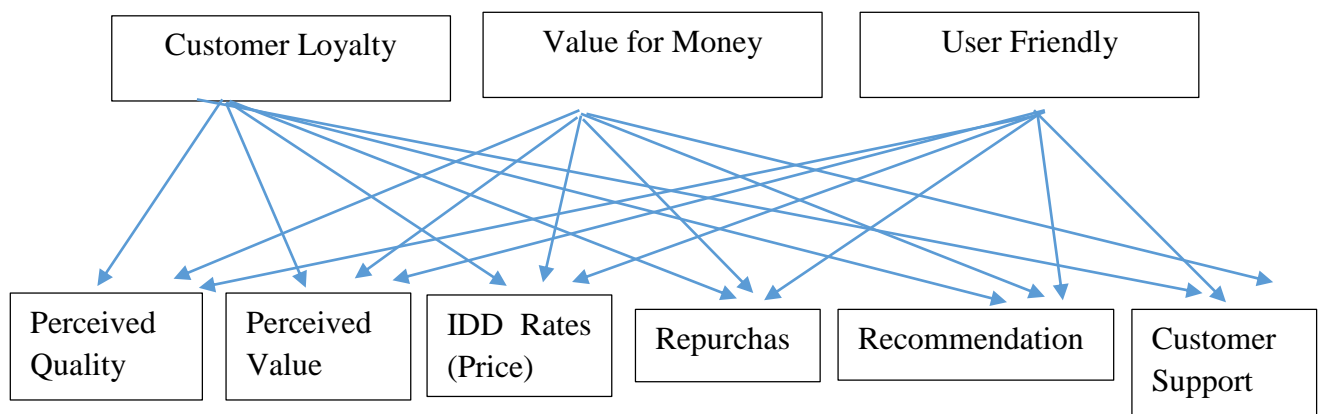


Figure 4.3 The identified 3-factor model

Factor 1: Customer Loyalty Customer loyalty is the result of consistently positive emotional experience, physical attribute-based satisfaction and perceived value of an experience, which includes the product or services. Factor 1 can be formed as a linear combination of two observed variables namely Q8 (Repurchase) and Q9 (Recommendation)

$$\text{Customer Loyalty} = 0.642 \text{ Repurchase} + 0.614 \text{ Recommendation}$$

Factor 2: Value for money According to the University of Cambridge (2010), described value for money in the following way: Value for money' (VFM) is a term used to assess whether or not an organization has obtained the maximum benefit from the goods and services it both acquires and provides, within the resources available to it. Some elements may be subjective, difficult to measure, intangible and misunderstood. It not only measures the cost of goods and services, but also takes account of the mix of quality, cost, and resource use, fitness for purpose, timeliness, and convenience to judge whether or not, together, they constitute good value. Thus, it can be concluded second factor can be formed as a linear combination of observed variables namely Q5 (Perceived Value) and Q6 (Price) and the coefficients are positive.



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$$\text{Value for money} = 0.632 \text{ Perceived Value} + 0.646 \text{ Price}$$

Factor 3: User Friendly User friendly means "easy to use". "User-friendly" seems an easy enough concept to comprehend, but like so many lively notions. This can be formed as a linear combination of Q7 (Perceived Quality) and Q10 (Customer Support) and all the coefficients are positive.

$$\text{User Friendly} = 0.566 \text{ Perceived Quality} + 0.653 \text{ Customer Support}$$

Therefore it can be concluded that the long term success of the IDD prepaid cards market in Sri Lanka will depend the following three factors Customer Loyalty, Value for Money and Use friendly, irrespective of the type of company sell IDD prepaid cards.

4.8 DISCUSSION

This study aims to investigate the customer satisfaction of the IDD prepaid call card market in Sri Lanka, and identify the factors influencing the customer satisfaction. Customer satisfaction is an experience-based assessment made by customers on how far their expectations about the overall functionality of the services obtained from the IDD prepaid call card providers have been met. With regards to customer satisfaction measurement, the results demonstrate that the customers are satisfied with the performance of the IDD prepaid call card industry. The interpretation of these results would be that the customers are truly satisfied with the service.

In the Factor analysis, a positive relationship between customer satisfaction variables (value, Price, Repurchase, Recommendation and Customer Support) and quality was found. The results of the Chi-Square Analyses show that there is an association between the Perceived Value and the Customer Satisfaction. A positive relationship with Quality, Price, Repurchase, Recommendation and Customer Support was found in the Factor Analysis. In the variable of “Price” it has indicated the highest correlation with the “Repurchasing”. According to the Factor Analysis, Price and Value named as “Value for Money”.



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There is a positive relationship between Customer Loyalty and Customer Satisfaction. Under factor analysis, repurchase and recommendation is as one of the main factors of “Customer Loyalty”. The findings from the Correlation Analysis confirmed researchers’ arguments that there is a relationship between customer recommendation and customer satisfaction as well as repurchasing and customer satisfaction (Zeithmal & Bitner, 2003; Anderson & Sullivan, 1993).

And also there is a significant association between the customer support and the overall customer satisfaction. According to the factor analysis, the main factors affecting the customer satisfaction have been revealed. Basically, the three most common factors have been identified. “Customer Loyalty” factor is consisted of “Repurchase’ and “Recommendation”. “Value for Money” factor is consisted of “Value” and “Rates”. Factor three was named as “User Friendly” which is consisted

of “Quality” and “Customer Support”. In the aggregate, these three named factors account for 78% of the total variance among the six variables. This high explained variance lead to believe in a reasonably coherent set of measures, and is a clear identification of the three factors which are involved in a given a set of measures which would give a managerial insight and possible strategies to improve customer satisfaction in IDD prepaid card market in Sri Lanka. Teas (1993), Oliver (1993) and Parasuraman (1994) considered Perceived service quality can be viewed at the level of both the transactional perspective and the global perspective.

At the transaction level, perceived transaction-specific quality will influence the customer satisfaction, and at the global level, the overall perception of a firm’s service quality is based on customers’ cumulative transaction-specific satisfaction with the service (Parasuraman, 1988). Gronroos (1984) stated that “in service environments, customer satisfaction will be built on a combination of two kinds of quality aspects; technical and functional”. Technical quality or quality of the output corresponds to the traditional quality of control in manufacturing. It is a matter of properly producing the core benefit of the service. Functional quality or process quality is the way the service is delivered. It is the process in which a customer is a participant and co-producer, and in which the relationship between service provider and customer plays an important role (Wiele et al., 2002). According to that Customer support and quality defined as one factor under factor analysis was confirmed. Zeithaml (1988) found out that customers who perceive that they receive value for money are more satisfied than the customers who do not perceive that they receive value for money. This argument was accepted through the Factor Analysis. The factors of “Value” and “Price” were combined as “Value for Money”. According to the Tam (2004), the more satisfied customer feels the service he or she receives, the more likely it is that he or she repurchases the service and recommends it to other people. However, in this study it was found that the best source of customer conviction is Television and radio.



CHAPTER 05

CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS

This research sets out to study the relevant factors affecting customer satisfaction with regard to IDD Prepaid call card market in Sri Lanka as it was found that such studies were not conducted recently in Sri Lanka. Thus, based on the statistical analysis carried out for the survey in this study, the following conclusions, recommendations and suggestions were made.

5.1 Conclusions

- Perceived Quality, Perceived value, Customer Loyalty and Customer Support are significantly influential variables on IDD prepaid call card market.
- All four variables Perceived Quality, Perceived value, Customer Loyalty and Customer Support have a positive effect and each variable increases the level of customer satisfaction.
- Each of the individual customer satisfaction variables was positively correlated with overall customer satisfaction with the IDD prepaid call card
- Quality, Value, Price, Repurchase, Recommendation and Customer Support can be explained from three main factors named as “Customer Loyalty”, “Value for Money” and “User Friendly.”
- Customer satisfaction with IDD prepaid call cards was not significantly influenced by demographic variables such as gender, age groups, marital status and employment status.
- Furthermore, customer satisfaction was not significantly influenced by the length of time used for IDD prepaid cards or frequency of using IDD prepaid cards.
- The main source of the customer conviction on IDD prepaid cards is the radio followed by the television. Though newspapers or magazines are not effective.
- Overall it is believed that this study has formed the foundation for further explorations of the field of IDD prepaid call card industry.

5.2 Recommendation

- The long term success of the IDD prepaid call card market in Sri Lanka will depend on the following three factors: Customer Loyalty, Value for Money and Use friendly irrespective of the type of company sell IDD prepaid cards.
- IDD Prepaid call card providers should not just rely on profit margins as a good indicator of business performance.
- Service providers should develop strategies that better capture customers' perceptions of their service offerings and these strategies can complement the internal perceptions of service offering.
- Customer satisfaction strategy helps companies to compare their performance against customer standards, compare customer standards against internal process and to identify opportunities for improvements.

5.3 Suggestions

As with the quantitative ratings, these comments can also be used as specific feedback in performance reviews. Furthermore, as described in the above, the optimal use of these data would be to initiate an ongoing quality assessment. The major suggestion is that the companies need to conduct frequent surveys on about their services from their customers and also to carry out a longitudinal study to monitor the evaluation of customer behavior over a period of time.

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QUESTIONNAIRE USED FOR THE STUDY

PART A: BIOGRAPHICAL DATA

Mark “√” for the appropriate one.

A1. What is your Gender?

Female	
Male	

A2. Which category describe your age?

18-24	
25-34	
35-44	
45-54	
55-64	
65 or above	



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A3. State your marital status

Married	
Unmarried	

A4. What is your employment status?

Government sector	
Private sector	
Self employed	
Retired	
Unemployed	

A5. What is the brand of the IDD prepaid card which you have used?


Sri Lanka Telecom Passport card	
Dialog Budget IDD card	
SLT Mobitel Max Talk	
Hutch IDD cards	
Lanka Bell Viza IDD card	
Other	

A6. What is the country most probably you have called?

.....

.....

A7. Majority of your IDD calls to?

	Contact Relatives	University of Moratuwa, Sri Lanka. Electronic Theses & Dissertations www.lib.mrt.ac.lk
	Official or Business Purpose	

PART B: CUSTOMER SATISFACTION FACTORS

B1. How long have you used this IDD prepaid card?

First Time	
Less than one month	
Less than one month but less than six month	
More than six month but less than one year	
More than one year	

B2. How often do you use this IDD prepaid card?

Once per week or more	
Two to three times per month	
Once per month	
Two to three times per year	
Not applicable	

B3. How did you learn about this IDD Prepaid card?

Television	
Radio	
Newspaper or Magazine	
Friend or Relative	
Other	

B4. What is the most important characteristic when purchasing this type of
IDD prepaid card?

Quality	
Value	
Easy to use	
Brand Name	
Value added service	

Indicate the extent to which each of the following statements you agree in your experience using the five point scale by marking a tick mark [√]

B5	Quality of the IDD Calls	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
Q1	The level of call quality provided to the customers by service provider.					
Q2	The type of the phone is a critical concern for you, to make a high quality IDD call.					
Q3	Level of availability of the service is a critical for you to use the service provider.					
Q4	The connectivity of the IDD call					
Q5	The “clarity” of a connected call when using IDD calls					



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B6	Value of the IDD Service	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
Q1	A proper knowledge is necessary to make an IDD call properly.					
Q2	Availability to purchase in anywhere					
Q3	Strength of the signal for your area					
Q4	Introducing attraction tariffs to IDD users					
Q5	Attraction promotions or discounts for regular IDD callers are providing					

B7	Rates of the IDD calls	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
Q1	Initial amount of IDD call cards are reasonable					
Q2	IDD call cards are available in affordable denominations					
Q3	IDD Call rates for per second are reasonable					
Q4	IDD Call rates for per minute are reasonable.					
Q5	Validity period of the card is reasonable					
Q6	Proper charging for calls without false answering is critical concern					

B8	Repurchase and Recommendation For IDD call cards	Definitely	Probably	Unsure	Probably Not	Definitely not
Q1	I like to purchase this IDD card again					
Q2	I would like to recommend this card to others					
Q3	It is important to consider others' experience (Friends, relatives, co-workers and etc.)					
Q4	Enough publicity is available to get attract customers					
Q5	High user-friendliness is available					

B9	Customer service/support	Excellent	Generally good	Acceptable	Not very Satisfactory	Not	Unacceptabl
Q1	The level of service provider reliability to make complaint related to IDD issues						
Q2	IDD prepaid call card's overall willingness on maintaining global standers in every aspects of IDD service						
Q3	Availability of customer support representatives						
Q4	They are well trained to solve any matter of in any case						
Q5	Kind and patients staff support is available						
Q6	Websites are updated to get information in anytime.						

B10. Overall how satisfied were you with this IDD prepaid card?

Very satisfied	
Somewhat satisfied	
Neither satisfied nor dissatisfied	
Somewhat dissatisfied	
Very dissatisfied	

11. Any other comments

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Thank You

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R.M.K.G.U Ratnhayaka
Student
(MSc. (Business Statistics))