A STUDY ON CRM AND ITS EFFECTS ON CONSUMER SWITCHING PATTERN IN CELLULAR TELECOM SERVICES IN KERALA WITH SPECIAL REFERENCE TO BSNL

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In
MANAGEMENT

By
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DECLARATION

I, Unnikrishnan.B., do hereby declare that the thesis entitled **"A study on CRM and its effects on consumer switching pattern in cellular telecom services in Kerala with special reference to BSNL "** is an independent work carried out by me and it has not been submitted anywhere else for any other degree, diploma or title.

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CERTIFICATE

This is to certify that the work embodied in the thesis entitled **"A study on CRM and its effects on consumer switching pattern in cellular telecom services in Kerala with special reference to BSNL"** has been carried out by Mr. Unnikrishnan.B., Research Scholar, Institute of Management in Kerala, Kerala University, Thiruvananthapuram under my supervision and guidance and that no part thereof has been presented for the award of any other degree, diploma, associateship, fellowship, title or recognition to any candidate of this or any other university.

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ABSTRACT

Driven by various policy initiatives, India's cellular mobile service sector has shown phenomenal growth over a decade and is nearing saturation. India's mobile service sector is hyper competitive with the presence of 12 operators and has one of the lowest call tariffs in the world. India's mobile service market is continued to be dominated by prepaid subscribers who are price sensitive, low spend and enjoying the freedom of no commitments which presents a greater challenge to the service providers. With the declining average revenue per user (ARPU) and increase in operational expenses, license fees etc., service providers find it hard to be profitable. The introduction of MNP aggravated the situation with over 20% customers opted for switching their service providers till March 2016.

Consumer switching is an important issue in a highly competitive telecom industry, as it lowers future revenue streams and reduces profitability of mobile operators. So protecting existing customer base and enhancing the customer loyalty appear to be crucial for competitive advantage in this hyper competitive environment. It is being well accepted that long-term customers are more profitable than short-term customers. Customer Relationship Management (CRM) has been recognised as an important tool for building long term relationship with the customers. Telecom companies have realized the importance of CRM and its potential to help them to acquire new customers, retain existing ones, and maximize their lifetime value. But even after implementing various CRM initiatives, mobile service providers face the problem of customer churn from its networks. To arrest the customer churn, it is necessary to find the various factors causing customers to switch from one cellular service provider to another. Further, it is important to find out impact of CRM on these factors so that companies can focus on these factors while implementing various CRM initiatives. There are not much studies conducted to analyse the factors causing switching behaviour in cellular mobile services. Further no studies have focused on the impact of CRM on these switching determinants.

This study analyses various factors causing switching intention and examines the impact of CRM on these factors. The study considered CRM as the central construct and studied its influence on consumer switching determinants. Based on

extensive review of literature, a model was proposed with CRM and other major switching determinants so as to explain the consumer switching behaviour. The model was tested with the primary data collected from individual cellular mobile customers of Kerala by conducting structural equation modeling using AMOS software. Stratified multistage random sampling technique was adopted for the primary data collection of this study. The population is divided into three strata namely urban, sub-urban and rural areas and a sample of 270 from each stratum is selected randomly there by collecting 810 samples for the study. The sampled data were screened for missing values and outliers to ensure the usability, reliability and validity for testing the causal theory which results in 788 usable data. IBM SPSS 20/AMOS 20 softwares were used for data analysis for this study.

The study finds that CRM plays an important role in regulating switching behaviour by directly influencing the key determinants of switching such as perceived service quality, perceived value, customer satisfaction and customer loyalty thereby indirectly influencing consumer switching intention in cellular mobile services. The study identifies customer knowledge management, loyalty programs, customization, efficient customer support service, two way communication and interaction management as the key components that determine the effectiveness of CRM measures. The relationship between demographic profile of the respondents and consumer switching intention is explored in the study. The study finds that gender, age, education, locality, annual income, type connection and period of association with a service provider have significant relationship with consumer switching intention. Word-of-mouth is found to influence consumer decision to stay with or switch the service provider in this study. A comparative analysis between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel in terms of the switching determinants has been made in the study. The analysis reveals that BSNL has higher levels of CRM, perceived service quality, perceived value, customer satisfaction, customer loyalty, corporate image, trust & switching cost and lower levels of alternative attractiveness & switching intention compared to other major service providers. This explains the higher staying intention and high net port-in status of BSNL compared to others in cellular mobile services, Kerala. The study recommends that service providers shall make intentional efforts to enhance the effectiveness of CRM by focusing on its key components so as to arrest customer churn.

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2G	-	Second Generation
3G	-	Third Generation
3GPP	-	Third Generation Partnership Project
4G	-	Fourth Generation
AA	-	Alternative Attractiveness
ACSI	-	American Customer Satisfaction Index
ADSL	-	Asymmetric Digital Subscriber Line
AGFI	-	Adjusted Goodness of Fit Index
AMOS	-	Analysis of Moment Structures
ARPU	-	Average Revenue Per User
ASV	-	Average Shared Variance
AVE	-	Average variance extracted
B2B	-	Business to Business
BSNL	-	Bharat Sanchar Nigam Limited
CDMA	-	Code Division Multiple Access
CFA	-	Confirmatory Factor Analysis
CFI	-	Comparative Fit Index
CI	-	Corporate Image
CL	-	Customer Loyalty
C.R	-	Critical Ratio
CR	-	Composite reliability
CRM	-	Customer Relationship Management

CS	-	Customer Satisfaction
df	-	Degrees of Freedom
DoT	-	Department of Telecommunication
DSL	-	Digital Subscriber Line
ECSI	-	European Customer Satisfaction Index
EDGE	-	Enhanced Data rate for GSM Evolution
ES	-	Expected Service
EVDO	-	Evolution Data Optimised
GFI	-	Goodness of Fit Index
GSM	-	Global System for Mobile communication
HDTV	-	High Definition Television
HSDPA	-	High Speed Downlink Packet Access
HSUPA	-	High Speed Uplink Packet Access
ILD	-	International Long Distance
IMT	-	International Mobile Telecommunications
IP	-	Internet Protocol
IPTV	-	Internet Protocol television
ISDN	-	Integrated Services Digital Network
ISP	-	Internet Service Provider
ITU	-	International Telecommunication Union
kbps	-	kilo bits per second
LSA	-	Licensed Service Area
LTE	-	Long Term Evolution
Mbps	-	Mega bits per second
ML	-	Maximum Likelihood

MNP	-	Mobile Number Portability
MSV	-	Maximum Shared Variance
MTNL	-	Mahanagar Telephone Nigam Limited
NLD	-	National Long Distance
NMT	-	Nordic Mobile Telephone
NNFI	-	Non-Normed Fit Index
NTP	-	National Telecom Policy
PDC	-	Personal Digital Cellular
PS	-	Perceived Service
PSQ	-	Perceived Service Quality
PV	-	Perceived Value
RMSEA	-	Root Mean Square Error of Approximation
RTT	-	Radio Transmission Technology
SC	-	Switching Cost
SEM	-	Structural Equation Modeling
SI	-	Switching Intention
SMS	-	Short Message Service
SPSS	-	Statistical Package for the Social Sciences
SQ	-	Service Quality
TACS	-	Total Access Communication System
TD-CDMA	-	Time-Division-Code Division Multiple Access
TD-SCDMA	-	Time-Division-Synchronous Code Division Multiple Access
TDSAT	-	Telecommunications Dispute Settlement and Appellate Tribunal
TLI	-	Tucker Lewis Index
TR	-	Trust

TRAI	-	Telecom Regulatory Authority of India
UASL	-	Unified Access Service License
UMTS	-	Universal Mobile Telecommunications System
VoIP	-	Voice Over Internet Protocol
VSAT	-	Very Small Aperture Terminal
VSNL	-	Videsh Sanchar Nigam Limited
W-CDMA	-	Wideband Code Division Multiple Access
WiMAX	-	Worldwide Interoperability for Microwave Access
WLL	-	Wireless Local Loop
WOM	-	Word-Of-Mouth

CHAPTER-I

INTRODUCTION

1.1 Telecom Evolution in India

The telecom services have been recognized the world-over as an important tool for socio-economic development for a nation. It is one of the prime support services needed for rapid growth and modernization of various sectors of the economy. Driven by various policy initiatives, the Indian telecom sector witnessed a complete transformation over the last two decades. It has achieved phenomenal growth during this period and it is poised grow further in future too.

Telecommunications services in India were governed by the Indian Telegraph Act, 1885. The Ministry of Posts and Telegraphs controlled the telecommunication services until 1985. Initially telecommunications utilities were treated as a luxury and the government gave low priority for telecom. The initial phase of telecom reforms started in August 1984, when the Centre for Development of Telematics (C-DOT) was set up as an autonomous research and development organisation to develop state-of-the-art telecommunication technology to meet the needs of the Indian telecommunication network. Indian telecom sector was under state monopoly in the pre-liberalization era. The entire telecom services operation in the country was carried out by the Department of Telecommunication (DoT), a public sector entity established in 1985 under the Ministry of Communications (MoC). DoT was the key body for policy issues and regulation, apart from being the basic service provider across the country.

To ease out DoT's operations in basic service provisioning, two new public sector corporations namely MTNL (Mahanagar Telephone Nigam Limited) and VSNL (Videsh Sanchar Nigam Limited) were set up under it in 1986. While MTNL primarily looked after the operation of basic telephony services in Delhi and Mumbai, VSNL provided international telecom services in India. DoT looked after basic telephony operations in regions other than Delhi and Mumbai.

The government paved the path for the entry of the private sector in telephone services by adopting the National Telecom Policy in 1994. In 1994, the license for providing cellular mobile telephone services was granted by the government of India for the metropolitan cities of Delhi, Mumbai, Kolkata and Chennai with a maximum of two licenses per metro. In 1995, the first mobile services were launched in Calcutta.

The entry of private players necessitated independent regulation in the sector. The Telecom Regulatory Authority of India (TRAI) was, thus, established with effect from 20th February 1997 by an Act of Parliament, called the Telecom Regulatory Authority of India Act, 1997. It was formed to provide a fair and transparent policy environment which promotes a level playing field and facilitates fair competition. TRAI is responsible for various regulations in telecom services such as fixation/revision of tariffs, interconnection, quality of service etc.

To adjudicate the disputes in telecom sector, Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT) was formed by an amendment in TRAI Act, 1997 on 24th January 2000. TDSAT was formed with a view to protect the interests of service providers and consumers of the telecom sector and to promote and ensure orderly growth of the telecom sector.

The second phase of reforms in telecom started from 1st April 1999 with the New Telecom Policy, 1999 (NTP 99). It allowed private operators providing cellular and basic services to migrate from a fixed licence fee regime to a revenue sharing regime. NTP 99 permitted the Cellular Mobile Service Providers (CMSPs) to provide, in its service area of operation, all types of mobile services. The NTP 99 also opens up National Long Distance (NLD) and International Long Distance (ILD) services to private operators.

In pursuance of objectives of the NTP 99, the Government bifurcated the Department of Telecommunications into two departments viz. the Department of Telecommunications for policy and licensing functions and Department of Telecom Services for all service providing functions on 15th October 1999. The Department of Telecom Services was corporatized and renamed as Bharat Sanchar Nigam Limited (BSNL) on 1st October 2000.

In November 2003, Unified Access Service Licensing (UASL) regime was introduced by DoT on the recommendation of the TRAI. The UASL permitted an access service provider to offer both fixed and/or mobile services under the same license, using any technology. The country was divided into 23 service areas comprising of 19 telecom circles and 4 metro circles for the purpose of implementing unified access services (UAS).

National Telecom Policy, 2012 (NTP 2012) was introduced with the vision of providing secure, reliable, affordable and high quality converged telecommunication services anytime, anywhere for an accelerated inclusive socio-economic development of the nation.NTP 2012 introduced Unified Licensing Regime which enables service providers to have a seamless delivery of converged services (voice, data, video, internet telephony, value added services and broadcasting services). NTP 2012 propose to de-link spectrum from licences, give industry liberal mergers and acquisition norms, remove roaming charges and offer national number portability.

1.2 Evolution of mobile communication networks

The first commercial mobile telephone system was launched by Bell Labs in St. Louis, USA, in 1946. But this system demands the need for high power transmitters and suffers from capacity and coverage constraints. To overcome these constraints, Bell Labs introduced the principle of cellular concept based on frequency reuse technique. Cellular systems use low power transmitters and allows for reuse of frequencies thereby enhancing the capacity. Based on cellular concepts, the first generation (1G) mobile telecommunication systems such as AMPS (Advanced Mobile Phone System), TACS (Total Access Communication System) and NMT (Nordic Mobile Telephone) evolved in U.S, Europe and Nordic countries respectively during 1980s. These analog telecommunication standards were replaced by second generation (2G) digital cellular systems in 1990s. There are four main standards for 2G systems namely Global System for Mobile communications (GSM) evolved in Europe, Code Division Multiple Access (CDMA) in U.S, Digital Advanced Mobile Phone System (D-AMPS) in North America and Personal Digital Cellular (PDC) in Japan. The 2G systems have the advantage of better voice clarity, improved privacy, enhanced capacity, lower power consumption and allows for data & short message

services. However, 2G systems support very low data rates ranging from 9.6 kbps to 14.4 kbps. To enhance the data transmission rates, improved versions of GSM such as GPRS (General Packet Radio Service) supporting speed upto 171.2kbps and EDGE (Enhanced Data rate for GSM Evolution) supporting speed up to 473.6 kbps were introduced. Improvement in CDMA technology leads to the evolution of CDMA 2000 1x RTT Rel.0 (Radio Transmission Technology Release 0) & CDMA 2000 1x RTT Rel.A which support data rate upto 153 kbps and 307.2 kbps respectively. These systems were commonly referred to as 2.5G and 2.75G systems.

Third generation (3G) mobile communication standards evolved out of the research and development by ITU (International Telecommunication Union) with the goal of providing anywhere, anytime communication across networks, across technologies using a single inexpensive mobile terminal. ITU developed 3G specifications and standards for mobile devices, services and networks under the name IMT-2000. In addition to voice services, IMT-2000 was designed to provide universal access with high data rates of the order of mega bits per second (Mbps) for demanding applications such as broadband internet access, interactive gaming, video calls, video conferencing, video on demand, location based services etc. Based on this, the 3rd Generation Partnership Project (3GPP), a consortium of seven telecommunications standard development organizations setup for developing 3G standards for GSM based systems, developed UMTS (Universal Mobile Telecommunications Systems) based on W-CDMA (Wideband Code Division Multiple Access) technology. On the other hand, the 3rd Generation Partnership Project Two (3GPP2), a consortium of five telecommunications standard development organizations setup for developing 3G standards for CDMA based systems, developed CDMA 2000 systems. A continual upgradation of 3G systems resulted in the development of 3.5G and 3.75G systems. The Fourth generation (4G) systems based on all-IP based network were evolved in order to have a common platform for all the technologies. 4G systems provide support for low to high mobility applications, ultra wireless broadband with a wide range of data rates, mobile web access, IP telephony, gaming services, high-definition mobile TV, video conferencing, 3D television, and cloud computing. Evolution of various generations of mobile technologies from 1G to 4G is listed in table 1.1.

Table 1.1

Generations of mobile communication technologies

Generation	Technologies	Data rate	Evolution period	Features	Remarks
1G	AMPS, TACS, NMT	--	1970-1980	voice only	Analog cellular technology ;Poor voice quality, no handover, poor battery life, large phone size, no security, limited capacity
2G	GSM/CDMA (IS-95) / D-AMPS /PDC	9.6-14.4 kbps	1990-1995	Handover; better voice quality, higher capacity; text messaging, circuit switched data;	Digital narrowband
2.5G	GPRS/ CDMA 20001x RTT Rel0	115-171.2 kbps	1999-2000	Packet switched data; multimedia messaging; web browsing	3GPP-Release97
2.75G	EDGE/ CDMA 20001x RTT RelA	384-473.6 kbps	2000	Streaming video	Pre-3G technology/ 3GPP- Release 98
3G	WCDMA (UMTS)/ TD-CDMA/ TD-CDMA/ CDMA 2000 1x EVDO	2-3.1 Mbps	2002-2003	Universal access; high speed internet; broadband; video calls, gaming, video conferencing; video on demand	Digital wideband; 3GPP- Release 99
3.5G	HSDPA/ HSUPA	7.2 -14 Mbps	2005 onwards	Improved data rates	3GPP- Release 5/ Release 6
3.75G	Evolved HSDPA (HSPA+)	Upto 42.2Mbps	2007 onwards	Higher data rate, battery life improvements.	3GPP- Release 7
3.9G	LTE/ Mobile WiMAX	Upto 300 Mbps	2007 onwards	support multi cast/broadcast streams; seamless handover	3GPP- Release 8 & Release 9; Marketed as 4G
4G	LTE Advanced/ WiMAX Advanced	1 Gbps	2009 onwards	Ultra wireless broadband, real time streaming, more security, high capacity; high quality of service, high speed handover, support for IPV6, HDTV, HD video streaming, seamless roaming.	All IP based Expensive 3GPP- Release 10 True 4G

1.3 Growth of Cellular Mobile Service in India

Indian cellular mobile service sector has shown phenomenal growth over a decade. The number of subscribers went up from 12.7mn in March 2002 to 1033.63mn in March 2016 which helped to boost the wireless teledensity from mere 0.6% to 81.4% (Figure1.1). Today, India is the second largest mobile network in the world.

Figure 1.1
Cellular mobile growth in India over years
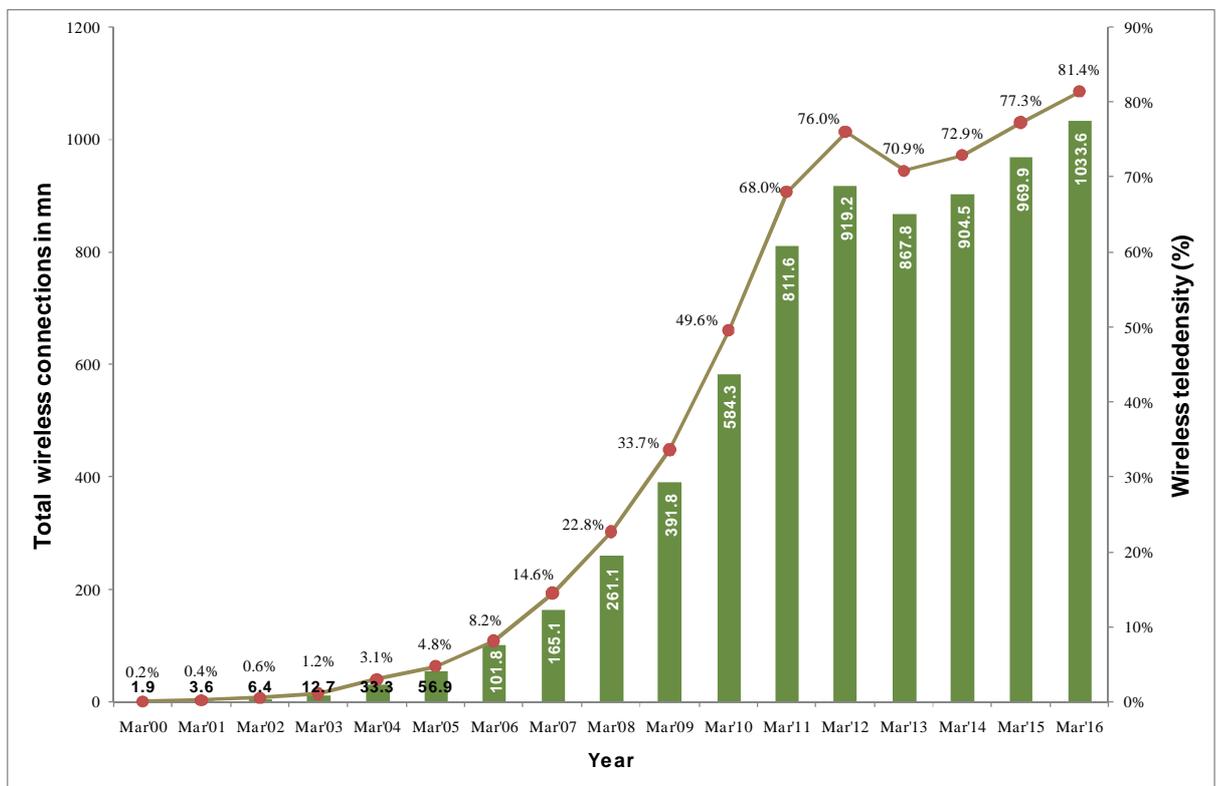
Though mobile service sector shown tremendous growth over a decade, landline service has shown declining trend during this period (Figure 1.2).

Figure 1.2

Trend in All India Landline connections
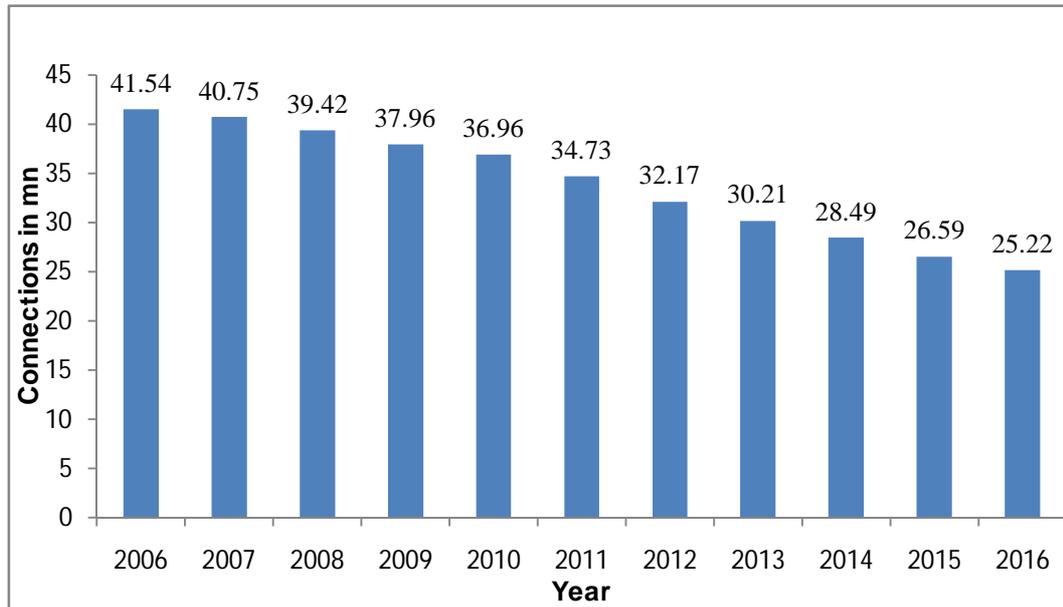
1.4 Growth in teledensity

Telephone density or teledensity is the number of telephone connections (fixed or mobile) for every hundred individuals living within an area. It varies widely across the nations and also between rural and urban areas within a country. It is a measure of telecom penetration within a region and is considered as one of the indicators of development of a nation. The overall teledensity has shown remarkable growth from 4.29% in 2002 to 83.36% in March 2016, which is contributed mainly by cellular mobile service sector especially from the urban area. The trend in all-India teledensity for rural/urban/total over years is given in figure 1.3 and a comparison of landline and mobile in terms of the contribution to overall teledensity is given in figure 1.4.

Figure 1.3

Trend in all India tele-density (Rural/Urban/Total)
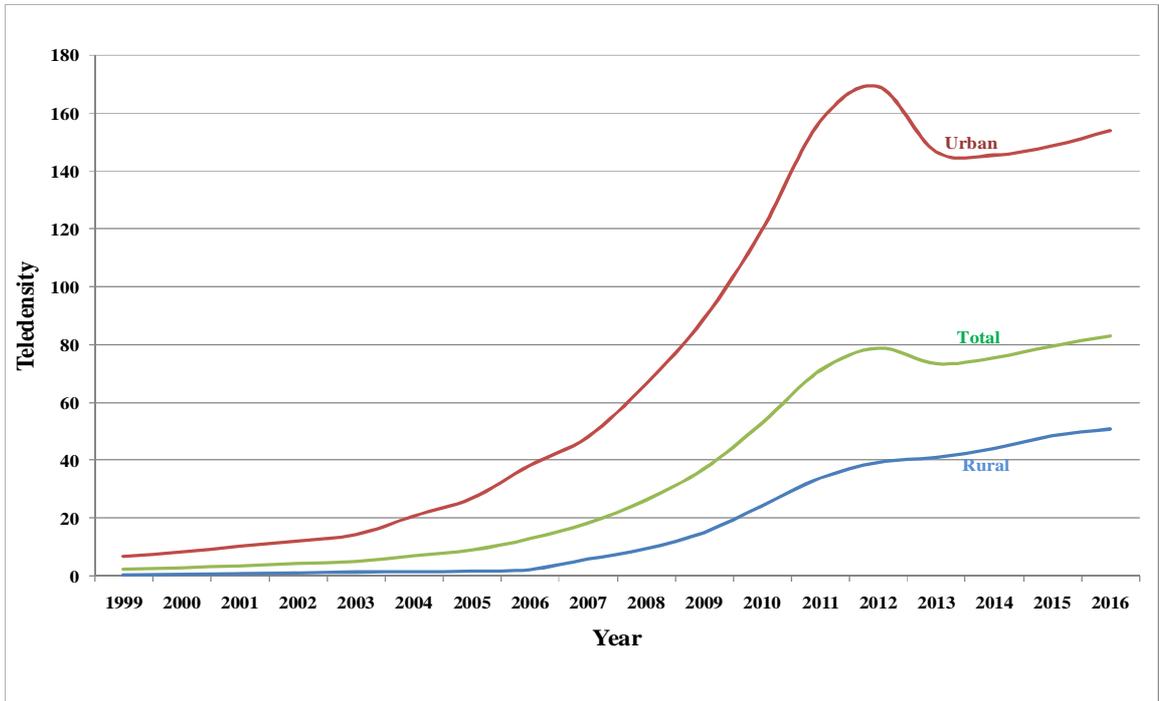
Figure 1.4

Contribution to teledensity: comparison of landline and mobile
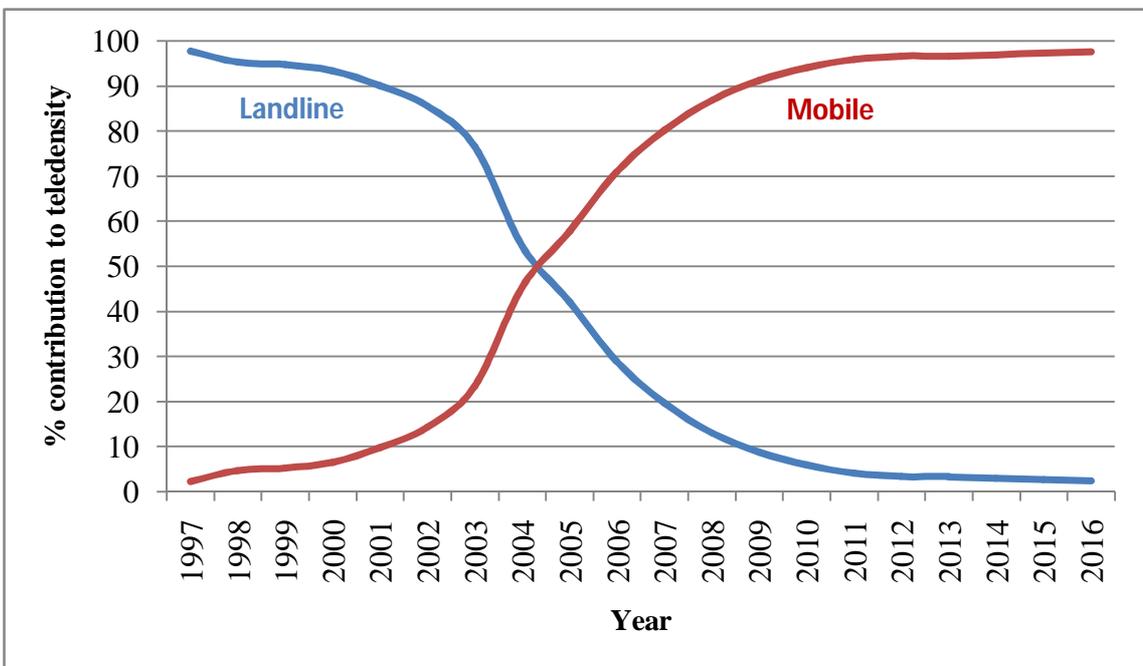
From the figure 1.4, it can be seen that till the year 2002, landline was the major contributor to the overall teledensity, but after 2005, cellular mobile became the major contributor to the overall teledensity and continues to do so.

1.5 Service providers in Indian mobile telecommunication industry

There are 12 cellular mobile service providers in India. A brief detail about the service providers is given below.

1.5.1 **Bharti Airtel Limited,** Headquartered in New Delhi, India is the largest wireless service provider in the nation with operations in 20 countries across Asia and Africa. It is world's 4th largest mobile service provider. It operates in all the 22 telecom circles in India. The company provides wireless services using GSM, 3G and 4G LTE technologies. It also provides fixed line voice, DSL broadband, IPTV (Internet Protocol Television), enterprise services including national & international long distance services to carriers and DTH (Direct To Home) TV services. It offers telecom services under "airtel" brand. It is the first service provider to launch 4G service in India.

1.5.2 **Vodafone India**, formerly Vodafone Essar, is a 100% subsidiary of Vodafone Group, the world's 2nd largest mobile telecommunications company. It is the second largest mobile network operator in India. It operates in all the 22 telecom circles in India. It offers GSM, 3G services and has got 4G license to operate in 5 Telecom circles. Vodafone group entered Indian mobile service market by acquiring the majority stake in Hutchinson Essar in May 2007. Hutchinson Essar had started mobile service in Mumbai during 1994.

1.5.3 **Idea Cellular,** commonly referred to as Idea, is an Aditya Birla Group Company. It was founded in 1995. It is India's 3rd largest wireless service provider. It is a pan-India integrated GSM operator (operates in all the 22 telecom circles) and has its own NLD and ILD operations, and ISP. It offers mobile service using GSM & 3G technologies. It has got 4G license to operate in 8 Telecom circles. It is the leading wireless service provider in Kerala.

1.5.4 **Reliance Communications Ltd**, commonly called RCOM is the flagship company of the Anil Dhirubhai Ambani Group (ADAG) of companies. It

was established in 2004. It is India's 4th largest wireless service provider. It offers wireless service in GSM, CDMA & 3G technologies and has got pan India 4G license. In addition to mobile services, it offers fixed line telephony, wireline and wireless broadband, national and international long distance services, data services, enterprise services and DTH (Direct To Home) TV services.

1.5.5 **Aircel** is a pan India mobile service provider headquartered in Chennai. It is the 5th largest mobile service provider in India. It was formed in 1994. It commenced operations in 1999. In 2006, Aircel was acquired by Malaysia's biggest integrated communications service provider Maxis (Maxis Communication Berhard) and is a joint venture with Sindya Securities & Investments Pvt Ltd. It offers mobile service using GSM, 3G and 4G LTE technologies. Aircel has got 3G license in 13 circles and 4G license in 8 circles. It is the leading mobile operator in Tamilnadu.

1.5.6 **BSNL (Bharat Sanchar Nigam Limited)** is an Indian state-owned telecommunications company headquartered in New Delhi, India. It was incorporated on 15th September 2000. It is India's oldest and largest communication service provider (CSP). It operates in all the telecom circles except the metros Mumbai and Delhi. It offers fixed line, WLL (wireless in local loop), mobile using GSM, CDMA & 3G technologies, ISDN, Internet access services through dial-up & ADSL Broadband, Leased Line services, MPLS-VPN (Multi Protocol Label Switching-Virtual Private Network), Carrier service, VSAT, VoIP, FTTH (Fiber To The Home) & IN (Intelligent Network) services. It is the largest wireline and broadband service provider in India.

1.5.7 **Tata Teleservices Limited (TTSL)** is a telecom company headquartered in Mumbai. It is a subsidiary of the Tata Group. It was founded in 1996. It offers Fixed and mobile telephony services, data services, value added services, Media and entertainment (DTH TV) services and infrastructure services. TTSL offers wireless service on CDMA platform under the brand name 'Tata Indicom' and on GSM platform under the brand name 'Tata Docomo' – which is a joint venture with Japanese telecom major NTT DOCOMO (which holds 26% equity stake). It has got license to operate in all the 22 telecom circles. It is the first operator to offer per second tariff plan as

a part of 'Pay for What You Use' pricing paradigm. It is the first private operator to offer 3G service in India.

1.5.8 Telewings Communications Services Private Limited, a subsidiary of Telenor Group, a telecommunications company headquartered in Oslo, Norway. It provides wireless telecommunication services in India using GSM technology under the brand name 'Uninor'. It operates in 6 telecom circles.

1.5.9 Sistema Shyam TeleServices Ltd. (SSTL),head quartered in Gurgaon, Haryana, is a venture, involving equity participation by Sistema JSFC (Joint Stock Financial Corporation of Russia), the Russian Federation and the Shyam Group of India. It provides wireless telecom service in India using CDMA technology under MTS (Mobile Tele Systems) brand name. It operates in 9 circles.

1.5.10 Videocon Telecom Limited, headquartered at Gurgaon, Haryana is a subsidiary of Videocon Industries. It offers GSM mobile services under the brand name 'Videocon'. It has got 2G license to operate in 6 telecom circles & 4G license in 8 telecom circles.

1.5.11 MTNL (Mahanagar Telecom Nigam Limited) is a state owned telecom service provider in the metro cities of Mumbai and New Delhi. It was established in 1986. It offers fixed line, WLL (wireless in local loop), mobile using GSM, CDMA & 3G technologies, dial-up-internet, ISDN, Leased Line services, broadband, FTTH (Fiber To The Home) and IPTV services. It is the leading fixed-line telecommunication service provider in Mumbai & Delhi. It is the pioneer in implementing latest telecom technologies in the country like ADSL2+ & VDSL2 (Very high bit rate DSL2) in broadband, IPTV on MPEG4 technology, VoIP and 3G Mobile service. MTNL operates in Nepal through its Joint Venture United Telecom Limited (UTL) and in Mauritius through its 100% subsidiary Mahanagar Telephone Mauritius Limited (MTML). It is the first operator to offer 3G service in India.

1.5.12 Quadrant Televentures Limited, formerly known as HFCL Infotel Ltd, is a telecommunications company based on Punjab. It offers fixed-line telephony, fixed wireless phone, mobile telephony and broadband services under the brand name 'Connect'. It operates in Punjab telecom circle alone.

1.6 All India wireless subscriber base and market share

Market share, the portion of a market controlled by a particular company or product, is an important factor in affecting customers' preference in mobile service sector (Aydin et.al, 2005). All-India operator wise subscriber base along with the market share as on 31st March 2016 is given in table 1.2 and is graphically represented in figures 1.5 & 1.6. Bharti Airtel holds the No.1 position with a market share of 24.31%, whereas the state-owned BSNL is at the No.6th position with a market share of 8.35%.The top three firms hold over 60% of the wireless market share.

Table 1.2
All India wireless subscriber base and market share as on 31st March 2016

Sl.No.	Service provider	Number of subscribers (in lakhs)	Market share (%)
1	Bharti Airtel	2512.37	24.31
2	Vodafone India	1979.47	19.15
3	Idea	1750.74	16.94
4	Reliance	1024.08	9.91
5	Aircel	870.87	8.43
6	BSNL	863.46	8.35
7	Tata	600.98	5.81
8	Telenor	524.55	5.07
9	Sistema	76.91	0.74
10	Videocon	65.64	0.64
11	MTNL	35.61	0.34
12	Quadrant	31.63	0.31
	Total	10336.31	100.00

Source: TRAI data

Figure 1.5
Service provider-wise wireless customer base in India as on 31st March 2016
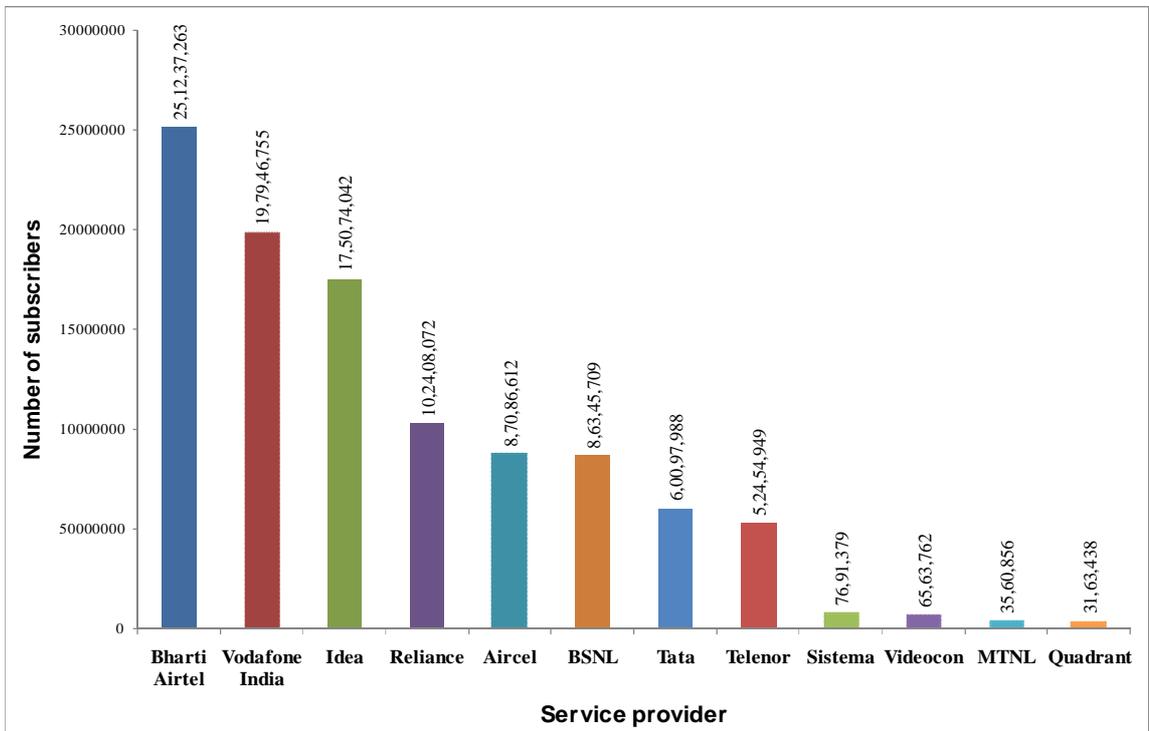
Source: TRAI data

Figure 1.6
All India service provider-wise wireless market share as on 31st March 2016
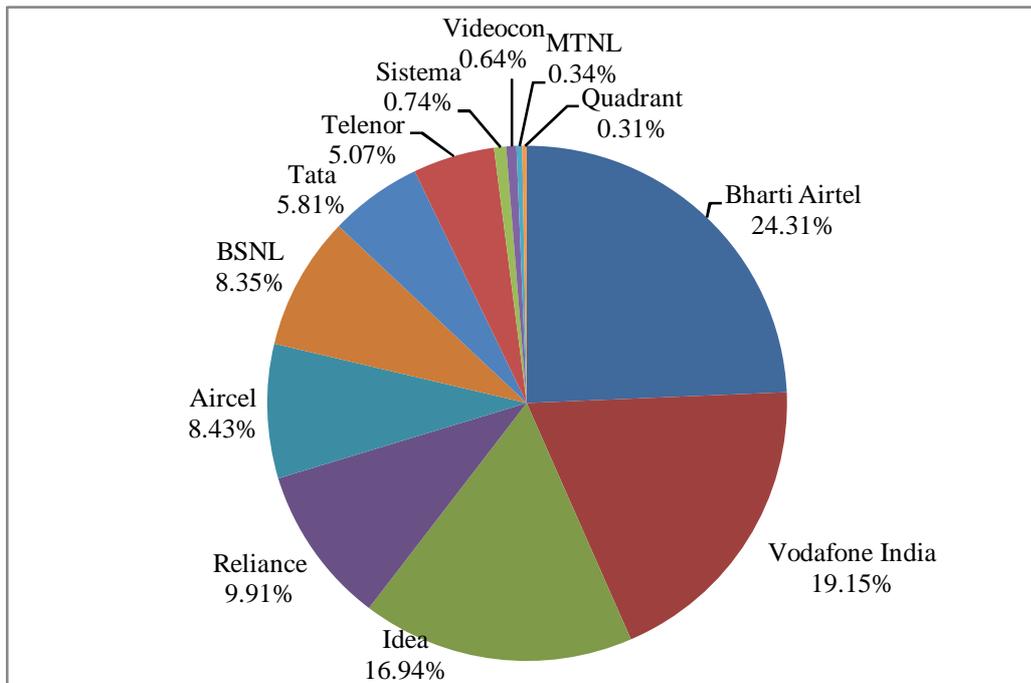
Source: TRAI data

1.7 All India trend in ARPU

The Average Revenue Per User (ARPU) is the ratio of the total revenue generated to the total number of subscribers or it is the revenue generated per subscriber. ARPU is a measure most often used by telecom and networking companies. It provides companies a granular view about user revenue contribution and allows tracking revenue sources and growth. ARPU growth can also indicate how successful a company is being in moving users to new services or value added services. ARPU trend over years for GSM and CDMA segment is given in figure 1.7.

Figure 1.7

All India trend in ARPU: GSM vs CDMA
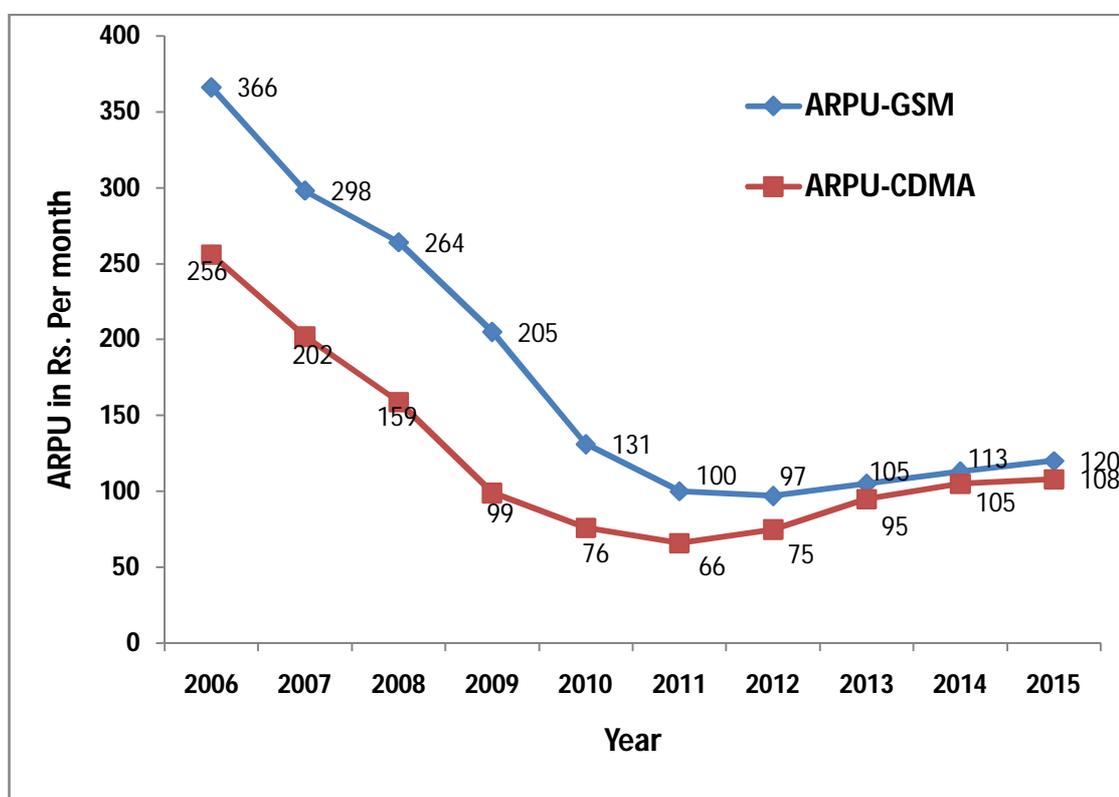
The ARPU shows a declining trend from 2006 onwards and stabilises around Rs.100-120. It can be seen that the ARPU for CDMA segment is less than the GSM segment.

1.8 Growth of cellular mobile service in Kerala

In Kerala, the first mobile service was launched by Escotel Mobile Communications Ltd (EMCL) in the year 1996. Later, in the same year BPL Mobile Cellular also started mobile service across Kerala. EMCL was acquired by Idea cellular in 2004 and BPL Mobile Cellular was acquired by Hutchison Essar, (now Vodafone India) in 2006. Initially there were only two mobile operators allowed in a circle. After the implementation of NTP99, more operators entered mobile service sector in Kerala. Bharti Airtel is the third operator to start mobile service during July 2002. BSNL launched its mobile service in Kerala on 23rd October 2002. Reliance communications started its mobile service in Kerala during May, 2003. With the entry of Bharti Airtel, BSNL and Reliance communications, Kerala mobile service sector started to show significant growth in customer base. Growth in mobile customers since 2001 is given in figure 1.8.

Figure 1.8
Growth of mobile subscribers in Kerala
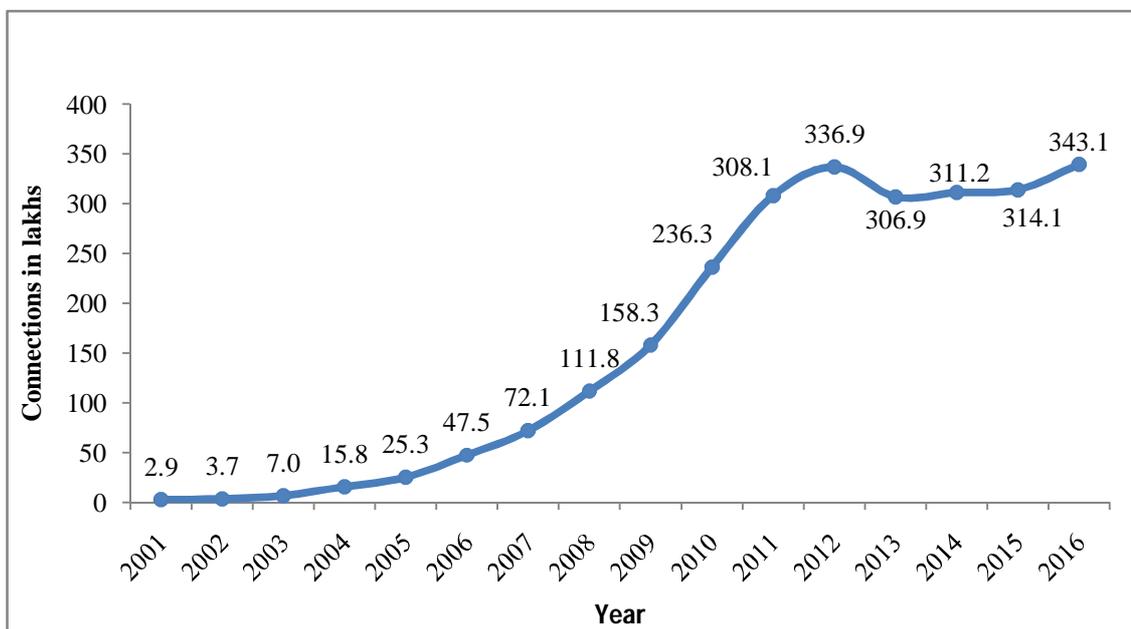
Source: TRAI data

Though BSNL entered as the 4th operator, soon after starting mobile service, it became the No.1 mobile service provider in 2004 and continued in that position till 2008. As on 31st March 2016, BSNL is the 2nd largest mobile service provider in Kerala with a customer base of 75.7 lakhs. Idea cellular is the largest mobile service

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provider in Kerala with a customer base of over 103 lakhs. Service provider wise growth in mobile service customer base is given in figure 1.9 and the wireless market share as on 31st March 2016 is given in figure 1.10.

Figure 1.9
Service provider-wise mobile subscriber growth in Kerala
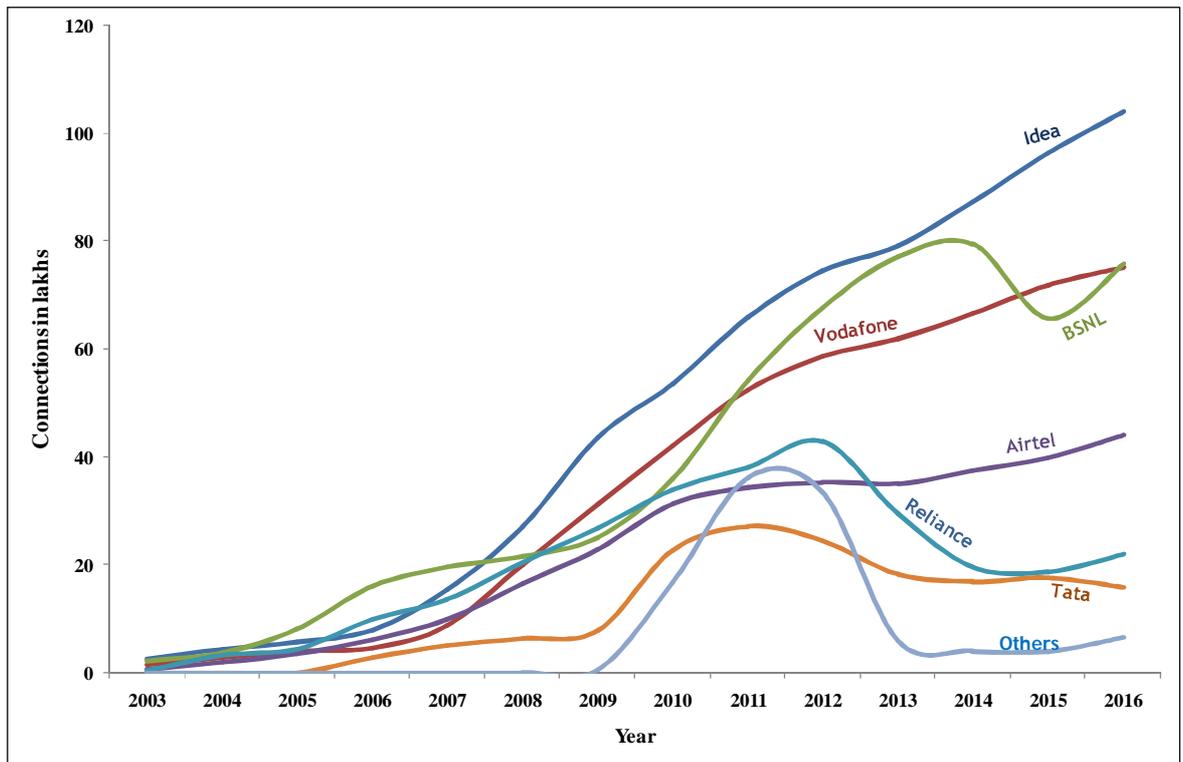
Source: TRAI data

Figure 1.10

Wireless Market share in Kerala as on 31st March 2016
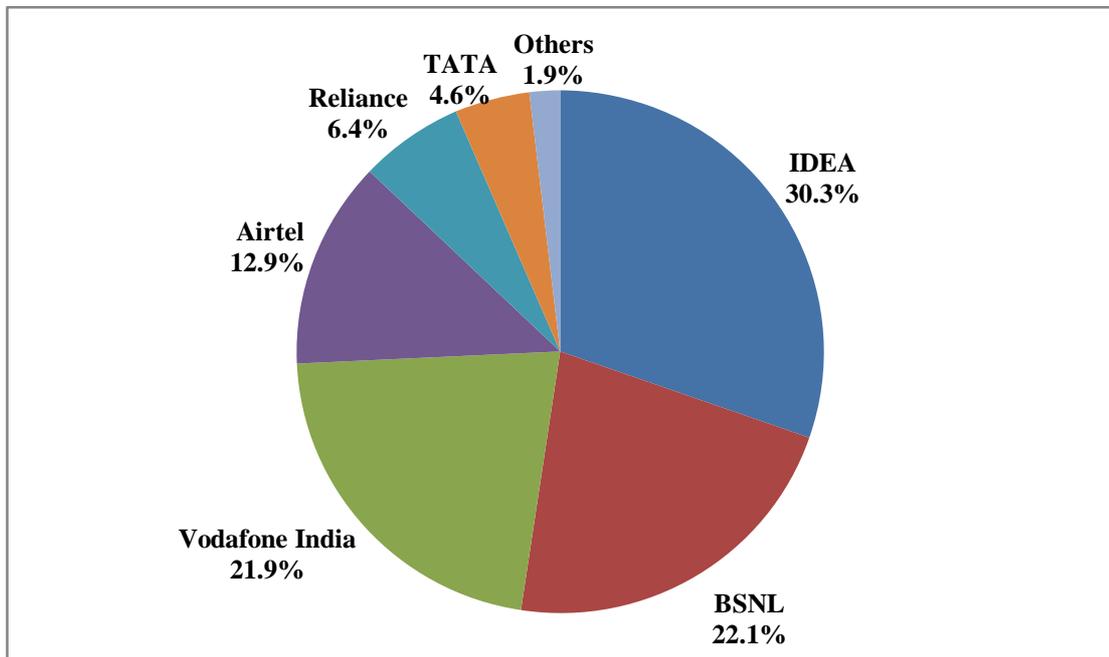
Source: TRAI data

From the pie chart it can be seen that the top four service providers such as Idea, BSNL, Vodafone, and Airtel together hold over 87% of the cellular mobile services market share in Kerala.

1.9 MNP (Mobile Number Portability)

Mobile Number Portability (MNP) allows the mobile subscribers to retain the existing mobile phone number when the subscriber switches from one access service provider to another irrespective of mobile technology (GSM/CDMA/UMTS) or from one technology to another of the same or any other access service provider. In the absence of MNP, customers have to give up their number and must adopt a new one when they switch service providers. This result in consumers to face the switching costs associated with informing people about changing their number, printing new business cards, missing valuable calls from people who do not have the new number, etc.

The world's first country to implement MNP was Singapore in 1997. In India, MNP was first introduced in Haryana circle (LSA) on 25.11.2010 and in the rest of

the country on 20.1.2011. Initially MNP was made available only within the licensed service area (intra circle). For allowing subscribers to switch their service provider irrespective of their licensed service area or circle, pan-India mobile number portability (full MNP) was introduced on 3rd July 2015.

The introduction of MNP triggered customer's propensity for rapidly switching service providers. The growth in cumulative mobile number porting requests since MNP implementation for all India is given in figure 1.11 and for Kerala circle is given in figure 1.12.

Figure 1.11
All India cumulative mobile number porting requests over years
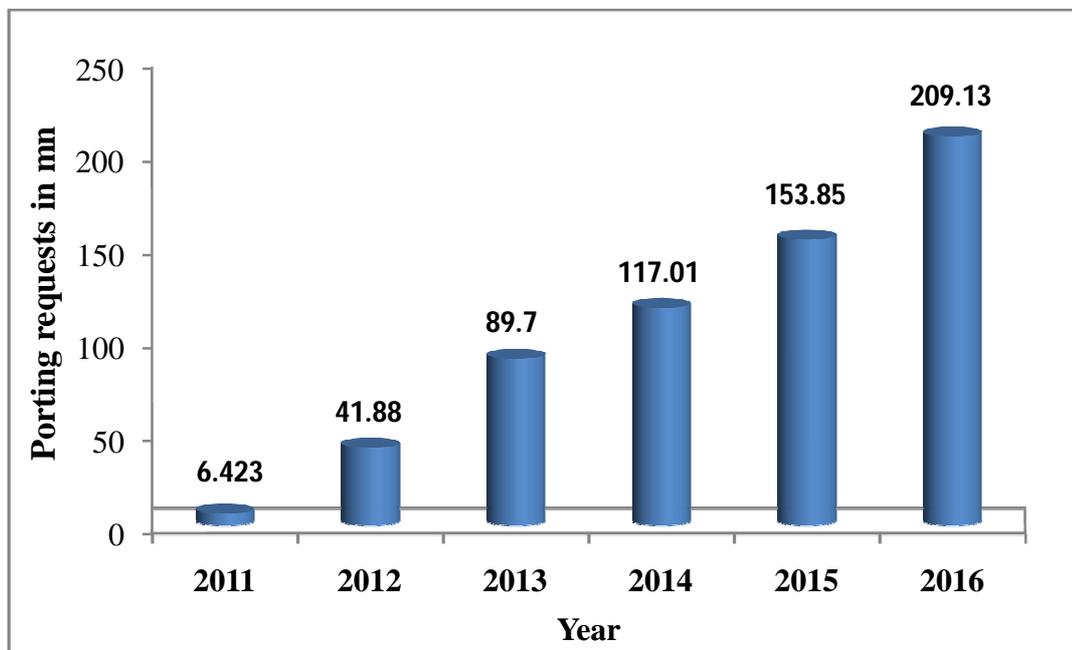
Source: TRAI data

Figure 1.12
Cumulative mobile number porting requests in Kerala over years
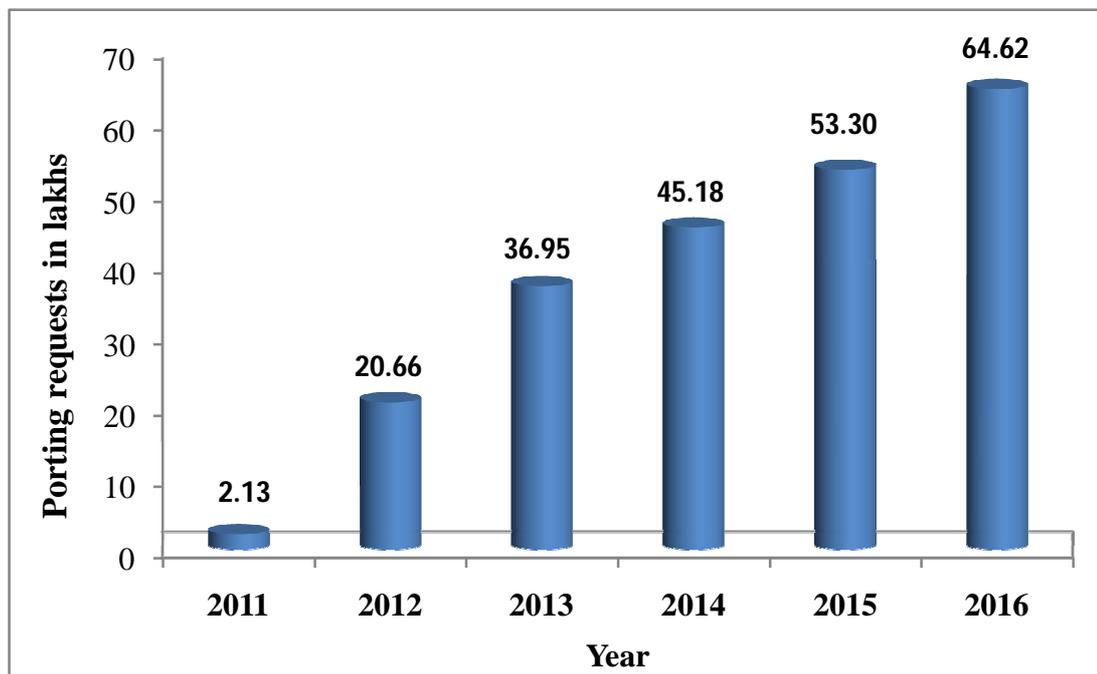
MNP provides opportunities for mobile service providers to capture the prospective customers of rival operators. But at the same time, it poses the threat of churn in customer base for the service providers. The performance of service providers with respect to MNP is analysed in terms of cumulative net gain (net port-in) status which is the difference between the total number of customers ported in to the network and ported out of the network since the implementation of MNP. Service provider wise MNP performance of Kerala telecom circle based on cumulative net gain as on 31st July 2014 is given in figure 1.13.

Figure 1.13
Service provider wise MNP performance of Kerala telecom circle
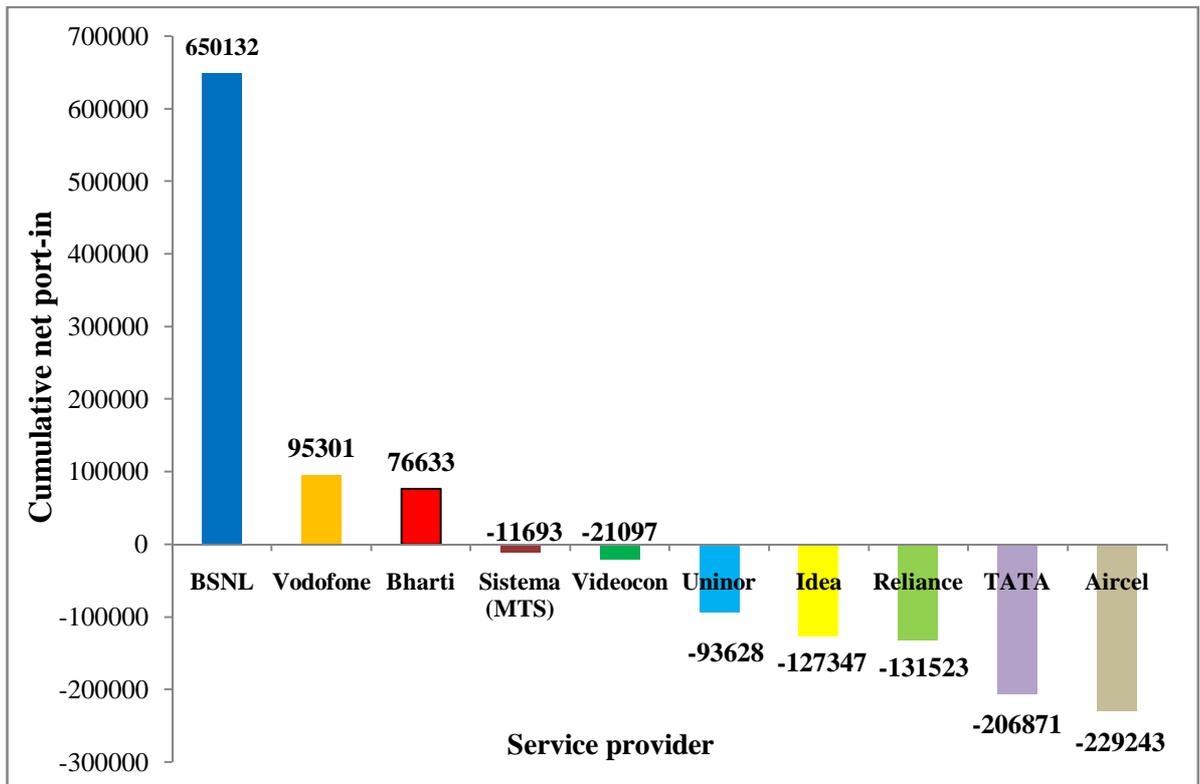
It can be seen that BSNL is far ahead of other mobile service providers with respect to cumulative net gain status in Kerala telecom circle. The MNP status of BSNL in Kerala telecom circle as on 13th February 2016 is given in table 1.3.

Table 1.3
MNP status of BSNL in Kerala telecom circle

Total number of port- in customers	Total number of port-out customers	Net port-in	Port-in/ port-out ratio
12,11,405	4,73,806	7,37,599	2.56

BSNL continue to dominate the MNP cumulative net gain status in Kerala with a cumulative net port-in of 7,37,599 customers.

1.10   Statement of the problem

India's mobile service sector is hyper competitive with the presence of 12 operators and has the lowest call tariffs in the world. It is nearly saturated with an

urban teledensity of 148.7% and overall teledensity of 80.9%. India's mobile service market is continued to be dominated by prepaid subscribers which accounted for more than 95% of the total mobile subscriber base. Prepaid customers are price sensitive, low spend and enjoying the freedom of no commitments or contracts which presents a greater challenge to service providers. Further, due to intense competition, the average revenue per user (ARPU) came down from Rs.434 in 2005 to Rs.120 in 2015. With the reduction in ARPU, increase in operational expenses, license fees etc., operators find it hard to be profitable. The introduction of MNP made this sector even more competitive. After the implementation of MNP in January 2011, over 209mn (over 20%) customers switched their service provider all over India till March 2016.

Consumer switching refers to customers abandoning a product or service in favour of a competitor. Customer churn, the number or percentage of regular customers who abandon their relationship with their service provider, is an important issue in a highly competitive telecom industry as it lowers future revenue streams and reduces profitability of mobile operators. In mobile services, the cost of customer acquisition is approximately 4 to 5 times that of customer retention (Fornell & Wernerfelt, 1988). So companies have realised the need for customer retention and enhance the loyalty of its customers.

Customer Relationship Management (CRM) has been recognised as an important tool for building long term relationship with customers thereby increasing a firm's profitability and ensuring its future viability. According to Kotler & Armstrong (2013), CRM is the overall process of building and maintaining profitable customer relationship by delivering superior customer value and satisfaction. Telecom companies have realized the importance of CRM and its potential to help them to acquire new customers, retain existing ones, and maximize their lifetime value. But even after implementing various CRM initiatives, mobile service providers face the problem of customer churn from its networks.

1.11 Significance of the study

To arrest the customer churn, it is necessary to find the various factors causing customers to switch from one cellular service provider to another. Further, it is important to find out impact of CRM on these factors so that companies can focus

on these factors while implementing various CRM initiatives. There are not much studies conducted to analyse the factors causing switching behaviour in cellular mobile services. Further no studies have focused on the impact of CRM on these switching determinants. This study analyses various factors causing switching intention and examines the impact of CRM on these factors so that service providers can focus on these factors to arrest customer churn while implementing various CRM initiatives.

1.12 Research objectives

The following research objectives have been set for the study based on the research problem identified above:

i)   To study the various factors that affect the consumer switching intention in mobile services

ii)   To study the relationship between various factors that affect the consumer switching intention in mobile services

iii)   To study the impact of CRM on consumer switching intention in mobile services

iv)   To study the impact of CRM on various factors that affect consumer switching intention in mobile services

v)   To study the relationship between various demographic factors and consumer switching intention in mobile services

vi)   To propose a model that explains the consumer switching intention in mobile services

vii)   To compare the switching determinants between BSNL and other prominent mobile service providers in Kerala

1.13 Scope of the study

The scope of the study is limited to consumer switching determinants and the effect of CRM on these determinants among individual cellular mobile customers of Kerala. Corporate or business customers are excluded from the study.

CHAPTER-II

REVIEW OF LITERATURE

This chapter explores the various researches conducted by different authors related to the topic chosen for the present study. An extensive review of literature helps to gather knowledge on the area of study and identify the gap. Further, it helps to identify the relevant constructs of the study and to design the research model for investigating the research questions. A brief of the review of literature in terms of CRM and consumer switching determinants is discussed here.

2.1 Customer Relationship Management (CRM)

Evolution of CRM

There is a transition from transaction-based marketing to relationship-based marketing (Berry, 1995). While transaction based marketing emphasize on winning new customers, relationship based marketing focuses on customer retention through effective management of customer relationships (Christopher et al., 1991).The term 'relationship marketing' was first introduced by Berry (1983). He conceptualised relationship marketing as firm's efforts to attract, maintain and enhance relationship with its customers. Relationship marketing shifts marketing orientation from attracting short-term, discrete transactions to retaining long-lasting, intimate customer relationships (Chen & Hu, 2010).

Relationship marketing and CRM (Customer Relationship Management) are often used interchangeably (Parvatiyar and Sheth, 2001). CRM is also termed as Continuous Relationship Marketing, Customer Relationship Marketing and Customer Relationship Management (Baran et al., 2008). Ryals and Payne (2001) described CRM as "information-enabled relationship marketing". CRM helps companies to shift from mass marketing to one-to-one marketing (Baran et al., 2008). So CRM is also referred to as one-to-one marketing (Peppers and Rogers, 1999).

Definition and views of CRM

Parvatiyar and Sheth (2001, p. 5) defined CRM as "a comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer".

Reinartz et al. (2004, p.294) defined CRM as "A systematic process to manage customer relationship initiation, maintenance, and termination across all customer contact points in order to maximize the value of the relationship portfolio". Reimann et al. (2010) defined CRM as the firms' practices to systematically manage their customers to maximize value across the relationship lifecycle. All the above definitions emphasize that maximizing customer value is the basic goal of CRM.

Chen and Popovich (2003) viewed CRM as an enterprise-wide customer-centric business model integrating people, processes and technology with focus on customer retention and relationship development. They argued that the model should be redesigned on a continual basis based on customer feedback.

Need for CRM

According to Bendapudi and Berry (1997), management of customer relationships is critical to a firm's survival and success in services for three reasons i) many services require ongoing relationships by its very nature ii) customers seek ongoing relationships to reduce the perceived risk in evaluating services iii) customers are more likely to form relationships with individuals and organisations as employees play a major role in shaping service experience. Bitner (1995) observed that long term relationship with a service provider shall reduce customer stress as the relationship becomes predictable.

Gerpott et al. (2001) emphasised the need for maintaining long-term relationship with its prospective customers for the success of a firm in highly competitive markets like telecom. Deng et al. (2010) pointed out that building strong relationships with customers, and developing the loyalty of consumers is critical in winning market share, developing a sustainable competitive advantage and for the business survival in a hyper competitive market. CRM applications help firms manage customer relationships more effectively across the stages of relationship initiation, maintenance, and termination (Reinartz et al., 2004).

CRM and Value

The aim of relationship marketing is to provide unique value over a long period of time by integrating marketing, quality, and customer service (Christopher et al., 1991). According to Bolton (1998), companies adopt relationship marketing with aim of maximizing customer lifetime value through customization of products, augmentation of core services, pricing and other marketing strategies that encourage satisfaction, loyalty and duration of provider-customer relationships. Ravald and Gronroos (1996) considered value as an important constituent of relationship marketing. They argued that the ultimate aim of adding value to enhance loyalty will not serve the purpose if it is not customer oriented.

CRM applications enable firms to customize their offerings for each customer based on their tastes and preferences by analysing the data gathered through various touch points (Mithas et al., 2005). Touch points are any point of contact that a customer or prospect has with the company, including phone inquiries, web applications, e-mail, or in-person transactions (Baran et al., 2008). Wang et al. (2006) viewed CRM as a way to maximize customer equity, the total lifetime value of a customer to a firm. Thus CRM acts as the key to build long-lasting mutually beneficial relationships (Chen & Popovich, 2003).

Chen and Hu (2010) observed that customer relationship exchanges are important as customers are expected to receive additional benefits which are interpersonal in nature called 'relational benefits'. They empirically found that relational benefits influences perceived value and customer loyalty. Gwinner et al (1998) empirically identified three relational benefits that customers receive from relational exchanges such as confidence benefits (psychological), social benefits, and special treatment benefits (economic and customization). Psychological benefits refer to the perceptions of reduced anxiety and comfort in knowing what to expect in the service encounter. Social benefits which are emotional in nature relate to the personal recognition of customers by employees and the development of friendship between customers and employees, which is evolved out of long term relationship with the firm. Special treatment benefits include economic and customization benefits such as price breaks, faster service, or individualized additional services etc.

They found that even dissatisfied customers may stay in a relationship if they receive important relational benefits.

CRM and Customer satisfaction

Chen and Popovich (2003) observed that an efficient and effective customer relationship management enhances customer satisfaction and retention rates. Mithas et al. (2005) analysed the effect of CRM on customer satisfaction and found that CRM applications is positively associated with improved customer satisfaction.

CRM and Loyalty

The aim of relationship marketing is to create customer loyalty so that a stable, mutually profitable and long-term relationship is enhanced (Ravald & Gronroos, 1996). CRM is considered an important way to boost customer loyalty and firm performance (Hillebrand et al., 2011). Menon & O'Connor (2007) argued that CRM strategy will generate customer affective commitment and will lead to customer retention, share of wallet, and advocacy.

Components of CRM

1. Customer knowledge management

According to Jayachandran et al. (2005), information plays an important role in building and maintaining customer relationships. They define relational information processes as encompassing the specific routines that a firm uses to manage customer information to establish long-term relationships with customers. It consists of five dimensions: information reciprocity, information capture, information integration, information access, and information use. i) Information reciprocity refers to the processes that enable customers to interact and share information with the firm ii) Information capture is the process of acquiring information from customer interactions with various sources and channels iii) Information integration is the assimilation of the gathered customer informations iv) Information access means providing relevant employees with access to relevant and updated customer information v) Information use refers to the usage of the

information to build and maintain customer relationships. Information reciprocity ensures effective communication, information capture and integration prevent information loss, information access limits information overload, and information use routines ensure that customer information is used consistently with the needs of CRM. The authors suggest that a firm should use these informations to understand the needs and behaviours of its customers and develop and offer customer specific products/services that enhance customer life time value.

Chen and Popovich (2003) viewed that sharing customer information across the touch points, helps the company to i) understand consumers' habits and preferences ii) provide superior customer service iii) have an integrated view of the customer iv) segment and target individual customers v) improve the efficiency of call centers/service centers. Further, Customer knowledge extraction reduces the need for marketing research tools such as customer surveys and focus groups. Mithas et al. (2005) found that CRM applications help firms gain customer knowledge which inturn helps firms to improve the customer satisfaction.

2. Customization

Customization means a manufacturer designs a product to suit a customer's needs (Baran et al., 2008). Richards and Jones (2008) observed that CRM technology will enhance a company's ability to customize products and services to meet the explicit and implicit needs of its customers. These customized offerings enhance the perceived quality of products and services from a customer's viewpoint which inturn improves customer satisfaction. (Mithas et al., 2005)

3. Loyalty programs

A loyalty or reward program is a marketing program introduced to build customer loyalty through a planned reward scheme based on customer's purchase history to fight competition (Yi & Jeon, 2003). According to Kivetz and Simonson (2003) loyalty programs or frequency programs play a critical role in developing relationships, stimulating product and service usage, and retaining customers. Bolton et. al (2000) investigated the impact of loyalty rewards program on customer loyalty using cross-sectional, time-series data from a worldwide financial service company

and found a positive effect on customer evaluations, behaviour, and repeat purchase intentions. They concluded that loyalty programs enhance customer perceived value thereby enhancing loyalty.

4. Customer support service

Providing quick and effective responses to customers is likely to enhance customer satisfaction by providing consumption-related fulfillment (Oliver, 2014). CRM applications enable firms to improve the reliability of consumption experiences by facilitating the timely, accurate processing of customer orders and requests (Mithas et al., 2005). Kim et al. (2004) suggested that a mobile operator should provide customer-oriented service in order to enhance customer satisfaction and speedily process customer's requests through various channels in order to minimize their inconvenience. The customer service and complaint-handling systems of a firm set the direction of customer loyalty. If positively handled, the complaining customers can be converted to loyal customers, if negatively handled, it may lead to customer defection (Fornell et al., 1996). According to Fornell and Wernerfelt (1987), a well-managed complaint management system can lower the total marketing expenditure by substantially reducing customer churn. Bolton (1998) argued that service recovery (the effective handling of a service failure) should be considered as an opportunity to delight a customer and create a stronger relationship.

5. Two way communication

Communication in the CRM involves the sharing of information between a firm and its customers (Jayachandran et al., 2005). It is a fundamental aspect of relationship development (Peng & Wang, 2006). Through two way communication, the promises can be effectively communicated, negotiated and the expectations can be managed individually (Bitner, 1995). Valenzuela (2010) suggested that firms should ensure that they continuously communicate with customers to improve quality of their offerings. According to Jayachandran et al. (2005), relational information processes enable customers to communicate easily with the organization thereby helping the customers to register their complaints and provide their feedback.

6.   Interaction management (Feedback management)

According to Zeithaml (1988), consumer's perception of quality change over time as a result of added information, increased competition in a product category and changing expectations. So marketers must track perceptions over time and align product and promotion strategies with these changing views. Chen and Popovich (2003) emphasized the need for redesigning core business processes from the customer perspective by taking customer feedback using CRM. CRM encourages customers to provide the firm with valuable suggestions for improving products and services (Lin et al., 2010).

CRM Imperative

Rigby et al. (2002) suggested five imperatives of CRM for the success of firms such as i) acquiring the right customer by identifying the most valuable customers ii) crafting right value proposition by studying customer's present and future needs and what competitors offer today or tomorrow iii) instituting the best processes so as to deliver products/services in the best way iv) motivating employees by adopting right human resource systems to boost employee loyalty and v) learning to retain customers by analysing why customers defect and how to win back them.

According to Chen and Popovich (2003), for the effective implementation of CRM, employee participation is required. They suggest that employee skills, knowledge, motivation and commitment for proper implementation of CRM can be ensured through company-wide education and training program. Further, the company management has to ensure that the job evaluations, compensation programs, and reward systems are modified on a basis that facilitate and reward customer orientation.

2.2 Perceived service quality

Delivering superior quality service is considered as an essential strategy for success and survival in today's competitive environment (Parasuraman et al., 1985). Service quality can be considered as a great differentiator and the most powerful weapon for service organisations (Berry et al., 1988).

Parasuraman et al. (1985) defined service quality as the degree of discrepancy between customer's normative expectations for the service and their perceptions of the service performance. Zeithaml (1988) defined perceived quality as the customer's judgement about the excellence or superiority of a product. It is a form of attitude, related but not equivalent to satisfaction, and results from a comparison of expectations with perceptions of performance (Parasuraman et al., 1988).

According to Parasuraman et al. (1985), customer's service quality perceptions result from a comparison of expectations with actual service or performance. It is a measure of how well the delivered service matches customer expectations. They observed that the quality evaluations are made based on the outcome of the service and the process of its delivery. They developed a service quality model (gap model) that highlights the main requirements for delivering high quality service. They identified five gaps that cause unsuccessful service delivery. The service gap is the difference between customers' expectations of service and their perception of the service actually delivered. If perceived service (PS) is less than expected service (ES), the perceived service quality is less than satisfactory; when PS matches with the ES, perceived service quality is satisfactory; if PS is greater than ES, the perceived service quality will tend to be ideal. They observed that the expected service is shaped by personal needs, marketer's communications, WOM (word-of-mouth) communications, and past experiences. They suggest that the ultimate goal of a service firm shall be to close the service gap, or at least narrow it as much as possible. This gap model of service quality is much like the disconfirmation of expectations model proposed by Oliver (1977, 1980) to explain the post purchase satisfaction.

Gronroos (1984) identified two service quality dimensions, namely technical quality and the functional quality. While technical quality is concerned with what is actually delivered, functional quality is concerned with the service delivery process or how the services are delivered. Gronroos observed that both technical and functional quality dimensions are interrelated. Gronroos argued that technical quality is a necessary but not a sufficient condition for high service quality which implies that functional quality is also important.

Based on the gap model of service quality, Parasuraman et al. (1988) developed a 22 item instrument called SERVQUAL for assessing customer perceptions of service quality in service/retail organisations. They grouped the items into the five distinct dimensions, viz.

1. Reliability: the ability to perform the desired service dependably, accurately and consistently

2. Responsiveness: the willingness to help customers and to provide prompt service

3. Assurance: The knowledge and courtesy of employees and their ability to convey trust and confidence

4. Empathy: The provision of caring, individualized attention to customers

5. Tangibles: the appearance of physical facilities, equipment, personnel and communication materials

In their study among long distance telephone, appliance repair and maintenance, credit card, and retail banking service customers using this SERVQUAL instrument by Berry et al. (1988), reliability has emerged as the most important dimension, regardless of the service sector. In line with this, Berry et al. (1994) reported the relative importance of these five dimensions in judging the overall service quality as reliability-32%, responsiveness-22%, assurance-19%, empathy-16% and tangibles-11%. . Berry et al. (1988) suggest that the first step in any quality improvement effort is to define the organisation's service standards on the basis of customer expectations. After establishing service standards, the performance should be continually compared with those standards to deliver outstanding performance.

Parasuraman et al. (1994) made further refinement to the SERVQUAUL scale based on psychometric and diagnostic procedures and a revised 22 item SERVQUAL scale was formulated which is the most widely used scale for measuring service quality. The measures used in the scale are

o Reliability: Providing service as promised, dependability in handling customer's service problems, providing service at the promised time, maintaining error free records

- Responsiveness: Keeping customers informed about when the services will be performed, prompt service to the customers, willingness to help the customers, readiness to respond to customers' requests

- Assurance: Employees who instil confidence in customers, making customers feel safe in their transactions, employees who are consistently courteous, employees who have the knowledge to answer customer questions

- Empathy: Giving customers individual attention, employees who deal with customers in a caring fashion, having the customer's best interests at heart, employees who understand the needs of their customers, convenient business hours

- Tangibles: Modern equipment, visually appealing facilities, employees who have a neat, professional appearance, visually appealing materials associated with the service

Based on extensive literature review, group discussions and expert opinions, Wang et al. (2004) identified Tangibles, reliability, responsiveness, assurance, empathy and network quality as the service quality related factors for mobile services in China. In line with this, Seth et al. (2008) proposed that traditional service quality measures need to be modified to be applicable to the mobile services industry. They proposed that the SERVQUAL instrument need to be augmented to include dimensions that measure customers' perceptions of network quality (technical quality) as well as convenience. They suggest that customer's perceived network quality is an indicator of network performance. They conducted research among Indian mobile subscribers and developed a valid and reliable instrument to measure customer perceived service quality incorporating both service delivery as well as technical quality aspects. In the modified instrument, they used all the 22 items from SERVQUAL instrument and added a few items to reflect convenience and network (technical) quality. They measured the perceived network quality in terms of network coverage, voice clarity, call drop and network congestion. The results show that the customer perceived network quality and functional quality are important in affecting the customer's perceptions of service quality. They also found that responsiveness is the best predictor of service quality, followed by reliability, customer perceived network quality, assurance, convenience, empathy, and tangibles. The present study takes into account the dimensions of reliability,

responsiveness, assurance, empathy, tangibility and network quality for measuring perceived service quality.

Literature review reveals that service quality influences perceived value, customer satisfaction, trust and customer loyalty. Many studies support that service quality is an antecedent of customer satisfaction (e.g Cronin et. al., 2000; Anderson et al., 1994) and has an impact of customer loyalty and profitability of the firm. Sweeney et al. (1999) conducted empirical research among electrical appliances shoppers in Australia and found that perceived product and service quality lead to perceived value for money in a service encounter and that these quality components reduce perceived risk. According to Bansal and Taylor (1999), a higher perceived level of service quality leads to a higher perceived level of satisfaction. A study by Gerpott et al. (2001) among German mobile customers revealed that perceived network quality is a key driver of customer satisfaction in mobile service market.

Lin and Ding (2005) conducted a study among ADSL customers in ISP service and reported that the influence of network quality on satisfaction is significant, while its impact on trust is insignificant. They pointed out that the reputation for network quality, positive or negative, will be broadcast by all customers, regardless of prior experience. Such a reputation, spread by word of mouth, can even overwhelm all other marketing efforts.

Lai et al. (2009) proposed an integrative model to examine the relations among service quality, value, image, satisfaction, and loyalty in China. Their empirical study revealed that service quality directly influences both perceived value and image perceptions of mobile customers in China. They also found that the perceived value, image and satisfaction mediate the impact of service quality on customer loyalty. Deng et al. (2010) found that perceived service quality is the main predictor of customer satisfaction in Chinese mobile instant message users.

Zeithaml et al. (1996) conducted a study among business customers of computer manufacturer and end customers of retail chain, automobile insurer and life insurer which shows that service quality has a strong impact on behavioural intentions (decision to stay or switch the service provider).

Ahn et al. (2006) investigated the determinants of customer churn in the Korean mobile telecommunications service market and found that call quality related factors influence customer churn.

Malhotra and Malhotra (2013) explored the switching behaviour of mobile service customers in the USA and found that high mobile service quality is a significant detractor of consumer's switching intentions. They also found that perception of high service quality and innovativeness of the service provider positively impact consumers' intent to buy more add-on services.

Seth et al. (2005) after reviewing 19 service quality models, concluded that a clear understanding of the concept of service quality and a focus on the factors affecting service quality such as customer focus, motivated staff, effective measurement & feedback system, effective implementation system and efficient customer care system as the key to service quality improvement.

In India, to ensure quality of service, TRAI deploys the benchmarks in evaluating the quality of performance of the service providers periodically which include the network quality and the delivery process. TRAI monitors the service quality and periodically conduct survey of the service that is being provided by the service providers.

2.3 Perceived Value

Perceived value is considered as the fundamental basis for all marketing activities (Holbrook, 1999). Gronroos and Ravald (2011) viewed that the goal of marketing is to support customers' value creation. Delivering superior customer value is one of the most important successful factors for any firm, due to its significant impact on behavioural intentions of customers (Wang et al., 2004). Cronin et al. (1997) pointed out that the value construct has been introduced in the consumer decision-making models to enhance the understanding of the relative importance of service quality and price in predicting purchase behaviour and to provide managers greater insight into the decision-making process.

Perceived value is defined fundamentally as an exchange process in marketing literature. Zeithaml (1988) defined perceived value as the customer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given. He observed that perceived value is subjective and individual, and therefore varies among consumers.

Monroe (1991) defined customer-perceived value as the ratio of perceived benefits relative to the perceived sacrifice. The perceived benefits are the combination of physical attributes, service attributes and technical support available in relation to the particular use of the product, as well as the purchase price and other indicators of perceived quality. The perceived sacrifice covers all the costs the customer has to make when making a purchase. These costs include purchase price, acquisition costs, transportation, installation, order handling, repairs and maintenance and the risk of failure or poor performance. According to McDougall and Levesque (2000) perceived value is the benefits customers receive in relation to total costs. According to Lovelock (2011), perceived value is the trade-off between perceived benefits and perceived costs.

Ravald and Gronroos (1996) argue that value can be increased by enhancing the benefits such as value addition that customer perceives as important, beneficial and unique and/or by reducing the sacrifice such as lowering actual price, increasing convenience etc. They suggest that both the benefits and sacrifices shall be mutually reinforcing. i.e increasing the benefits should lead to a reduction in the customer-perceived sacrifice through a reduction of the costs involved in the purchase. They considered relationship costs as sacrifices and propose that firms should try to minimize relationship costs for the customer thereby enhancing the perceived value.

Chen and Hu (2010) pointed out that customers are not simply motivated by attributes of a product or service, but by the benefits brought by them. Liljander (2000) observed that perceived relationship benefits add to the perceived value of the product.

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Perceived value dimensions

Most research studies have measured value as a multi-dimensional construct. Sweeney and Soutar (2001) presented value as a multi dimensional concept comprising of functional value relating to performance or quality, functional value relating to price (value for money), emotional value, and social value. They referred functional value as the utility derived from the perceived quality and expected performance of the product; social value as the utility derived from the product's ability to enhance social self-concept; emotional value as the utility derived from feelings or affective states that a product generates.

Karjaluoto et al. (2012) also considered perceived value as a four dimensional construct consisting of functional value, monetary value, emotional value and social value. They referred functional value as effective task fulfillment through utilitarian, physical or functional performance (e.g convenience, availability, ease of use etc). Monetary value denotes the perceptions of good value for money or low price compared to the alternatives. Social value is related to social approval and the enhancement of self-image. They viewed that social value associates users of the service with a social group which includes social image, identification, social self-concept, expression of personality and pursuit of class membership.

Similar to the above studies, Deng et al. (2010) suggested four dimensions of perceived value such as functional value, emotional value, social value, and monetary value. Functional value refers to the practical or technical benefits that users can obtain when using the service. Emotional value means users' mental or psychological needs for the service. Social value is defined as the benefits users can feel when they are connected to others by using the service. Monetary value means how much the service is satisfactory considering the cost, time or effort spent in using the service.

Sheth et al. (1991) proposed a five-dimensional scale consisting of social, emotional, functional, epistemic, and conditional responses for measuring perceived value. Epistemic value refers to the perceived utility acquired from alternative's capacity to arouse curiosity, provide novelty, and/ or satisfy a desire for knowledge.

Conditional value relates to the perceived utility acquired by an alternative as the result of the specific situation or set of circumstances faced by the purchaser.

Antecedents and consequences of perceived value

Service quality is considered to be the antecedent of perceived value. Several studies have established the direct positive influence of service quality on customer perceived value (Zeithaml, 1988; Andreassen and Lindestad, 1998; Cronin et al., 2000; Choi et al., 2004; Lai et al., 2009). Ostrom and Iacobucci (1995) found that price, quality, service friendliness, and service customization had a significant influence on perceived service value under different conditions.

Perceived value is found to positively influence customer satisfaction (Fornell et al., 1996; Oh, 1999; McDougall and Levesque, 2000; Anderson et al., 1994). Perceived value is considered as an important antecedent to satisfaction and subsequent behavioural intentions (Cronin et al., 2000; McDougall & Levesque, 2000).

Karjaluoto et al. (2012) found that perceived value is instrumental in developing trust and it drives loyalty. Perceived value is found to have a direct positive influence on behavioural or repurchase intentions by many researchers (Zeithaml, 1988; Oh,1999; Cronin et al., 2000; Wang et al., 2004).Sweeney et al. (1999) found that perceived value is a significant mediator of the impact of perceived quality, price and risk on willingness-to-buy.

Turel et al. (2007) in their study among wireless value-added service (such as SMS) users, found that value tradeoffs (i.e., price, social, emotional and quality) are critical drivers in the adoption decision.

Chen and Chen (2010) explored the impact of experience quality, perceived value and satisfaction, on behavioural intentions in heritage tourism, Taiwan and found that both perceived value and satisfaction have direct impact on behavioural intentions whereas the impact of experience quality on behavioural intentions is mediated by perceived value and satisfaction.

Gwinner et al. (1998) found that the dimensions of relational benefits such as confidence benefit, social benefits, and special treatment benefit have significant relationships on outcomes such as loyalty and positive word-of-mouth .Chen and Hu (2010) found that relational benefits have direct effect on perceived value and customer loyalty, indirect effect on loyalty via perceived value in coffee outlet market.

2.4 Customer Satisfaction

According to the expectancy-disconfirmation theory propounded by Oliver (1980), customer satisfaction formation is a process in which customers first form an initial expectation of a specific service or product prior to purchase. Customer expectations are formed from prior consumption experience with the firm's offerings and non experiential information available through various sources such as advertising, promotions and word-of-mouth (Fornell,et al., 1996; Bayol et al., 2000). Customers then form perceptions about the service's actual performance. Third, customers compare the pre-purchase expectations with the post-purchase perceptions of performance and determine the extent to which their expectations are confirmed. If the perceived performance is above (below) expectations, positive (negative) disconfirmation occurs and increase (decrease) in satisfaction is expected. Thus satisfaction is a function of expectations and disconfirmations.

Customer satisfaction is defined as the consumer's response to the evaluation of the perceived discrepancy between prior expectations and actual performance of the product as perceived after its consumption (Tse &Wilton, 1988). According to Rust and Oliver (1993), customer satisfaction is the degree to which one believes that an experience evokes positive feelings. Oliver (2014) observed that a customer senses satisfaction if the consumption fulfils his needs, desire or goals in a pleasurable way. Deng et al. (2010) viewed that customer satisfaction reflects the degree of a customer's positive feeling for a service provider.

Marketing literature suggests that mainly there are two different conceptualizations for customer satisfaction viz. transaction specific and cumulative. Transaction specific customer satisfaction is an immediate post purchase evaluative judgement or an affective reaction to the most recent transactional experience with

the firm (Oliver, 1993). Cumulative customer satisfaction is the overall evaluation based on the total purchase and consumption experience with a goods or service over time (Johnson & Fornell, 1991). According to Anderson et al. (1994), cumulative or overall customer satisfaction is a fundamental indicator of firm's past, current and future performance.

A number of national and international customer satisfaction barometers or indices have been introduced for studying customer satisfaction. The first national index to monitor satisfaction and assess the quality of products and services of organisations and industries was the Swedish Customer Satisfaction Barometer (SCSB) by Fornell (1992). Later, American Customer Satisfaction Index (ACSI) model was introduced by Fornell et al. (1996). The model links antecedents or causes of customer satisfaction (customer expectations, perceived quality and perceived value) with overall customer satisfaction values and consequences or outcomes of customer satisfaction (customer complaints and loyalty). Perceived quality or performance is the served market's evaluation of recent consumption experience, perceived value is the perceived level of product quality relative to the price paid and consumer expectations represent both the served market's prior consumption experience with the firm's offering, including non experiential information available through sources such as advertising and word-of-mouth and is a forecast of the supplier's ability to deliver quality in the future. European customer satisfaction index (ECSI) was introduced by ECSI Technical Committee in 1998. The ECSI represents another variation on the ACSI model with the introduction of 'image' as the seventh latent variable. In this model, customer expectations, perceived quality, perceived value and image are represented as the antecedents of customer satisfaction, image and customer satisfaction as the antecedent of loyalty with customer complaints as the outcome of customer satisfaction. This model was estimated to be valid by Bayol et al. (2000) using PLS (Partial Least Square) estimation. He termed ECSI as an economic indicator for measuring customer satisfaction.

Importance of customer satisfaction

Customer satisfaction is a fundamental indicator of a firm's performance because of its linkage to the behavioural and economic consequences beneficial to

the firm (Anderson et al., 1994). The ability to provide a high degree of customer satisfaction is critical for service providers in differentiating themselves from their competitors (Deng et al., 2010). High customer satisfaction enhances customer loyalty, prevents customer churn, lowers customers' price sensitivity, reduces the marketing costs of customer acquisition, reduces operating costs due to lower complaints and increased marketshare, improves the effect of advertising and enhances corporate reputation (Fornell, 1992). Reichheld and Sasser (1990) observed that increased customer satisfaction helps in reducing customer defection thereby securing future revenues. Customer satisfaction enhances overall reputation of the firm which help in introducing new products, establishing and maintaining relationships with key suppliers, distributors and potential allies (Anderson et al., 1994).

According to Zeithaml et al. (1996), satisfied customers show favourable behavioural intentions such as showing preference for the company over others, willing to recommend to their friends or relatives, increase the volume of purchase, willing to pay premium prices and show a strong continuance intention whereas dissatisfied customers show unfavourable behavioural intentions such as complaining to friends, external agencies etc, decrease the amount of business with the company or even switch to competitors.

Anderson et al. (1994) argued that the resources allocated for improving quality and customer satisfaction should be treated as investments or assets rather than expenses since increase in customer satisfaction results in increased future cash flows. They observed that satisfied customers engage in positive word-of-mouth and less likely to utter negative word-of-mouth. They found a positive association between customer satisfaction and shareholder value though it vary across industries and firms.

It is generally viewed that customer satisfaction is a necessary but not a sufficient condition for future intentions (McDougall & Levesque, 2000). Greater satisfaction leads to more positive attitudes towards the associated service provider which strengthens the intentions to continue with the service provider (Chuang, 2011).

According to Richins (1983), there are three possible responses to dissatisfaction (1) avoiding repeat purchase (2) making a complaint in an attempt to remedy the dissatisfaction (3) negative word-of-mouth behaviour. When a minor dissatisfaction is experienced, consumers' responses are often minimal. Most often consumers neither complain nor spread negative reports of the product involved. When the dissatisfaction is serious enough, their responses are also likely to be strong.

Antecedents and consequences of customer satisfaction

Cronin and Taylor (1992) found that service quality is an antecedent of customer satisfaction and that customer satisfaction has a significant positive effect on purchase intentions. Perceived service quality and customer perceived value are found to be important drivers of customer satisfaction in mobile services (Lim et al., 2006).

An exploratory research conducted by McDougall and Levesque (2000) among four service industries viz. dental, hair style, auto, and restaurant services revealed that core service quality and perceived value are the most important drivers of customer satisfaction with relational service quality a significant but less important driver. They also found that customer satisfaction directly influences future intentions across four services.

Kim et al. (2004), in their study among Korean mobile customers found that subscriber evaluations of satisfaction with service providers are based primarily on the perception of service quality, especially call quality and customer service quality found to be the key drivers of customer satisfaction.

Gerpott et al. (2001), in their study among German mobile customers found that perceived network quality is a key driver of customer satisfaction and that overall customer satisfaction has a significant impact on customer loyalty, which in turn influences customers' switching intentions. Caruana (2002) in his study among retail banking customers found that customer satisfaction mediates the effect on service quality on service loyalty

Athanassopoulos (2000) examined the customer satisfaction cues in retail banking services in Greece and found that customer satisfaction is a function of service quality (staff service and corporate image), price, innovativeness and convenience.

Deng et al. (2010), in their study among mobile instant message service users in China, found that trust, perceived service quality, perceived customer value contribute to generating customer satisfaction.

Choi et al. (2004) in their study in health care services in South Korea found that service quality is the most important determinant of customer satisfaction than perceived value. They also found that perceived value is influenced by service quality and both service quality and perceived value have direct impact on behavioural intentions.

Lai et al. (2009) proposed an integrative model to examine the relationship among service quality, value, image, satisfaction and loyalty in China telecom and found that perceived value and image influence satisfaction, image influence value and that both satisfaction and value are significant determinants of loyalty.

Bolton (1998) explored the influence of duration of relationship on cumulative customer satisfaction and customer retention in a continuously provided service such as telecommunication services and found that duration of relationship positively influences cumulative satisfaction levels and customer decision to stay loyal with the provider.

Levesque and McDougall (1996) observed that service firms can make major gains in customer satisfaction through improvements in service quality, service features and customer complaint handling. Kau and Loh (2006) investigated the effect of service recovery on customer satisfaction in mobile services and found that satisfaction with service recovery leads to higher level of trust in the mobile service providers and willingness on the part of customers to engage in positive word-of-mouth communications. Lin and Ding (2005) argued that good service recovery is crucial to customer satisfaction which requires user problems to be

rapidly and comprehensively identified and settled by employing efficient databases combined with help desks and call centers.

From the literature review, it can be concluded that perceived service quality, perceived value to be major antecedents of customer satisfaction and that customer satisfaction influences customer loyalty and other behavioural intentions.

2.5 Customer Loyalty

Oliver (2014) defines loyalty as a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts that have the potential to cause switching behaviour. This definition incorporates both attitudinal and behavioural aspects of loyalty. Caruana (2002) defines service loyalty as the degree to which a customer repeats its purchasing behaviour from a service provider, possesses a positive attitudinal disposition towards the service provider, and considers using only this provider when there is a need for the service exists. According to Assael (1998), brand loyalty is a favourable attitude towards a brand, which results in consistent purchases of the brand over time.

According to White and Yanamandram (2007), three popular conceptualizations of loyalty exist

(1) Behavioural conceptualisations which conceive loyalty purely in terms of revealed behaviour such as repeat purchase behaviour, proportion of purchases, sequence of purchases, and share of market.

(2) Attitudinal conceptualisations which conceive loyalty in terms of whether people like the brand, feel committed to it, recommend it to others, and have positive beliefs and feelings about it relative to competing brands &

(3) Combined behavioural and attitudinal conceptualisations which conceive loyalty in terms of both attitudinal and behavioural dimensions.

Srinivasan et al. (2002) pointed out that behavioural conceptualisation of loyalty is insufficient because it does not distinguish between true loyalty and spurious loyalty that may result, for example, from a lack of available alternatives

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for the consumer. Attitudinal measures provide better understanding of the factors associated with the development of loyalty (Lee & Cunningham, 2001). So combination of behavioural and attitudinal dimensions will give more insight into loyalty intentions.

Dick and Basu (1994) proposed a loyalty model by combining the effects of behaviour and attitude. They suggest that loyalty is the result of the interaction between a customer's relative attitude to a brand, or store, and their repeat purchase behaviour for that brand or store. They divided customers into four groups such as i) true loyals: customers with high attitudinal and behavioural loyalty ii) spurious loyals: customers with high behavioural loyalty but low attitudinal loyalty iii) latent loyals: customers with high attitudinal loyalty but low behavioural loyalty and iv) non loyals: customers with low attitudinal and behavioural loyalty.

Stages of loyalty

According to Oliver (1999), customer loyalty can be identified into four stages: cognitive loyalty, affective loyalty, conative loyalty, and action loyalty. These stages emerge consecutively rather than simultaneously. Cognitive loyalty, the first loyalty phase, is developed through comparison of preferred product with its alternatives based on knowledge relating to its attributes, performance etc. The loyalty at this stage will be very weak and shallow and hence consumers are likely to switch once they perceive alternative offerings as being superior. The second loyalty phase is referred to as affective loyalty which is deeper than cognitive loyalty. At this stage a liking or positive attitude towards the brand is developed based on cumulatively satisfying usage occasions. Affective loyalty is also subject to deterioration, caused primarily by an increased attractiveness of competitive offerings. The third phase of loyalty development is conative (behavioural intention or commitment) stage which is influenced by repeated episodes of positive affect towards the brand. At this stage, there will be a strong commitment and intention to repurchase. Action loyalty is the fourth and final stage, in which the intentions are converted into actions. At this stage, customer is not carried away by any competitive offerings.

Importance of customer loyalty

Establishing and maintaining customer loyalty is essential for keeping customers from defecting to the competition (Hoffman & Bateson, 2010). Customer retention and strengthening customer loyalty appear to be very crucial for service providers to gain competitive advantage (Deng et al., 2010). Customer loyalty is considered as a prime determinant of long-term financial performance of firms (Jones and Sasser, 1995). Reichheld (1996) pointed out that customer loyalty should be the goal of a company and not satisfaction. Karjaluoto et al. (2012) viewed that customer loyalty in a continuous service setting such as mobile telecom service is crucial because of intense competition and variety seeking behaviour of customers. Customer loyalty is expected to bring more certainty into the business, more stability in relationships, higher customer tolerance to mistakes by the provider, increased customer feedback and more trust in a provider-customer relationship (Hennig-Thurau, 2000).

Customer acquisition is considered to be more expensive than customer retention (Reichheld & Schefter, 2000) as it involves advertising, promotion, and sales costs, as well as start-up operating expenses (Zeithaml et al., 1996). Kim et al. (2004) observed that when the market reaches saturation, securing new customers will be not only difficult but also costly in terms of marketing. They suggested that the best marketing strategy will be to focus on retaining existing customers by enhancing customer value and loyalty. According to Reichheld and Sasser (1990) long-term customers are more profitable to a company than short-term customers because of lower price sensitivity, higher revenue generation and lower maintenance costs due to familiarity.

Antecedents and consequences of customer loyalty

Aydin et al. (2005) observed that for gaining customer loyalty, firms need to enhance customer satisfaction by raising offered service quality, ensure trust in the firm and enhance switching cost which makes the switching unattractive.

Deng et al. (2010) conducted a study among mobile instant message service users in China to examine the determinants of customer satisfaction and

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customer loyalty and found that trust, perceived service quality, perceived customer value contribute to generating customer satisfaction and trust, customer satisfaction and switching cost found to directly enhance customer loyalty. They also found that customer satisfaction mediates the effect of trust on customer loyalty and age, gender, and usage time have moderating effects on the antecedents of customer satisfaction and customer loyalty.

Chen and Hu (2010) investigated how relational benefits enhance perceived value to win customer loyalty in coffee outlet markets and found that relational benefits have direct effect on perceived value and customer loyalty, indirect effect on loyalty via perceived value and that perceived value positively influenced customer loyalty.

Gerpott et al.'s (2001) study in German mobile service supports the two stage model where overall customer satisfaction significantly impacts customer loyalty, which in turn influences a customer's intention to stay or switch the service provider in mobile telephony services.

Lai et al. (2009) in their study in Chinese mobile service found that customer satisfaction and value are significant determinants of customer loyalty with value having direct and indirect effect (through satisfaction) on customer loyalty. They made a key observation in their study that consumers do not become loyal the same way in different cultures.

2.6 Alternative Attractiveness

Ping (1993) conceptualized alternative attractiveness as the customer's estimate of the likely satisfaction available from an alternative relationship. Ping defined it as the best expected alternative service level relative to the existing service provider. According to Jones et al. (2000), alternative attractiveness is the customer perception regarding the extent to which viable competing alternatives are available in the marketplace or how good alternative suppliers would be in comparison with current supplier. Alternative attractiveness implies the reputation, image and service quality of the replacing carrier, which are expected to be superior to the existing carrier (Kim et al., 2004). Chuang (2011) defined alternative attractiveness as the

positive features of the competing service provider, encouraging subscribers to switch.

Based on extensive literature review, Kim et al. (2011b) classified alternative attractiveness into three categories viz. (1) economic attractiveness associated with economic profit (2) social attractiveness associated with social reputation, relationship fairness and business image, and (3) quality attractiveness associated with the service or product range or differentiation level. They observed that these factors can influence consumer's continuous usage intentions and considered alternative attractiveness as a negative factor in continuance intention.

Alternative attractiveness arises from the comparison that subscribers make between existing provider and competing service providers (Chuang, 2011). According to Keaveney (1995), when the competing firms offer greater benefits or services that are more worthy or of high quality, then it enhances consumer's switching intention. Chuang (2011) observed that when the marketing promotions (e.g. lower price offers, free own network calling, more value-added services etc.) adopted by competing firms are more attractive, buyers are encouraged to leave their existing providers to purchase the products of competitors, thus producing disloyal behaviour. He also pointed out that better image or reputation of the alternative service provider encourages customers to switch their service providers.

According to Bansal and Taylor (2015), when a customer faces problems with the current service provider, he (she) is likely to likely to switch to another service provider that can better fulfil his (her) needs. They find that alternative attractiveness and customer value are the significant predictors of switching intentions for long distance telephone services.

Alternative attractiveness can be linked to service differentiation, which is the provision of a unique and valued service that competitors do not offer (White and Yanamandram, 2007). When a service provider offers differentiated services that are difficult for the alternative providers to match with, the customers tend to remain with the existing provider (Bendapudi & Berry, 1997). Kim et al. (2011a) argued that higher level of attractiveness of the current service provider will lower the attractiveness of alternatives. Sharma and Patterson (2000) observed that if

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customers perceive the alternative service as attractive in terms of better service, geographic proximity, service affordability, low cost or high economic contribution, then they are likely to switch the existing service provider.

Yim et al. (2007) proposed that the alternative attractiveness is likely to have an influence on customer commitment to a relationship. If fewer attractive alternatives exist in the market, the customer will be more committed to the existing service provider whereas higher attractive alternatives will lead to lower commitment. They conducted an empirical study on hairstyling service and found that customer commitment to the current service provider deceases with increase in attractiveness of alternative service provider. They argued that a high level of alternative attractiveness should reduce satisfaction with the incumbent relationship. According to Bansal et al. (2004), when alternative service providers are perceived to be attractive, consumers are less likely to feel 'locked in' to their current service providers. Kim et al. (2011b) observed that customers frequently find problems in their relationship with the existing service provider and begin to complain aggressively about their problems when the attractiveness of alternatives increases.

The unavailability of attractive alternatives or low alternative attractiveness is a favourable condition for defending customers or customer retention (Ping, 1993).When the alternative attractiveness is low, the customer's perceived profit or benefit derived from switching the current service provider may be low (Kim et al., 2011b). The lack of superior alternatives or no perceived differences among alternatives may deter the customer from switching service provider (Han et al., 2011).

Patterson and Smith (2003) conducted a cross-cultural study of switching barriers and propensity to stay with service providers in three services viz. travel agency, medical and hairdressing services and found that attractiveness of alternatives is found to have a significant impact on consumer intention to stay or switch the service provider. According to them, a customer will stay with the current service provider even when it is perceived as less than satisfactory if he does not perceive the alternatives as attractive or unaware of the attractive alternatives.

The empirical study by Kim et al. (2006) among email users in Korea shows that the alternative attractiveness moderates the relationship between customer satisfaction and intention to switch.

Kim et al. (2011a) examined WiMAX service continuance by integrating economic and technological aspects from user perspective and found that alternative attractiveness has a significant negative effect on consumer's decision to continue with a service provider. They found that satisfaction has a negative effect on attractiveness of alternatives and pointed out that high perceived value will increase the attractiveness of existing service and may inturn lower the attractiveness of alternatives.

2.7 Switching Cost

Switching cost is defined as the onetime costs that customers associate with the process of switching from one provider to another (Burnham et al., 2003). According to Jackson (1985), it is the sum of economic, psychological and physical costs. Switching costs include not only those that can be measured in monetary terms but also the psychological effect of becoming a customer of a new firm, and the time and effort involved in buying new brand (Klemperer, 1995).

Several empirical studies provide evidence for the presence of switching costs in a range of industries, such as telecom, banking, electricity, airlines, insurance, online brokerage services, computer software, television and others (Farrell and Klemperer, 2007). But it varies across firms (Chen and Hitt, 2002). Switching cost plays an important role in protecting firms' existing customer base and gaining competitive advantage (Aydin et al., 2005). Burnham et al. (2003) found that switching costs have a stronger effect on customer retention than customer satisfaction. Knittel (1997) through his studies in long distance telephony, showed that sufficiently high switching costs creates market power for the firms. Switching costs affect competition intensity, attractiveness of entry and market structure (Klemperer, 1987).

Burnham et al. (1993) identified eight distinct elements for the switching costs viz. (1) Economic risk costs: the uncertainty in terms of performance risk,

financial risk, and convenience risk. (2) Evaluation costs : the time and effort costs required to search and analyse potential alternatives so as to make a switching decision (3) Learning costs: the time and effort costs of acquiring new skills or know-how in order to use a new product or service effectively which are often provider-specific (4) Setup costs: the time and effort costs associated with the process of initiating a relationship with a new provider or setting up a new product for initial use (e.g. installation and software configuration) (5) Benefit loss costs: the costs associated with contractual linkages that create economic benefits for staying with the current provider (e.g. loss of accumulated points, loyalty discounts or benefits while switching) (6) Monetary loss costs: the one time expenditure in adopting a new service provider (eg deposits, registration fee, installation charges, activation fee etc.) (7) Personal relationship loss costs: the affective losses or emotional discomfort associated with breaking the bonds of identification formed with the staff of incumbent provider (8) Brand relationship loss costs : the affective losses or emotional discomfort associated with breaking the bonds of identification formed with a brand or company.

Burnham et al. (2003) further classified these switching cost elements into three higher order switching costs types viz. (1) Procedural switching costs consisting of economic risk costs, evaluation costs, setup costs, and learning costs. It primarily involves loss of time and effort (2) Financial switching costs consisting of benefit loss and monetary loss costs. It involves the loss of financially quantifiable resources (3) Relational switching costs consisting of personal relationship loss and brand relationship loss costs. It involves psychological or emotional discomfort due to the loss of identity and the breaking of bonds. They found that all the three switching cost types significantly influence consumers' intentions to stay with their current service provider. i.e the greater the switching costs, the higher will be consumer intentions to stay with an incumbent provider.

Aydin et al. (2005) identified various procedural switching costs in mobile services such as evaluating alternative operators with regard to different criteria such as coverage area, billing procedures, customer service, value added services etc., purchasing a new GSM service and finally notifying the new number to others.

Julander and Soderberg (2003) proposed that switching barriers can be seen as positive or negative. Positive switching barriers are related to wanting to be in a relationship, and negative switching barriers are related to having to be in a relationship. Their empirical study shows that negative switching barriers have negative effects on customer satisfaction and attitudinal loyalty, but a positive effect on repurchase intentions; positive switching barriers positively influences customer satisfaction, repurchase intentions and attitudinal loyalty. According to Valenzuela (2010), positive or more reward-based type of switching barriers, could strengthen the interpersonal relationship between the customer and the service provider.

Customers who perceive switching costs to be high tend to be loyal (Ping, 1993). Caruana's (2004) study among corporate mobile subscribers revealed that higher switching costs leads to stronger loyalty levels. Deng et al. (2010) found that switching cost directly enhance customer loyalty. They noted that switching costs weakens customers' sensitivity to price and satisfaction of the product brand and allows customers to view brands with similar functions as different brands.

Ahn et al. (2006) observed that in mobile services, even dissatisfied customers may show a high level of ''false'' loyalty as they have to forfeit the accumulated loyalty points, membership benefits etc.

According to Jones et al. (2000), switching barriers make consumer switching difficult or costly and include interpersonal relationships, perceived switching costs, and the attractiveness of alternatives. They found that switching barriers positively influenced repurchase intentions when satisfaction is low.

Chuang (2011) investigated the factors that influence subscribers to stay with or switch a service provider in mobile service industry, Taiwan and found that switching cost is the most significant factor for retention of subscribers. He also found that the procedural and financial switching costs negatively influence switching intention.

Lee et al. (2001) studied the impact of switching costs on the customer satisfaction-loyalty link among mobile subscribers of France and found that switching costs moderate the link between satisfaction and loyalty which suggest

that switching costs could serve as exit barriers only when a firm's services are above average.

Ranaweera and Prabhu (2003) conducted an empirical study among telephone users of UK to examine the effect of satisfaction, trust and switching barriers on customer retention and found that switching barriers have a significant positive effect on customer retention and it moderates the impact of customer satisfaction on retention. They suggested that for preventing customer defection, firms should create switching barriers that also add value to their services.

Aydin et al. (2005) studied the direct and indirect effect of switching cost on customer loyalty in Turkish mobile service market and found that switching cost directly affects customer loyalty, and moderates the effect of both trust and customer satisfaction on customer loyalty. They found that as a moderator variable, switching cost reduces the effect of both trust and customer satisfaction on loyalty.

Malhotra and Malhotra (2013) identified two types of lock-in strategies adopted by firms to arrest customer churn viz. "hard lock-in" and "soft lock-in". Hard lock-in refers to the negative switching costs which negatively influence or penalize customers whereas soft lock-in refers to the positive switching costs which positively influence customers. They argued that hard lock-in strategies create spuriously loyal customers who are not willing to switch only because of switching costs whereas soft lock-in strategies create relationally loyal customers who see relational value in continuing with the provider. They warn that hard lock-ins may be detrimental for firms in the long run and such practices may be avoided.

Yang and Peterson (2004) found that the moderating effects of switching costs on the association of customer loyalty and customer satisfaction and perceived value are significant only when the level of customer satisfaction or perceived value is above average.

Burnham et al. (2003) suggested that consumers' perceptions of switching costs may be enhanced by differentiating the firm's offerings (provider heterogeneity), communicating customers about the features that differentiate the provider from other competitors based on their needs and by increasing the product

complexity and breadth of use. Breadth of use refers to the extent to which the consumer employs a variety of product types, features, and functions offered by a provider (for e.g. a mobile service user may subscribe to voice, data, video or other value added services). The greater the breadth of products employed, the more likely that the customer's accumulated benefits will be lost in switching which increases the risk associated with switching the service provider.

2.8 Trust

Trust is defined as the willingness to rely on an exchange partner in whom one has confidence (Moorman et al., 1993). Trust exists when one party has confidence in exchange partner's reliability and integrity (Morgan and Hunt, 1994). Trust involves two parties: a trusting party (trustor) and a party to be trusted (trustee) (Mayer et al., 1995).

According to Anderson and Narus (1990), in order to gain trust, one party has to believe that a third party will perform actions that will result in positive outcomes for the first. Aydin et al. (2005) argued that in order to develop trust, customer should perceive positive outcomes and that these positive outcomes will continue in the future too. Trust develops over time based on a series of observations and interactions (Mayer et al., 1995).

Sako (1992) categorised trust in to three types based on the predictability in behaviour viz. 1) Contractual trust: the partner's ability to perform according to agreements 2) Competence trust: the partner's capability to deliver its promises and 3) Goodwill trust: the partner's commitment to take initiatives favouring the customer while refraining from taking unfair advantage.

Ganesan (1994) identified two distinct types of trusts in his study on determinants of long-term orientation in buyer-seller relationships viz. 1) credibility trust which is the confidence that the service will be delivered satisfactorily and 2) benevolence trust which is the confidence that the service provider will not take advantage of the relationship. He argued that repeated satisfaction over times would strengthen the perceived reliability of the provider and contribute further to trust formation.

Rousseau et al. (1998) termed trust as a psychological state with the intention to accept vulnerability based on positive expectations of intentions of another. They argued that risk and interdependence are the essential conditions for trust. They observed that trust changes over time and it creates positive attitude towards others. They noted that there are three phases of trust viz. 1) trust building phase where trust is formed or reformed 2) trust stability phase where trust already exists and develops and 3) trust dissolution phase where trust declines.

According to McKnight et al. (1998), there are three major mechanisms to build trust: institution-based process, knowledge-based process and trust transfer process. Institution-based process stresses on building trust through a variety of institutional structures such as feedback system, guarantees, intermediary etc. Knowledge-based process means that people's trust in one party builds based on their prior interactions with the party. Trust transfer process refers to a trust mechanism that one's trust in an unknown person/object can be derived from his trust in a known person/object who has certain association with the unknown person/object. They suggest that good reputation of a firm will leads to greater trust as it reflects professional competence.

Morgan and Hunt (1994) highlight the importance of confidence in generating trust. They suggest that the confidence on the part of trusting party results from the firm belief that the trustworthy party is reliable and has high integrity. They suggested that the trustee (trustworthy party) should be consistent, competent, honest, fair, responsible, helpful and benevolent in generating trust. They considered trust as a major determinant of relationship commitment.

Gefen (2000) observed that trust is complex, multidimensional and context dependent. Gefen pointed out that trust reduces the need for extensive negotiations, creates commitment, encourages long-term orientation and reduces perceived risk and transaction costs. He observed that familiarity builds trust and trust in the vendor influences customer's intention to purchase in the context of e-commerce.

Sirdeshmukh et al. (2002) conceptualised consumer trust as a multi faceted construct involving front line employees (FLEs) behaviours and the management policies and practices (MPPs) that indicate a motivation to safeguard

customer interests. They conceptualised trustworthiness as a three dimensional construct comprising of operational competence, operational benevolence and problem solving orientation. They empirically tested the linkage between trust and loyalty in retail and airline service contexts and found that value mediates the effect of trust on loyalty.

Many researchers consider trust as a key to relationships. According to Morgan and Hunt (1994), trust is central to all relational exchanges. Trust determines the quality and effectiveness of many relations (Gefen, 2000). Trust is an important aspect of interpersonal relationships (Butler, 1991). Berry (1993) found that trust is the basis for loyalty in retail sector. Bendapudi and Berry (1997) observed that trust leads to dedication for maintaining relationships as long term relations reduces transaction costs. In their theoretical model, they proposed that customer's trust in relationship partner will lead to greater dedication for maintaining the relationship; the greater the partner's expertise, the greater the customer's dependence on and trust in the partner; the greater the customer's satisfaction with past service interaction, the greater the dependence on and trust in the relationship partner.

Trust plays an important role in reducing uncertainty of customers. Karjaluoto et al. (2012) observed that customers rely on trust for service exchanges to reduce the uncertainty and perceived risk created by intangibility of services. Trust is critical when there is an uncertainty in transaction and sufficient product relevant information is unavailable (Swan and Nolan, 1985).

Previous studies suggest that trust has a significant effect on behavioural intentions. Gefen (2000) found that trust in the vendor positively influences customer's intention to use vendor's web for e-commerce. Crosby et al. (1990) viewed that trust in the salesperson is a key factor for relationship quality which is shown to positively influence the future interactions in service sales context. Ganesan (1994) viewed that trust in the supplier is the key for the customer's intention to continue the relationship. According to Aydin et al. (2005), when customers trust brands, they are likely to show positive buying intentions towards them. Chaudhuri and Holbrook (2001) found that brand trust has a direct positive effect on both purchase loyalty and attitudinal loyalty. Deng et al. (2010) proposed

that when customers trust the service provider, they will continually use the service and even recommend the service to others. Lee (2005) found that trust positively influences customer attitude and behavioural intentions in m-commerce.

The empirical study by Wang et al. (2013) in the web-mobile service reveals that trust can influence users' mobile service adoption behaviour by affecting performance expectancy perceived risk, perceived usefulness, attitude, behavioural intention, satisfaction and loyalty.

Aydin and Ozer (2006) conducted research among Turkish mobile customers and found that trust positively influences customer satisfaction and customer loyalty. They argued that to trust a brand customer should perceive quality as positive. Deng et al. (2010) found that trust positively influences customer satisfaction and customer loyalty in their study among mobile instant message service users in China.

Aydin et al. (2005) found that trust is more important than customer satisfaction in generating loyalty. They also found that switching costs moderate the impact of trust on customer loyalty. They suggest that trust in a firm will resist attractive short-term alternatives.

Karjaluoto et al. (2012) conducted an empirical survey among mobile subscribers of Finland and found that trust mediates the impact of perceived value on loyalty.

2.9 Corporate Image

According to Spector (1961), corporate image is the sum total of customer's perceptions of a firm's personality characteristics. Souideen et al. (2006) refers corporate image as the overall impression made on the minds of the public about a firm. Barnett et al. (2006) stated that image is the perception that external observers have of the firm. Andreassen and Lindestad (1998) viewed corporate image as the accumulated attitude towards a company.

Wartick (2002) pointed out that corporate identity, image and reputation are often used interchangeably. According to Markwick and Fill (1997) corporate

identity is an organization's presentation of itself to its various stakeholders and the means by which it distinguishes itself from all other organizations. Barnett et al. (2006, p.34) defined corporate reputation as "observers' collective judgments of a corporation based on assessments of the financial, social, and environmental impacts attributed to the corporation over time."

According to Bayol et al. (2000), image is related to brand name and refers to the kind of associations the customers get from the product/brand/company. Brand image is the perception of a brand held in consumer memory (Keller, 1993). Brand reputation refers to the perception of quality associated with the name of the product or the firm that provides the service (Selnes, 1993).

Corporate image is established and developed in the customer's mind through communication and experience. (Andreassen and Lindestad, 1998). Lai et al. (2009) observed that corporate image arise from all of a customer's consumption experiences, and service quality is a major contributor to these consumption experiences.

Barnett et al. (2006) argued that image can be shaped but not controlled by a firm because factors such as media, governmental regulations and surveillance, industry dynamics and other external forces also influence impressions of the firm. Spector (1961) observed that an image held by the people who interact with the company is not easily improved because of its attitudinal nature and emotional components associated with it. Richins (1983) pointed out that some level of customer dissatisfaction is inevitable in marketplace, but the way in which these dissatisfactions are managed will have a major impact on image of the firm.

Gronroos (1984) incorporated corporate image as a component in his perceived service quality model. He stated that corporate image is built up by mainly by technical and functional quality of services and less importantly by other factors such as tradition, ideology, word-of-mouth and traditional marketing activities.

In the service marketing literature, corporate image has been identified as an important factor in the overall evaluation of the service and the company (Gronroos 1984). Corporate image is assumed to have an impact on customers´

choice of company when service attributes are difficult to evaluate. (Andreassen and Lindestad, 1998).Corporate reputation creates expectations about the key attributes of a company and its future behaviour (Saxton, 1998).de Ruyter and Wetzels (2000) viewed corporate image as an information cue that consumers use to judge matters such as credibility, perceived quality and purchase intentions. Andreassen and Lindestad (1998) argued that good corporate image stimulates purchase by simplifying decision rules. Spector (1961) stated that the image of a manufacturer affects people's selection or rejection of its products. He argued that negative image is a more potent determinant of consumers' choices. Lai et al. (2009) viewed that a positive image makes the consumption experience more delighting, thus helping customers experience pleasurable social and emotional benefits.

According to Peng and Wang (2006), corporate image is crucial for service firms as it helps to reduce customer's perceived monetary, social or safety risk in buying services which are difficult to evaluate prior to purchase. Wang et al. (2006) observed that corporate reputation shall be viewed as a strategic asset of a firm as it adds value to a product or service by influencing purchase behaviour and word-of-mouth recommendations.

Kang and Fames (2004) observed that image has a filtering effect on consumer's perception of quality. They viewed that a favourable image is an asset for any firm as it influences consumer perceptions of communication and operations. While positive image is having a curtailing effect on consumer complaints, negative image is having a magnifying effect. Corporate image is capable of creating a halo effect on consumers´ satisfaction judgments (Andreassen and Lindestad, 1998).

A strong corporate image can be used to increase communication efficiency (Keller and Aaker, 1997). Corporate image can be an extrinsic information cue for both existing and potential customers and may influence customer loyalty (Andreassen and Lindestad, 1998). A good corporate image helps in making the customers more attached to the company (corporate commitment) (Bhattacharya and Sen, 2003). Corporate image serves as an important factor influencing the perception of quality, consumers' evaluation of satisfaction and customer loyalty (Andreassen and Lindestad, 1998).

According to Wang et al. (2006), a favourable corporate image helps companies to (i) withstand occasional adverse publicity (ii) motivate higher levels of purchase intentions (iii) encourage better attitudes among buyers (iv) enhance customer loyalty and (v) provide an indication of the service quality and value that customers are likely to obtain.

Lai et al. (2009) found that service quality has a direct positive influence on corporate image which inturn influences customer satisfaction, thereby mediates the impact of service quality on customer loyalty in mobile services.

Andreassen and Lindestad (1998) found that corporate image is found to have (i) direct positive effect on perceived quality and customer satisfaction (ii) indirect positive effect on value through perceived quality (iii) direct positive effect on customer loyalty (iv) indirect positive effect on customer loyalty through customer satisfaction.

Malhotra and Malhotra's (2013) exploratory study reveals that customers perceptions of the innovativeness of the company positively impact consumers' intent to buy more add-on services and have a detracting effect on consumer' s switching intention.

2.10 Word-Of-Mouth

Historically, the term ''word of mouth'' (WOM) was used to describe interactions (mostly verbal) among customers. Arndt (1967) defined WOM as the oral, person-to-person communication between a perceived non-commercial communicator and a receiver concerning a brand, a product, or a service. WOM may be positive or negative. Positive word of mouth (PWOM) involves relating pleasant, vivid or novel experiences and recommendation to others whereas negative word of mouth (NWOM) involves behaviour such as defamation, relating unpleasant experiences, rumour and private complaining (Anderson, 1998). WOM may be uttered before or after a purchase. When operates in the pre-purchase phase it is called 'input WOM', whereas if it happens after the purchase it is called 'Output WOM' (Buttle, 1998). WOM possesses the flexibility of interpersonal communication (Day, 1971). It vanishes as soon as it is uttered. WOM may be

offered with or without request. It may or may not be sought by the listener. But for authoritative information, it may be sought from opinion leaders (Buttle, 1998). WOM may happen in many domains such as customers, suppliers, employees, influentials, recruitment and referral markets (Christopher et al., 1991).

WOM communication may be offline or online. When it happens through internet (online), it is termed as electronic WOM (eWOM). Hennig-Thurau et al. (2004, p.39) defined eWOM as "any positive or negative statement made by potential, actual, or former customers about a product or a company via the internet". Though eWOM increases speed and ease of communications, it is usually unsolicited, lacks reliability and flexibility provided through face-to-face communications and the recipient need to not necessarily willing to pay attention to it. But many firms encourage customer reviews through their websites, which allow customers to share their informations far more easily than ever before. With the increasing use of internet based communication such as online discussion forums, consumer review sites, social network sites, etc. among customers, it is likely that eWOM will play a bigger role in consumer purchase decisions (Cheung & Thadani, 2010)

Role of WOM in decision making

Consumer purchase decision is a complex, multistage process which comprises of five stages such as problem/need recognition, information search, evaluation of alternatives, purchase decision and post purchase behaviour (Kotler, 2003).

Consumer's search for information and evaluation of alternatives is a risk reduction strategy (Murrary, 1991). Perceived risk is the consumer's perceptions of the uncertainty and adverse consequences of purchasing a product or service (Dowling & Staelin, 1994). According to Wangenheim and Bayon (2004), perceived risk is multi dimensional in nature which may be financial, functional, social, psychological, time and security. Functional risk refers to the risk that the functional attributes of the product do not satisfy the needs. Financial risk means financial loss due to 'bad' purchase. Social risk refers to the negative consequences arising from the social environment of the consumer (e.g. not accepted by friends). Psychological

risk relates to lower self perception when customer has made a bad choice. The greater the perceived risk, the greater will be the propensity to seek the information. Services are perceived to be riskier than goods as it is difficult to evaluate prior consumption due its intangible dominant nature (Murrary, 1991).

WOM has been identified as a primary source of informational influence in consumer purchase decision making (Tax et al., 1993). WOM communications is found to have a very strong influence on purchase decisions than other sources of influence in service context as it is perceived to be more reliable, credible and trustworthy by consumers than firm-initiated communications (Arndt, 1967; Murray, 1991). WOM influences expectations and perceptions during information search phase of the buying process and influences attitude during the pre-choice evaluation of alternative service providers (Buttle, 1998). WOM is influential not only in generating awareness about products/services but also in actual purchase decisions. Murray (1991) observed that WOM reduces the risk associated with buying decisions. WOM is found to influences consumer's brand choice decisions and brand switching behaviour. While PWOM encourages brand choice, NWOM discourages brand choice (East et al., 2008).

Informational influence occurs when someone else provides information to the consumer to help them make a purchase decision. The sources of influence may be (i) Experiential sources of influence (e.g. own personal experience) (ii) Interpersonal sources of influence (e.g. opinions of friends, colleagues, relatives, or others) and (iii) External sources of influence (e.g. advertising, articles, reviews, or other activities of a company. (Keaveney & Parthasarathy, 2001). When faced with a purchase decision, consumers first engage in internal search by examining information from memory based on past experiences and product-relevant knowledge (Bettman, 1979). Richins (1983) observed that consumer perceptions are usually based either on prior personal experience or reports of the prior experiences of others.

WOM plays an important role in consumer's post-purchase decision making too. WOM is often sought as a strategy to reduce the discomfort caused by post purchase conflict or cognitive dissonance (Festinger, 1962; Buttle, 1998). Cognitive dissonance occurs due to difference in consumer's expectations and the

product's perceived performance (Kotler & Armstrong, 2013). WOM is often used as a vehicle for expressing satisfaction or dissatisfaction with a product experience and often being considered as an important post purchase complaining option (Tax et al., 1993).

Keaveney (1995) explored the consumer switching behaviour in service industries and found that 50% of the customers found a new service provider through word of mouth referrals. Wangenheim and Bayon (2004) studied the effect of word of mouth on services switching and found that WOM referrals influences consumer's purchase or switching intentions. It is also found that the strength of WOM influence is determined by perceived communicator characteristics such as perceived source similarity and expertise.

Richins (1983) suggested that a firm can show its responsiveness to complaints through warranty, complaint procedure informations, toll-free telephone numbers to receive comments/complaints, positive employee attitudes and by prompt and courteous handling of complaints. He argued that such responsiveness may avert negative WOM and may even create positive WOM.

Anderson et al. (2004) argued that the PWOM generated by satisfied customers should reduce the acquisition costs, and thereby enhancing the net cash flows and shareholder value of firms. Anderson (1998) found that extremely dissatisfied customers engage in greater word of mouth (NWOM) than high satisfaction customers (PWOM).

Kau and Loh (2006) noted that satisfaction with service recovery leads to higher level of trust in the mobile phone provider and willingness on the part of customers to engage in positive word-of-mouth communications.

2.11 Switching Intention

Oliver (1997) described behavioural intention as the stated likelihood to engage in a behaviour. Behavioural intention may be positive (e.g. repurchase intention) or negative (e.g. switching intention) (Han et al., 2011). Behavioural

intentions can be viewed as indicators that signal whether the customers will remain with or defect from the service provider (Zeithaml et al., 1996).

According to Ping (1994) switching or exit intention is the propensity to terminate the primary supplier relationship. Service switching indicates a person's desire to replace the current service provider with another (Sambandam and Lord, 1995). Ranaweera and Prabhu (2003) define customer exit (or switching) as the customer's decision to stop purchasing a particular service or patronising the service firm, which results from a gradual dissolution of relationships due to a problem or problems encountered over time. According to Han et al. (2011), service switching, switching intention, customer loyalty, customer retention and repurchase intention are all associated. While customer loyalty, customer retention and repurchase intention indicate favourable outcomes for the service provider, service switching and switching intention indicate unfavourable outcomes. Consumer switching adversely affects marketshare, profit, and future revenues (Reichheld & Sasser, 1990). Ganesh et al. (2000) viewed that service switching behaviour poses a serious threat to long-term relationships.

In telecommunication industry, the sharp increase of competition makes customer churn a great concern for the providers especially as the market matures (Ahn et al., 2006). So customer retention or preventing customer churn has become a key competitive issue (Sweeney and Swait, 2008). For effective customer retention, a service provider must understand why customers switch from one provider to another and identify the factors affecting their decision to switch or stay with the provider (Han et al., 2011).

According to Ganesh et al. (2000), a firm's customer base can be classified into two groups (1) Switchers: customers who have switched from other service providers (2) Stayers: customers who haven't switched their service providers. Switchers can again be classified as dissatisfied switchers who switched their service provider due to dissatisfaction and satisfied switchers who switched for reasons other than dissatisfaction. They observed that an understanding of how these groups differ in their attitudes and behaviour will provide crucial insights for designing and implementing effective customer retention and acquisition strategies.

Keaveney (1995) explored why consumers switch from one service provider to another and classified the reasons in to eight general categories: (1) core service failures-44% (2) service encounter failures-34% (3) pricing -30% (4) inconvenience- 20% (5) employee response to service failures-17 % (6) attraction by competitiors-10% (7) ethical problems 9% (8) involuntary switching & seldom mentioned incidents- 6%. Keaveney argued that six of these eight categories can be controlled by the service firms. He suggested that customer defections caused by unsatisfactory employee-customer interaction can be reduced by educating employees through training to listen to customers, responding promptly to their queries, keeping customers informed and explaining properly about products and procedures.

According to Garbarino and Johnson (1999) consumer decision making is guided by customer satisfaction, perceived service quality, perceived value, trust and commitment. In line with this, the empirical study conducted by Cronin et al. (2000) across service industries reveals that service quality, service value, and satisfaction directly related to behavioural intentions when the variables considered collectively and the indirect effects of the service quality and value enhanced their impact on behavioural intentions. Bitner (1995) suggested that customers may terminate relationships due to better quality alternatives, lower prices available elsewhere, special promotions from competitors, not needing the service any longer or other reasons not explored till date.

Chen and Chen (2010) explored the impact of experience quality, perceived value and satisfaction, on behavioural intentions in Heritage tourism, Taiwan and found that both perceived value and satisfaction have direct impact on behavioural intentions whereas the impact of experience quality on behavioural intentions is mediated by perceived value and satisfaction

Ranaweera and Prabhu (2003) examined the combined effects of customer satisfaction, trust and switching barriers on customer retention in a continuous purchase setting (telephone users) in UK and found that both customer satisfaction and trust have strong direct positive effects on customer retention whereas switching barriers moderate the effect of satisfaction on retention. They also found that trust is a weaker predictor of retention than customer satisfaction.

Gerpott et al. (2001), in their study among German mobile customers found that overall customer satisfaction has a significant impact on customer loyalty which in turn influences a customer's intention to terminate/extend the contractual relationship with his mobile service provider.

In their churn model, Ahn et al. (2006) considered user dissatisfaction, switching costs, service usage patterns, customer status and customer-related factors as the main factors influencing consumer decision to remain or switch the service providers. They found that call quality, loyalty points and service usage level are the major factors influencing customer churn in the Korean mobile service market.

Malhotra and Malhotra (2013) explored the impact of service quality innovation and lock-in strategies on consumer switching intentions among mobile service customers of USA and found that mobile service quality and perceptions of the innovativeness negatively impact the switching intentions and enhances customer's intent to buy more add-on services. They also found that the hard lock-in strategies (e.g. unreasonable contract length, contract breaking fees, etc.) adopted by the service providers have a reverse impact of enhancing consumer's switching intentions. They observed that hard-lock in strategies may lead to 'spuriously loyal' customers whereas soft-lock in strategies (e.g incentives for calls to friends/family within network) may lead to 'relationally loyal' customers.

Han et al. (2011) studied the relationships among core service performance, service encounter performance, customer satisfaction, switching barriers and switching intention in hotel industry. They found that the core service and service encounter performances significantly affect customer satisfaction, and customer satisfaction completely mediates the effects of service performances on switching intention. They also found that the switching barriers such as switching costs, relational investment and lack of alternative attractiveness moderated the relationships between customer satisfaction and switching intention.

Using a binary logit model, Chuang (2011) investigated the factors influencing customer's intention to stay or switch the service provider in Taiwan mobile service, and found that customer satisfaction, switching costs, and habit strength negatively influence switching intentions or motivates customers to stay

with their service providers (termed as 'sucking effect') whereas alternative attractiveness positively influences switching intentions, or motivates customers to switch their service providers (termed as 'pulling effect'). He also found that switching cost is the most significant factor for retention of subscribers. He suggested that mobile service providers should develop a variety of reward plans and switching procedures to cause subscribers to perceive the existence of switching costs, thereby discouraging switching intentions. He observed that the promotions and unique services provided by alternative providers are strong forces that pull subscribers towards other service providers.

Valenzuela (2010) in his exploratory study on switching barriers among retail banking customers of Chile, concluded that a service provider should increase the level of trust, value, and interpersonal relationship to prevent consumer switching. He suggested various steps such as effective communication with the customers, showing customer commitment, effective conflict handling, improving corporate image through publicity and public relations for preventing consumer switching. He cautioned that the negative switching barriers imposed by service firms will not ensure dissatisfied customers from switching their service providers.

Burnham et al. (2003) found that all the three switching cost types (viz. procedural switching costs, financial switching costs & relational switching costs) significantly influence consumers' intentions to stay with their current service provider. They also found that the financial switching costs have the weakest impact on consumer switching among the different switching cost types.

Keaveney and Parthasarathy (2001) explored the attitudinal, behavioural, and demographic characteristics that discriminate switchers and continuers of online services subscription. They found that continuers are more likely to use experiential and external information sources than interpersonal information sources in selecting the service provider whereas switchers prefer interpersonal information sources (such as WOM) than others sources. While customers with higher satisfaction, higher involvement, higher period of association, higher income, higher educational level show more propensity to continue the service, customers with lesser period of association, lower satisfaction, lower involvement, lower income and lower educational level show higher propensity to switch their service providers.

Keramati and Ardabili (2011) investigated the factors affecting customer churn in Iranian mobile services and found that customer dissatisfaction, amount of service usage and age have the most influence on their decision to remain or churn.

Kim and Yoon (2004) analysed the determinants of customer churn and customer loyalty in Korean mobile telephony market and found that subscription duration and customer satisfaction with service attributes such as call quality, tariff level, brand image negatively influence customer churn whereas income level positively influences customer churn. Bolton (1998) in his exploratory study using dynamic model on the influence of the duration of relationship on cumulative customer satisfaction argued that customers with more experience will have a stable assessment of the expected service whereas newer customers will be less certain about the services and hence will be more vulnerable to switching.

Using Bayesian Belief Network, Kisioglu and Topcu (2011) found that the average minutes of calls, average billing amount, frequency of calls and tariff as the most important determinants that explain customer churn in Turkish telecom service. They also found that are rural customers are more loyal than urban customers and customers with less than 5 years association as well as under the age of 35 show a high propensity to churn.

From the literature review, it can be concluded that CRM, service quality, perceived value, customer satisfaction, customer loyalty, alternative attractiveness, WOM, trust, corporate image and switching costs are the major factors affecting customer's decision to stay or switch the service provider. It is also understood that the demographic profile of the customers such as gender, age, income, education, locality, type of connection, amount of service usage and period association with a service provider moderate the switching intention in mobile services.

CHAPTER-III

RESEARCH METHODOLOGY

This chapter deals with the development of the constructs, hypotheses, research model and instrument, nature and source of data, sampling design, method of data collection, pilot study, reliability and content validity of the instrument.

3.1 Development of constructs, hypotheses, research model and instrument

3.1.1 Customer Relationship Management (CRM)

From the literature review, it can be concluded that CRM helps to improve quality of service through continuous two way communication, interaction management such as feedbacks, quick and efficient support service. Further CRM enables firms to enhance customer lifetime value, customer satisfaction and customer loyalty directly through customer retention strategies such as loyalty programs, customization, relationship commitment, relationship development and indirectly by enhancing the perceived quality of service. By influencing the key constructs such as perceived service quality, perceived value, customer satisfaction and customer loyalty that determine the consumer switching intention, CRM can be assumed to negatively influence consumer switching intention. This lead to the following hypotheses:

H1a : CRM positively influences perceived service quality

H1b : CRM positively influences perceived value

H1c : CRM positively influences customer satisfaction

H1d : CRM positively influences customer loyalty

H1e : CRM negatively influences consumer switching intention

The effectiveness of customer perceived CRM is measured using the key components of CRM such as customization, loyalty programs, interaction management, relationship commitment, relationship development and efficiency of

the customer support services. Seven standardised questions adopted from the studies of Hillebrand et al. (2011), Reimann et al. (2010) and Agbaje (2014) were used for measuring CRM in this study.

3.1.2 Perceived service quality (PSQ)

Literature review leads to the conclusion that PSQ is the key antecedent of customer satisfaction and customer loyalty (Cronin et al.,2000; Anderson et al.,1994; Gerpott et al., 2001; Lin & Ding, 2005; Deng et al., 2009) by directly influencing consumer perceived value [Sweeney et al., 1999; Bansal and Taylor, 1999; Lai et al., 2009). Further PSQ is found to have direct impact on behavioural intentions (Zeithaml et al., 1996; Ahn et al., 2006; Malhotra and Malhotra, 2013). Based on the above, the following hypotheses are proposed

H2a : Perceived service quality positively influences perceived value

H2b : Perceived service quality positively influences customer satisfaction

H2c : Perceived service quality positively influences customer loyalty

H2d : Perceived service quality negatively influences consumer switching intention

As suggested by Wang et al. (2004) PSQ for this study is measured using six dimensions such as reliability, responsiveness, assurance, empathy, tangibility and network quality dimensions. The first five dimensions were measured using the standardised 22 item SERVQUAL scale introduced by Parasuraman et al. (1994) and the network quality dimension is measured using 5 item scale suggested by Seth et al. (2008). PSQ is considered as a reflective measure of these six dimensions in this study.

3.1.3 Perceived value

Customer perceived value is the difference between prospective customer's evaluation of all the benefits and all the costs of an offering in comparison with its alternatives. From the review of literature, it is found that

perceived value positively influences customer satisfaction and an important driver of customer loyalty (e.g. Fornell et al., 1996; Oh, 1999; McDougall and Levesque, 2000; Anderson et al., 1994; Karjaluoto et al., 2012). When customers perceive the services as highly valued, it will reduce the attractiveness of alternatives available in the market (Kim et al., 2011a). Giovanis et al. (2009) found a direct negative impact of perceived value on attractiveness of alternatives in Greek mobile telecom service industry. Further, perceived value found to have direct positive influence on behavioural intentions by many researchers (Zeithaml, 1988; Oh, 1999; Cronin et al., 2000; Wang et al., 2004; Turel et al., 2000; Chen & Chen, 2010). Accordingly the following hypotheses are proposed

H3a : Perceived value positively influences customer satisfaction

H3b : Perceived value positively influences customer loyalty

H3c : Perceived value negatively influences alternative attractiveness

H3d : Perceived value negatively influences consumer switching intention

Many researches consider perceived value as a multi-dimensional construct comprising of functional value, monetary value, emotional value, and social value (e.g. Sweeney and Soutar,2001; Deng et al., 2010;Karjaluoto et al., 2012). The present study measures perceived value using the above dimensions with six standardised questions adopted from the research works of Karjaluoto et al. (2012) & Pihlstrom (2008).

3.1.4 Customer satisfaction

Customer satisfaction is explained as the discrepancy between a customer's prior expectations and perceptions after consumption (Tse &Wilton, 1988).Literature review supports two different conceptualisations for customer satisfaction such as transaction specific and cumulative satisfaction. This study adopts cumulative satisfaction approach as takes into account of overall evaluation of purchase and consumption experience over time which is considered ideal for continuously used service such as mobile services. Customer satisfaction is measured using expectancy or desire disconfirmation and cumulative satisfaction

components with the help of five standardised questions adopted from the research works of Fornell (1992) & Zhao et al. (2012).

From the review of literature, it is found that customer satisfaction positively influence customer loyalty (Caruana, 2002; Lai et al., 2009; Aydin et al., 2005; Deng et al., 2010) and negatively influence consumer switching intention (Gerpott et al., 2001; Chen & Chen,2010 ; Chuang, 2011) . Accordingly the following hypotheses are proposed

H4a : Customer satisfaction positively influences customer loyalty

H4b : Customer satisfaction negatively influences consumer switching intention

3.1.5 Customer loyalty

From the review of literature, it is understood that there are three popular conceptualisations or approaches for customer loyalty namely behavioural, attitudinal and integrated approach. Since behavioural approach is incapable of differentiating spurious loyalty from true loyalty, integrated approach which incorporate both behavioural and attitudinal approaches is used in this study as suggested by Dick & Basu (1994). Customer loyalty is measured with six standardised questions adopted from Zeithaml et al. (1996).

Further, it is found that customer loyalty influences consumer's intentions to stay or switch the service provider (e.g. Gerpott et al., 2001; Platonova et al., 2008). Accordingly the following hypothesis is proposed

H5 : Customer loyalty negatively influences consumer switching intention

3.1.6 Alternative Attractiveness

Alternative attractiveness refers to how good available alternatives would be in comparison with the existing one. It is the positive features of the competing service provider, encouraging subscribers to switch (Chuang, 2011). Alternative attractiveness is found to have a positive influence on switching intention by many

researchers (e.g. Kim et al., 2011a; Keaveney, 1995; Chuang, 2011; Bansal and Taylor, 2015; Yim et al., 2007; Bansal et al., 2004; Patterson & Smith, 2003).Further, when customers perceive that there are no or very few alternatives exists, they will be more loyal to the relationship and continue using the same provider as if they are locked in the relationship (Platonova et al., 2008). The negative impact of alternative attractiveness on customer loyalty is empirically established by Jeng (2004) in mobile service sector, Tung et al. (2011) in department stores, Magalhaes (2009) in banking sector, Siswoyo & Supriyanto (2013) in hospital services and Platonova et al. (2008) in healthcare services. This leads to the following hypotheses:

H6a : Alternative attractiveness negatively influences customer loyalty

H6b : Alternative attractiveness positively influences consumer switching intention

In this study, alternative attractiveness is measured using three item scale adopted from Chuang (2011) which measure the attractiveness of competing service provider's service, products, and promotion.

3.1.7   Switching cost

Switching cost, the onetime cost incurred while switching from one service provider to another plays an important role in arresting customer churn and helps firms to create market power. In this study, switching cost is measured using an eight item scale adopted from Burnham et al. (2003) comprising of benefit loss costs, economic risk costs, evaluation costs, learning costs, monetary loss costs and setup costs elements. Switching cost is found to negatively influence consumer switching intention. Accordingly the following hypothesis is proposed

H7 : Switching cost negatively influences consumer switching intention

3.1.8   Trust

Trust, the willingness to rely on an exchange partner, is a psychological state with the intention to accept risk based on positive expectations. It plays a key

role in relational exchanges by reducing uncertainty. It changes (develops or stabilises or deteriorates) over time. Review of literature suggests that trust has a significant effect on behavioural intentions (e.g. Ganesan, 1994; Gefen, 2000; Lee, 2005). So trust in a service provider is expected to negatively influence switching intention. Accordingly, the following hypothesis is proposed

H8 : Trust negatively influences consumer switching intention

In this study, trust is measured using benevolence, competence, honesty, fairness, consistency, responsibility and overall trust dimensions with seven questions adopted from research works of Butler (1991) and Karjaluoto (2012).

3.1.9   Corporate image

Literature review indicates that corporate image does not influence the consumer switching intention directly. But it has a filtering effect on consumer perception of quality. Corporate image is measured using six item scale adopted from Bayol et al. (2000) and Kang et al. (2004).

3.1.10   Word-of-Mouth

Word- of-mouth is identified as the primary source of informational influence as it is perceived to be more reliable, credible and trustworthy than firm initiated communications. It is found to have a strong influence on various stages of the purchase process and helps to reduce the risk associate with the purchase process especially for services which are difficult to evaluate prior consumption (Murrary, 1991). It influences expectations and perceptions of customers and drives the attitude towards purchasing. Word-of-mouth is found to have a strong impact on consumer purchase of switching intention (Keaveney, 1995; Wangenheim & Bayon, 2004).

In this study, the role of word-of-mouth in consumer decision making is measured based on its influence on various stages of purchase process such as need recognition, information search, evaluation of alternatives, purchase and post purchase using six questions derived from the research works of Park et al.(2007) and Wangenheim et al. (2004).

3.1.11   Switching intention

Switching intention, the negative form of behavioural intention, indicates whether the customers will remain with or defect from the service provider. In this study, consumer switching intention is measured using five item scale developed by Malhotra & malhotra (2013).

Based on the above hypotheses, the following conceptual model is proposed for the study.

Figure 3.1

Research Model
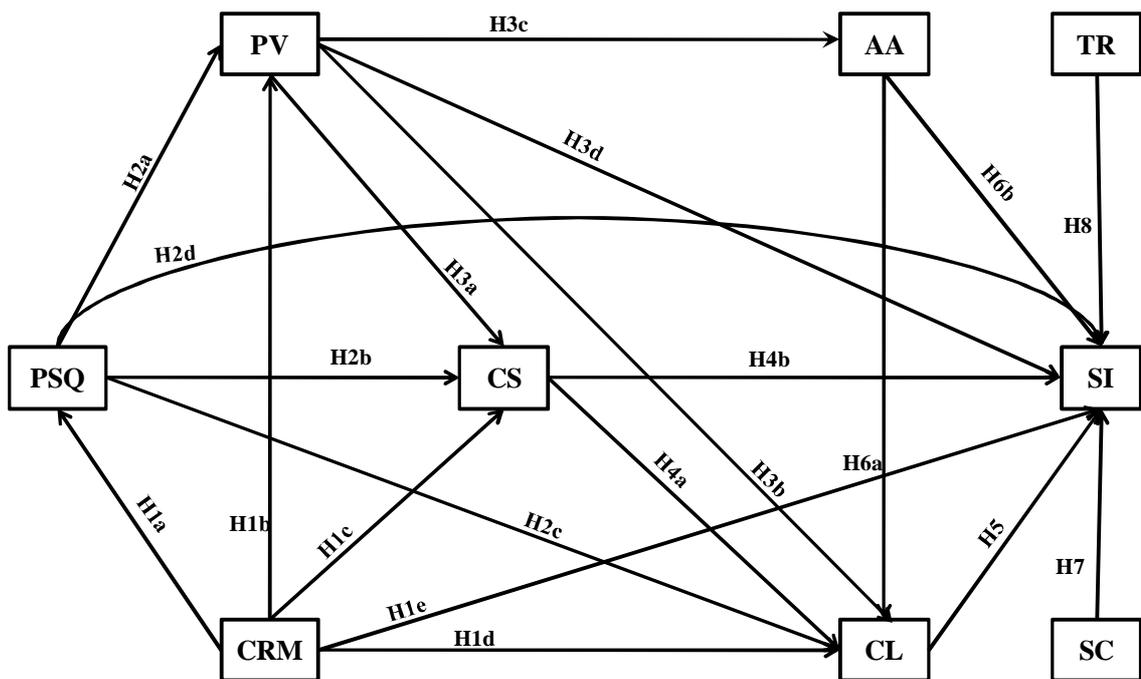
Legend: PSQ- Perceived service quality; CRM- Customer Relationship Management; PV- Perceived value; CL- Customer Loyalty; CS- Customer Satisfaction; SC- Switching Cost; TR- Trust; AA- Alternative Attractiveness; WOM- Word-Of-Mouth; SI- Switching Intention

3.2 Pilot study

After developing the questionnaire, each question and the questionnaire as a whole must be evaluated rigorously before final administration. Pilot study or Pilot Survey, a replica and rehearsal of the main survey, is used to test the weakness in the questionnaire, to check the clarity of the questions and to eliminate difficulties or ambiguities in wording. In this study, the initial questionnaire was refined through a pre-testing prior to administering the actual survey. The pilot study was conducted among 50 respondents randomly selected from Thiruvananthapuram district. Based on the feedback from the respondents and after consulting with experts, some questions were removed and some questions were slightly modified for better understanding of the questions, but without affecting its actual intended meaning.

3.3 Design of the Questionnaire

The structured questionnaire was developed specifically to meet objective of research and hypotheses using standardised measurement scales. The questionnaire has been divided into two sections. The first part of the questionnaire deals with the collection of personal data of the respondents namely name, gender, age, education, employment status, locality, annual family income and details of the mobile connection currently possessed by the respondent. The second part is related questions on the most preferred mobile service currently possessed by the respondent which measure various variables adopted in the proposed model using a 5 point Likert scale having the score value '1' for strongly disagree and '5' for strongly agree. The copy of questionnaire is given in Appendix-I.

3.4 Collection of data
3.4.1 Primary data

The primary data for the study was collected directly by the researcher using survey method by administering a structured questionnaire. The primary data was collected during the period June 2015 to November 2015. The respondents who participated in the pilot study are exempted from the main survey.

3.4.1.1 Sampling design

Individual cellular mobile customers of Kerala telecom circle constitute the population for the study. Stratified multistage random sampling technique is used for selecting the samples for the primary data collection of this study.

In the first stage, the population is divided into three strata or sub groups namely urban, sub-urban and rural areas. Kerala state has 6 municipal corporations representing urban stratum, 87 municipalities representing sub-urban stratum and 941 grama panchayats representing the rural stratum.

3.4.1.2 Sample size

Structural equation modeling will be used for checking the causal relationship among variables and for testing the hypotheses proposed in the study. Sample size plays an important role in the estimation and interpretation of structural equation modeling results (Hair et al., 2009). According to Jackson (2003), sample size is an important consideration to bear in mind while doing research with structural equation modeling. Structural equation modeling is generally considered as a large sample technique (Kline, 2015). According to Hair et al. (2009), a large sample size is required in order to obtain reliable and meaningful parameter estimates in structural equation modeling. Though there is universal agreement among researchers that larger samples provide more stable parameter estimates, yet there is no agreement as to what constitutes an adequately large sample size (Raykov and Marcoulides, 2000). Kline (2015) suggests that sample sizes below 100 could be considered small, between 100 and 200 cases as medium size and samples that exceed 200 cases could be considered as large. According to Anderson & Gerbin (1988) a sample size of 150 or more is required in structural equation modeling to obtain parameter estimates that have standard errors small enough to be of practical use. Mueller (1997) suggests that the ratio of the number of cases to the number of observed variables is recommended to be 10:1. The rule of thumb for sample size in structural equation modeling is choosing of 10 observations per indicator for the adequacy of sample sizes (Westland, 2010). Westland (2010) observed that sample size rule of ten observations per indicator may indeed bias researchers towards selecting smaller numbers of indicators per latent variable in order to control the cost

of a study or the length of a survey instrument. He suggested a formula for finding out the optimum sample size by consolidating the recommendations made by several researchers that $n \geq 50\ r^2 - 450r + 1100$, where n is the sample size, r is the ratio of number of indicators (p) to the number of latent variables (k). In this study the number of indicators used for measuring the constructs proposed in the structural equation measurement model is 80, number of latent variables is 16, hence r=80/16=5. So the minimum sample size for this study shall be n=50*5*5-(450*5) +1100=100. He also suggested that the probability of rejection of true models will be reduced drastically, if the sample size is increased. So in this study a sample size of 800 will be more than adequate to do the structural equation modeling.

In order to ensure proper representation of the respondents from urban, sub-urban and rural areas, a sample of 270 from each stratum is selected. This is achieved by selecting three municipal corporations randomly from the urban stratum with 90 samples from each, nine municipalities randomly from sub-urban stratum with 30 samples from each and eighteen grama panchayats randomly from rural stratum with 15 samples from each using simple random sampling technique. Thus a total of 810 samples were collected for data analysis. The list of locality, place selected and the sample size of primary survey is given in the Appendix-II.

3.4.2 Secondary Data

The secondary data for this research study were collected from various resources like journals, articles, study reports etc. and from the web sites of the Department of Telecommunications (DoT), Telecom Regulatory Authority of India (TRAI), Telecom Service Providers, Cellular Operators Association of India (COAI), Association of Unified telecom Service Providers of India (AUSPI) and many other relevant sources.

3.5   Content validity of the questionnaire

The questionnaire is checked for the content validity before administering it for data collection. All the questions used for measuring various constructs were adopted from standardised scales developed by various researchers as discussed earlier. Further, telecom experts were consulted and slight modifications were made for better understanding of the questionnaire.

3.6   Reliability of the instrument

The reliability of the scale is measured by calculating Cronbach's alpha using SPSS, which is the most commonly used reliability measure. Cronbach's alpha measures the internal consistency of the items under a construct. Value above 0.9 indicates excellent internal consistency, between 0.9 and 0.8 is considered as good and those above 0.7 is acceptable. The calculated Cronbach's alpha (α) values for various constructs range from 0.853 to 0.955 indicating good consistency among the items within each dimension of the construct being measured. The measured values of Cronbach's alpha for various constructs used in the study are listed in table 3.1.

Table 3.1

Cronbach's alpha values of the constructs

Sl No	Name of the construct	Cronbach's alpha (α) value
1	Alternative attractiveness	0.902
2	Corporate image	0.894
3	Customer loyalty	0.947
4	Customer relationship management	0.917
5	Customer satisfaction	0.955
6	Perceived value	0.908
7	Switching cost	0.92
8	Switching intention	0.923
9	Trust	0.925
10	Word-of-mouth	0.92
11	SQ-Reliability	0.897
12	SQ-Responsiveness	0.906
13	SQ-Assurance	0.879
14	SQ-Empathy	0.883
15	SQ-Tangibility	0.906
16	SQ-Network service quality	0.853

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis of the primary data collected through sample survey and interpretation of the results obtained. The analysis includes the data screening, distribution of the respondents profile along with the sample characteristics, measurement model assessment and structural model fit. For descriptive & inferential statistics, IBM SPSS (Statistical Package for Social Sciences) Version 20 software package and for conducting structural equation modeling, IBM SPSS AMOS 20 software package were used.

4.1 Data screening

Data screening is the process of inspecting the data for errors and correcting them prior to doing data analysis. It ensures that the data is useable, reliable, and valid for testing the causal theory. Data screening is conducted for the 810 responses collected in the sample survey.

4.1.1 Missing data

The data were collected with utmost care so that no missing values in the collected data set, as it can seriously affect the results of the structural equation modeling (Allison, 2003). However, it was screened for missing data and all the samples were retained in the database for further examination of outliers as no missing data were found.

4.1.2 Outliers

Outliers can influence the results by pulling the mean away from the median. All the variables in the model were measured on 5 point Likert scale, thus extreme value outliers do not exist. The personal data collected through first part of the questionnaire was examined for outliers using box plot and no outliers were found. Another type of outlier is an unengaged response. Unengaged response refers to the suspicious response pattern such as when the respondent makes the same response

for several group of questions like '4,4,4,4,4,…' or '2.2.2.2…..'. Such responses were identified using standard deviation function in Microsoft excel. Cases with standard deviation below 0.5 represent unengaged responses in five point Likert scale (Gaskin, 2012). Twenty two such unengaged responses were deleted from the data set and finally 788 responses were taken for this study.

4.2 Demographic profile of the respondents

The distribution of the collected data based on the demographic features such as gender, age, income, education, occupation, locality, type of service subscribed, subscription duration, average monthly usage and most preferred service provider are listed below.

The distribution of respondents by gender is given in the table 4.1 and figure 4.1. It indicates that out of the 788 respondents, 65.4% are male respondents and 34.6% are female respondents.

Table 4.1
Distribution of respondents by gender

Gender of the respondent	Frequency	Percentage
Male	515	65.4
Female	273	34.6
Total	788	100.0

Figure 4.1
Distribution of respondents by gender
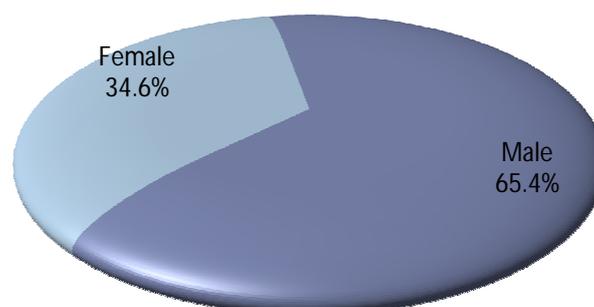
The distribution of respondents by age group is given in the table 4.2 and figure 4.2. The respondents are varied widely in terms of their age. The highest representatives of the respondents (35.2%) are from age group 21-30.

Table 4.2
Distribution of respondents by age group

Age group (in years)	Frequency	Percentage
Upto 20	71	9.0
21- 30	277	35.2
31-40	213	27.0
41-50	163	20.7
Above 50	64	8.1
Total	788	100

Figure 4.2

Distribution of respondents by age group
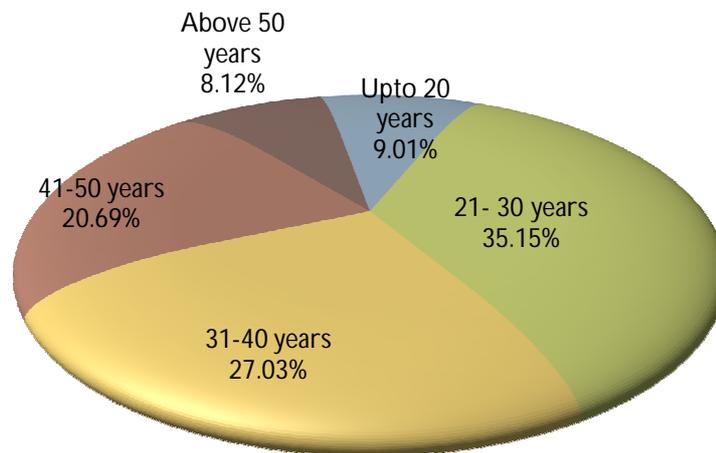
The distribution of the respondents by educational qualification is given in the table 4.3 and figure 4.3. It can be seen that about 83% of the respondents possess graduation or above.

Table 4.3
Distribution of respondents by educational qualification

Educational qualification	Frequency	Percentage
Under graduate	133	16.9
Graduate	460	58.4
Post graduate	195	24.7
Total	788	100.0

Figure 4.3
Distribution of respondents by educational qualification
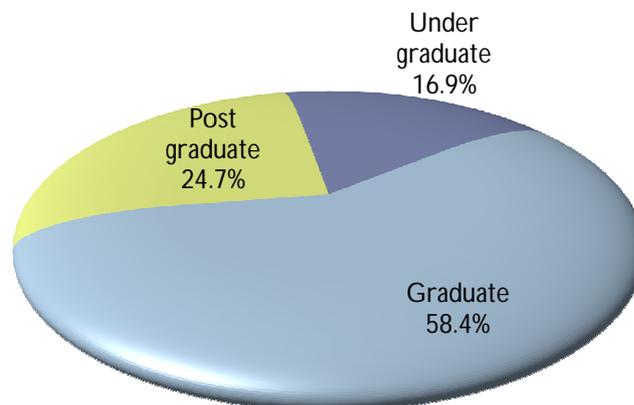
The distribution of the respondents by employment status is given in the table 4.4 and figure 4.4. The employment status is categorized in eight segments viz. Government/PSU Service, Private Sector, Business, Student, Self Employed, Professional, Retired and House Wife.

Table 4.4
Distribution of respondents by occupation

Employment status	Frequency	Percentage
Government/PSU Service	109	13.8
Private Sector	158	20.1
Business	77	9.8
Student	241	30.6
Self Employed	72	9.1
Professional	63	8.0
Retired	30	3.8
House Wife	38	4.8
Total	788	100

Figure 4.4
Distribution of respondents by occupation
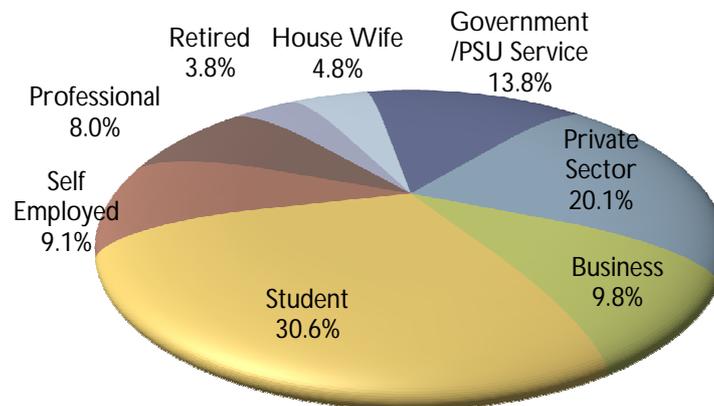
The distribution of the respondents based on annual family income is given in the table 4.5 and figure 4.5. It can be seen that 20.4% of the respondents belonging to very low income group (<1 lakh rupees) and 3.4 % of the respondents belong to very high income (>10 lakh rupees) group.

Table 4.5

Distribution of respondents by annual family income

Annual Family Income (Rs.)	Frequency	Percentage
less than 1 lakh	161	20.4
1-2 lakhs	227	28.8
2-5 lakhs	267	33.9
5-10 lakhs	106	13.5
Above 10 lakhs	27	3.4
Total	788	100

Figure 4.5

Distribution of respondents by annual family income
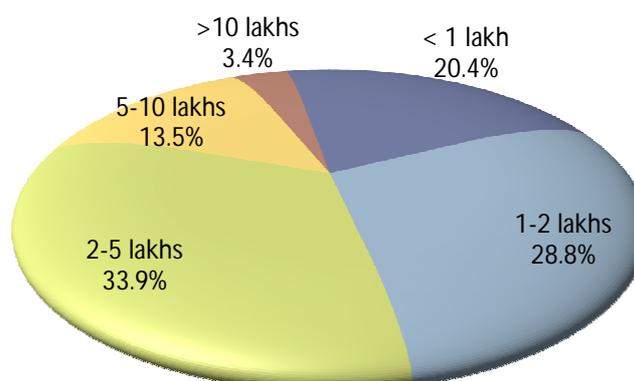
The distribution of the respondents based on locality (geographical area) is given in the table 4.6 and figure 4.6. It can be seen that 34.1% of the respondents belong to corporation (urban) area, 33.4% of respondents belong to municipal (semi-urban) area and 32.5% of the respondents belong to grama panchayat (rural) area.

Table 4.6
Distribution of respondents by locality

Type of locality	Frequency	Percentage
Corporation	269	34.1
Municipality	263	33.4
Grama panchayat	256	32.5
Total	788	100

Figure 4.6
Distribution of respondents by locality
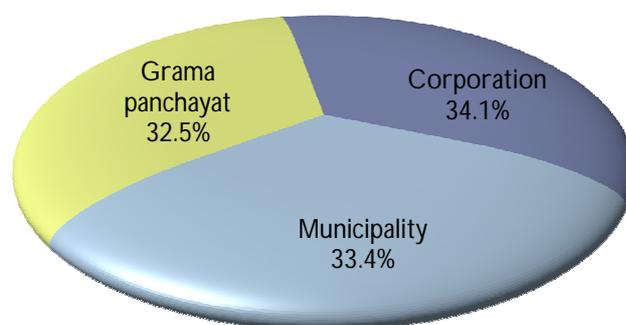
The distribution of the respondents based on the mobile service provider is given in the table 4.7 and figure 4.7. Though there are 12 mobile operators in India who possess license to provide service based on LSA, only 6 operators mainly operate in Kerala telecom circle viz. Idea, BSNL, Vodafone, Airtel, Reliance and Tata. However, after the implementation of national mobile number portability in July 2015, customers can freely move from one part of the country to another without changing their mobile number. So all other operators present in the circle are categorised as 'Others' while collecting data.

Table 4.7
Distribution of the respondents by service provider

Name of the service provider	Frequency	Percentage
Idea	229	29.1
Vodafone	167	21.2
BSNL	189	24.0
Airtel	105	13.3
Reliance	44	5.6
Tata	37	4.7
Others	17	2.2
Total	788	100

Figure 4.7
Distribution of the respondents by service provider
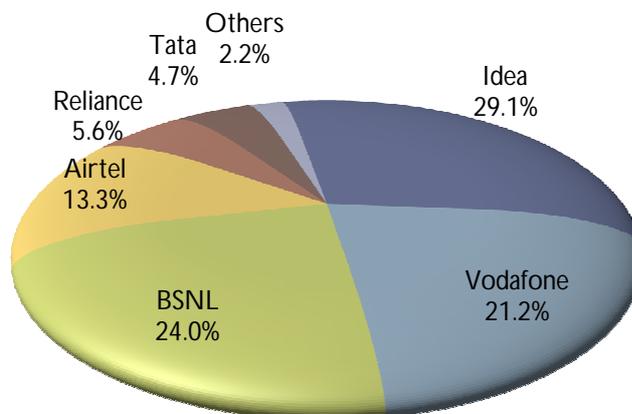
The distribution of the respondents based on type of mobile service subscribed is listed in table 4.8 and figure 4.8. Two types of services are offered by the mobile service providers in India namely the pre-paid service and the post paid service. While prepaid users pay before they use with the help of recharge coupons, top-ups etc., post-paid users pay their monthly bills after their use. The respondents are classified based on the type of service they have subscribed. 84.4% of the

respondents have subscribed to pre-paid service and 16.6% of the respondents have subscribed to post paid service.

Table 4.8

Distribution of respondents based on type of service subscribed

Type of service subscribed	Frequency	Percentage
Prepaid	665	84.4
Postpaid	123	15.6
Total	788	100

Figure 4.8

Distribution of respondents based on type of service subscribed
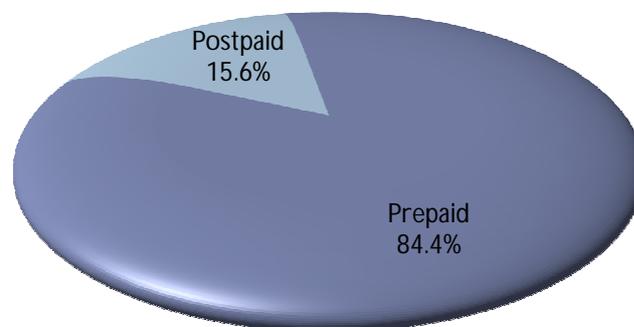
The distribution of the respondents based on the period of association to a particular service provider is listed in table 4.9 and figure 4.9. The respondents who have been using the service from the same service provider for less than two years account for 12.2 %, subscribers with 2 to 5 years of association represent 59.5% and those with more than 5 years of subscription account for 28.3%.

Table 4.9

Distribution of respondents based on period of association

Period of association	Frequency	Percentage
Less than 2 years	96	12.2
2-5 years	469	59.5
Above 5 years	223	28.3
Total	788	100

Figure 4.9

Distribution of respondents based on period of association
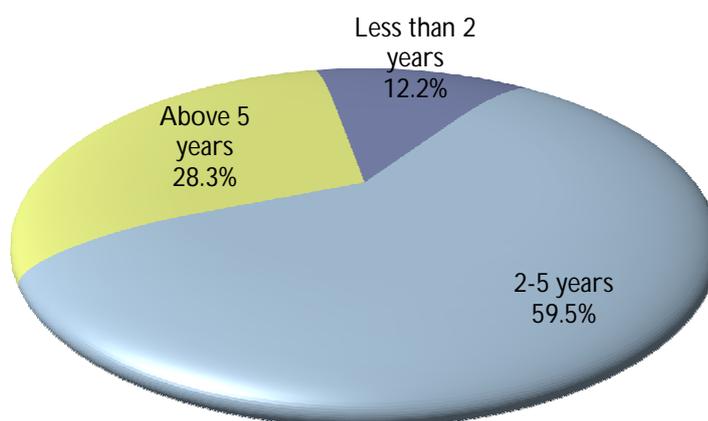
The distribution of the respondents based on average monthly usage amount (mobile subscription charges) is listed in table 4.10 and figure 4.10. 14.7% of the respondents belong to very low usage (upto Rs.100) group, 48.5% belong to low usage (Rs.101-200) group, 25.4% belong to medium usage (Rs.201-500), 8.1% belong to high usage (Rs.501-1000) group and 3.3% belong to very high usage (above Rs.1000) group.

Table 4.10

Distribution of respondents based on average monthly usage amount

Average monthly usage amount (Rs.)	Frequency	Percentage
Up to 100	116	14.7
101-200	382	48.5
201-500	200	25.4
501-1000	64	8.1
Above 1000	26	3.3
Total	788	100

Figure 4.10

Distribution of respondents based on average monthly usage amount
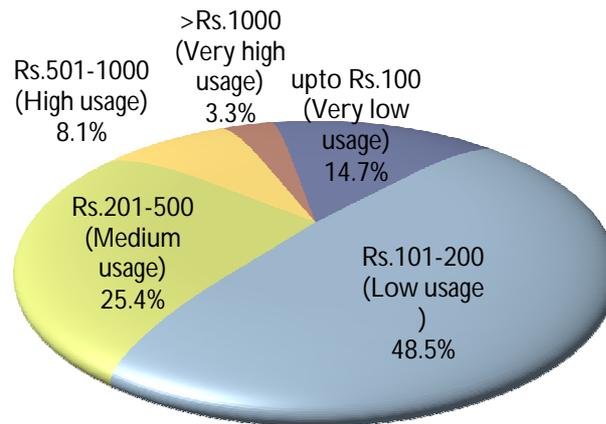
4.3 Structural Equation Modeling (SEM): Theory and Analysis

In this study, structural equation modeling is used to check the causal relationships among the variables and testing the hypotheses postulated in the study. The following section briefly describes the basic concepts of structural equation modeling and moves on to present the psychometric checks done using the measurement model of SEM and the analysis results of the hypotheses testing done using the structural model.

4.3.1 Structural Equation Modeling-An Introduction

Structural Equation Modeling (SEM) is a statistical modeling technique widely used in behavioural sciences (Hox & Bechger, 1998). It estimates and tests a series of inter-related dependence relationships simultaneously. It combines regression and factor analysis (Tabachnick and Fidell, 2001). So it can be viewed as a powerful alternative to multiple regression and factor analysis (Fassinger, 1987). According to Hair et al. (2009), SEM is a path analytical method for handling multiple relationships and assessing relationships from exploratory analysis to confirmatory analysis. SEM is also referred to as causal modeling, causal analysis, simultaneous equation modeling, or analysis of covariance structures (Hardy & Bryman, 2004). The term Structural Equation Modeling conveys that the causal processes under study are represented by a series of structural (i.e. regression) equations, and that these can be modeled pictorially to enable a clearer conceptualization of the study.

Using SEM, the hypothesized model can be tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the sampled data (Byrne, 2013). SEM provides researchers with an exhaustive means for assessing and modifying theoretical models (Anderson and Gerbing, 1988). It allows for the examination of simultaneous equations with many dependent variables. According to Smith and Langfield-Smith (2004), SEM is the only statistical technique that allows for the simultaneous analysis of a series of structural equations. SEM estimates a series of causal relationships and shows parameter estimates as well as path links among variables in the conceptual model. It also estimates multiple regression equations simultaneously through the structural model. SEM takes into account of the measurement error in the variables and enables the researcher to specify structural relationships among the unobserved (latent) variables, thus producing more accurate representations. So SEM is used as a prominent tool for testing proposed and competing models.

SEM model can be decomposed into two sub models: a measurement model, and a structural model. The measurement model defines the relations between the observed and unobserved variables, whereas the structural model defines relations

among the unobserved variables or it specifies the manner by which certain latent variables directly or indirectly influence changes in the values of certain other latent variables in the model.

Some of the basic concepts of SEM and some parameters used for analysis are described below.

Latent and Observed Variables

Latent variable is an underlying variable that cannot be observed directly but inferred from other variables that are observed. They are also called constructs or factors. They are measured indirectly by their respective indicators (observed variables). Multiple indicators are normally used as it is highly likely that a single observed variable will contain quite unreliable information about the construct. Three indictors per construct is regarded as acceptable, four or more is recommended (Hair et al, 2009).

Exogenous and Endogenous Latent Variables

Exogenous latent variables are synonymous with independent variables which cause fluctuations in the values of other latent variables in the model. Endogenous latent variables are synonymous with dependent variables and, as such, are influenced by the exogenous variables in the model, either directly or indirectly.

Degrees of freedom (df)

Degrees of freedom relate to the number of observations that are free to vary (Field, 2013). It is the difference between the number of observations and the number of its parameters in the model.

The Factor Analytic Model:

Factor analysis is one of the best known statistical procedures for investigating relationship between sets of observed and latent variables. There are two basic types of factor analysis viz. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Exploratory factor analysis (EFA) is designed

for the situation where links between the observed and latent variables are unknown or uncertain. Confirmatory Factor Analysis (CFA) is used when the researcher has some knowledge of the underlying latent variable structure. In CFA, the researcher postulates relations between the observed measures and the underlying factors 'a priori', based on knowledge of the theory, empirical research, or both, and then tests this hypothesized structure statistically. CFA focuses solely on the link between factors and their measured variables. So within the framework of SEM, CFA represents a 'measurement model'. In this study, the model was developed 'a priori', hence only CFA was used.

The Process of Statistical Modeling

Statistical models provide an efficient and convenient way of describing the latent structure underlying a set of observed variables. These models explain how the observed and latent variables are related to one another. The primary task in this model-testing procedure is to determine the goodness-of-fit between the hypothesized model and the sample data. The researcher imposes the structure of the hypothesized model on the sample data, and then tests how well the observed data fit this restricted structure.

4.3.2 Steps in SEM

Kline (2015) suggested six basic iterative steps with a flowchart for conducting SEM analysis which is listed in figure 4.11

Figure 4.11

Flowchart for conducting SEM analysis
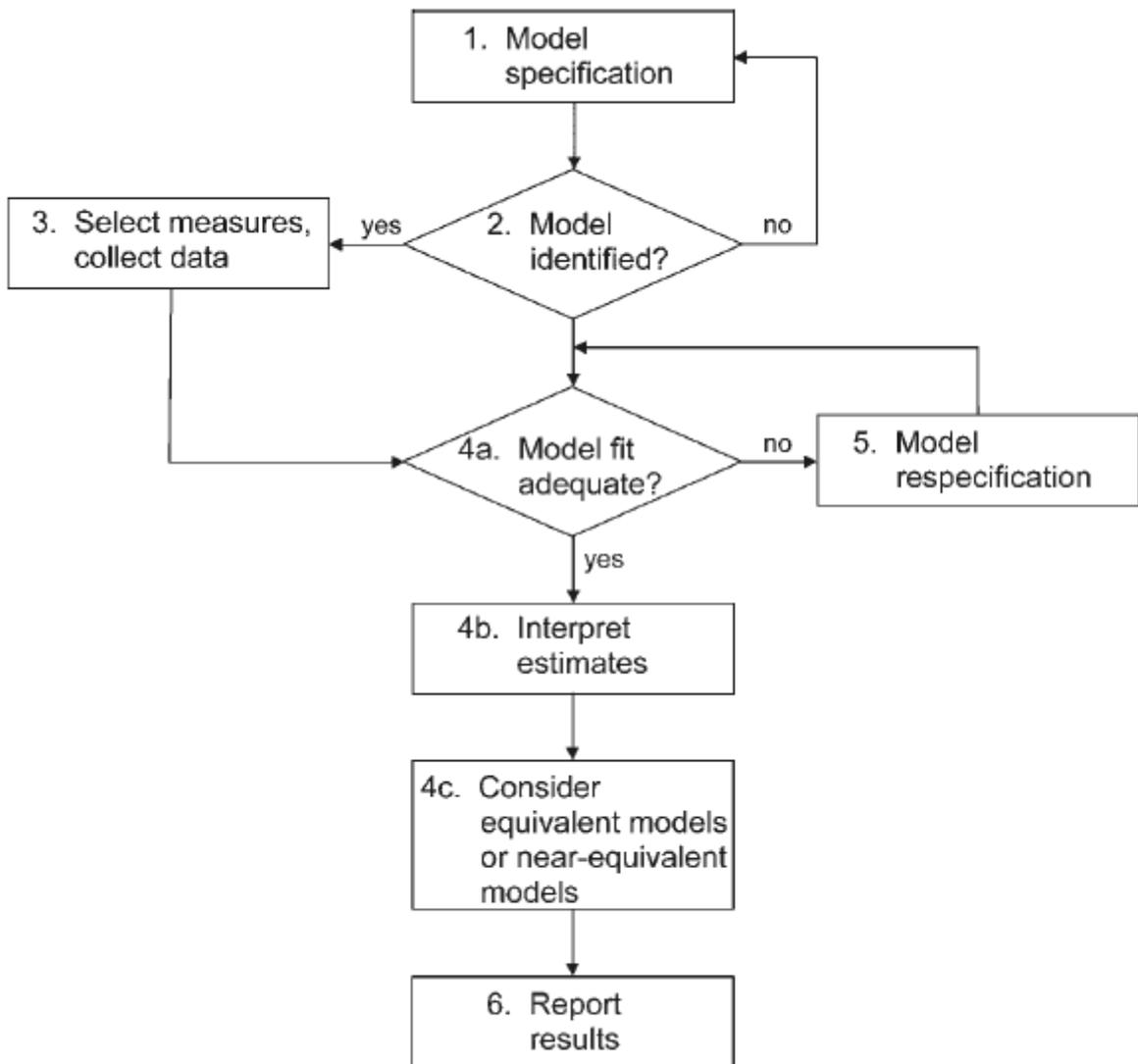
Source: Kline, 2015

1. Model specification.

2. Model identification (if not identified, go back to step 1).

3. Measure Selection and Data Collection

4. Model estimation :

    a. Evaluate model fit (if poor, skip to step 5).

    b. Interpret parameter estimates.

    c. Consider equivalent or near-equivalent models (skip to step 6).

5. Model respecification (return to step 4).

6. Report the results.

Model specification

The representation of hypotheses in the form of a structural equation model is specification. Specification is the most important step since the results from later steps assume that the model is basically correct. It is suggested to make a list of possible changes to the initial model that would be justified according to theory or empirical results.

Model Identification

A model is said to be identified, if a unique solution for the values of the structural parameters can be found and the model can be tested. If a model can't be identified (unidentified), then it indicates that the parameters are subject to arbitrariness, which implies that different parameter values define the same model or attainment of consistent estimates for all parameters is not possible, and, thus, the model cannot be evaluated empirically. In such cases, the model has to be respecified.

Structural models may be just-identified, over-identified, or under-identified. A model is said to be just-identified if there is a one-to-one correspondence between the data and the structural parameters. i.e the number of data points (the number of variances and covariances of the observed variables) is equal to the number of

parameters to be estimated. Though a just-identified model yields unique solution, it is not scientifically interesting as it lacks any degrees of freedom and therefore it can't be rejected. An under-identified model is one in which the number of parameters to be estimated exceeds the number of data points. Such a model contains insufficient information or allows for an infinite number of solutions. An over-identified model is one in which the number of estimable parameters is less than the number of data points. This results in positive degrees of freedom that allow for rejection of the model, thereby rendering it of scientific use. So the aim in SEM is to specify a over-identified model (Byrne, 2013).

Measure Selection and Data Collection

Select proper measures for various constructs in the model and collect, prepare, and screen the data for further analysis.

Model Estimation:

This step involves using an SEM tool to conduct the analysis. (1) Evaluate model fit, which means determine how well the model explains the data. (2) Interpret the parameter estimates after satisfactorily fitting the model. (3) Consider equivalent or near-equivalent models. In this study, IBM SPSS AMOS 20 software package is used for conducting SEM analysis.

Model Respecification:

It is required when the proposed initial model is having a poor fit. Any respecified model must be identified.

Model Fit Assessment

Model fit refers to how well the proposed model account for the correlations between variables in the dataset. A model will have a good fit if all the major correlations inherent in the dataset are accounting for, whereas it will have a poor fit if there is a significant discrepancy between correlations proposed and observed.

Brown (2015) identifies three categories of fit indices: (1) absolute fit indices, (2) parsimony correction indices, and (3) comparative or incremental or relative fit indices.

Absolute fit indices test whether the predicted variance-covariance matrix is equal to the sample variance-covariance matrix. The most common absolute fit index is the model chi-square which tests whether the model fits exactly in the population (Harrington, 2009).

Parsimony Correction Indices: It incorporate a penalty for poor parsimony, therefore more complex models will be viewed as having poorer fit. The root mean square error of approximation (RMSEA) tests the extent to which the model fits reasonably well in the population. It is sensitive to model complexity, but it is relatively insensitive to sample size. RMSEA less than or equal to 0.05 indicates a close fit.

Comparative fit indices are used to evaluate the fit of a model relative to a more restricted, nested baseline model (e.g   CFI, TLI).

Brown (2015) reported that Chi-square, RMSEA, TLI and CFI are most widely accepted global goodness of fit indices. He suggested that these fit indices be reported and considered because they provide different information about model fit. Hu and Bentler (1999) suggested that i) RMSEA values shall be close to .06 or below ii) CFI and TLI values shall be close to 0.95 or greater for an acceptable model fit.

4.3.3 Overall Model Fit Indices

Following fit statistics are used to assess the overall model fitness

i)   **Chi-square:** The most common absolute fit index is the model chi-square ($\chi 2$), which tests whether the model fits exactly in the population. The chi-square for the model is also called the discrepancy function, likelihood ratio chi-square, or chi-square goodness of fit. The smaller the $\chi 2$ value, the better will be the fit. $\chi 2$ value close to zero means best fit. In that sense, $\chi 2$ value is also called 'badness-of-fit' index. One of the major drawbacks of chi-square is that its value is significantly affected by sample

size. The higher the sample size, the higher will be the chi-square value. In AMOS, the chi-square value is called CMIN.

ii) **Normed chi-square (NC)** or **Chi-square/df ratio**: It is the ratio of chi-square to the degrees of freedom. It is considered to be a 'normalization' of $\chi 2$. In AMOS it is represented as CMIN/df. Usually a value of CMIN/df near 1.00 is considered a sign of a good fit.

iii) **Goodness of Fit Index (GFI)**: GFI is a measure of absolute model fit. It reflects the proportion of available variance-covariance information in the data the given model explains with larger GFI values representing better model fit. GFI is regarded analogous to R^2 in multiple regressions. Bentler and Bonnet (1980) recommended that measurement models should have GFI values of atleast 0.9. GFI = 1.0 indicates perfect model fit, GFI > 0.9 may indicate good fit, and values close to zero indicate very poor fit.

iv) **Adjusted Goodness of Fit Index (AGFI):** It is a measure of absolute model fit. It corrects downward the value of the GFI based on model complexity. i.e there is a greater reduction for more complex models. It adjusts for the number of degrees of freedom in the specified model.

v) **Comparative Fit Index (CFI)**: It is a measure of the relative model fit. It is a relative index and is insensitive to model complexity. Its values ranges from 0 to 1 with higher values indicating better model fit. A value above 0.9 is usually considered as a good fit.

vi) **Root Mean Square Error of Approximation (RMSEA):** It represents the discrepancy per degrees of freedom between the population data and the hypothesized model due to approximation. It was first proposed by Steiger and Lind in 1980. It is one of the most informative criteria in covariance structure modeling, as it takes into account of the error of approximation in the population. It is sensitive to the number of estimated parameters in the model as it takes into account of the degrees of freedom. Values less than 0.05 indicate good fit, 0.05 to 0.08 represent reasonable fit, 0.08 to 0.1 indicate mediocre fit and those greater than 0.10 indicate poor fit or unacceptable model (Byrne,2013).

vii) **Tucker Lewis Index (TLI) or Non-normed fit index (NNFI) :** It is an incremental fit index. It is actually a comparison of the normed chi-square values for the null and specified model.

The threshold values for various overall model fit indices as recommended by Hooper et al. (2008) and Hu and Bentler (1999) is given in table 4.11.

Table 4.11
Threshold values for overall model fit indices

Measure	Threshold
Chi-square/df (cmin/df)	should be <5, <2 preferred
p-value for the model	>0.05
CFI	>0.95 great;>0.9 traditional; 0.8 sometimes permissible
GFI	>0.90
AGFI	>0.90
RMSEA	<0.05 good; 0.05-0.10 fair; >0.10 poor
TLI or NNFI	>0.95 great; should be >0.8
PCLOSE	>0.05

4.3.4 Estimation Methods

The objective of CFA is to obtain estimates for each parameter of the measurement model (i.e. factor loadings, factor variances and covariances, indicator error variances and possibly error covariances) that produce a predicted variance-covariance matrix that represents the sample variance-covariance matrix. In CFA, it is tested whether the model fits the data. There are multiple estimation methods available for testing the fit of an over-identified model. Fitting a model is an iterative process that begins with an initial fit, tests how well the model fits, adjusts the model, tests the fit again, and so forth, until the model converges or fits well enough. All the software programs used for SEM such as AMOS, Mplus, LISREL or EQS starts with an initial set of parameter estimates and repeatedly refine these estimates in an effort to minimize the difference between the sample and model-implied variance-covariance matrices. Convergence is reached when the program arrives at a set of parameter estimates that cannot be improved further.

There are various estimation methods such as maximum likelihood (ML), scale free least squares (SLS), asymptotically distribution-free (ADF), generalized

least squares (GLS), weighted least squares (WLS), and unweighted least squares (ULS). AMOS can handle multi-group models, equality constraints, and models with means and intercepts. It offers five estimation methods such as ML, SLS, ADF, GLS, and ULS estimation.

Maximum likelihood (ML) is the most commonly used estimation method in SEM. ML estimation method provides standard errors (SEs) for each parameter estimate with p -values (levels of significance), and confidence intervals, and other goodness-of-fit indices. Further, ML estimates are quite robust to the violation of normality, except for extreme non-normality (Chou et al., 1991). In this study, Likert scale is used to measure all the indicators adopted in the model which eliminates the possibility of extreme values.

The most commonly used statistics to identify specific areas of misfit in a CFA are standardized residuals and modification indices. While standardized residual reflects the difference between the observed sample value and model-implied estimate for each indicator variance and covariance, the modification index reflects an approximation of how much the overall model $\chi 2$ will decrease if the fixed or constrained parameter is freely estimated (Brown, 2015). Although both of these indices provide specific information on how the model fit can be improved, such revisions should only be pursued if they can be justified on empirical or conceptual grounds (MacCallum et al., 1992).

4.3.5 The Measurement Model

The measurement model shown in figure 4.12 comprises of fifteen first order latent factors and one second order latent factor. Each factor is measured by a minimum of three to a maximum of eight observed variables, the reliability of which is influenced by random measurement error, as indicated by the associated error term. Each of these observed variables is regressed into its respective latent factor. The second order latent factor PSQ is represented as a reflective construct related to six first order latent constructs such as reliability, responsiveness, tangibility, assurance, empathy and network service quality**.** PSQ and other nine first order latent factors such as CRM, SI, CI,PV,TR,SC,AA,CL and CS are shown to be inter-correlated.

Figure 4.12

The measurement model
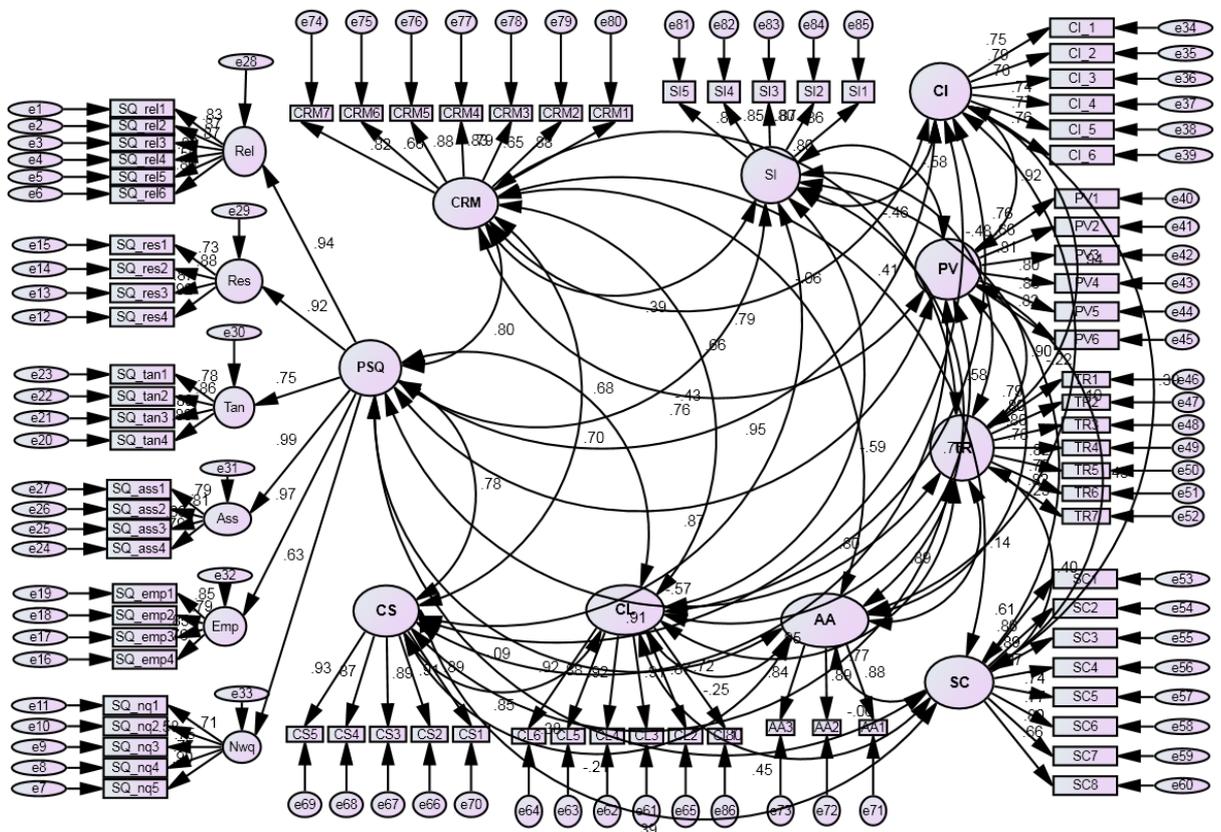
4.3.6 Validation of the Measurement Model

A Confirmatory Factor Analysis (CFA) was conducted using AMOS 20. Measurement model validity depends on establishing acceptable levels of goodness-of–fit for the measurement model and finding specific evidence of construct validity. Validity is defined as the extent to which data collection methods accurately measure what they were intended to measure (Saunders, 2011). To satisfy the validity procedure, the following validity and reliability checks that were carried out viz. i) Content validity ii) Convergent validity iii) Composite Reliability iv) Discriminant validity. The content validity of the research model has already been presented in chapter three under research methodology. The other psychometric property checks of the instrument are presented here.

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Convergent Validity

Convergent validity indicates the extent to which the items of a scale that are theoretically related should correlate highly. When measures of the same concept are highly correlated, there is evidence of convergent validity (Bagozzi et al., 1991). In other words the items that are the indicators of a construct should share a high proportion of variance in common. Ideally the standardized loadings for reflective indicators shall be above 0.7 but values above 0.60 are considered to be an acceptable level (Barclay et al., 1995).

Convergent validity was verified with the help of factor loading scores obtained through the AMOS output. All factor loadings are well above the benchmark of 0.6, most of them are above 0.7 and range from 0.614 to 0.931. The standardized factor loadings (λ) of construct items of the measurement model are presented in table 4.12.

Table 4.12

AMOS output extract: Standardized factor loadings of construct items

Sl. No	Observed variable name	Construct statements	Standardized factor loadings (λ)
		Alternative Attractiveness	
1	AA1	The services provided by other operators are highly attractive	0.88
2	AA2	Other operators' promotions are attractive	0.891
3	AA3	Promotions from other providers meet my needs better	0.837
		Corporate Image	
4	CI_1	My service provider has a good reputation	0.751
5	CI_2	It can be trusted in what it says and does	0.792
6	CI_3	It is stable and firmly established	0.763
7	CI_4	It has a social contribution for the society	0.741
8	CI_5	It is concerned with customers	0.773
9	CI_6	It is innovative and forward looking	0.764
		Customer Loyalty	
10	CL1	I will continue with this operator even if prices increase somewhat	0.724
11	CL2	I will subscribe more services offered by this operator	0.866
12	CL3	I consider this operator my first choice for mobile services	0.907
13	CL4	I will encourage friends and relatives to use the services offered by this operator	0.916
14	CL5	I recommend this operator to others who seek advice	0.877

Sl. No	Observed variable name	Construct statements	Standardized factor loadings (λ)
15	CL6	I say positive things about this operator to others	0.925
		Customer Relationship Management	
16	CRM1	The company maintains a frequent and constant relationship with me	0.877
17	CRM2	The company offers customized products/tariffs to meet customer needs	0.646
18	CRM3	The company gives me full and useful informations about its products	0.787
19	CRM4	The company offers a fast, reliable and friendly support service	0.83
20	CRM5	The company maintains an interactive two-way communication with its customers	0.875
21	CRM6	The company actively stress customer loyalty/ retention programs	0.676
22	CRM7	The company systematically collect customer feedbacks and tries to improve products/services	0.823
		Customer Satisfaction	
23	CS1	This operator gives close to perfect service	0.886
24	CS2	My decision to choose this service provider is wise	0.911
25	CS3	I am enjoying the services offered by this operator	0.893
26	CS4	This operator always fully meet my expectations	0.873
27	CS5	Overall I am extremely satisfied with my service provider	0.931
		Perceived Value	
28	PV1	This mobile service is good value for money	0.765
29	PV2	The services of this operator are reasonably priced	0.664
30	PV3	My mobile operator always delivers superior service	0.813
31	PV4	I value the ease /convenience of using this mobile service	0.795
32	PV5	Using this mobile service gives me pleasure	0.856
33	PV6	Using this mobile service makes a good impression on other people	0.817
		Switching Cost	
34	SC1	Switching to a new operator, I would loose loyalty reward points, credits, services etc. that I have accumulated	0.615
35	SC2	I don't know what I will end up having to deal with while switching to a new service provider	0.856
36	SC3	I worry that the service offered by other operators won't work as expected	0.888
37	SC4	Switching to a new service provider will probably involve hidden costs/charges	0.867

Sl. No	Observed variable name	Construct statements	Standardized factor loadings (λ)
38	SC5	Comparing the operators with each other takes a lot of energy, time and effort	0.741
39	SC6	It takes me a great deal of time and effort to get used to a new company	0.766
40	SC7	Switching to a new service provider would involve some up-front costs (registration/activation charges, deposits etc.)	0.805
41	SC8	It would be a hassle changing operator	0.661
Switching Intention			
42	SI1	I do not expect to stay with my current mobile service provider for long	0.86
43	SI2	When my contract with this operator runs out, I am likely to switch to another	0.875
44	SI3	I have often considered changing my current mobile service provider	0.8
45	SI4	I am likely to switch my provider to one that offers better services	0.853
46	SI5	I have often had problems with my current provider, which makes me want to switch providers	0.818
Trust			
47	TR1	My operator is mainly concerned with the consumers' interests	0.786
48	TR2	My mobile operator has the ability to accomplish what it says it will do	0.799
49	TR3	My mobile operator is very honest	0.798
50	TR4	My mobile operator treats people like me fairly and justly	0.779
51	TR5	My mobile operator is very reliable/dependable	0.818
52	TR6	My mobile operator is very responsible	0.789
53	TR7	Overall, my operator is trustworthy	0.823
SQ (First order)-Reliability			
54	SQ_rel1	My operator provides services as promised	0.831
55	SQ_rel2	My service provider is dependable	0.87
56	SQ_rel3	This operator performs the services right the first time	0.872
57	SQ_rel4	My service provider follows up customer requests in a timely manner	0.797
58	SQ_rel5	The billing system of this operator is accurate and error free	0.614
59	SQ_rel6	You are kept well-informed about the progress of your complaints	0.804
SQ (First order)-Responsiveness			
60	SQ_res1	It keeps customers informed when services will be performed	0.731
61	SQ_res2	Contact employees gives you prompt service	0.884

Sl. No	Observed variable name	Construct statements	Standardized factor loadings (λ)
62	SQ_res3	The employees are always willing to help the customers.	0.867
63	SQ_res4	The employees of are never too busy to respond to customer requests	0.919
		SQ (First order)-Assurance	
64	SQ_ass1	The employees are courteous, polite, and respectful	0.788
65	SQ_ass2	The employees of are competent (i.e., knowledgeable and skilful)	0.809
66	SQ_ass3	The employees instil confidence in customers	0.835
67	SQ_ass4	You feel safe in your transactions with your service provider	0.787
		SQ (First order)-Empathy	
68	SQ_emp1	My service provider gives individual attention to the customers.	0.849
69	SQ_emp2	My service provider keeps customers' best interest at heart	0.786
70	SQ_emp3	The employees of the company understand your specific needs	0.851
71	SQ_emp4	My service provider offers convenient business hours	0.759
		SQ (First order)-Tangibility	
72	SQ_tan1	My service provider has modern facilities for the customers	0.781
73	SQ_tan2	Company's physical facilities are visually appealing. (e.g., ambience of outlet).	0.859
74	SQ_tan3	The employees of my service provider have a neat and professional appearance	0.894
75	SQ_tan4	Materials associated with the services (such as pamphlets/brochures etc.) are visually appealing	0.832
		SQ (First order)-Network Service Quality	
76	SQ_nq1	My service provider provides sufficient geographical coverage (on highways, inside the buildings etc.)	0.621
77	SQ_nq2	I get clear and undisturbed voice	0.705
78	SQ_nq3	I experience minimum call drops during conversation	0.749
79	SQ_nq4	My call gets connected to the called person during first attempt most of the time	0.767
80	SQ_nq5	I am able to make calls at peak hours	0.897

Note: All Factor loadings are significant at $p<0.01$

Perceived service quality (PSQ) is a second order construct derived from six fist order latent constructs viz. reliability, responsiveness, assurance, empathy, tangibility and network service quality. The standardized factor loadings of these components are given in table 4.13.

Table 4.13

Factor loading with Perceived Service Quality (PSQ)-second order

First order factor	Standardized factor loadings
Reliability ← PSQ	0.938
Responsiveness ← PSQ	0.92
Assurance ← PSQ	0.993
Empathy ← PSQ	0.972
Tangibility ← PSQ	0.754
Network Service quality ← PSQ	0.626

Note: All Factor loadings are significant at p<0.01

According to Fornell and Larcker (1981), for the convergent validity in SEM, the factor loadings and Average Variance Extracted (AVE) should be greater than 0.5 and the composite reliabilities must exceed 0.80.

Average variance extracted (AVE)

It is a variance extracted estimate, which measures the amount of variance captured by a construct in relation to the variance due to random measurement error. The AVE for each of the factors is calculated manually for all the constructs using the formula suggested by Hair et al. (2009) as given below:

$$
AVE = \frac{(\sum_{i=1}^{n} \lambda_i^2)}{(\sum_{i=1}^{n} \lambda_i^2) + (\sum_{i=1}^{n} \delta_i)}
$$

where λ is the standardized factor loadings and δ is the indicator measurement error.

Composite reliability (CR)

Reliability can be defined as the degree to which measurements are free from error and, therefore yield consistent results. Carmines and Zeller (1979) defined reliability as the extent to which a measure, procedure, or instrument yields the same result on repeated trials. Operationally reliability is defined as the internal consistency of a scale, which assesses the degree to which the items are homogeneous. Composite reliability is a measure of the overall reliability of a

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collection of heterogeneous but similar items. It assesses the internal consistency of a measure (Fornell & Larcker, 1981). For reflective measures, all items are viewed as parallel measures capturing the same construct of interest. Composite reliability measures the overall reliability of a set of items loaded on a latent construct. Its value ranges from zero to one. Values above 0.7 reflect good reliability (Fornell and Larcker, 1981).

Composite reliability is calculated using the following formula

$$\text{Composite Reliability } (\rho) = \frac{(\sum \lambda_i)^2}{[\ (\sum \lambda_i)^2\ +\ \sum(\delta_i)\ ]}$$

where λ is the standardized factor loadings and δ is the indicator measurement error
The composite reliability and AVE's of all constructs are presented in Table 4.14.

Table 4.14
Composite Reliability and AVE of Constructs

Sl No	Construct	CR	AVE
1	Alternative Attractiveness	0.903	0.756
2	Corporate Image	0.894	0.584
3	Customer Loyalty	0.950	0.76
4	Customer Relationship Management	0.921	0.628
5	Customer Satisfaction	0.955	0.808
6	Perceived Value	0.907	0.620
7	Switching Cost	0.925	0.609
8	Switching Intention	0.924	0.708
9	Trust	0.925	0.638
10	SQ (First order)-Reliability	0.915	0.644
11	SQ (First order)-Responsiveness	0.914	0.728
12	SQ (First order)-Assurance	0.880	0.648
13	SQ (First order)-Empathy	0.886	0.660
14	SQ (First order)-Tangibility	0.907	0.710
15	SQ (First order)-Network Service Quality	0.866	0.567
16	Perceived service quality (PSQ) 2nd order	0.951	0.770

As seen from the table, the AVE and CR values for all the constructs are above the benchmark value of 0.5 and 0.8 respectively thereby demonstrating convergent validity.

Discriminant Validity

Discriminant validity refers to the extent to which a latent construct is truly distinct from other latent constructs (Hair et al., 2009). It is a measure used to ensure that the different constructs extracted are different from each other and do not overlap in their meaning. Discriminant validity is exhibited when measures of different constructs are distinct. i.e., there are low correlations among the constructs (Bagozzi et al., 1991).

Discriminant validity can be established by comparing the value of inter-construct correlation to the value of square root of average extracted variance. The value of AVE should be greater than the value of inter-correlation. It can also be established by comparing the values of maximum shared variance (MSV) and average shared variance (ASV) of each construct that should be lower than the AVE. The MSV and the ASV values need to be lesser than the AVE for the discriminant validity (Hair et al., 2009). A rule of thumb for Discriminant validity is that the square root of each construct should be much larger than the correlation of the specific construct with any of the other constructs in the model and should be at least 0.50 (Fornell and Larker,1981). The measurement of discriminant validity was calculated using Stat Tool Package (Gaskin, 2012).

To examine discriminant validity, the shared variances between factors were compared with the AVE of individual factors (Fornell & Larcker, 1981), the values of which are presented in table 4.15. The diagonal items in the table represent the square root of AVE's, which is a measure of variance between construct and its indicators, and the off diagonal items represent squared correlation between constructs.

Table 4.15
Factor matrix showing discriminant validity

	CR	AVE	MSV	ASV	SC	PSQ	CI	PV	TR	CL	CS	CRM	SI	AA
SC	0.925	0.609	0.204	0.135	**0.78**									
PSQ	0.951	0.770	0.612	0.317	0.38	**0.88**								
CI	0.894	0.584	0.449	0.295	0.39	0.60	**0.76**							
PV	0.907	0.620	0.593	0.392	0.43	0.59	0.60	**0.79**						
TR	0.925	0.638	0.593	0.367	0.40	0.65	0.59	0.73	**0.80**					
CL	0.950	0.760	0.593	0.397	0.45	0.68	0.63	0.74	0.77	**0.87**				
CS	0.955	0.808	0.612	0.404	0.39	0.78	0.60	0.77	0.73	0.73	**0.90**			
CRM	0.921	0.628	0.581	0.339	0.41	0.56	0.67	0.76	0.68	0.66	0.70	**0.79**		
SI	0.924	0.708	0.348	0.242	-0.22	-0.43	-0.46	-0.58	-0.48	-0.59	-0.57	-0.39	**0.84**	
AA	0.903	0.756	0.334	0.060	-0.06	-0.09	-0.10	-0.23	-0.14	-0.25	-0.21	-0.06	0.58	**0.87**

The analysis shows that the shared variance between factors is lower than the AVE's of the individual factors, which confirms the discriminant validity.

4.3.7 Confirming the Measurement Model Using CFA

Confirmatory Factor Analysis (CFA) using AMOS 20 was used to evaluate the model fit of the measurement model to confirm the hypothesized structure.

4.3.7.1 Model Identification

Model identification checks whether one has sufficient information to obtain a unique solution for the parameters to be estimated by the model. Identification determines whether it is possible to find unique values for the parameters of the specified model. It is concerned about the correspondence between the information to be estimated (the free parameters) and the information from which it is to be estimated (the observed variances and covariances) (Hoyle, 1995). According to Tabachnick and Fidell (2001), only models that are identified can be estimated. An over-identified model has positive degrees of freedom and provides for a number of possible solutions (Hair et al, 2009).

Table 4.16
AMOS Output: Computation of degrees of freedom

Number of distinct sample moments	3240
Number of distinct parameters to be estimated	210
Degrees of freedom (3240 - 210)	3030

The proposed model in this study is an over-identified model with positive degrees of freedom (3030) as shown in table 4.16 drawn from the AMOS output. In this model there are 3240 distinct sample moments (i.e., pieces of information) from which to compute the estimates of the default model, and 210 distinct parameters to be estimated, leaving 3030 degrees of freedom, which is positive and hence the model is an over identified one.

4.3.7.2 Model Estimation Method

Maximum likelihood (ML) using AMOS 20 is used to estimate the model. It is very complex often iterative which means starting with the initial solution attempts are made to improve the overall model fit. Iterations are made until optimum fitness indices are achieved. In this study, overall model fit could be achieved with three iterations by covarying the error terms e40 & e41, e54 & e55 and e4 & e6. The AMOS output diagram of the respecified measurement model is given in fig. 4.13 and the fit statistics for the measurement model is listed in table 4.17

Figure 4.13
The respecified measurement model
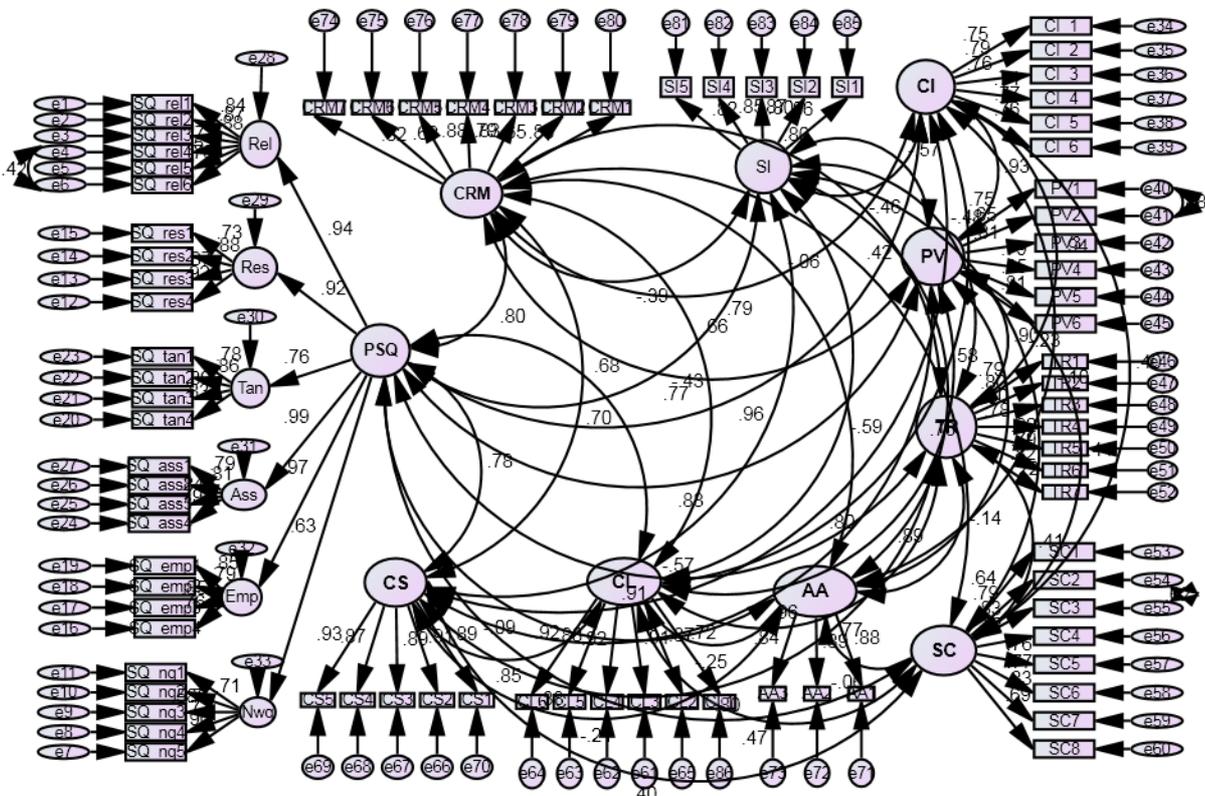
Table 4.17
Fit statistics of the measurement model

Fit Statistics	Obtained
cmin	5961.22
df	3026
cmin/df	1.97
GFI	0.92
AGFI	0.91
CFI	0.98
TLI	0.98
RMSEA	0.046
P close	0.397

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The confirmatory factor analysis shows an acceptable overall model fit and hence, the theorized model fit well with the observed data. It can be concluded that the hypothesized ten latent factor CFA model fits the sample data very well.

4.3.8 The Structural Model Path Diagram

Developing a structural path model with too many observed variables as shown in the measurement model will be too difficult to handle in AMOS. For making the process easier, AMOS facilitates the researcher with data imputation feature (Gaskin, 2012). So in this study, for developing the path diagram, the composites for latent variables are imputed using AMOS 20 (Analyse →Data imputation with regression imputation option). This will create a new SPSS data set with the same name as the current dataset but followed by an "_C". The structural model generated using the new dataset of imputed composite variables based on hypotheses is shown in figure 4.4 and the standardized regression weights for the proposed initial model extracted from the output of AMOS is listed in table 4.18. The fit statistics extracted from AMOS output for the proposed initial structural path model is given in table 4.19.

Figure 4.14
Initial hypothesised structural model
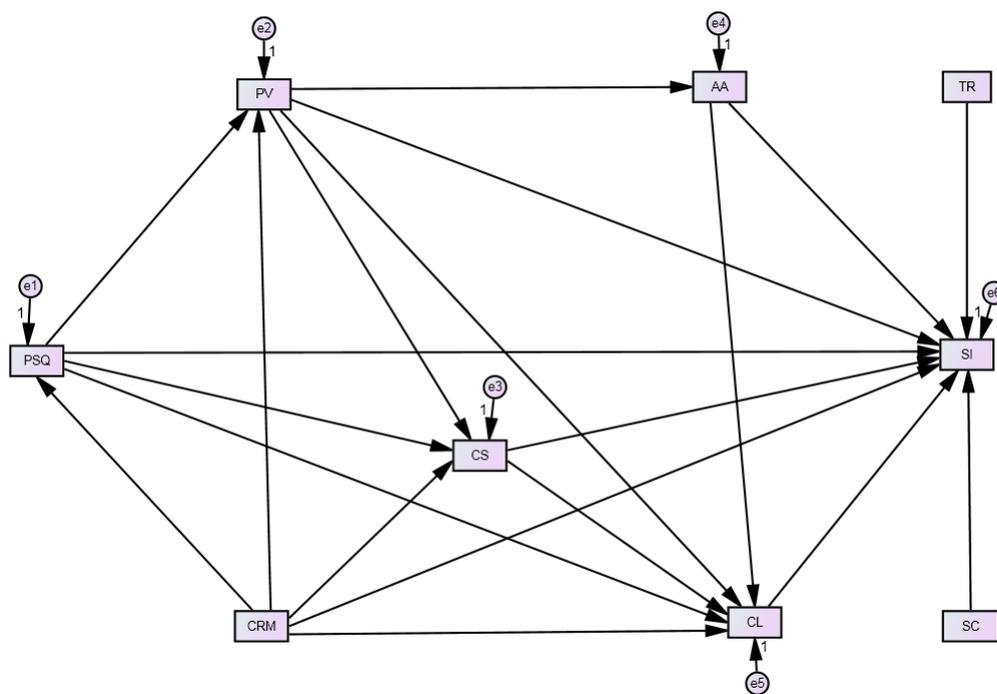
Table 4.18
Standardized regression weights for the proposed initial model

Path			Standardized Estimate (β)	S.E.	C.R.	P
PSQ	<---	CRM	0.772	0.022	34.029	***
PV	<---	CRM	0.341	0.053	8.088	***
PV	<---	PSQ	0.357	0.055	8.457	***
AA	<---	PV	-0.314	0.030	-9.275	***
CS	<---	PV	0.533	0.018	26.613	***
CS	<---	CRM	0.213	0.028	8.650	***
CS	<---	PSQ	0.277	0.028	11.196	***
CL	<---	CS	0.546	0.033	16.699	***
CL	<---	CRM	0.113	0.026	4.788	***
CL	<---	PV	0.354	0.023	13.760	***
CL	<---	PSQ	0.131	0.028	4.434	0.025
CL	<---	AA	-0.042	0.014	-2.811	0.005
SI	<---	CS	-0.273	0.056	-4.695	***
SI	<---	AA	0.535	0.022	23.866	***
SI	<---	CL	-0.286	0.053	-5.251	***
SI	<---	PV	-0.103	0.038	-2.578	0.023
SI	<---	PSQ	-0.011	0.042	-0.532	0.595[#]
SI	<---	TR	-0.022	0.025	-0.706	0.480[#]
SI	<---	SC	-0.017	0.024	-0.820	0.412[#]
SI	<---	CRM	-0.030	0.040	-0.796	0.429[#]

***- significant at <0.001   [#]-not significant at 5%

From the analysis of the standardized regression weights table, extracted from the output of AMOS, it can be seen that the impact of CRM, PSQ, Trust and SC on switching intention is not significant at 5%, whereas all other relationships are significant.

Table 4.19

Fit statistics of the proposed initial structural path model

Fit Statistic	Obtained
cmin	1347.576
df	17
cmin/df	79.269
GFI	0.792
AGFI	0.448
CFI	0.786
TLI	0.546
RMSEA	0.315
PCLOSE	0.000

From the analysis of the fit statistics, the initial model is found to have a poor model fit which calls for respecification of the model. The analysis of the p value suggests the dropping of the constructs trust and switching cost constructs and removal of the regression path of CRM and PSQ on switching intention which leads to the modified structural model (respecified model) which is listed in figure 4.15

Figure 4.15

Respecified structural model- input path diagram
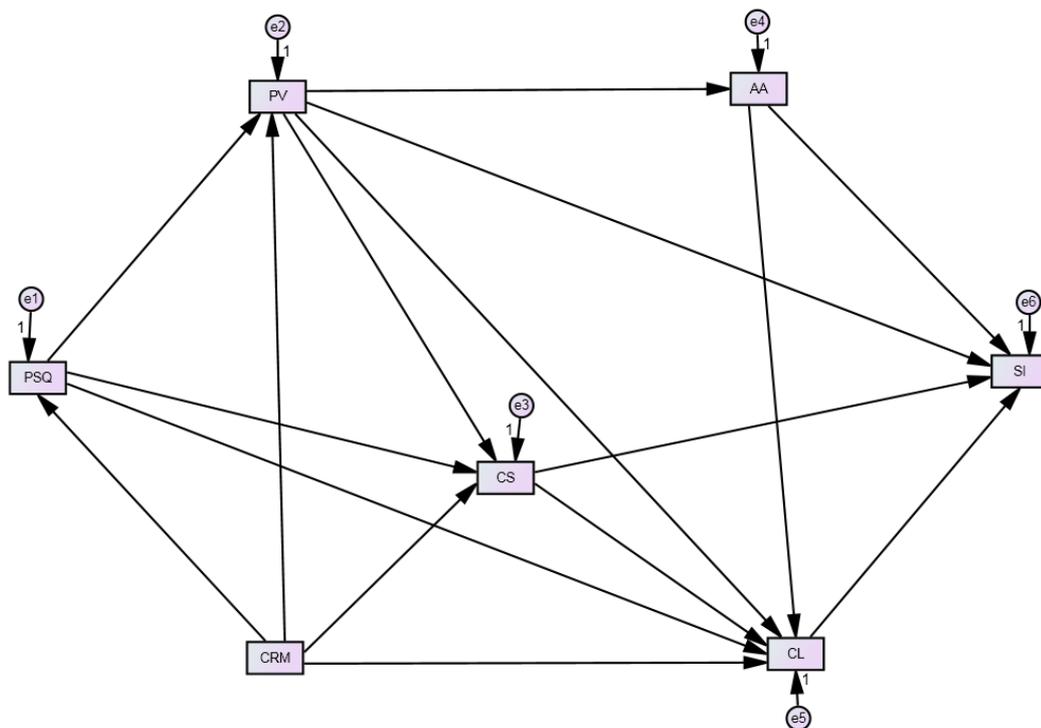
AMOS output path diagram of the respecified structural model is listed in figure 4.16 and the standardized regression weights for the respecified model are given in table 4.20.

Figure 4.16
Output path diagram of the respecified structural model
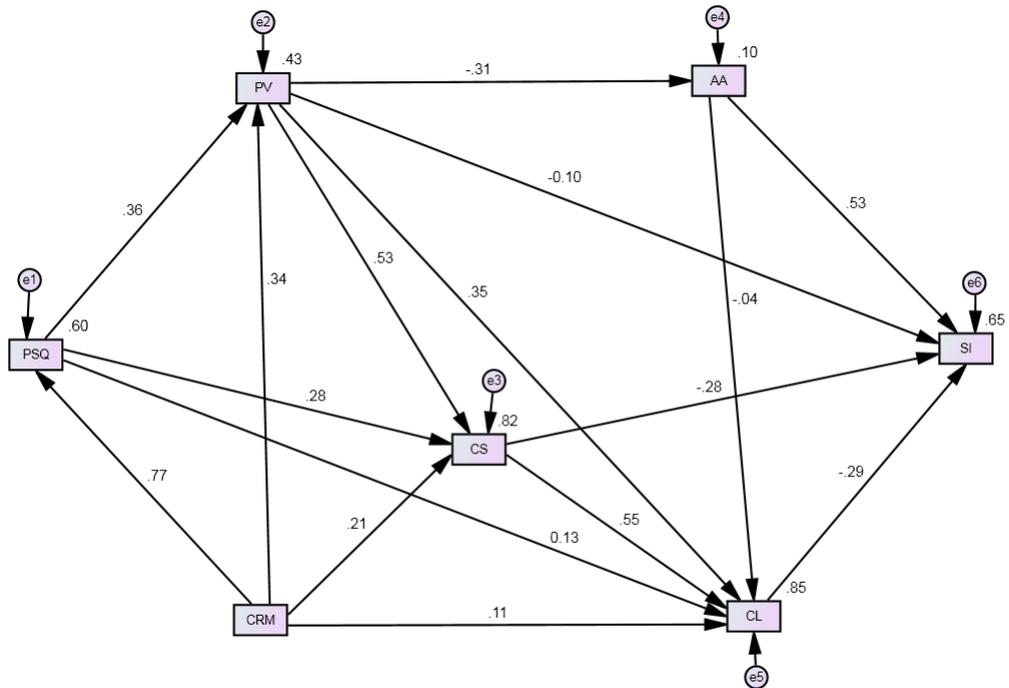
cmin/df=1.851 gfi=.997 agfi=0.981 TLI=.996 cfi=.999 rmsea=.033 sig=.099 pclose=.774

Table 4.20

Standardized regression weights for the respecified model

Path			Standardized Estimate (β)	S.E.	C.R.	P
PSQ	<---	CRM	0.772	0.022	34.029	***
PV	<---	CRM	0.341	0.053	8.088	***
PV	<---	PSQ	0.357	0.055	8.457	***
AA	<---	PV	-0.314	0.030	-9.275	***
CS	<---	PV	0.533	0.018	26.613	***
CS	<---	CRM	0.213	0.028	8.650	***
CS	<---	PSQ	0.277	0.028	11.196	***
CL	<---	CS	0.546	0.033	16.699	***
CL	<---	CRM	0.113	0.026	4.788	***
CL	<---	PV	0.354	0.023	13.760	***
CL	<---	PSQ	0.131	0.028	4.434	0.025
CL	<---	AA	-0.042	0.014	-2.811	0.005
SI	<---	CS	-0.280	0.049	-5.611	***
SI	<---	AA	0.532	0.022	23.788	***
SI	<---	CL	-0.291	0.052	-5.421	***
SI	<---	PV	-0.103	0.038	-2.578	0.027

***- significant at <0.001

From the analysis of the standardized regression weights table of the respecified model, extracted from the output of AMOS, it can be seen that all the regression paths are significant at 5% level.

4.3.9 Assessing Structural Model Fitness

The fit statistics of the respecified structural path model is given in table 4.21. From the analysis of the table, it can be concluded that the model fit indices provide a very good model fit for the structural model.

Table 4.21
Fit statistics of the respecified structural path model

Fit Statistic	Obtained
cmin	9.256
df	5
cmin/df	1.851
GFI	0.997
AGFI	0.981
CFI	0.999
TLI	0.996
RMSEA	0.033
PCLOSE	0.774

The cmin/df value is 1.851 which is below the preferred benchmark level of 2.The Goodness of Fit index (GFI) obtained is 0.997 and the Adjusted Goodness of Fit Index (AGFI) is 0.981 which are well above desired levels. Comparative Fit index (CFI), Tucker Lewis Index (TLI) are 0.999, 0.996 respectively and RMSEA is 0.033. Hence it can be concluded that the respecified path model fits the data very well.

4.3.10   Results of hypothesis testing

Based on the analysis of the SEM output using AMOS, the test results of the hypothesised model is listed in table 4.22. All hypotheses except H2d, H7 and H8 found to be supported at a significance level of 0.05.

Table 4.22
Results of hypothesis testing

No	Hypothesis	β-value	p-value	Remarks
H1a	CRM positively influences perceived service quality	0.772	***	Supported
H1b	CRM positively influences perceived value	0.341	***	Supported
H1c	CRM positively influences customer satisfaction	0.213	***	Supported
H1d	CRM positively influences customer loyalty	0.113	***	Supported
H1e	CRM negatively influences consumer switching intention	-0.030	0.429	Not supported[#]
H2a	Perceived service quality positively influences perceived value	0.357	***	Supported
H2b	Perceived service quality positively influences customer satisfaction	0.277	***	Supported
H2c	Perceived service quality positively influences customer loyalty	0.131	0.025	Supported
H2d	Perceived service quality negatively influences consumer switching intention	-0.011	0.595	Not supported[#]
H3a	Perceived value positively influences customer satisfaction	0.533	***	Supported
H3b	Perceived value positively influences customer loyalty	0.354	***	Supported
H3c	Perceived value negatively influences alternative attractiveness	-0.314	***	Supported
H3d	Perceived value negatively influences consumer switching intention	-0.103	0.027	Supported
H4a	Customer satisfaction positively influences customer loyalty	0.546	***	Supported
H4b	Customer satisfaction negatively influences consumer switching intention	-0.280	***	Supported
H5	Customer loyalty negatively influences consumer switching intention	-0.291	***	Supported
H6a	Alternative attractiveness negatively influences customer loyalty	-0.042	0.005	Supported
H6b	Alternative attractiveness positively influences consumer switching intention	0.532	***	Supported
H7	Switching cost negatively influences consumer switching intention	-0.017	0.412	Not supported[#]
H8	Trust negatively influences consumer switching intention	-0.022	0.480	Not supported[#]

β- Standardized Path Coefficient; ***- significant at <0.001; # not significant

4.3.11 Indirect effect of CRM on consumer switching intention

According to Cheung and Lau (2007), SEM provides unbiased estimates of mediation and suppression effects, and the bias-corrected bootstrap confidence intervals perform best in testing for mediation and suppression effects. The impact of CRM on consumer switching intention was tested in the model and found that the direct effect without the presence of mediators is not significant. So the direct and indirect effects of CRM on consumer switching intention in presence of various mediating variables such as perceived service quality, perceived value, customer satisfaction and customer loyalty is tested with the help of bootstrapping technique using AMOS. The extracted AMOS output for the various possible indirect effects of CRM on consumer switching intention is listed in table 4.23

Table 4.23
Indirect effect of CRM on consumer switching intention

Path	Direct effect with mediator (β-value)	Indirect effect with mediator (β-value)	Result
CRM →CL→SI	-0.024 (ns)	-0.034 ***	Indirect effect
CRM→CS→SI	-0.024 (ns)	-0.099 ***	Indirect effect
CRM→PV→SI	-0.024 (ns)	-0.096 ***	Indirect effect
CRM→PSQ→SI	-0.024 (ns)	-0.275 ***	Indirect effect

ns=not significant at 5% ; ***=p <0.001 ; β- Standardized regression coefficient

From the table, it can be seen that all the four indirect paths from CRM to consumer switching intention such as CRM →CL→SI, CRM→CS→SI, CRM→PV→SI and CRM→PSQ→SI are significant with maximum indirect effect through perceived service quality. Thus CRM is found to have a negative indirect effect on consumer switching intention in cellular mobile services.

4.4 The relatedness of demographic profile of respondents and consumer switching intention

The Chi-Square test is used for testing the relatedness or independence of demographic variables such as age, gender, age, educational qualification, annual family income, locality, type of connection, amount of service usage and period of association with a service provider on consumer switching intention in cellular mobile services for this study.

In this study, the consumer switching intention is measured using five questions on a 5-point Likert Scale (1=Strongly Disagree, 2=Disagree, 3= Uncertain, 4= Agree and 5= Strongly Agree with mean value of the Scale = 3. The overall consumer switching intention is calculated as the average of these five questions with equal weightage for all the questions. For conducting the chi-square test, this scale variable has to be converted to categorical variable. A value above 3 (mean of the scale) represents the intention to switch the service provider and is categorised as "switchers" whereas all other values (<=3) represents the intention to stay with the service provider and is categorised as "stayers".

4.4.1 Relationship between gender and consumer switching intention

Hypothesis 9.1

Ho: There is no significant relationship between gender and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between gender and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of gender and consumer switching intention. The cross tabulation of gender of the sample respondents and consumer switching intention is presented in the table 4.24 & figure 4.17 and the results of the Chi-Square test is presented in table 4.25.

Table 4.24

Cross tabulation of gender and consumer switching intention

Gender	Details	SI category		Total
		Stayers	**Switchers**	
Male	Count	199	316	515
	% within gender	38.60%	61.40%	100.00%
	% within SI category	50.60%	80.00%	65.40%
	% of Total	25.30%	40.10%	65.40%
Female	Count	194	79	273
	% within gender	71.10%	28.90%	100.00%
	% within SI category	49.40%	20.00%	34.60%
	% of Total	24.60%	10.00%	34.60%
Total	Count	393	395	788
	% within gender	49.90%	50.10%	100.00%
	% within SI category	100.00%	100.00%	100.00%
	% of Total	49.90%	50.10%	100.00%

Figure 4.17

Cross tabulation of gender and consumer switching intention

120
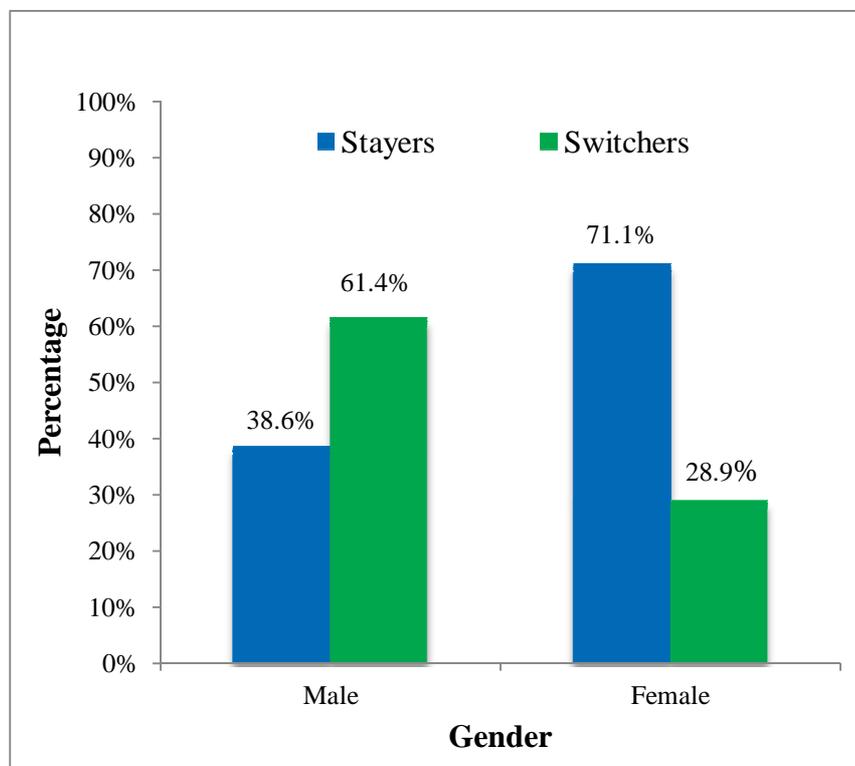
Table 4.25

Gender and consumer switching intention: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	75.019[a]	1	.000
Continuity Correction	73.728	1	.000
Likelihood Ratio	76.797	1	.000
Linear-by-Linear Association	74.924	1	.000
N of Valid Cases	788		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 136.15.			

The Pearson Chi-Square has a value of 75.019 with a significance value of 0.000. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that there is a significant relationship between gender and consumer switching intention.

From the cross tabulation table, it can be seen that among male category 61.4% are switchers and 38.6% are stayers, whereas among female category 71.1% are stayers and 28.9% are switchers. This clearly indicates that males have higher switching intention than females.

4.4.2 Relationship between age and consumer switching intention

Hypothesis 9.2

Ho: There is no significant relationship between age and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between age and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of age and consumer switching intention. The respondents are segmented into three

categories based on their age i) Youngsters with age up to 30 years ii) Middle aged with age between 31 to 50years and iii) Old aged with age above 50 years. The cross tabulation of age group of the sample respondents and consumer switching intention is presented in the table 4.26 & figure 4.18 and the results of the Chi-Square test is presented in table 4.27.

Table 4.26

Cross tabulation of age group and consumer switching intention

Age Group	Details	SI Category		Total
		Stayers	**Switchers**	
Youngsters (Upto 30 years)	Count	158	314	472
	% within Age Group	33.50%	66.50%	100.00%
	% within SI Category	40.20%	79.50%	59.90%
	% of Total	20.10%	39.80%	59.90%
Middle Aged (31-50 years)	Count	186	66	252
	% within Age Group	73.80%	26.20%	100.00%
	% within SI Category	47.30%	16.70%	32.00%
	% of Total	23.60%	8.40%	32.00%
Old aged (Above 50 years)	Count	49	15	64
	% within Age Group	76.60%	23.40%	100.00%
	% within SI Category	12.50%	3.80%	8.10%
	% of Total	6.20%	1.90%	8.10%
Total	Count	393	395	788
	% within Age Group	49.90%	50.10%	100.00%
	% within SI Category	100.00%	100.00%	100.00%
	% of Total	49.90%	50.10%	100.00%

Figure 4.18

Cross tabulation of age group and consumer switching intention
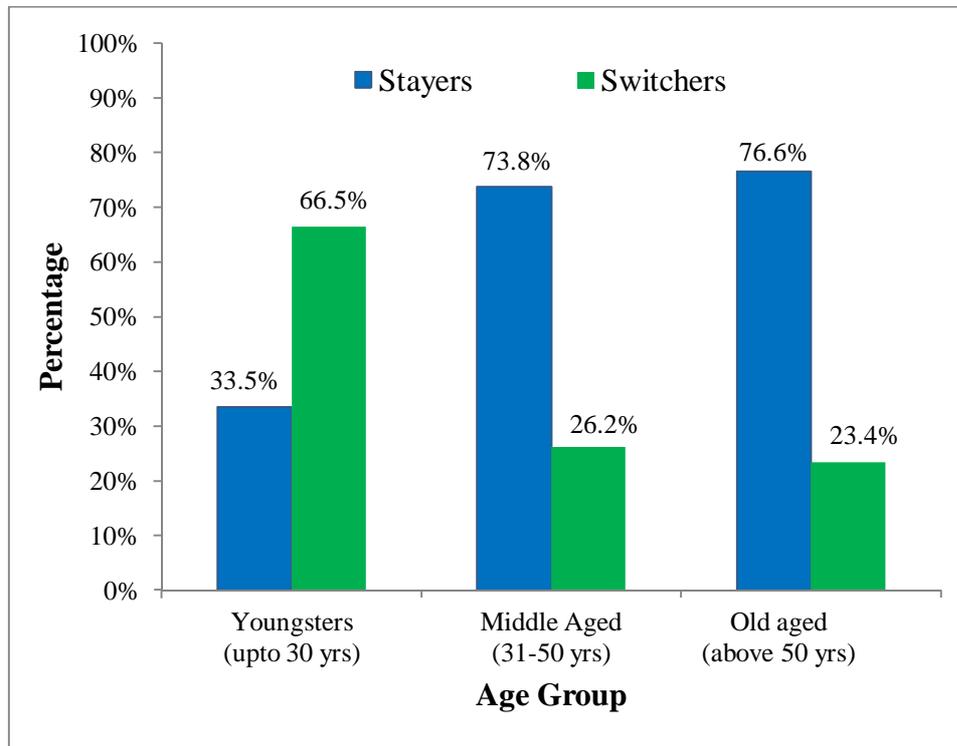
Table 4.27

Age group and consumer switching intention: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	126.760a	2	.000
Likelihood Ratio	131.088	2	.000
Linear-by-Linear Association	109.815	1	.000
N of Valid Cases	788		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 31.92.			

The test result shows that Pearson Chi-Square has a value of 126.76 with a significance of 0.000. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant relationship between age and consumer switching intention.

From the cross tabulation table, it can be seen that 66.5% of the youngsters are switchers and 33.5% are stayers. In the middle aged, 26.2% are switchers and 73.8% are stayers. In the old aged group, 23.4% are switchers and 76.6% are stayers. So it can be concluded that youngsters show more switching intention whereas middle aged and old aged (or customers above 30 years) show more staying intentions or less prone to switch their service providers in cellular mobile services.

4.4.3   Relationship between education and consumer switching intention

Hypothesis 9.3

Ho: There is no significant relationship between education and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between education and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of education and consumer switching intention. The respondents are segmented into three categories based on their education level i) Below graduation ii) Graduation and iii) Post graduation. The cross tabulation of education and consumer switching intention is presented in the table 4.28 & figure 4.19 and the results of Chi-Square test is presented in table 4.29.

Table 4.28

Cross tabulation of education level and consumer switching intention

| Education Level | Details | SI Category | | Total |
		Stayers	Switchers	
Below graduation	Count	54	79	133
	% within Education	40.60%	59.40%	100.00%
	% within SI Category	13.70%	20.00%	16.90%
	% of Total	6.90%	10.00%	16.90%
Graduation	Count	230	230	460
	% within Education	50.00%	50.00%	100.00%
	% within SI Category	58.50%	58.20%	58.40%
	% of Total	29.20%	29.20%	58.40%
Post graduation	Count	109	86	195
	% within Education	55.90%	44.10%	100.00%
	% within SI Category	27.70%	21.80%	24.70%
	% of Total	13.80%	10.90%	24.70%
Total	Count	393	395	788
	% within Education	49.90%	50.10%	100.00%
	% within SI Category	100.00%	100.00%	100.00%
	% of Total	49.90%	50.10%	100.00%

Figure 4.19

Cross tabulation of education level and consumer switching intention
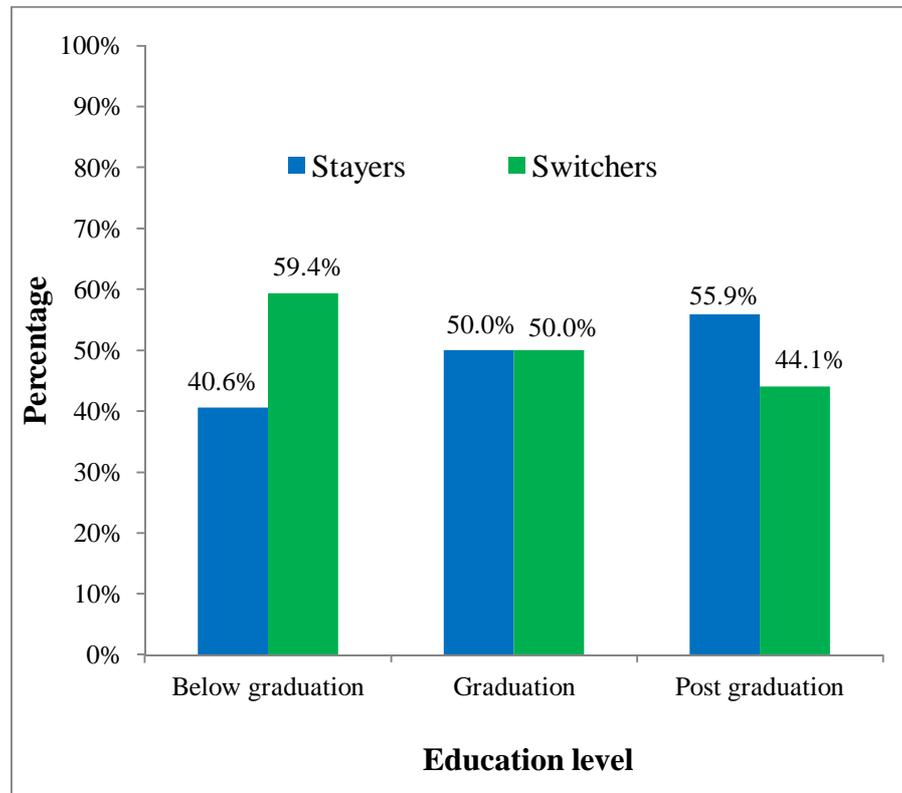
Table 4.29

Education and consumer switching intention: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.407[a]	2	.025
Likelihood Ratio	7.441	2	.024
Linear-by-Linear Association	7.168	1	.007
N of Valid Cases	788		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 66.33.			

The test result shows that Pearson Chi-Square has a value of 7.407 with a significance of 0.025. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant relationship between education and consumer switching intention in cellular mobile services.

From the cross tabulation table, it can be seen that in the below graduation level, 40.6% of the respondents are stayers and 59.4% are switchers. In the graduation level, 50% of the respondents are switchers and 50% are stayers. Among post graduates, 55.9 % of the respondents are stayers and 44.1% are switchers. This clearly indicates that customers with low educational level show higher switching intention and highly educated customers show lower switching intention.

4.4.4 Relationship between annual income and consumer switching intention

Hypothesis 9.4

Ho: There is no significant relationship between annual family income and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between annual family income and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of annual family income and consumer switching intention. In the socio-economic classification based on annual family income there are five different categories i) Poor: < Rs.1Lakh ii) Lower Middle class: Rs.1-2Lakhs iii) Middle class: Rs.2-5 Lakhs iv) Upper middle class: Rs.5-10Lakhs and v) Rich: > Rs.10Lakhs. The cross tabulation of annual family income and consumer switching intention is presented in the table 4.30 & figure 4.20 and the results of Chi-Square test is presented in table 4.31.

Table 4.30

Cross tabulation of annual family income and consumer switching intention

Annual Family Income (Rs.)	Details	SI Category		Total
		Stayers	**Switchers**	
Below 1 lakh	Count	60	101	161
	% within annual income	37.30%	62.70%	100.00%
	% within SI Category	15.30%	25.60%	20.40%
	% of Total	7.60%	12.80%	20.40%
1-2 lakhs	Count	119	108	227
	% within annual income	52.40%	47.60%	100.00%
	% within SI Category	30.30%	27.30%	28.80%
	% of Total	15.10%	13.70%	28.80%
2-5 lakhs	Count	147	120	267
	% within annual income	55.10%	44.90%	100.00%
	% within SI Category	37.40%	30.40%	33.90%
	% of Total	18.70%	15.20%	33.90%
5-10 lakhs	Count	51	55	106
	% within annual income	48.10%	51.90%	100.00%
	% within SI Category	13.00%	13.90%	13.50%
	% of Total	6.50%	7.00%	13.50%
Above 10 lakhs	Count	16	11	27
	% within annual income	59.30%	40.70%	100.00%
	% within SI Category	4.10%	2.80%	3.40%
	% of Total	2.00%	1.40%	3.40%
Total	Count	393	395	788
	% within annual income	49.90%	50.10%	100.00%
	% within SI Category	100.00%	100.00%	100.00%
	% of Total	49.90%	50.10%	100.00%

Figure 4.20

Cross tabulation of annual family income and consumer switching intention
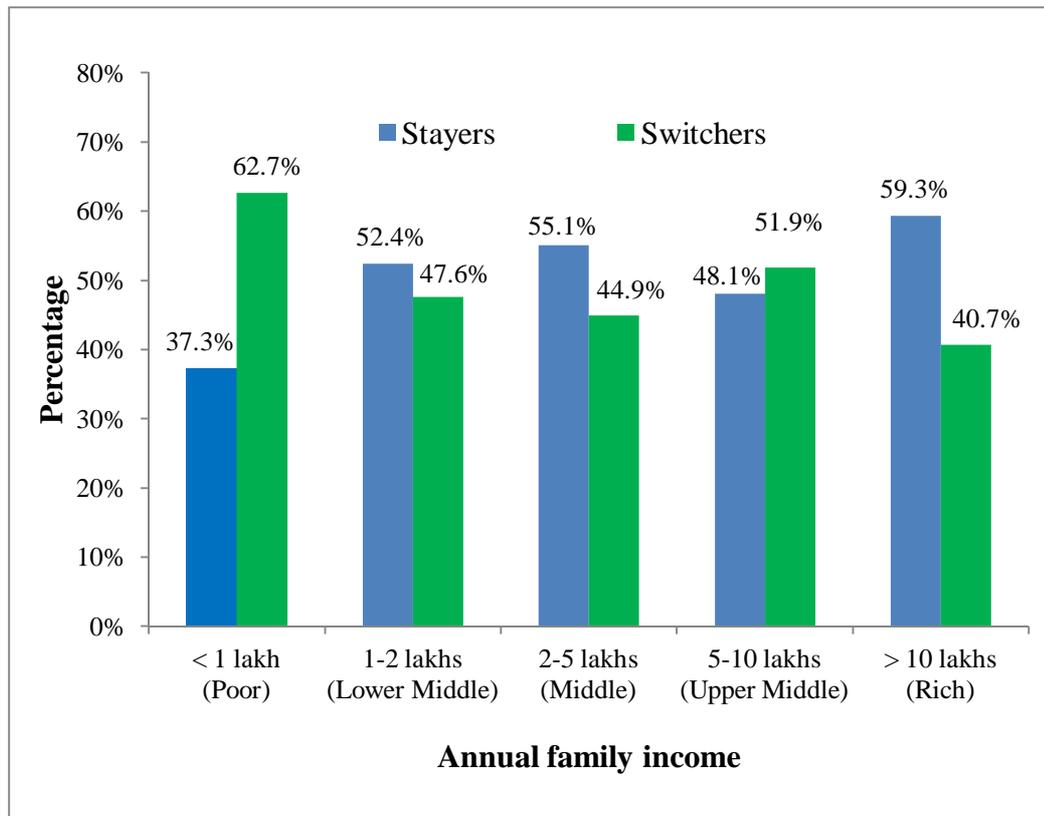
Table 4.31

Annual family income and consumer switching intention:
Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.776[a]	4	.005
Likelihood Ratio	14.902	4	.005
Linear-by-Linear Association	6.462	1	.011
N of Valid Cases	788		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.47.			

The test result shows that Pearson Chi-Square has a value of 14.776 with a significance of 0.005. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate

hypothesis is accepted that there is significant relationship between annual family income and consumer switching intention in cellular mobile services.

From the cross tabulation table, it can be seen that 62.7% customers in the Poor category are switchers and 37.3% are stayers. Among the Rich category, 59.3% are stayers and 40.7% are switchers. So it can be concluded that Poor or very low income group show more switching intention, whereas Rich or very high income group show more staying intentions in cellular mobile services.

4.4.5   Relationship between locality and consumer switching intention

Hypothesis 9.5

Ho: There is no significant relationship between locality and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between locality and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of locality and consumer switching intention. The respondents are segmented into three categories based on their location i) Rural customers belonging to panchayat areas ii) Semi-urban customers belonging to municipalities and iii) Urban customers belonging to corporation areas. The cross tabulation of locality and consumer switching intention is presented in the table 4.32 & figure 4.21 and the results of Chi-Square test is presented in table 4.33.

Table 4.32

Cross tabulation of locality and consumer switching intention

Locality	Details	SI Category		Total
		Stayers	**Switchers**	
Panchayat	Count	169	87	256
	% within locality	66.0%	34.0%	100.0%
	% within SI Category	43.0%	22.0%	32.5%
	% of Total	21.4%	11.0%	32.5%
Municipality	Count	115	148	263
	% within locality	43.7%	56.3%	100.0%
	% within SI Category	29.3%	37.5%	33.4%
	% of Total	12.1%	21.3%	33.4%
Corporation	Count	109	160	269
	% within locality	40.5%	59.5%	100.0%
	% within SI Category	27.7%	40.5%	34.1%
	% of Total	13.8%	20.3%	34.1%
Total	Count	393	395	788
	% within locality	49.9%	50.1%	100.0%
	% within SI Category	100.0%	100.0%	100.0%
	% of Total	49.9%	50.1%	100.0%

Figure 4.21
Cross tabulation of locality and consumer switching intention
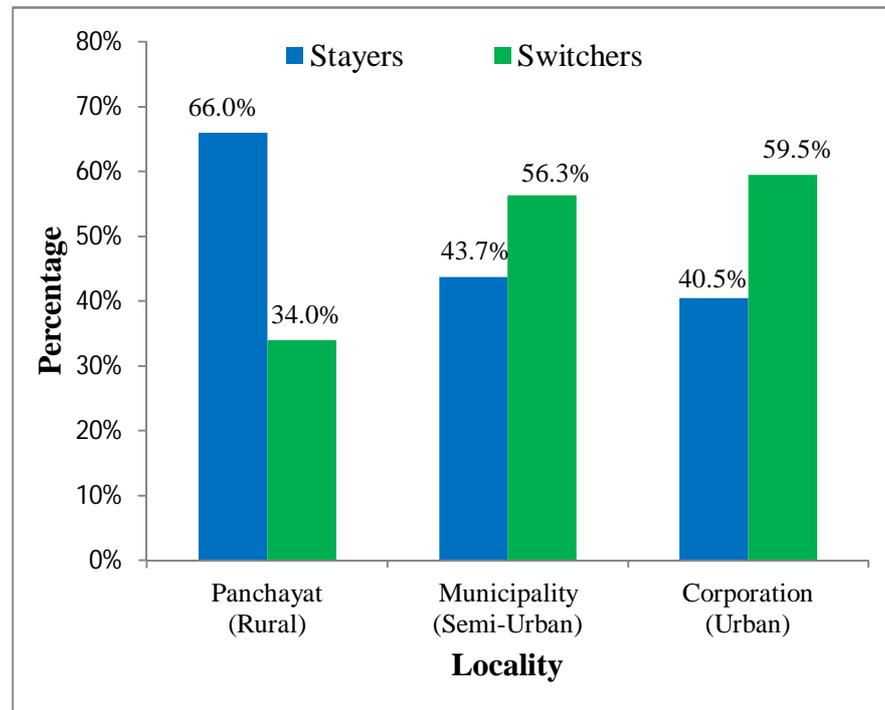
Table 4.33
Locality and consumer switching intention: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.489[a]	2	.000
Likelihood Ratio	31.818	2	.000
Linear-by-Linear Association	1.833	1	.176
N of Valid Cases	788		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 127.68.			

Pearson Chi-Square has a value of 31.489 with a significance of 0.000. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that there is a significant relationship between locality of the sample respondents and consumer switching intention in cellular mobile services.

From the cross tabulation table, it can be seen that 64% of the respondents in panchayat or rural areas are stayers and 34% are switchers; 43.7% of the respondents in municipalities or semi-urban areas are stayers and 56.3% are switchers and 40.5% of the respondents in urban or corporation areas are stayers and 59.5% are switchers. This clearly indicates that rural customers are less prone to switching compared to urban/semi-urban customers.

4.4.6 Relationship between type of connection and consumer switching intention

Hypothesis 9.6

Ho: There is no significant relationship between type of connection and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between type of connection and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of type of connection and consumer switching intention. The respondents are segmented into two categories based on the type of connection (mobile service subscribed) namely i) Prepaid and ii) Postpaid. The cross tabulation of type of connection and consumer switching intention is presented in the table 4.34 & figure 4.22 and the results of Chi-Square test is presented in table 4.35

Table 4.34

Cross tabulation of type of connection and consumer switching intention

Type of connection	Details	SI Category		Total
		Stayers	Switchers	
Prepaid	Count	310	355	665
	% within type of connection	46.6%	53.4%	100.0%
	% within SI Category	78.9%	89.9%	84.4%
	% of Total	39.3%	45.1%	84.4%
Post paid	Count	83	40	123
	% within type of connection	67.5%	32.5%	100.0%
	% within SI Category	21.1%	10.1%	15.6%
	% of Total	10.5%	5.1%	15.6%
Total	Count	393	395	788
	% within type of connection	49.9%	50.1%	100.0%
	% within SI Category	100.0%	100.0%	100.0%
	% of Total	49.9%	50.1%	100.0%

Figure 4.22

Cross tabulation of type of connection and consumer switching intention

134
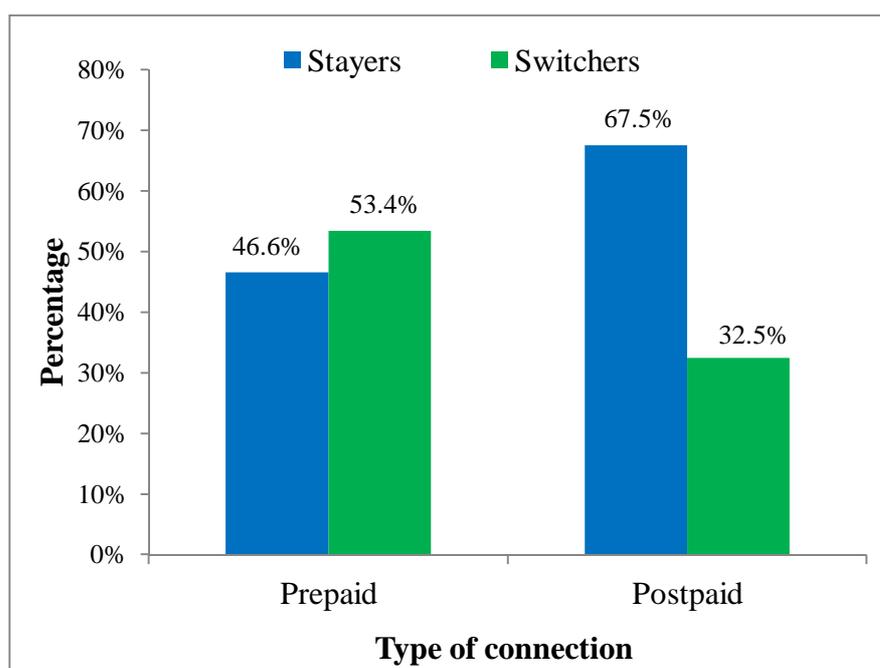
Table 4.35

Type of connection and consumer switching intention: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	18.073[a]	1	.000		
Continuity Correction[b]	17.248	1	.000		
Likelihood Ratio	18.397	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	18.050	1	.000		
N of Valid Cases	788				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 61.34.

b. Computed only for a 2x2 table

Pearson Chi-Square has a value of 18.073 with a significance of 0.000. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that there is a significant relationship between type of connection and consumer switching intention in cellular mobile services.

From the cross tabulation table, it can be seen that 53.4% of the respondents in prepaid segment are switchers and 46.6% are stayers whereas in postpaid segment, 67.5% of the respondents are stayers and 32.5% are switchers. This clearly indicates that postpaid customers show lower switching intention whereas prepaid customers show higher switching intention.

4.4.7 Relationship between type of service provider and consumer switching intention

Hypothesis 9.7

Ho: There is no significant relationship between type of service provider and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between type of service provider and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of type of service provider and consumer switching intention. The respondents are segmented based on the type of mobile service provider namely i) Public sector (BSNL) and ii) Private sector (Others). The cross tabulation of type of service provider and consumer switching intention is presented in the table 4.36 & figure 4.23 and the results of Chi-Square test is presented in table 4.37.

Table 4.36
Cross tabulation of type of service provider and consumer switching intention

Type of mobile Service provider	Details	SI category		Total
		Stayers	Switchers	
Public sector (BSNL)	Count	164	25	189
	% within Service provider	86.8%	13.2%	100.0%
	% within SI Category	41.7%	6.3%	24.0%
	% of Total	20.8%	3.2%	24.0%
Private sector (Others)	Count	229	370	599
	% within Service provider	38.2%	61.8%	100.0%
	% within SI Category	58.3%	93.7%	76.0%
	% of Total	29.1%	47.0%	76.0%
Total	Count	393	395	788
	% within Service provider	49.9%	50.1%	100.0%
	% within SI Category	100.0%	100.0%	100.0%
	% of Total	49.9%	50.1%	100.0%

Figure 4.23

Cross tabulation of type of service provider and consumer switching intention
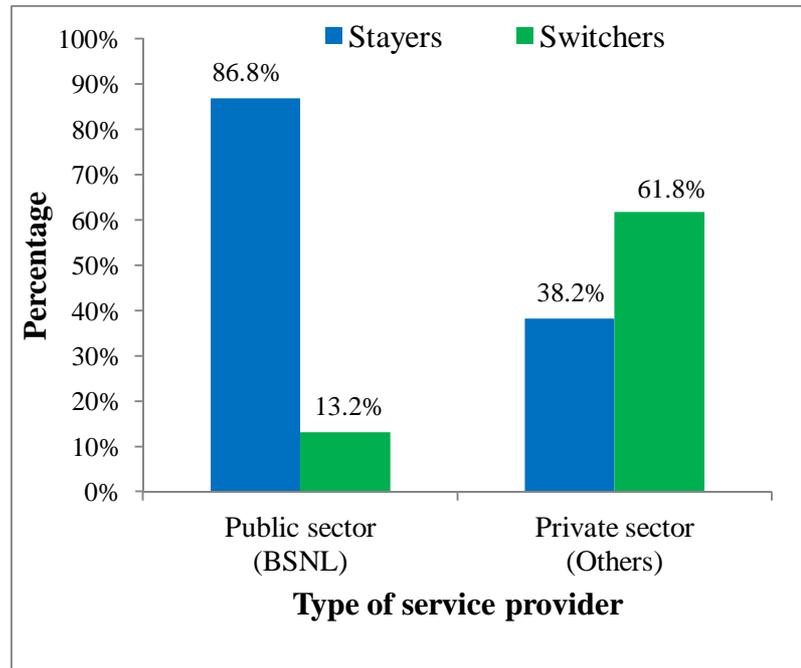
Table 4.37

Type of service provider and consumer switching intention:
Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	135.414[a]	1	.000		
Continuity Correction[b]	133.479	1	.000		
Likelihood Ratio	147.828	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	135.242	1	.000		
N of Valid Cases	788				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 94.26.

b. Computed only for a 2x2 table

Pearson Chi-Square has a value of 135.414 with a significance of 0.000. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that

there is a significant relationship between type of service provider and consumer switching intention in cellular mobile services (chi-square =135.414, df=1, p<0.001).

From the cross tabulation table, it can be seen that 86.8% of the respondents from BSNL (public sector) are stayers and 13.2% are switchers, whereas 61.8% of the respondents from other operators (Private sector) are switchers and 38.2% are stayers. This clearly indicates that BSNL customers show high level of staying intention (less prone to switch) whereas private sector customers show higher switching intention.

4.4.8 Relationship between amount of service usage and consumer switching intention

Hypothesis 9.8

Ho: There is no significant relationship between amount of service usage and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between amount of service usage and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of amount of service usage (average monthly spending) and consumer switching intention. The respondents are segmented into five categories namely very low spent (upto Rs.100), low spent (Rs.101-200), medium spent (Rs.201-500), high spent (Rs.501-1000) and very high spent (above Rs.1000). The cross tabulation of service usage in terms of average monthly spending and consumer switching intention is presented in the table 4.38 and the results of Chi-Square test is presented in table 4.39.

Table 4.38

Cross tabulation of amount of service usage and consumer switching intention

Average monthly spending (Rs.)	Details	SI Category		Total
		Stayers	Switchers	
Upto 100 (Very low spent)	Count	60	56	116
	% within average monthly spending	51.7%	48.3%	100.0%
	% within SI Category	15.3%	14.2%	14.7%
	% of Total	7.6%	7.1%	14.7%
101-200 (Low spent)	Count	194	188	382
	% within average monthly spending	50.8%	49.2%	100.0%
	% within SI Category	49.4%	47.6%	48.5%
	% of Total	24.6%	23.9%	48.5%
201-500 (Medium spent)	Count	96	104	200
	% within average monthly spending	48.0%	52.0%	100.0%
	% within SI Category	24.4%	26.3%	25.4%
	% of Total	12.2%	13.2%	25.4%
501-1000 (High spent)	Count	29	35	64
	% within average monthly spending	45.3%	54.7%	100.0%
	% within SI Category	7.4%	8.9%	8.1%
	% of Total	3.7%	4.4%	8.1%
Above 1000 (Very high spent)	Count	14	12	26
	% within average monthly spending	53.8%	46.2%	100.0%
	% within SI Category	3.6%	3.0%	3.3%
	% of Total	1.8%	1.5%	3.3%
Total	Count	393	395	788
	% within average monthly spending	49.9%	50.1%	100.0%
	% within SI Category	100.0%	100.0%	100.0%
	% of Total	49.9%	50.1%	100.0%

Figure 4.24

Cross tabulation of amount of service usage and consumer switching intention
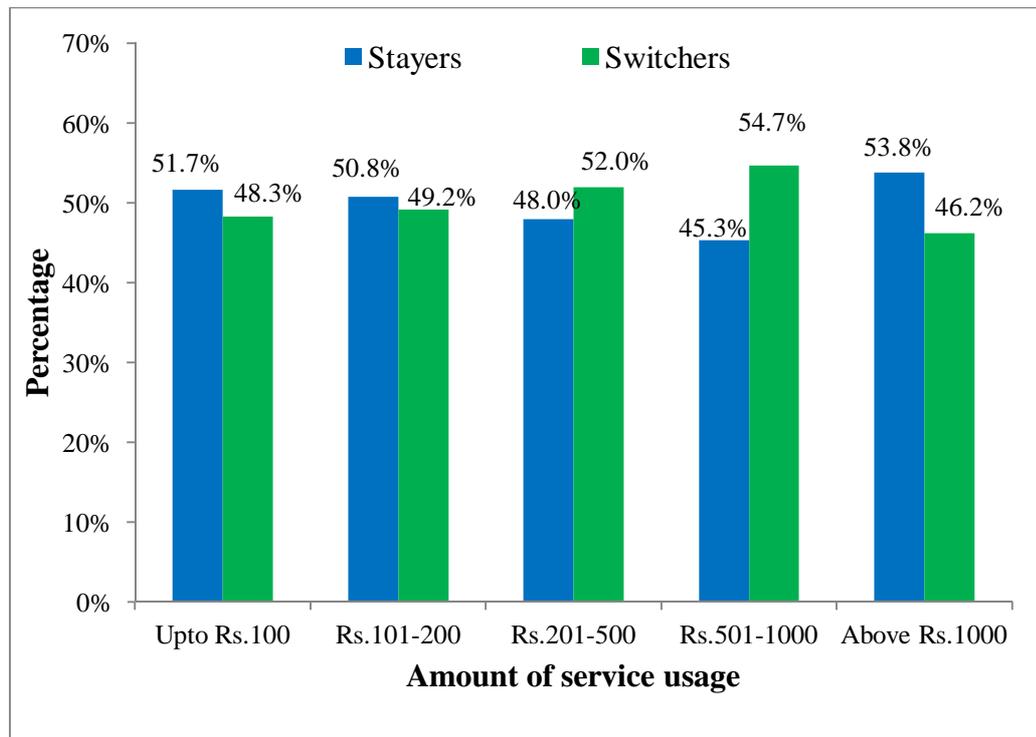
Table 4.39

Amount of service usage and consumer switching intention:
Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.263[a]	4	.868
Likelihood Ratio	1.265	4	.867
Linear-by-Linear Association	.426	1	.514
N of Valid Cases	788		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.97.

The Pearson Chi-Square has a value of 1.263 with a significance of 0.868. This significance value is much higher than the commonly accepted alpha level of 0.05. Therefore the null hypothesis is accepted and it can be concluded that there is no significant relationship between amount of service usage and consumer switching intention in cellular mobile services.

4.4.9 Relationship between period of association and consumer switching intention

Hypothesis 9.9

Ho: There is no significant relationship between the period association with a service provider and consumer switching intention in cellular mobile services

Ha: There is a significant relationship between the period association with a service provider and consumer switching intention in cellular mobile services

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of period association with a service provider and consumer switching intention. The respondents are segmented into three categories based on the period of association i) less than 2 years ii) 2-5 years iii) above 5 years. The cross tabulation of period association with a service provider and consumer switching intention is presented in the table 4.40 & figure 4.25 and the results of Chi-Square test is presented in table 4.41.

Table 4.40

Cross tabulation of period association with a service provider and consumer switching intention

Period of association	Details	SI Category		Total
		Stayers	**Switchers**	
Less than 2 years	Count	33	63	96
	% within period of association	34.38%	65.63%	100.00%
	% within SI Category	8.40%	15.95%	12.18%
	% of Total	4.19%	7.99%	12.18%
2-5 years	Count	199	270	469
	% within period of association	42.43%	57.57%	100.00%
	% within SI Category	50.64%	68.35%	59.52%
	% of Total	25.25%	34.26%	59.52%
Above 5 years	Count	161	62	223
	% within period of association	72.20%	27.80%	100.00%
	% within SI Category	40.97%	15.70%	28.30%
	% of Total	20.43%	7.87%	28.30%
Total	Count	393	395	788
	% within period of association	49.87%	50.13%	100.00%
	% within SI Category	100.00%	100.00%	100.00%
	% of Total	49.87%	50.13%	100.00%

Figure 4.25
Cross tabulation of period association with a service provider and consumer switching intention
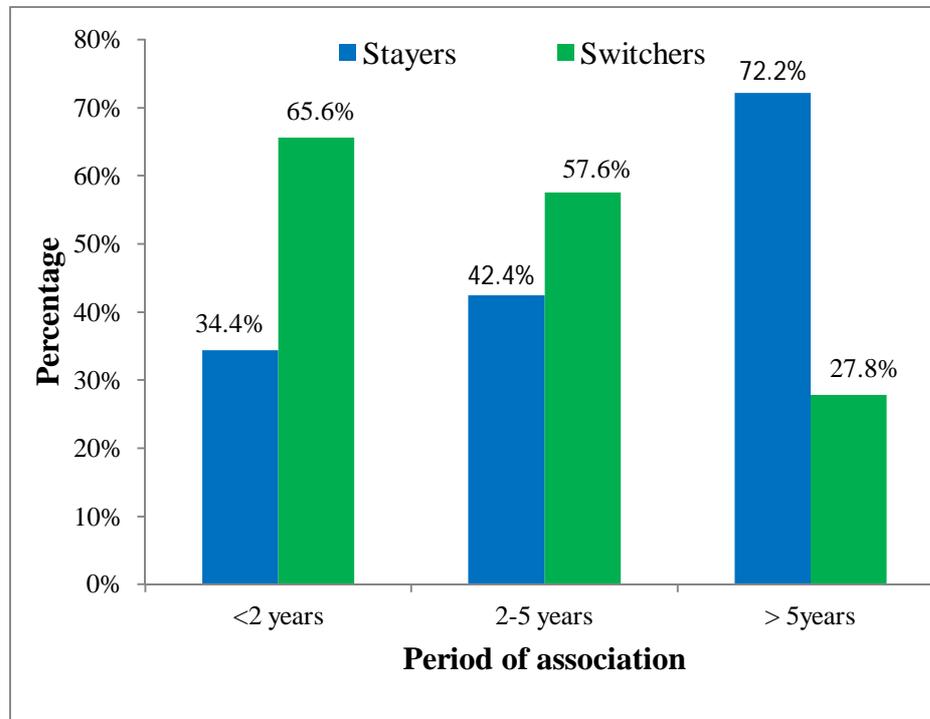
Table 4.41
Period of association with a service provider and consumer switching intention: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	64.069[a]	2	.000
Likelihood Ratio	65.841	2	.000
Linear-by-Linear Association	55.951	1	.000
N of Valid Cases	788		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 47.88.

Pearson Chi-Square has a value of 64.069 with a significance of 0.000. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that there is a significant relationship between the period association with a service provider and consumer switching intention in cellular mobile services.

From the cross tabulation table, it can be seen that 72.2% of the respondents having more than 5 years of association are stayers and only 27.8% are switchers. Among respondents with 2-5 years of association, 57.6% are switchers and 42.4% are stayers whereas 65.6% of the respondents with less than 2 years of association are switchers and 34.4% are stayers. This clearly indicates that customers with more than 5 years of association show high staying intention whereas customers with fewer years of association show higher switching intention in cellular mobile services.

4.5   Role of word-of-mouth on consumer decision making (switch or stay)

In this study, the role of word-of-mouth on consumer decision making such as to switch or stay with a service provider is measured using six questions measured on a 5-point Likert Scale (1=Strongly Disagree, 2=Disagree, 3= Uncertain, 4= Agree and 5= Strongly Agree with mean value of the Scale = 3) and is calculated as the mean of these six questions with equal weightage for all the questions. Mean value less than 3 represents the disagreement on the role of word-of-mouth on decision making where as value greater than 3 represents the agreement on the role of word-of-mouth on decision making. Table 4.42 shows the descriptive statistics of the role of WOM on consumer decision making.

Table 4.42
Descriptive Statistics of the role of WOM on consumer decision making

Details	N	Minimum	Maximum	Mean	Std. Deviation
WOM	788	1	5	3.5565	0.81517
Valid N (listwise)	788				

The descriptive statistics shows that the mean is 3.56 with a low standard deviation of 0.815 which implies that there is a high level of agreement on the role of WOM on consumer decision to switch or stay with a service provider. So it can be inferred that WOM plays an important role in consumer switch or stay decisions.

4.6 A comparative analysis of various switching determinants between BSNL and other prominent mobile service providers in Kerala

The MNP performance chart in Kerala telecom circle shows that BSNL is far ahead of other operators in terms of cumulative net port-in of mobile subscribers. The analysis of the primary data reveals that BSNL mobile customers show higher staying intentions or less prone to switch compared to other service providers. From the review of literature, it is found that customer satisfaction, customer loyalty, corporate image, perceived value, CRM, alternative attractiveness, switching cost, perceived service quality, trust and consumer switching intention are the major switching determinants in cellular mobile services. So a comparative analysis of the determinants of switching (or switching variables) is performed between BSNL and other prominent service providers such as Idea, Vodafone and Airtel so as to determine any perceived difference in terms of the switching variables.

4.6.1 Comparison of customer satisfaction between BSNL and other prominent mobile service providers in Kerala

The customer satisfaction of mobile service providers is measured using five items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.1

Ho: There is no significant difference between customer satisfaction of BSNL and other prominent mobile service providers in Kerala

Ha: There is significant difference between customer satisfaction of BSNL and other prominent mobile service providers in Kerala

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'customer satisfaction' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'customer satisfaction' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'customer satisfaction' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.43 & 4.44

Table 4.43

Mean ranking of customer satisfaction of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	420.10
Idea	229	316.88
Vodafone	167	303.45
Airtel	105	340.51
Total	690	

Table 4.44

Kruskal-Wallis test statistics based on customer satisfaction of mobile service providers

Details	Value
Chi-Square	39.032
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'customer satisfaction' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.45.

Table 4.45
Descriptive statistics of the variable - customer satisfaction

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.6857	189	.873
Idea	3.2044	229	.933
Vodafone	3.0671	167	1.139
Airtel	3.2629	105	1.030
Total	3.3119	690	1.013

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on customer satisfaction of mobile service providers shown in table 4.44 indicates that the significance value is 0.000 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that that there is a significant difference between customer satisfaction of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.43 indicates that the BSNL has significantly higher levels of customer satisfaction than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.45 also agrees to this finding.

Customer satisfaction of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is a significant difference between customer satisfaction levels of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL

and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of customer satisfaction between BSNL and Idea: Mann-Whitney U test

To compare the customer satisfaction of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.46 & 4.47.

Table 4.46

Mean ranking of customer satisfaction of BSNL and Idea based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	245.11
Idea	229	180.11
Total	418	

Table 4.47

Mann-Whitney U test statistics based on customer satisfaction of BSNL & Idea

Details	Customer satisfaction
Mann-Whitney U	14911.0
Wilcoxon W	41246.0
Z	-5.498
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.47 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the customer satisfaction significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.46 indicates that BSNL has significantly higher levels of customer satisfaction than Idea in mobile services, Kerala.

**Comparison of customer satisfaction between BSNL and Vodafone:
Mann-Whitney U test**

To compare the customer satisfaction of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.48 & 4.49.

Table 4.48
**Mean ranking of customer satisfaction of BSNL and Vodafone
based on Mann-Whitney U test**

Mobile Service Provider	N	Mean Rank
BSNL	189	205.31
Vodafone	167	148.16
Total	356	

Table 4.49
**Mann - Whitney U test statistics based on customer satisfaction of
BSNL & Vodafone**

Details	Customer satisfaction
Mann-Whitney U	10714.5
Wilcoxon W	24742.5
Z	-5.25
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.49 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the customer satisfaction significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.48 indicates that BSNL has significantly higher levels of customer satisfaction than Vodafone in mobile services, Kerala.

Comparison of customer satisfaction between BSNL and Airtel:
Mann-Whitney U test

To compare the customer satisfaction of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.50 & 4.51.

Table 4.50
Mean ranking of customer satisfaction of BSNL and Airtel
based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	159.68
Airtel	105	125.57
Total	294	

Table 4.51
Mann - Whitney U test statistics based on customer satisfaction of
BSNL & Airtel

Details	Customer satisfaction
Mann-Whitney U	7620
Wilcoxon W	13185
Z	-3.32
Asymp. Sig. (2-tailed)	0.001
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.51 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the customer satisfaction significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.50 indicates that BSNL has significantly higher levels of customer satisfaction than Airtel in mobile services, Kerala.

4.6.2 Comparison of customer loyalty between BSNL and other prominent mobile service providers in Kerala

The customer loyalty of mobile service providers is measured using five items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.2

Ho: There is no significant difference between customer loyalty of BSNL and other prominent mobile service providers in Kerala

Ha: There is significant difference between customer loyalty of BSNL and other prominent mobile service providers in Kerala

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'customer loyalty' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'customer loyalty' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'customer loyalty' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.52 & 4.53

Table 4.52

Mean ranking of customer loyalty of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	449.11
Idea	229	331.22
Vodafone	167	276.6
Airtel	105	299.74
Total	690	

Table 4.53

Kruskal-Wallis test statistics based on customer loyalty of mobile service providers

Details	Value
Chi-Square	78.131
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'customer loyalty' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.54

Table 4.54

Descriptive statistics of the variable - customer loyalty

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.7557	189	.806
Idea	3.2198	229	.885
Vodafone	2.8822	167	1.097
Airtel	3.0524	105	.944
Total	3.2539	690	.985

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on customer loyalty of mobile service providers shown in table 4.53 indicates that the significance value is 0.000 which is less than 0.05. Therefore the null hypothesis is rejected and the alternate hypothesis is accepted that that is significant difference between customer loyalty levels of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.52 indicates that the BSNL has significantly higher levels of customer loyalty than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.54 also agrees to this finding.

Customer loyalty of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between customer loyalty levels of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of customer loyalty between BSNL and Idea: Mann-Whitney U test

To compare the customer loyalty of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.55 & 4.56.

Table 4.55
Mean ranking of customer loyalty of BSNL and Idea based on
Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	251.03
Idea	229	175.22
Total	418	

Table 4.56
Mann - Whitney U test statistics based on customer loyalty of BSNL & Idea

Details	Customer loyalty
Mann-Whitney U	13791.5
Wilcoxon W	40126.5
Z	-6.407
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.56 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the customer loyalty significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.55 indicates that BSNL has significantly higher levels of customer loyalty than Idea in mobile services, Kerala.

Comparison of customer loyalty between BSNL and Vodafone: Mann-Whitney U test

To compare the customer loyalty of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.57 & 4.58.

Table 4.57
Mean ranking of customer loyalty of BSNL and Vodafone based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	217.37
Vodafone	167	134.51
Total	356	

Table 4.58
Mann - Whitney U test statistics based on customer loyalty of BSNL & Vodafone

Details	Customer loyalty
Mann-Whitney U	8435.0
Wilcoxon W	22463.0
Z	-7.604
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.58 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the customer loyalty significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.57 indicates that BSNL has significantly higher levels of customer loyalty than Vodafone in mobile services, Kerala.

Comparison of customer loyalty between BSNL and Airtel:
Mann-Whitney U test

To compare the customer loyalty of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.59 & 4.60.

Table 4.59
Mean ranking of customer loyalty of BSNL and Airtel based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	170.71
Airtel	105	105.73
Total	294	

Table 4.60

**Mann - Whitney U test statistics based on customer loyalty of
BSNL & Airtel**

Details	Customer loyalty
Mann-Whitney U	5536.5
Wilcoxon W	11101.5
Z	-6.304
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.60 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the customer loyalty significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.59 indicates that BSNL has significantly higher levels of customer loyalty than Airtel in mobile services, Kerala.

4.6.3 Comparison of corporate image between BSNL and other prominent mobile service providers in Kerala

The corporate image of mobile service providers is measured using six items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.3

Ho: There is no significant difference between corporate image of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between corporate image of BSNL and other prominent mobile service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'corporate image' pertaining to the mobile

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service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'corporate image' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'corporate image' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.61 & 4.62

Table 4.61
Mean ranking of corporate image of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	402.65
Idea	229	329.56
Vodafone	167	298.2
Airtel	105	352.63
Total	690	

Table 4.62
Kruskal-Wallis test statistics based on corporate image of mobile service providers

Details	Value
Chi-Square	26.704
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'corporate image' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.63.

Table 4.63
Descriptive statistics of the variable - corporate image

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.8686	189	.707
Idea	3.6128	229	.786
Vodafone	3.4780	167	.838
Airtel	3.6778	105	.769
Total	3.6601	690	.787

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on corporate image of mobile service providers shown in table 4.62 indicates that the significance value is 0.000 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between corporate image of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.61 indicates that the BSNL has significantly higher levels of corporate image than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.63 also agrees to this finding.

Corporate image of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between corporate image of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of corporate image between BSNL and Idea: Mann-Whitney U test

To compare the corporate image of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.64 & 4.65.

Table 4.64
Mean ranking of corporate image of BSNL and Idea based on
Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	234.01
Idea	229	189.27
Total	418	

Table 4.65
Mann-Whitney U test statistics based on corporate image of BSNL & Idea

Details	Corporate image
Mann-Whitney U	17007.5
Wilcoxon W	43342.5
Z	-3.781
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.65 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the corporate image significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.64 indicates that BSNL has significantly higher levels of corporate image than Idea in mobile services, Kerala.

Comparison of corporate image between BSNL and Vodafone:
Mann-Whitney U test

To compare the corporate image of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.66 & 4.67.

Table 4.66

Mean ranking of corporate image of BSNL and Vodafone based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	203.62
Vodafone	167	150.07
Total	356	

Table 4.67

Mann-Whitney U test statistics based on corporate image of BSNL & Vodafone

Details	Corporate image
Mann-Whitney U	11034.0
Wilcoxon W	25062.0
Z	-4.915
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.67 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the corporate image significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.66 indicates that BSNL has significantly higher levels of corporate image than Vodafone in mobile services, Kerala.

Comparison of corporate image between BSNL and Airtel: Mann-Whitney U test

To compare the corporate image of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.68 & 4.69.

Table 4.68

Mean ranking of corporate image of BSNL and Airtel based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	155.02
Airtel	105	133.97
Total	294	

Table 4.69

Mann-Whitney U test statistics based on corporate image of BSNL & Airtel

Details	Corporate image
Mann-Whitney U	8502.0
Wilcoxon W	14067.0
Z	-2.041
Asymp. Sig. (2-tailed)	0.041
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.69 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the corporate image significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.68 indicates that BSNL has significantly higher levels of corporate image than Airtel in mobile services, Kerala.

4.6.4 Comparison of perceived value between BSNL and other prominent mobile service providers in Kerala

The perceived value of mobile service providers is measured using six items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items**.**

Hypothesis 10.4

Ho: There is no significant difference between perceived value of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between perceived value of BSNL and other prominent mobile service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'perceived value' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'perceived value' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'perceived value' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.70 & 4.71

Table 4.70

Mean ranking of perceived value of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	432.65
Idea	229	328.51
Vodafone	167	287.37
Airtel	105	318.13
Total	690	

Table 4.71

Kruskal-Wallis test statistics based on perceived value of mobile service providers

Details	Value
Chi-Square	54.231
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'perceived value' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.72

Table 4.72

Descriptive statistics of the variable - perceived value

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.7531	189	.769
Idea	3.3450	229	.781
Vodafone	3.1327	167	.967
Airtel	3.2683	105	.892
Total	3.3937	690	.874

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on perceived value of mobile service providers shown in table 4.71 indicates that the significance value is 0.000 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between perceived value of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.70 indicates that the BSNL has significantly higher levels of perceived value than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.72 also agrees to this finding.

Perceived value of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between perceived value of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of perceived value between BSNL and Idea: Mann-Whitney U test

To compare the perceived value of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.73 & 4.74.

Table 4.73
Mean ranking of perceived value of BSNL and Idea
based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	246.2
Idea	229	179.2
Total	418	

Table 4.74

Mann-Whitney U test statistics based on perceived value of BSNL & Idea

Details	Perceived value
Mann-Whitney U	14703.5
Wilcoxon W	41038.5
Z	-5.66
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.74 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the perceived value significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.73 indicates that BSNL has significantly higher levels of perceived value than Idea in mobile services, Kerala.

Comparison of perceived value between BSNL and Vodafone: Mann-Whitney U test

To compare the perceived value of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.75 & 4.76.

Table 4.75

Mean ranking of perceived value of BSNL and Vodafone based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	211.86
Vodafone	167	140.75
Total	356	

Table 4.76

Mann-Whitney U test statistics based on perceived value of BSNL & Vodafone

Details	Perceived value
Mann-Whitney U	9476.5
Wilcoxon W	23504.5
Z	-6.524
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.76 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the perceived value significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.75 indicates that BSNL has significantly higher levels of perceived value than Vodafone in mobile services, Kerala.

Comparison of perceived value between BSNL and Airtel: Mann-Whitney U test

To compare the perceived value of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.77 & 4.78.

Table 4.77

Mean ranking of perceived value of BSNL and Airtel based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	154.59
Airtel	105	116.74
Total	294	

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Table 4.78

Mann-Whitney U test statistics based on perceived value of BSNL & Airtel

Details	Perceived value
Mann-Whitney U	6692.5
Wilcoxon W	12257.5
Z	-4.638
Asymp. Sig. (2-tailed)	0.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.78 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the perceived value significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.77 indicates that BSNL has significantly higher levels of perceived value than Airtel in mobile services, Kerala.

4.6.5 Comparison of CRM between BSNL and other prominent mobile service providers in Kerala

The CRM of mobile service providers is measured using seven items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.5

Ho: There is no significant difference between CRM of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between CRM of BSNL and other prominent mobile service providers in Kerala

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'CRM' pertaining to the mobile service

providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'CRM' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'CRM' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.79 & 4.80

Table 4.79
Mean ranking of CRM of mobile service providers
based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	379.64
Idea	229	319.30
Vodafone	167	332.83
Airtel	105	361.33
Total	690	

Table 4.80
Kruskal-Wallis test statistics based on CRM of
mobile service providers

Details	Value
Chi-Square	10.838
df	3
Asymp. Sig.	.013
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'CRM' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.81

Table 4.81
Descriptive statistics of the variable – CRM

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.318	189	.759
Idea	3.1216	229	.837
Vodafone	3.1437	167	.952
Airtel	3.2653	105	.887
Total	3.2064	690	.857

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on CRM of mobile service providers shown in table 4.80 indicates that the significance value is 0.013 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between CRM of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.79 indicates that the BSNL has significantly higher levels of CRM than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.81 also agrees to this finding.

CRM of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between CRM levels of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of CRM between BSNL and Idea: Mann-Whitney U test

To compare the CRM of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.82 & 4.83.

Table 4.82

Mean ranking of CRM of BSNL and Idea based on

Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	230.27
Idea	229	192.36
Total	418	

Table 4.83

Mann-Whitney U test statistics based on CRM of BSNL & Idea

Details	CRM
Mann-Whitney U	17714.5
Wilcoxon W	44049.5
Z	-3.194
Asymp. Sig. (2-tailed)	.001
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.83 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the CRM significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.82 indicates that BSNL has significantly higher levels of CRM than Idea in mobile services, Kerala.

Comparison of CRM between BSNL and Vodafone: Mann-Whitney U test

To compare the CRM of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.84 & 4.85.

Table 4.84

**Mean ranking of CRM of BSNL and Vodafone based on
Mann-Whitney U test**

Mobile Service Provider	N	Mean Rank
BSNL	189	189.44
Vodafone	167	166.11
Total	356	

Table 4.85

Mann-Whitney U test statistics based on CRM of BSNL & Vodafone

Details	CRM
Mann-Whitney U	13713.0
Wilcoxon W	27741.0
Z	-2.135
Asymp. Sig. (2-tailed)	.033
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.85 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the CRM significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.84 indicates that BSNL has significantly higher levels of CRM than Vodafone in mobile services, Kerala.

Comparison of CRM between BSNL and Airtel: Mann-Whitney U test

To compare the CRM of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.86 & 4.87.

Table 4.86

Mean ranking of CRM of BSNL and Airtel based on
Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	149.92
Airtel	105	143.14
Total	294	

Table 4.87

Mann-Whitney U test statistics based on CRM of BSNL & Airtel

Details	CRM
Mann-Whitney U	9464.5
Wilcoxon W	15029.5
Z	-0.656
Asymp. Sig. (2-tailed)	0.512
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.87 indicates that the observed significance value is much higher than 0.05. Therefore, it can be inferred that the CRM does not significantly differ between the mobile service providers BSNL and Airtel.

4.6.6 Comparison of alternative attractiveness between BSNL and other prominent mobile service providers in Kerala

The alternative attractiveness of mobile service providers is measured using three items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items**.**

Hypothesis 10.6

Ho: There is no significant difference between alternative attractiveness of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between alternative attractiveness of BSNL and other prominent mobile service providers in Kerala

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Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'alternative attractiveness' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'alternative attractiveness' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'alternative attractiveness' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.88 & 4.89.

Table 4.88

Mean ranking of alternative attractiveness of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	289.24
Idea	229	334.06
Vodafone	167	388.10
Airtel	105	403.42
Total	690	

Table 4.89
Kruskal-Wallis test statistics based on alternative attractiveness of mobile service providers

Details	Value
Chi-Square	32.808
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'alternative attractiveness' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.90

Table 4.90
Descriptive statistics of the variable - alternative attractiveness

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	2.9012	189	.954
Idea	3.1237	229	.933
Vodafone	3.4072	167	1.140
Airtel	3.4952	105	.938
Total	3.1879	690	1.016

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on alternative attractiveness of mobile service providers shown in table 4.89 indicates that the significance value is 0.000 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between alternative attractiveness of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.88 indicates that the BSNL has significantly lower levels of alternative attractiveness than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.90 also agrees to this finding.

Alternative attractiveness of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between alternative attractiveness of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of alternative attractiveness between BSNL and Idea: Mann-Whitney U test

To compare the alternative attractiveness of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.91 & 4.92.

Table 4.91
Mean ranking of alternative attractiveness of BSNL and Idea based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	193.78
Idea	229	222.48
Total	418	

Table 4.92
Mann-Whitney U test statistics based on alternative attractiveness of BSNL & Idea

Details	Alternative attractiveness
Mann-Whitney U	18669.0
Wilcoxon W	36624.0
Z	-2.447
Asymp. Sig. (2-tailed)	.014
Grouping Variable: Mobile Service Provider	

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The summary of Mann-Whitney U test statistics shown in table 4.92 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the alternative attractiveness significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.91 indicates that BSNL has significantly lower alternative attractiveness than Idea in mobile services, Kerala.

Comparison of alternative attractiveness between BSNL and Vodafone: Mann-Whitney U test

To compare the alternative attractiveness of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.93 & 4.94.

Table 4.93
Mean ranking of alternative attractiveness of BSNL and Vodafone based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	129.88
Vodafone	167	179.21
Total	356	

Table 4.94
Mann-Whitney U test statistics based on alternative attractiveness of BSNL & Vodafone

Details	Alternative attractiveness
Mann-Whitney U	6592.5
Wilcoxon W	24547.5
Z	-4.817
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.94 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the alternative attractiveness significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.93 indicates that BSNL has significantly lower levels of alternative attractiveness than Vodafone in mobile services, Kerala.

Comparison of alternative attractiveness between BSNL and Airtel: Mann-Whitney U test

To compare the alternative attractiveness of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.95 & 4.96.

Table 4.95
Mean ranking of alternative attractiveness of BSNL and Airtel based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	129.88
Airtel	105	179.21
Total	294	

Table 4.96
Mann-Whitney U test statistics based on alternative attractiveness of BSNL & Airtel

Details	Alternative attractiveness
Mann-Whitney U	6592.5
Wilcoxon W	24547.5
Z	-4.817
Asymp. Sig. (2-tailed)	0.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.96 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the alternative attractiveness significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.95 indicates that BSNL has significantly lower levels of alternative attractiveness than Airtel in mobile services, Kerala.

4.6.7 Comparison of switching cost between BSNL and other prominent mobile service providers in Kerala

The switching cost of mobile service providers is measured using eight items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.7

Ho: There is no significant difference between switching cost of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between switching cost of BSNL and other prominent mobile service providers in Kerala

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'switching cost' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'switching cost' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'switching cost' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.97 & 4.98

Table 4.97

Mean ranking of switching cost of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	394.63
Idea	229	341.34
Vodafone	167	316.23
Airtel	105	312.71
Total	690	

Table 4.98

Kruskal-Wallis test statistics based on switching cost of mobile service providers

Details	Value
Chi-Square	18.098
df	3
Asymp. Sig.	.001
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'switching cost' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.99

Table 4.99

Descriptive statistics of the variable - switching cost

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.4299	189	.765
Idea	3.2091	229	.749
Vodafone	3.0988	167	.925
Airtel	3.0821	105	.820
Total	3.2236	690	.820

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on switching cost of mobile service providers shown in table 4.98 indicates that the significance value is 0.001 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between switching cost levels of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.97 indicates that the BSNL has significantly higher levels of switching cost than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.99 also agrees to this finding.

Switching cost of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between switching cost of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of switching cost between BSNL and Idea: Mann-Whitney U test

To compare the switching cost of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.100 & 4.101.

Table 4.100

Mean ranking of switching cost of BSNL and Idea based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	227.99
Idea	229	194.24
Total	418	

Table 4.101

Mann-Whitney U test statistics based on switching cost of BSNL & Idea

Details	Switching cost
Mann-Whitney U	18146.0
Wilcoxon W	44481.0
Z	-2.849
Asymp. Sig. (2-tailed)	.004
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.101 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the switching cost significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.100 indicates that BSNL has significantly higher switching cost than Idea in mobile services, Kerala.

Comparison of switching cost between BSNL and Vodafone:
Mann-Whitney U test

To compare the switching cost of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.102 & 4.103.

Table 4.102

Mean ranking of switching cost of BSNL and Vodafone
based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	196.72
Vodafone	167	157.88
Total	356	

Table 4.103

Mann-Whitney U test statistics based on switching cost of BSNL & Vodafone

Details	Switching cost
Mann-Whitney U	12338.5
Wilcoxon W	26366.5
Z	-3.560
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.103 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the switching cost significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.102 indicates that BSNL has significantly higher levels of switching cost than Vodafone in mobile services, Kerala.

Comparison of switching cost between BSNL and Airtel: Mann-Whitney U test

To compare the switching cost of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.104 & 4.105.

Table 4.104

Mean ranking of switching cost of BSNL and Airtel based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	159.92
Airtel	105	125.14
Total	294	

Table 4.105

Mann-Whitney U test statistics based on switching cost of BSNL & Airtel

Details	Switching cost
Mann-Whitney U	7575.0
Wilcoxon W	13140.0
Z	-3.370
Asymp. Sig. (2-tailed)	0.001
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.105 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the switching cost significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.104 indicates that BSNL has significantly higher levels of switching cost than Airtel in mobile services, Kerala.

4.6.8 Comparison of perceived service quality between BSNL and other prominent mobile service providers in Kerala

The perceived service quality of mobile service providers is measured in six dimensions such as reliability, responsiveness, assurance, empathy, tangibility and network quality by using 27 items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.8

Ho: There is no significant difference between perceived service quality of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between perceived service quality of BSNL and other prominent mobile service providers in Kerala

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'perceived service quality' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'perceived service quality' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'perceived service quality' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.106 & 4.107

Table 4.106

Mean ranking of perceived service quality of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	381.67
Idea	229	323.90
Vodafone	167	324.70
Airtel	105	360.57
Total	690	

Table 4.107

**Kruskal-Wallis test statistics based on perceived service quality of
mobile service providers**

Details	Value
Chi-Square	11.355
df	3
Asymp. Sig.	.010
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'perceived service quality' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.106.

Table 4.108

Descriptive statistics of the variable - perceived service quality

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.5487	189	.765
Idea	3.3387	229	.749
Vodafone	3.3058	167	.925
Airtel	3.4589	105	.820
Total	3.4065	690	.820

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on perceived service quality of mobile service providers shown in table 4.107 indicates that the significance value is 0.010 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between perceived service quality levels of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.106 indicates that the BSNL has significantly higher levels of perceived service quality than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.108 also agrees to this finding.

Perceived service quality of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between perceived service quality of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of perceived service quality between BSNL and Idea: Mann-Whitney U test

To compare the perceived service quality of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.109 & 4.110.

Table 4.109
Mean ranking of perceived service quality of BSNL and Idea based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	229.27
Idea	229	193.19
Total	418	

Table 4.110

Mann - Whitney U test statistics based on perceived service quality of BSNL & Idea

Details	Perceived service quality
Mann-Whitney U	17904.5
Wilcoxon W	44239.5
Z	-3.040
Asymp. Sig. (2-tailed)	.002
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.110 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the perceived service quality significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.109 indicates that BSNL has significantly higher perceived service quality than Idea in mobile services, Kerala.

Comparison of perceived service quality between BSNL and Vodafone: Mann-Whitney U test

To compare the perceived service quality of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.111 & 4.112.

Table 4.111

Mean ranking of perceived service quality of BSNL and Vodafone based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	192.03
Vodafone	167	163.19
Total	356	

Table 4.112

Mann-Whitney U test statistics based on perceived service quality of BSNL & Vodafone

Details	Perceived service quality
Mann-Whitney U	13225.0
Wilcoxon W	27253.0
Z	-2.639
Asymp. Sig. (2-tailed)	.008
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.112 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the perceived service quality significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.111 indicates that BSNL has significantly higher levels of perceived service quality than Vodafone in mobile services, Kerala.

Comparison of perceived service quality between BSNL and Airtel: Mann-Whitney U test

To compare the perceived service quality of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.113 & 4.114.

Table 4.113

Mean ranking of perceived service quality of BSNL and Airtel based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	150.38
Airtel	105	142.31
Total	294	

Table 4.114

Mann-Whitney U test statistics based on perceived service quality of BSNL & Airtel

Details	Perceived service quality
Mann-Whitney U	9378.0
Wilcoxon W	14943.0
Z	-.780
Asymp. Sig. (2-tailed)	0.436
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.114 indicates that the observed significance value is much greater than 0.05. Therefore, it can be inferred that the perceived service quality does not significantly differ between BSNL and Airtel in mobile services, Kerala.

4.6.9 Comparison of trust between BSNL and other prominent mobile service providers in Kerala

The customer's trust in the mobile service provider is measured using 7 items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.9

Ho: There is no significant difference between trust of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between trust of BSNL and other prominent mobile service providers in Kerala

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'trust' pertaining to the mobile service

providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'trust' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'trust' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.115 & 4.116.

Table 4.115
Mean ranking of trust of mobile service providers
based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	410.21
Idea	229	320.42
Vodafone	167	308.12
Airtel	105	343.17
Total	690	

Table 4.116
Kruskal-Wallis test statistics based on trust of
mobile service providers

Details	Value
Chi-Square	29.555
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'trust' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.115.

Table 4.117
Descriptive statistics of the variable – trust

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	3.5487	189	.765
Idea	3.3387	229	.749
Vodafone	3.3058	167	.925
Airtel	3.4589	105	.820
Total	3.4065	690	.820

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on trust of mobile service providers shown in table 4.116 indicates that the significance value is 0.000 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between trust of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.115 indicates that the BSNL has significantly higher levels of trust than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.117 also agrees to this finding.

Trust of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between trust of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus

on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of trust between BSNL and Idea: Mann-Whitney U test

To compare the trust of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.118 & 4.119.

Table 4.118
Mean ranking of trust of BSNL and Idea based on
Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	240.03
Idea	229	184.31
Total	418	

Table 4.119

Mann-Whitney U test statistics based on trust of BSNL & Idea

Details	Trust
Mann-Whitney U	15871.0
Wilcoxon W	42206.0
Z	-4.706
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.119 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the trust significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.118 indicates that BSNL has significantly higher levels of trust than Idea in mobile services, Kerala.

Comparison of trust between BSNL and Vodafone: Mann-Whitney U test

To compare the trust of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.120 & 4.121.

Table 4.120
Mean ranking of trust of BSNL and Vodafone
based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	202.64
Vodafone	167	151.18
Total	356	

Table 4.121
Mann-Whitney U test statistics based on trust of BSNL & Vodafone

Details	Trust
Mann-Whitney U	11219.0
Wilcoxon W	25247.0
Z	-4.717
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.121 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the trust significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.120 indicates that BSNL has significantly higher levels of trust than Vodafone in mobile services, Kerala.

Comparison of trust between BSNL and Airtel: Mann-Whitney U test

To compare the trust of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.122 & 4.123.

Table 4.122
Mean ranking of trust of BSNL and Airtel
based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	157.55
Airtel	105	129.41
Total	294	

Table 4.123
Mann-Whitney U test statistics based on trust of BSNL & Airtel

Details	Trust
Mann-Whitney U	8023.5
Wilcoxon W	13588.5
Z	-2.726
Asymp. Sig. (2-tailed)	0.006
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.123 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the trust significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.122 indicates that BSNL has significantly higher levels of trust than Airtel in mobile services, Kerala.

4.6.10 Comparison of consumer switching intention between BSNL and other prominent mobile service providers in Kerala

The consumer switching intention is measured using five items with a five point Likert scale and is calculated as the mean score by giving equal weightage to all the items.

Hypothesis 10.10

Ho: There is no significant difference between consumer switching intention of BSNL and other prominent mobile service providers in Kerala.

Ha: There is significant difference between consumer switching intention of BSNL and other prominent mobile service providers in Kerala

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable 'consumer switching intention' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'consumer switching intention' pertaining to the mobile service providers BSNL, Idea, Vodafone and Airtel. The test results show that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the hypothesis and the Mann- Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'consumer switching intention' of the mobile service providers BSNL, Idea, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 4.124 & 4.125.

Table 4.124

Table 4.124

Mean ranking of consumer switching intention of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean Rank
BSNL	189	193.32
Idea	229	373.58
Vodafone	167	424.4
Airtel	105	432.7
Total	690	

Table 4.125

Kruskal-Wallis test statistics based on consumer switching intention of mobile service providers

Details	Value
Chi-Square	161.652
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The descriptive statistics of the variable 'consumer switching intention' related to the mobile service providers BSNL, Idea, Vodafone and Airtel is given in table 4.124.

Table 4.126
Descriptive statistics of the variable - consumer switching intention

Mobile Service Provider	Mean*	N	Standard Deviation
BSNL	2.3101	189	.740
Idea	3.1860	229	.843
Vodafone	3.4311	167	1.117
Airtel	3.4952	105	.754
Total	3.0525	690	.996

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The Kruskal-Wallis test statistics based on consumer switching intention of mobile service providers shown in table 4.125 indicates that the significance value is 0.000 which is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted that there is significant difference between consumer switching intention of BSNL and other prominent mobile service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 4.124 indicates that the BSNL has significantly lower levels of consumer switching intention than Idea, Vodafone and Airtel. The descriptive statistics of the variable given in the table 4.126 also agrees to this finding.

Consumer switching intention of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that there is significant difference between consumer switching intention of BSNL and other prominent mobile service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test is conducted as post hoc procedures for the Kruskal-Wallis test. Since the study specifically focus on BSNL, the comparison is made between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel.

Comparison of consumer switching intention between BSNL and Idea: Mann-Whitney U test

To compare the consumer switching intention of BSNL and Idea, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.127 & 4.128.

Table 4.127

Mean ranking of consumer switching intention of BSNL and Idea based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	144.44
Idea	229	263.19
Total	418	

Table 4.128

Mann-Whitney U test statistics based on consumer switching intention of BSNL & Idea

Details	Consumer switching intention
Mann-Whitney U	9345.0
Wilcoxon W	27300.0
Z	-10.028
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.128 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the consumer switching intention significantly differs between the mobile service providers BSNL and Idea. The value of mean ranking based on Mann-Whitney U test given in table 4.127 indicates that BSNL has significantly lower levels of consumer switching intention than Idea in mobile services, Kerala.

Comparison of consumer switching intention between BSNL and Vodafone: Mann-Whitney U test

To compare the consumer switching intention of BSNL and Vodafone, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.129 & 4.130.

Table 4.129

Mean ranking of consumer switching intention of BSNL and Vodafone based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	130.10
Vodafone	167	233.28
Total	356	

Table 4.130

Mann-Whitney U test statistics based on consumer switching intention of BSNL & Vodafone

Details	Consumer switching intention
Mann-Whitney U	6633.5
Wilcoxon W	24588.5
Z	-9.460
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.130 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the consumer switching intention significantly differs between the mobile service providers BSNL and Vodafone. The value of mean ranking based on Mann-Whitney U test given in table 4.129 indicates that BSNL has significantly lower levels of consumer switching intention than Vodafone in mobile services, Kerala.

Comparison of consumer switching intention between BSNL and Airtel: Mann-Whitney U test

To compare the consumer switching intention of BSNL and Airtel, Mann-Whitney U test is conducted for these groups and the results are given in the table 4.131 & 4.132.

Table 4.131

Mean ranking of consumer switching intention of BSNL and Airtel based on Mann-Whitney U test

Mobile Service Provider	N	Mean Rank
BSNL	189	108.78
Airtel	105	217.20
Total	294	

Table 4.132

Mann-Whitney U test statistics based on consumer switching intention of BSNL & Airtel

Details	Consumer switching intention
Mann-Whitney U	2604.5
Wilcoxon W	20559.5
Z	-10.505
Asymp. Sig. (2-tailed)	0.000
Grouping Variable: Mobile Service Provider	

The summary of Mann-Whitney U test statistics shown in table 4.132 indicates that the observed significance value is less than 0.05. Therefore, it can be inferred that the consumer switching intention significantly differs between the mobile service providers BSNL and Airtel. The value of mean ranking based on Mann-Whitney U test given in table 4.131 indicates that BSNL has significantly lower levels of consumer switching intention than Airtel in mobile services, Kerala.

CHAPTER-V
FINDINGS

The study is conducted to analyse various factors that affect switching intention in cellular mobile services and the relationships between these factors. The study considered CRM as the key variable and studied its direct and indirect effect on consumer switching intention and its impact on other factors that drives switching intention in cellular mobile services. The study adopts a model to explain consumer switching intention in cellular mobile service by incorporating the key determinants that cause switching behaviour. The model presented in the study depicts the relationship among various factors that cause switching intention. The study also analysed the relationship between switching intention and demographic profile of the respondents. The findings of the study are discussed in detail here by comparing with the previous research findings.

5.1   Impact of CRM on perceived service quality

Providing quick and effective customer support service is a key component of CRM. Mithas et al. (2005) found that this will improve the reliability and responsiveness of the service offered. CRM helps to manage customer relationships effectively, which improves customer service quality (Reinartz et al., 2004). CRM enables firms to customize products/services based on consumer needs, which enhance perceived quality (Mithas et al., 2005). Two way communication using CRM enables firms to continuously communicate with customers to improve quality of their service offerings (Valenzuela, 2010). Christopher et al. (2013) emphasised the need for shifting from the traditional concept of internal quality (conform to specification) to customer perceived quality (quality defined by customers). By enabling customers to provide feedback about services and valuable suggestions for improvement, CRM helps firms to enhance quality of product/ service (Lin et al., 2010).Thus CRM enables firms to close the quality gap between customer expectations and perceived service performance as observed by Christopher et al. (1991).

In this study, CRM is found to have a strong direct positive influence on consumer perceived service quality. This is in line with the findings of Rootman (2006) that CRM positively influences the level of service quality in banks. Further, Al-Refaie et al. (2014) found that CRM enhances relationship quality in Jordanian banks.

5.2   Impact of CRM on perceived value

Companies adopt CRM with the aim of maximising customer life time value. Ravald and Gronroos (1996) considered value as an important constituent of relationship marketing. Mithas et al. (2005) argued that CRM equips firms with better knowledge of customer behaviour, which enables them to manage and target customers based on service experience, will increase customer value. Loyalty program, a key component of CRM, is found to enhance customer perceived value (Bolton et. al, 2000).

Gwinner et al. (1998) empirically identified four relational benefits that customers receive from relational exchanges viz. psychological, social, economic and customization benefits. Chen and Hu (2010) found that relational benefits have direct effect on perceived value in coffee outlets industry. The present study considered perceived value as a combination of functional value, monetary value, emotional value, and social values.

In this study, CRM is found to have a strong direct positive influence on consumer perceived value. This is in line with the studies of Kurniati et al. (2015) who found that CRM has a significant effect on customer value in banking services.

5.3   Impact of CRM on customer satisfaction

CRM helps firms to handle customer requests and complaints efficiently and effectively which enhances customer satisfaction. CRM applications help firms to gain customer knowledge (such as habits and preferences) which enable firms to customize the offerings based on customer needs and preferences and serve the customers better. This will inturn improve the customer satisfaction. Further, CRM is found to enhance the antecedents of customer satisfaction such as service quality and

perceived value. Therefore, it is expected that CRM is likely to have a strong positive impact on customer satisfaction.

In this study, CRM is found to have a strong direct positive influence customer satisfaction. This is consistent with the findings of Mithas et al. (2005) who analysed the effect of CRM on customer satisfaction and found that CRM applications is positively associated with improved customer satisfaction. Similarly, Chen and Popovich (2003) found that an efficient and effective customer relationship management enhances customer satisfaction and retention rates. Long et al. (2013) conducted a study among departmental store customers in Tehran and found that CRM has a significant impact on customer satisfaction. Ata and Toker (2012) found that customer relationship management adoption in business-to-business markets has a significant positive effect on customer satisfaction.

5.4 Impact of CRM on customer loyalty

The basic goal of CRM is to create loyalty by enhancing customer lifetime value. Many authors considered CRM as a way to boost loyalty (e.g. Hillebrand et al., 2011). Loyalty programs play a critical role in developing relationships and enhancing customer loyalty. Bolton et al. (2000) investigated the impact of loyalty programs on customer loyalty and found a positive relationship between them. Ndubisi (2007) found that relationship marketing strategies positively impact customer loyalty in banking customers, Malaysia. Roberts-Lombard (2011) studied CRM and its influence on customer loyalty among insurance providers of South Africa and have identified a strong positive relationship between CRM and customer loyalty. Long et al. (2013) examined the impact of CRM on customer satisfaction and loyalty in departmental stores in Tehran and found that CRM elements have a significant impact on customer satisfaction and loyalty. Kurniati et al. (2015) found that CRM has a significant effect on customer loyalty in banking services. In this study, CRM is found to have a direct positive impact on customer loyalty which is consistent with above mentioned studies.

5.5   Impact of CRM on consumer switching intention

The direct effect of CRM on consumer switching intention was explored, but the results of the SEM indicated the absence of direct impact. But CRM is found to have a negative indirect effect on consumer switching intention via perceived service quality, perceived value, customer satisfaction and customer loyalty with maximum indirect effect through perceived service quality.

5.6   Impact of perceived service quality on perceived value

Perceived value is the benefits customers receive in relation to total costs (McDougall and Levesque, 2000). In this study perceived service quality is considered to comprise of technical and functional qualities as suggested by Gronroos (1984) and measured in terms of reliability, responsiveness, assurance, empathy, tangibility and network quality dimensions. Higher service quality is expected to enhance perceived value by enhancing the benefits. Several studies have established the direct positive influence of service quality on customer perceived value (e.g. Zeithaml, 1988; Andreassen and Lindestad, 1998; Sweeney et al., 1999; Cronin et al., 2000; Choi et al., 2004; Lai et al., 2009). In this study, perceived service quality is found to have a direct positive impact on customer perceived value which is consistent with above mentioned studies.

5.7   Impact of perceived service quality on customer satisfaction

Satisfaction is customer's evaluation of a product or service in terms of whether it has met their needs and expectations (Zeithaml et al., 2010). Previous studies establish direct positive impact of perceived service quality on customer satisfaction. Bansal and Taylor (1999) found that higher perceived level of service quality leads to a higher perceived level of satisfaction. Gerpott et al. (2001) found that perceived network quality is a key driver of customer satisfaction in German mobile service market. Lin and Ding (2005) conducted a study among ADSL customers in ISP service and reported that the influence of network quality on satisfaction is significant. Deng et al. (2010) found that perceived service quality is the main predictor of customer satisfaction in Chinese mobile instant message users.

In this study also, perceived service quality is found to have a direct positive influence on customer satisfaction which is consistent with the above studies.

5.8 Impact of perceived service quality on customer loyalty

It is well established in marketing literature that service quality positively influences customer loyalty. Many researchers find empirical support for this assertion (e.g. Cronin et al., 2000; Sharma and Patterson, 1999; Zeithaml et al., 1996; Bell et al., 2005). In this study also, it is found that perceived service quality has a direct positive impact on customer loyalty.

5.9 Impact of perceived service quality on consumer switching intention

Some studies indicate the direct relationship between perceived service quality and behavioural intentions. Zeithaml et al. (1996) found that service quality has a strong impact on behaviour intentions. Malhotra and Malhotra (2013) found that high mobile service quality is a significant detractor of consumer's switching intention among U.S mobile service customers. But, the results of this study indicate that perceived service quality has no significant direct impact on consumer switching intention.

5.10 Impact of perceived value on customer satisfaction

In this study, perceived value is found to have a strong positive influence on customer satisfaction. This finding is consistent with previous studies conducted by Chen and Chen (2010) in heritage tourism, Taiwan, Lai et al. (2009) in Chinese telecom, Lam et al. (2004) in B2B context, McDougall and Levesque (2000) in Canada across four services that perceived value is the most important driver of customer satisfaction.

5.11 Impact of perceived value on customer loyalty

Perceived value is found to be the major determinant of customer loyalty by many researchers. Karjaluoto et al. (2012) found that perceived value is an important driver of loyalty. Pura (2005) found that perceived value has a direct impact on attitudinal and behavioural components of loyalty in mobile telephony services.

Yang and Peterson (2004) conducted a web-based survey of online service users and found that perceived value has a direct positive effect on customer loyalty. The direct positive association between perceived value and loyalty is established by Pihlstrom (2008) in mobile service, Finland and Lai et al. (2009) in Chinese telecom service. Johnson et al. (2006) found perceived value as an important driver of loyalty intentions in mobile phone services, Germany. In this study, perceived value is found to have a direct positive impact on customer loyalty which is consistent with the above studies.

5.12   Impact of perceived value on alternative attractiveness

The impact of perceived value on alternative attractiveness is not be widely explored till date. In this study, perceived value is found to have a strong direct negative impact on alternative attractiveness. This is in line with the findings of Giovanis et al. (2009) that perceived value negatively influence attractiveness of alternatives in Greek mobile telecom service industry.

5.13   Impact of perceived value on consumer switching intention

Many studies support the direct impact of perceived value on behavioural intentions. Cronin et al. (2000) found that service value has a direct impact on behavioural intentions across multiple service industries. Similar to this, direct impact of perceived value on behavioural intentions was found by Chen and Chen (2010) in heritage tourism, Chen (2008) among air passengers in Taiwan and Wang et al. (2004) in Chinese mobile communication market. In this study, perceived value is found to have a negative direct impact on consumer switching intention which is consistent with the above studies.

5.14   Impact of customer satisfaction on customer loyalty

The direct positive influence of customer satisfaction on customer loyalty is well established in service literature. e.g. McDougall and Levesque (2000) in dental, hair style, auto, and restaurant services; Kim et al. (2004) in Korean mobile telecommunication services; Yang and Peterson (2004) in online service; Aydin et al. (2005) in Turkish mobile phone market; Platonova et al. (2008) in health care

services; Lai et al. (2009) in Chinese telecom services; Deng et al. (2010) among Chinese mobile instant message users; Vilares and Coelho (2003) among supermarket customers. In this study too, customer satisfaction is found to have a strong direct positive influence on customer loyalty in conformance with the above studies.

5.15   Impact of customer satisfaction on consumer switching intention

McDougall and Levesque (2000) found that customer satisfaction negatively influences consumer switching intention in their study among four service industries such as dental, hair style, auto, and restaurant services. Han et al. (2011) found that customer satisfaction negatively influence switching intention in hotel industry. Shin and Kim (2008) conducted a study of the US mobile market and found that customer satisfaction negatively influence customers' intention to switch the service provider. Chuang (2011) found that subscriber satisfaction with mobile phone services negatively influences switching intention in Taiwan's mobile phone industry. Kim et al. (2011a) found that customer satisfaction has a direct positive impact on WiMAX continuance intention. Zhao et al. (2012) found that customer satisfaction has a direct positive impact on continuance intention of mobile value-added services in China. Thus it can be concluded that customer satisfaction positively influences continuance intention or negatively influences switching intention. In this study, customer satisfaction is found to have a strong negative impact on consumer switching intention which is in conformance with the previous studies.

5.16 Impact of customer loyalty on consumer switching intention

Gerpott et al. (2001) found that customer loyalty influences a customer's intention to terminate/extend the contractual relationship with his operator in German mobile cellular telecommunications market. Platonova et al.'s (2008) empirical study in health care services revealed that customer loyalty is strong and significant predictor of patients' intentions to stay with the doctor. In line with this, the present study also found that customer loyalty negatively influences consumer switching intention which reaffirms the previous findings.

5.17 Impact of alternative attractiveness on customer loyalty

Alternative attractiveness is found to have a negative impact on customer loyalty in this study. This implies that higher the attractiveness of the alternatives leads to lower customer loyalty, whereas lower attractiveness of alternatives leads to higher customer loyalty. This is in line with the findings of Jeng (2004) in mobile phone service industry, Taiwan; Tung et al. (2011) in department stores, Taiwan; Magalhães (2009) in retail banking sector; Siswoyo and Supriyanto (2013) in hospital services and Platonova et al. (2008) in healthcare services.

5.18 Impact of alternative attractiveness on consumer switching intention

Keaveney (1995) pointed out that the attractiveness of the competitors will enhance consumer switching intention. Alternative attractiveness is found to positively influence consumer switching intention or negatively influence continuance intentions by many researchers. Kim et al. (2011a) found that alternative attractiveness has a significant negative effect on consumer's decision to continue with a service provider in WiMAX service. Chuang (2011) found that alternative attractiveness positively influences switching intention in Taiwan's mobile phone industry and termed it as 'pulling effect'. Bansal and Taylor (2015) found that high alternative attractiveness results in higher intentions to switch service providers in dry cleaning, hair styling and long distance telephone services. The positive impact of alternative attractiveness on switching intention is also found by Patterson and Smith (2003) in travel agency, medical and hairdressing services, Bansal et al. (2004) in long distance telephone services. In this study also, alternative attractiveness is found to have a strong direct positive impact on consumer switching intention.

5.19 Impact of switching cost on consumer switching intention

The direct impact of switching cost on consumer switching intention is explored in this study and no significant impact is found. This may be due to implementation of MNP which helps to reduce switching costs as discussed earlier.

5.20 Impact of trust on consumer switching intention

The direct impact of trust on consumer switching intention is explored in this study and no significant impact is found.

5.21 Role of word-of-mouth on consumer stay or switch decisions

The role of word-of-mouth on consumer decision making such as to switch or to stay with a service provider has not been widely explored. Wangenheim and Bayon (2004) found that word-of-mouth referrals influences consumer's purchase or switching intention. Exploratory study by Keaveney (1995) in service industries reveals that 50% of the customers found a new service provider through word of mouth referrals. Consistent with these findings, in this study also word-of-mouth is found to have an important role in consumer decision to switch or stay with a service provider.

5.22 Relationship between demographic profile of the respondents and consumer switching intention

5.22.1 Gender and consumer switching intention

The study finds a significant relationship between gender and consumer switching intention with males showing higher switching intention than females. This is in line with the findings of Ranganathan et al. (2006) who found that female users show lesser propensity to switch than male users in mobile services, North America. They observed that females possess more anxiety than males which suppress the switching behaviour. Similarly, Valenzuela (2010) found that females perceive greater switching barrier than males which deters them from switching the service provider in Chilean banking industry.

5.22.2 Age and consumer switching intention

The study finds a significant relationship between age and consumer switching intention with youngsters (upto 30 years) showing more switching intention, whereas the middle and old aged showing more staying intention. This is in line with the findings of Kisioglu and Topcu (2011) that customers below the age of

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35 show a high propensity to churn in Turkish telecom service. Ranganathan et al. (2006) found that age is negatively related to switching behaviour of mobile users in North America. Shin and Kim (2008) found that age is negatively related to switching intention in their studies among mobile customers in the U.S. Similarly Keramati and Ardabili (2011) found that age significantly influences consumer decision to remain or churn in Iranian mobile services.

5.22.3 Education and consumer switching intention

The study finds a significant relationship between education and consumer switching intention with customers having low educational level (below graduates) show higher switching intention, whereas highly educated customers show higher staying intention. This is in line with the findings of Keaveney and Parthasarathy (2001) that customers with low educational level show higher propensity to switch their service providers, whereas customers with higher educational level show higher propensity to continue the service.

5.22.4 Annual income and consumer switching intention

The study finds a significant relationship between annual family income and consumer switching intention with very low income (poor) group showing more switching intention and very high income (rich) group showing more staying intention. This is in line with the findings of Keaveney and Parthasarathy (2001) that customers with low income level show higher propensity to switch their service providers, whereas customers with high income level show higher propensity to continue the service. Similar to this, Maddan et al. (1999) found that customer churn probability is inversely related to household income in Australian ISP market.

5.22.5 Locality and consumer switching intention

The study finds a significant relationship between locality and consumer switching intention with rural customers showing higher propensity to continue with the service provider, whereas semi-urban/urban customers show higher propensity to switch their service providers. This is in line with the findings of Kisioglu and Topcu (2011) that rural customers are more loyal than urban customers in Turkish telecom service.

5.22.6 Type of connection and consumer switching intention

The study finds a significant relationship between type of connection and consumer switching intention with prepaid customers showing higher switching intention, whereas postpaid customers showing higher staying intentions. This is in line with the findings of Srinuan et al. (2011) that prepaid customers are more likely to switch to other service providers in Thai cellular market.

5.22.7 Period of association and consumer switching intention

The study finds a significant relationship between period of association with a service provider and consumer switching intention with customers having more than 5 years of association show high staying intention, whereas customers with fewer years of association show high switching intention. This is similar to the findings of Kisioglu and Topcu (2011) that customers with short tenure show highest propensity to churn in Turkish telecom service.

5.23   Other major findings

- There is no significant relationship between amount of service usage and consumer switching intention in mobile services, Kerala.
- BSNL (Public sector) customers show high level of staying intention, whereas private sector customers show higher switching intention in mobile services, Kerala.
- A comparative analysis of various switching determinants between BSNL and other major service providers in Kerala such as Idea, Vodafone and Airtel is performed so as to determine any perceived difference in terms of the switching variables and the following findings are observed:
    - BSNL has significantly higher levels of customer satisfaction than Idea, Vodafone and Airtel in mobile services, Kerala.
    - BSNL has significantly higher levels of customer loyalty than Idea, Vodafone and Airtel in mobile services, Kerala.
    - BSNL has significantly higher levels of corporate image than Idea, Vodafone and Airtel in mobile services, Kerala.

- BSNL has significantly higher levels of perceived value than Idea, Vodafone and Airtel in mobile services, Kerala.

- BSNL has significantly higher levels of CRM than Idea and Vodafone but does not significantly differ with that of Airtel in mobile services, Kerala.

- BSNL has significantly lower levels of alternative attractiveness than Idea, Vodafone and Airtel in mobile services, Kerala.

- BSNL has significantly higher levels of switching cost than Idea, Vodafone and Airtel in mobile services, Kerala.

- BSNL has significantly higher levels of perceived service quality than Idea and Vodafone but does not significantly differ with that of Airtel in mobile services, Kerala.

- BSNL has significantly higher levels of trust than Idea, Vodafone and Airtel in mobile services, Kerala.

- BSNL has significantly lower levels of consumer switching intention than Idea, Vodafone and Airtel in mobile services, Kerala.

CHAPTER-VI

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Indian cellular mobile service sector has seen severe customer churn after the implementation of mobile number portability in 2011. Companies have recognised the need for maintaining long term relationship with customers by arresting customer churn. CRM has been identified as an important tool in building long term relationships with customers. But even after implementing various CRM initiatives, most of the service providers are facing customer defection over years in cellular mobile service sector. So this study considered CRM as the central construct and studied its influence on consumer switching intention and other major switching determinants. Based on extensive review of literature, a model was proposed with CRM and other major switching determinants so as to explain the consumer switching behaviour. The model was tested with the primary data collected from individual cellular mobile customers of Kerala by conducting structural equation modeling using AMOS software. The findings of the study will help the service firms to focus on key factors that cause switching intention in cellular service, thereby arresting the customer churn. The introduction of CRM as the key variable in explaining switching behaviour is relatively a new study and it contributes to marketing literature.

The study analysed the impact of CRM on consumer switching intention and various other switching determinants. The study also analysed the relationship between various factors that affect consumer switching intention in mobile services. While perceived value, customer satisfaction and customer loyalty are found to have a direct negative effect on consumer switching intention, alternative attractiveness is found to have a direct positive effect on consumer switching intention. The study finds that CRM plays an important role in regulating switching behaviour by directly influencing the key determinants of switching such as perceived service quality, perceived value, customer satisfaction and customer loyalty thereby indirectly influencing consumer switching intention in cellular mobile services.

The study identifies customer knowledge management, loyalty programs, customization, efficient customer support service, two way communication and interaction management as the key components that determine the effectiveness of CRM measures. Customer information plays a vital role in building and maintaining relationships. Customer knowledge management helps firms to maintain up-to-date customer information (profile, needs, preference, purchase pattern etc.) which changes over time (dynamic). It enables firms to segment individual customers, provide superior customer support service and to enhance efficiency of customer support service. It helps firms to do segmented marketing which reduce the advertising and promotional expenditure. Further, it helps firms to identify and focus on potential customers and serve them better by analysing their needs and preferences rather than wasting resources in serving non-profitable customers. Loyalty programs help to differentiate a company from others. It delights customers by enhancing customer perceived value which results in enhanced loyalty, increased spendings, positive word-of-mouth and profitability of firms. Loyalty programs even help companies to win back lost customers. Customization helps firms to cater to individual customer needs which enhance customer value and satisfaction. Providing prompt and efficient customer support service is the key to CRM effectiveness. It improves the reliability of consumption experience, reduces inconvenience, lowers customer complaints, and boosts satisfaction and loyalty. Two way communication between company and its customers helps in relationship development by sharing of informations. Interaction management allows firms to collect feedback about their services such as perceived network quality (network coverage, call drops, network congestions etc.), value added services, tariff plans etc. thereby improving the quality and value of service offered. It also allows firms to track customer perceptions which help them to align product and promotion strategies based on customers' changing views.

Delivering superior customer value has been considered as the most important factor in determining the success of a firm. The study finds perceived value as the key factor driving consumer switching intention. In addition to the direct negative effect on switching intention, perceived value is found to have a strong direct positive impact on customer satisfaction and customer loyalty which inturn detracts customers from switching the service provider. Further, perceived value is directly

responsible for reducing the alternative attractiveness which has got the strongest positive impact on consumer switching intention.

The relationship between demographic profile of the respondents and consumer switching intention is explored in the study. It is found that gender, age, education, locality, annual income, type of connection and period of association with a service provider have significant relationship with consumer switching intention. The study finds that males show higher switching intention whereas females show higher staying intention. Among the age group, youngsters show higher switching intention whereas middle and old aged show higher staying intention. In the educational level category, customers with low educational level show higher switching intention whereas highly educated customers show higher staying intention. In terms of the annual family income, very low income group show higher switching intention whereas very high income group show higher staying intention. In terms of the locality or geographical area, rural customers show higher staying intention whereas semi-urban/urban customers show higher switching intention. When type of connection is considered, prepaid customers show higher switching intention whereas postpaid customers show higher staying intention. In terms of the period of association with a service provider, customers with more than 5 years of association show higher staying intention whereas customers with fewer years of association show higher switching intention. Thus, it is found that demographic profile of the respondents play an important role in determining the switching pattern in cellular mobile services.

A comparative analysis between BSNL and other prominent mobile service providers in Kerala such as Idea, Vodafone and Airtel in terms of the switching determinants has been made in the study. From the secondary data analysis, it was found that BSNL emerged as the leader in terms of cumulative net port-in status in Kerala after the implementation of MNP. The analysis of the switching determinants in terms of the primary data revealed that BSNL has higher levels of CRM, perceived service quality, perceived value, customer satisfaction, customer loyalty, corporate image, trust and switching cost and lower levels of alternative attractiveness and switching intention compared to other major service providers. This

substantiates the higher staying intention and high net port-in status of BSNL compared to other major service providers in cellular mobile services, Kerala.

6.2 Recommendations

Mobile service is a continuously consumed service which gives the consumers the opportunity for continuous evaluation. Further, consumer's perception of quality and expectations change over time. This necessitates the need for continuous evaluation of the service delivered from customers' point of view. Companies shall make proper use of the CRM tools in tracking customers' needs, preferences, and perceptions of the product and quality of service delivered and make corrective measures to meet customer expectations.

Perceived value is found to be the key driver of customer satisfaction, customer loyalty, alternative attractiveness and consumer switching intentions. So companies shall make intense efforts to enhance perceived value so as to reduce the alternative attractiveness, enhance customer satisfaction and customer loyalty thereby reducing the customer churn. Firms can enhance the perceived value by increasing the benefits and by reducing the costs. CRM plays a major role in enhancing perceived value through customized offerings and loyalty programs. Perceived value can also be enhanced by improving the perceived service quality, which is strongly being influenced by CRM. Network service quality is one of the key components in driving the perceived service quality in mobile services. Proper network coverage, superior voice clarity, minimum call drops during conversation, ability to make calls or use the service even during the peak hours and faster connectivity are the major determinants of network service quality in mobile services. Though TRAI has set guidelines for ensuring minimum service quality for the customers, companies shall make continuous efforts to deliver superior service quality by monitoring the perceived service quality though continual improvement program with the help of CRM.

Provision of efficient and effective customer support service is one of the components that determine the effectiveness of CRM. So companies shall ensure the availability of customer care service (using toll free numbers) round the clock (24 hours a day x7 days a week) which will help customers to register their complaints and provide feedback. Companies shall make earnest efforts to periodically

communicate with its prospective customers through two-way communication for proper relationship development. With the surge in internet penetration (over 25%) and increased use of electronic media, service firms shall focus more on utilizing the electronic channels for gathering customer informations, feedbacks, disseminating product/service related informations and for other customer support services which will drastically improve customer relations.

Word-of-mouth is found to have an important role on consumer decision to switch or stay with a service provider. Though it is being established by many researchers, the power of word-of-mouth in consumer decision making is not being effectively explored by service firms. So service firms shall make intentional efforts to promote positive word-of-mouth and to curtail negative word-of-mouth. Service providers shall make use of CRM in offering customized products/ services, loyalty programs, fast and effective customer support service and superior network quality through continual improvement using customer feedbacks which will help a long way in regulating the word-of-mouth.

The demographic factors are found to have a strong relationship with consumer intention to switch or stay with a service provider. So the service firms shall take into account of demographic factors also while designing various loyalty/ retention programs to arrest customer churn. Loyalty programs shall be made simple, flexible, relevant, timely and personalised based on consumer preferences and shall be communicated contextually.

Switching cost does not find any significant impact on consumer switching intention which indicates the need for enhancing switching costs by service firms. This may be done through effective implementation of loyalty programs, by enhancing personal relationships and by offering unique and valued services.

6.3 Limitations of the study

The primary data for the research has been collected using survey method which suffers from the limitation of natural bias in responses. The respondent's mood at the time of survey can influence the evaluations and hence the responses given (Heide & Grohaug, 1991). Further, the respondents may interpret the questions

differently which may result in arbitrary responses (Krosnick & Presser, 2010). The present study is limited to individual mobile service customers in Kerala and has not considered the business (corporate) segment. The model proposed in the study has been tested among mobile customers of Kerala, but the consumer behaviour may vary across cultures and the cultural characteristics may influence the pattern and strength of relationships (Lai et al., 2009).

6.4 Scope for future research

The model suggested in the study examines the impact of CRM and other factors on consumer switching intention in a business to individual mobile service customer environment in Kerala. The model can be tested in business to business or corporate customer environment too. Switching behaviour is a common phenomenon in service sectors, the model can be extended to other service sectors and can be tested across different cultures too.

The model proposed in the study has not incorporated the switching determinants such as corporate image, trust and switching cost as they are not found to have significant direct impact on consumer switching intention. But the effect of these variables on other switching determinants may also be explored for betterment of the proposed model.

QUESTIONNAIRE

Dear Respondent,

      This questionnaire is designed to study the consumer switching behaviour in cellular mobile services in Kerala. I request you to go through the questionnaire carefully and express your views frankly and honestly on mobile services availed by you. This study is conducted as a part of my Ph.D programme. Your responses will be kept strictly confidential and it will be used only for academic research purpose.

      With Sincere Gratitude

Unnikrishnan.B

Research Scholar, IMK, University of Kerala

I. Personal Data

1.Name	2.Gender	3.Age
	Male ☐ Female ☐	
4. Education	**5. Employment Status**	
Elementary school ☐ Graduate ☐ High School ☐ Post Graduate ☐ Higher Secondary ☐ Others (please specify) ……………………………	Govt /PSU ☐ Student ☐ Private Sector ☐ Retired ☐ Self Employed ☐ House wife ☐ Professional ☐ Business ☐	
6. Locality	**7.Your annual family income**	
Panchayat ☐ Municipality ☐ Corporation ☐	Below 1 lakh ☐ 1-2 lakhs ☐ 2-5 lakhs ☐ 5-10 lakhs ☐ > 10 lakhs ☐	

8. Details of the most preferred mobile connection you possess now

Name of the service provider	No. of years of association	Type of connection Please put tick mark ☑		Average monthly spending (Rs.)
		Prepaid	Postpaid	

II. To what extent do you agree with the following statements with respect to the most preferred mobile service you possess now? Please indicate ☑ your responses based on the scale mentioned below

SA: Strongly Agree   A: Agree   U: Uncertain   D: Disagree   SD: Strongly Disagree

Sl. no	Statement	SA	A	U	D	SD
1	My service provider has a good reputation					
2	It can be trusted in what it says and does					
3	It is stable and firmly established					
4	It has a social contribution for the society					
5	It is concerned with customers					
6	It is innovative and forward looking					
7	My operator provides services as promised					
8	My service provider is dependable					
9	This operator performs the services right the first time					
10	My service provider follows up customer requests in a timely manner					
11	The billing system of this operator is accurate and error free					
12	You are kept well-informed about the progress of your complaints					
13	It keeps customers informed when services will be performed					
14	Contact employees gives you prompt service					
15	The employees are always willing to help the customers.					

Sl. no	Statement	SA	A	U	D	SD
16	The employees of are never too busy to respond to customer requests					
17	The employees are courteous, polite, and respectful					
18	The employees of are competent (i.e., knowledgeable and skilful)					
19	The employees instil confidence in customers					
20	You feel safe in your transactions with your service provider					
21	My service provider gives individual attention to the customers.					
22	My service provider keeps customers' best interest at heart					
23	The employees of the company understand your specific needs					
24	My service provider offers convenient business hours					
25	My service provider has modern facilities for the customers					
26	Company's physical facilities are visually appealing. (e.g., ambience of outlet).					
27	The employees of my service provider have a neat and professional appearance					
28	Materials associated with the services (such as pamphlets/brochures etc) are visually appealing					
29	My service provider provides sufficient geographical coverage (on highways, inside the buildings etc)					
30	I get clear and undisturbed voice					
31	I experience minimum call drops during conversation					
32	My call gets connected to the called person during first attempt most of the time					
33	I am able to make calls at peak hours					
34	This operator gives close to perfect service					

Sl. no	Statement	SA	A	U	D	SD
35	My decision to choose this service provider is wise					
36	I am enjoying the services offered by this operator					
37	This operator always fully meet my expectations					
38	Overall I am extremely satisfied with my service provider					
39	This mobile service is good value for money					
40	The services of this operator are reasonably priced					
41	My mobile operator always delivers superior service					
42	I value the ease /convenience of using this mobile service					
43	Using this mobile service gives me pleasure					
44	Using this mobile service makes a good impression on other people					
45	My operator is mainly concerned with the consumers' interests					
46	My mobile operator has the ability to accomplish what it says it will do					
47	My mobile operator is very honest					
48	My mobile operator treats people like me fairly and justly					
49	My mobile operator is very reliable/dependable					
50	My mobile operator is very responsible					
51	Overall, my operator is trustworthy					
52	I will continue with this operator even if prices increase somewhat					
53	I will subscribe more services offered by this operator					

Sl. no	Statement	SA	A	U	D	SD
54	I consider this operator my first choice for mobile services					
55	I will encourage friends and relatives to use the services offered by this operator					
56	I recommend this operator to others who seek advice					
57	I say positive things about this operator to others					
58	Switching to a new operator, I would loose loyalty reward points, credits, services etc that I have accumulated					
59	I don't know what I will end up having to deal with while switching to a new service provider					
60	I worry that the service offered by other operators won't work as expected					
61	Switching to a new service provider will probably involve hidden costs/charges					
62	Comparing the operators with each other takes a lot of energy, time and effort					
63	It takes me a great deal of time and effort to get used to a new company					
64	Switching to a new service provider would involve some up-front costs (registration/activation charges, deposits etc.)					
65	It would be a hassle changing operator					
66	I do not expect to stay with my current mobile service provider for long					
67	When my contract with this operator runs out, I am likely to switch to another					
68	I have often considered changing my current mobile service provider					
69	I am likely to switch my provider to one that offers better services					
70	I have often had problems with my current provider, which makes me want to switch providers					
71	The services provided by other operators are highly attractive					

Sl. no	Statement	SA	A	U	D	SD
72	Other operators' promotions are attractive					
73	Promotions from other providers meet my needs better					
74	The company maintains a frequent and constant relationship with me					
75	The company offers customized products/tariffs to meet customer needs					
76	The company gives me full and useful informations about its products					
77	The company offers a fast, reliable and friendly support service					
78	The company maintains an interactive two-way communication with its customers					
79	The company actively stress customer loyalty/ retention programs					
80	The company systematically collect customer feedbacks and tries to improve products/services					
81	I seek information and advice from friends/ relatives regarding selection of mobile service provider					
82	I have selected my service provider based on positive word of mouth referrals about the firm					
83	Word of mouth referrals influenced my decision to stay with or switch my service provider					
84	Word of mouth referrals make me confident in selecting the service provider					
85	Word of mouth plays a significant role in influencing my perception on company's corporate reputation					
86	Word of mouth plays a significant role in influencing my perception on company's products/services					

Thank you very much

APPENDIX –II

List of locality, place selected and sample size for the primary survey

Sl. No	Locality	Place	Sample size
1	Urban	Thiruvananthapuram corporation	90
2	Urban	Thrissur corporation	90
3	Urban	Kannur corporation	90
4	Semi-Urban	Neyyattinkara Municipality	30
5	Semi-Urban	Karunagapally Municipality	30
6	Semi-Urban	Adoor Municipality	30
7	Semi-Urban	Changanacherry Municipality	30
8	Semi-Urban	Perumbavoor Municipality	30
9	Semi-Urban	Pattambi Municipality	30
10	Semi-Urban	Nilambur Municipality	30
11	Semi-Urban	Feroke Municipality	30
12	Semi-Urban	Kalpetta Municipality	30
13	Rural	Maranalloor Grama Panchayat	15
14	Rural	Thirupuram Grama Panchayat	15
15	Rural	Amboori Grama Panchayat	15
16	Rural	Anchal Grama Panchayat	15
17	Rural	Panmana Grama Panchayat	15
18	Rural	Ambalapuzha South Grama Panchayat	15
19	Rural	Cherthala South Grama Panchayat	15
20	Rural	Kadampanad Grama Panchayat	15
21	Rural	Manarcadu Grama Panchayat	15
22	Rural	Nedumbassery Grama Panchayat	15
23	Rural	Pavaratty Grama Panchayat	15
24	Rural	Vadakkencheri Grama Panchayat	15
25	Rural	Trithala Grama Panchayat	15
26	Rural	Wandoor Grama Panchayat	15
27	Rural	Kalikavu Grama Panchayat	15
28	Rural	Angadippuram Grama Panchayat	15
29	Rural	Kuttippuram Grama Panchayat	15
30	Rural	Perambra Grama Panchayat	15
Total			**810**

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LIST OF PUBLICATIONS, PRESENTATIONS AND PARTICIPATIONS BY THE RESEARCHER

List of publications

1. Unnikrishnan.B (2015).Impact of switching cost on consumers in India cellular mobile services. Review of social sciences, XVI(2),90-97. (ISSN: 0974-9004)

2. Unnikrishnan.B (2016).The effect of word-of-mouth on consumer switching intentions in Indian cellular mobile services. Management Researcher, XXII (3), 273-279. (ISSN: 2230-8431).

3. Unnikrishnan.B (2016). An analysis of the impact of word-of-mouth on consumer switching decisions in Indian cellular mobile services. International Journal of Business and Administration Research Review, 1(1), 97-102. (ISSN: 2348-0653).

Presentations

1. Unnikrishnan.B, "An analysis of the impact of word-of-mouth and marketshare on consumer switching decisions in Indian cellular mobile services" in the national seminar on "Management and Business Research- A contemporary Approach" held at Thiruvananthapuram . The seminar was organised by IMK & Kerala Academy of social sciences, 24th August 2013.

2. Unnikrishnan.B, "An analysis of the impact of switching cost on consumer switching decisions in Indian cellular mobile services" in the national seminar on " Management science Research for sustainable development" held at Thiruvananthapuram . The seminar was organised by Researcher's Forum, IMK and Kerala Academy of social sciences, 29th November 2014.

3. Unnikrishnan.B, " A study on the impact of service quality on consumer switching decision in cellular mobile services" in the national seminar on "Managing change for sustainability- the way to the organizational growth" held at Thiruvananthapuram . The seminar was organised by IMK, University of Kerala, 9th January 2016.

Participations

1. Participation in two day workshop on "Recent Trends in Social Science Research" conducted by Entrepreneurship Development Cell, Senate Hall Campus, University of Kerala, Thiruvananthapuram-34, March 26-27,2011

2. Participation in two day national seminar on "Water Management and Sustainable Development" organised by IMK, University of Kerala and the Kerala Academy of Social Sciences, Thiruvananthapuram, December 21-22, 2012.

3. Participation in the faculty development programme titled " Pre-Doctoral Workshop on Research Proposal Development" organised by the Indian Indstitute of Management, Kozhikode, April 22-26,2013.

4. Participation in the faculty development programme titled " Research Design and Data Analysis for Social Sciences" organised by the Indian Indstitute of Management, Kozhikode, August 03-08,2015.

5. Participation in two day national workshop on "Multivariate Analysis Using SPSS & AMOS" organised by Department of Management Studies, Kongu Engineering College, Tamilnadu, October 30-31, 2015.

6. Participation in the national level hands-on training workshop on "Structural Equation Modeling (SEM) using IBM SPSS AMOS" conducted by Christ University at the nodal office, Thiruvananthapuram, March 28-30, 2016.