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

By

UNNIKRISHNAN.B
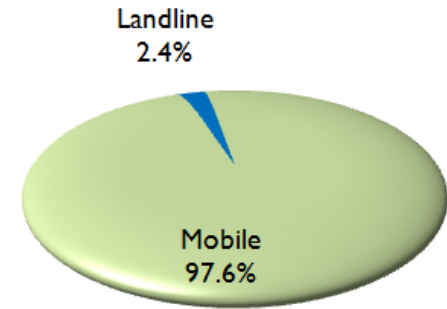Research scholar,
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Introduction

Landline 2.4%
Mobile 97.6%
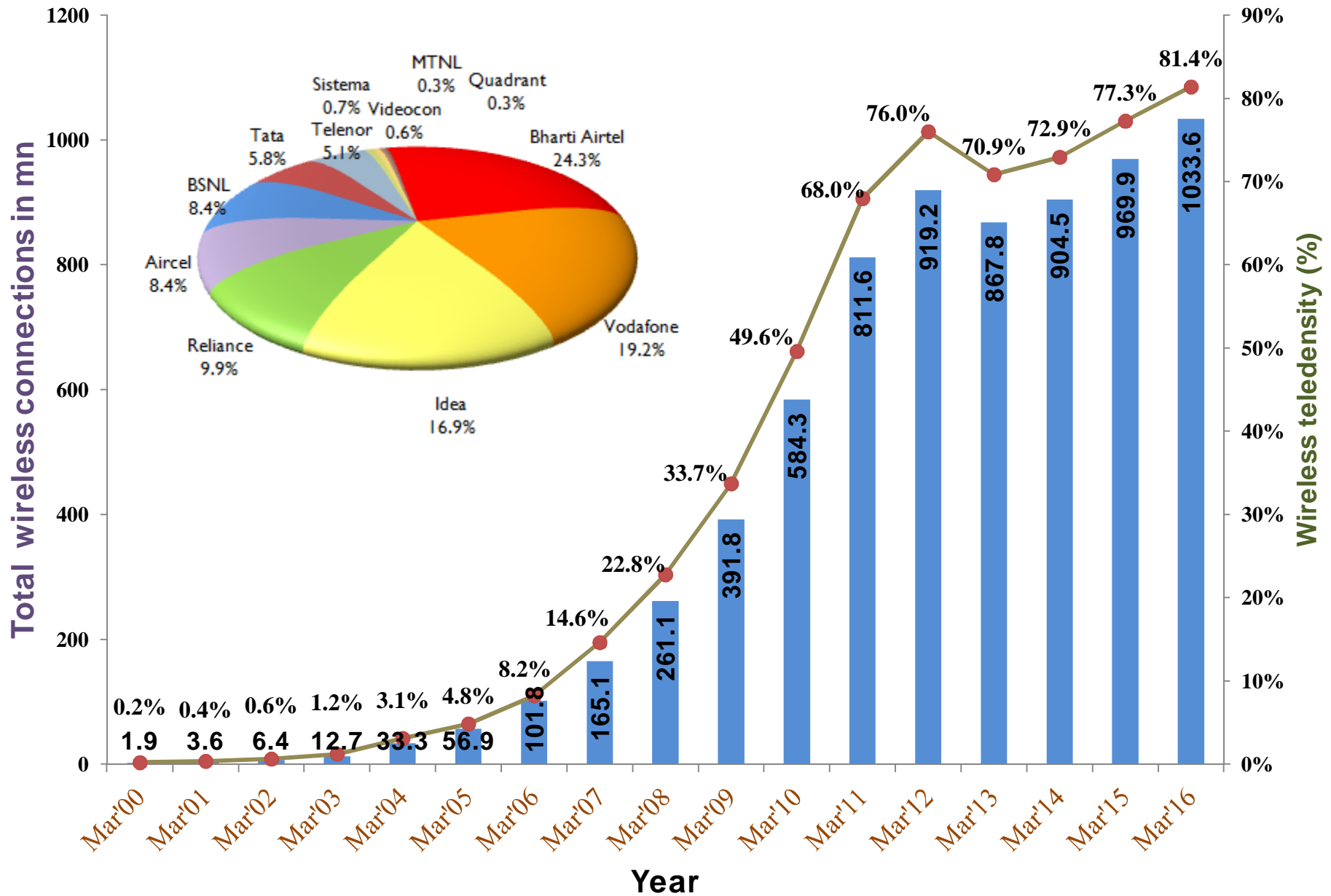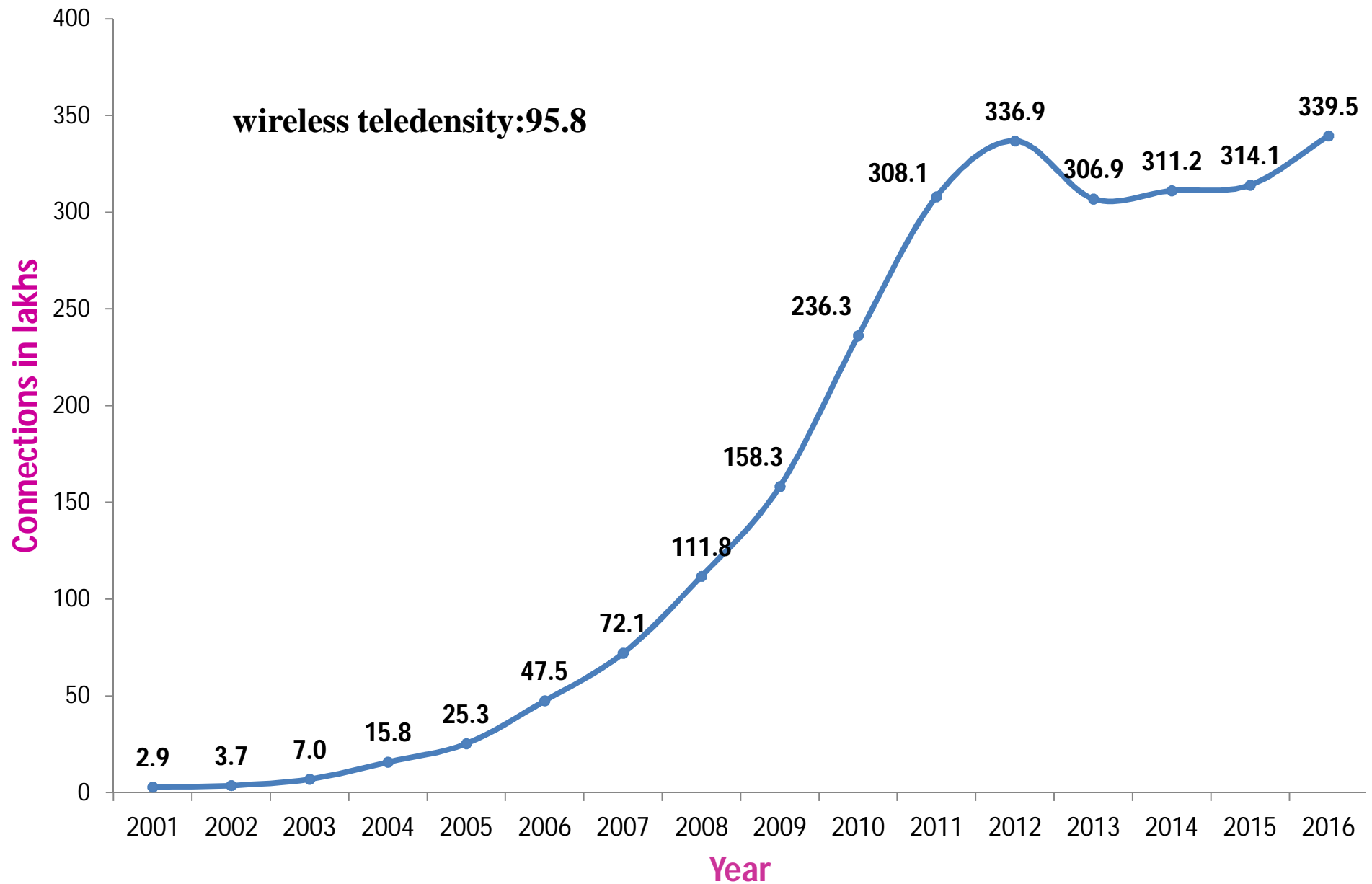
- India's cellular telecom (mobile) sector is nearing saturation after the phenomenal growth over a decade

- India is the second largest wireless telecom market in the world with a customer base of 1033.63mn and a wireless teledensity of 81.4% (urban-148.7, rural 50.9)

- India's mobile service sector is hyper competitive with the presence of 12 operators

- It has one of the lowest tariffs in the world

Cellular subscriber growth in India

Cellular subscriber growth in Kerala

wireless teledensity:95.8

Connections in lakhs

Year

2.9 3.7 7.0 15.8 25.3 47.5 72.1 111.8 158.3 236.3 308.1 336.9 306.9 311.2 314.1 339.5

2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

Operator-wise mobile subscriber growth in Kerala

Connections in lakhs

Idea

Vodafone

BSNL

Airtel

Reliance

Tata

Others

Year

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

0 20 40 60 80 100 120
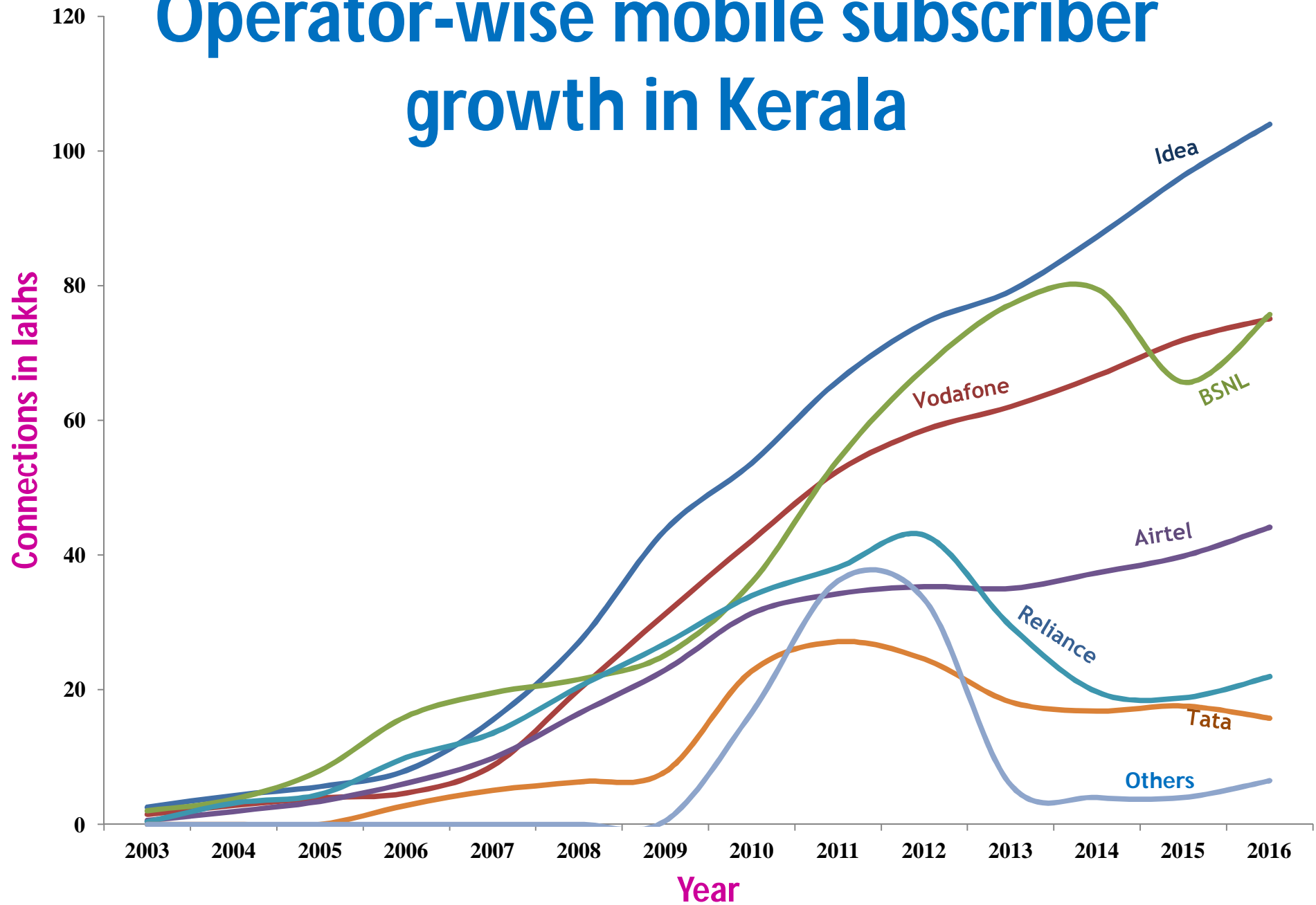
TELECOM MARKETSHARE-KERALA

31.3.2016

Landline
6.3%
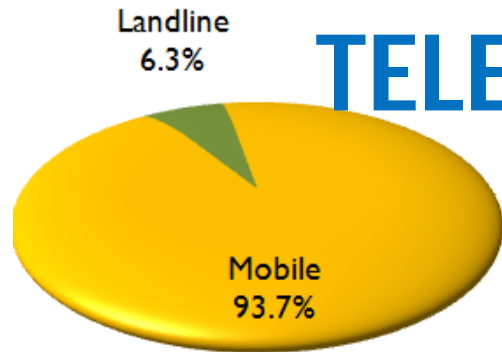
Mobile
93.7%

Overall teledensity-102.27

Company	Mobile	Landline	Total	Mob_mktshare	LL_mktshare	Total_mktshare
Idea	10397873	0	10397873	30.3	0.0	28.4
BSNL	7574666	2187427	9762093	22.1	95.2	26.7
Vodafone	7490687	1440	7492127	21.8	0.1	20.5
Airtel	4412144	56574	4468718	12.9	2.5	12.2
Reliance	2192179	33623	2225802	6.4	1.5	6.1
Tata	1575054	18115	1593169	4.6	0.8	4.4
Sistema	355554	0	355554	1.0	0.0	1.0
Aircel	292060	0	292060	0.9	0.0	0.8
TOTAL	34290217	2297179	36587396	100.0	100.0	100.0

93.7% of teledensity contributed by mobile

OPERATORWISE MOBILE CONNECTIONS-KERALA

Total : 342.9 lakhs

Wireless teledensity: 95.8

top 4 firms hold 87%

Pie chart:
- Sistema 1.0%
- Tata 4.6%
- Aircel 0.9%
- Idea 30.3%
- Reliance 6.4%
- Airtel 12.9%
- Vodafone 21.8%
- BSNL 22.1%

Bar chart — Connections in lakhs:
- IDEA: 104.0
- BSNL: 75.7
- Vodafone: 75.1
- Airtel: 44.1
- Reliance: 21.9
- TATA: 15.8
- Others: 6.5
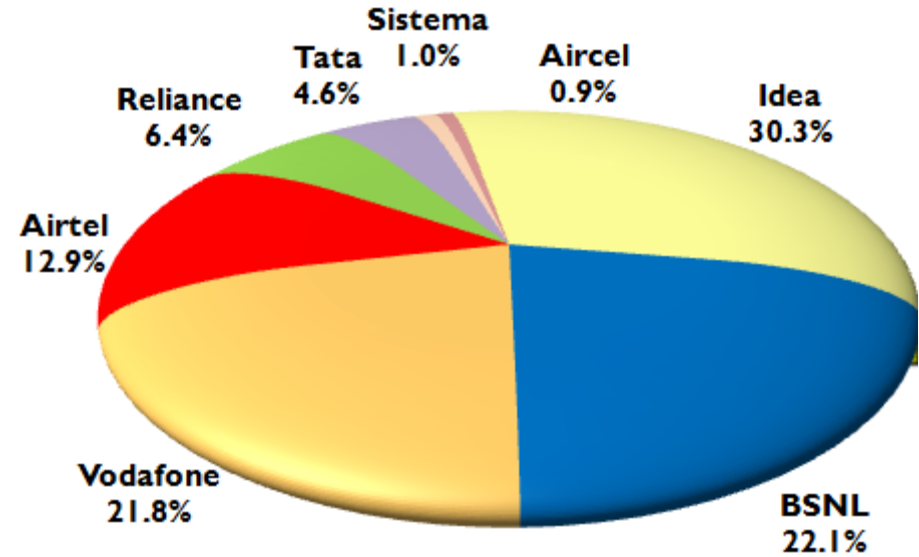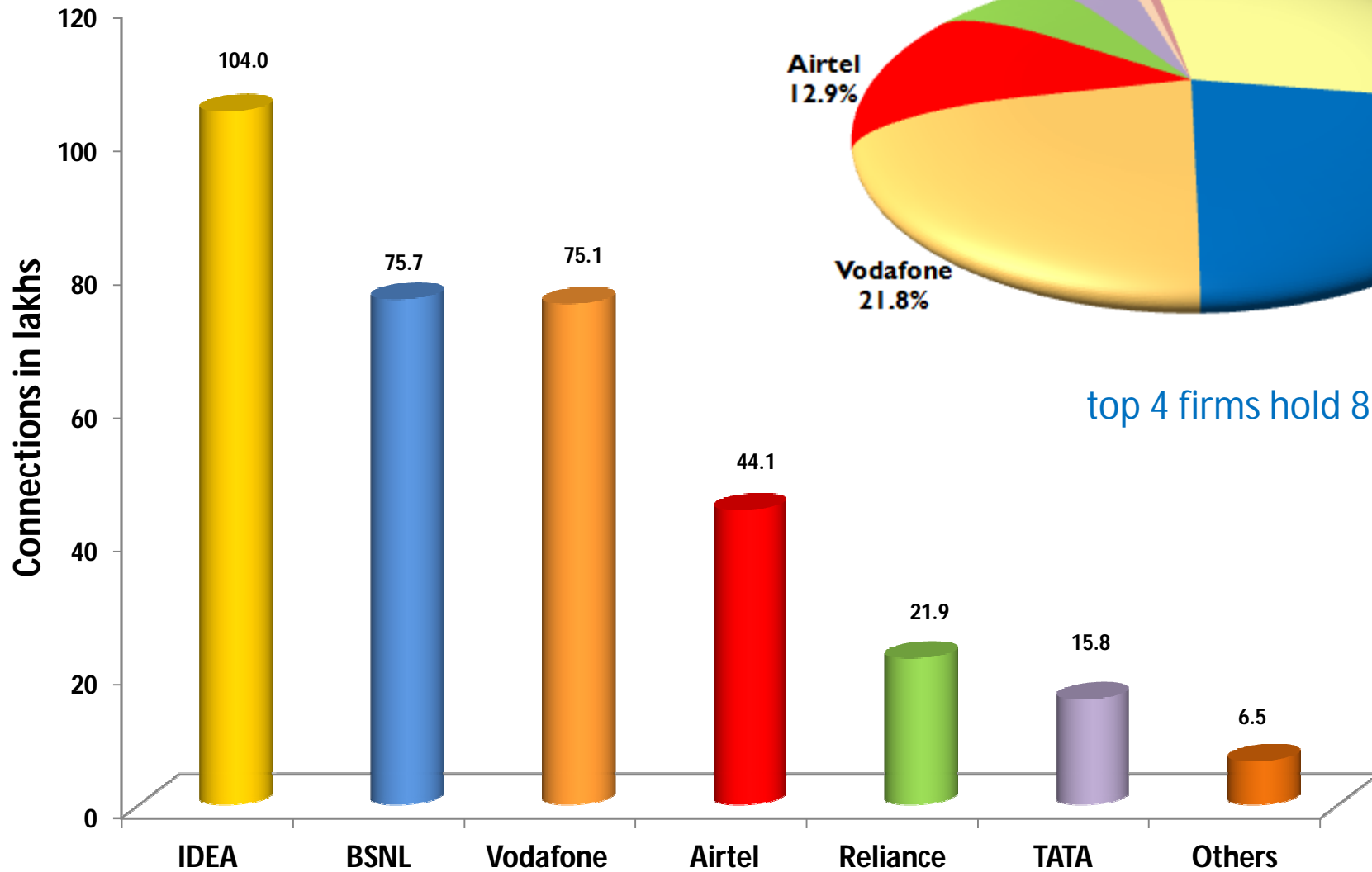
All India trend in ARPU: GSM vs CDMA
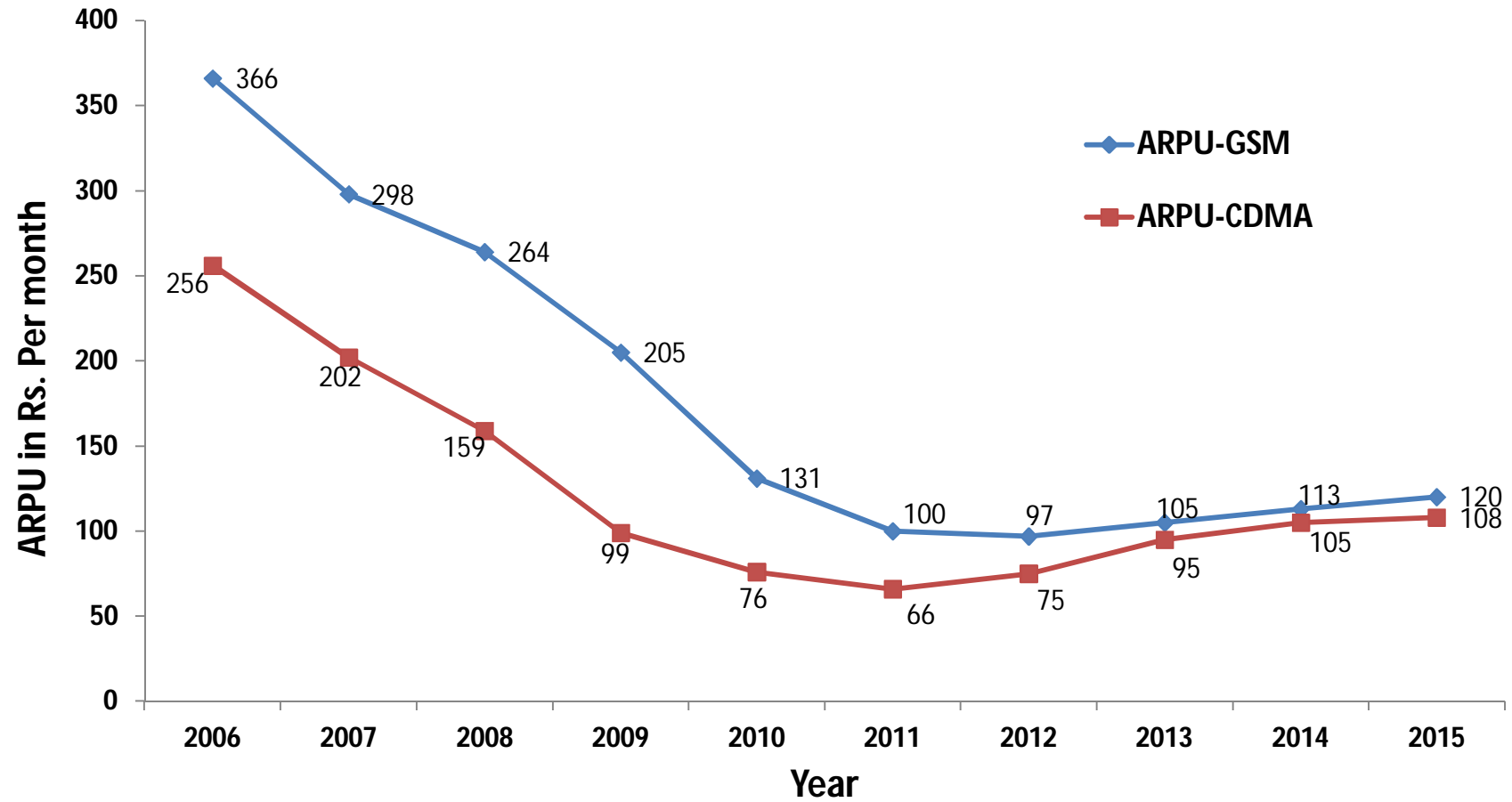
Cumulative MNP requests in India over years
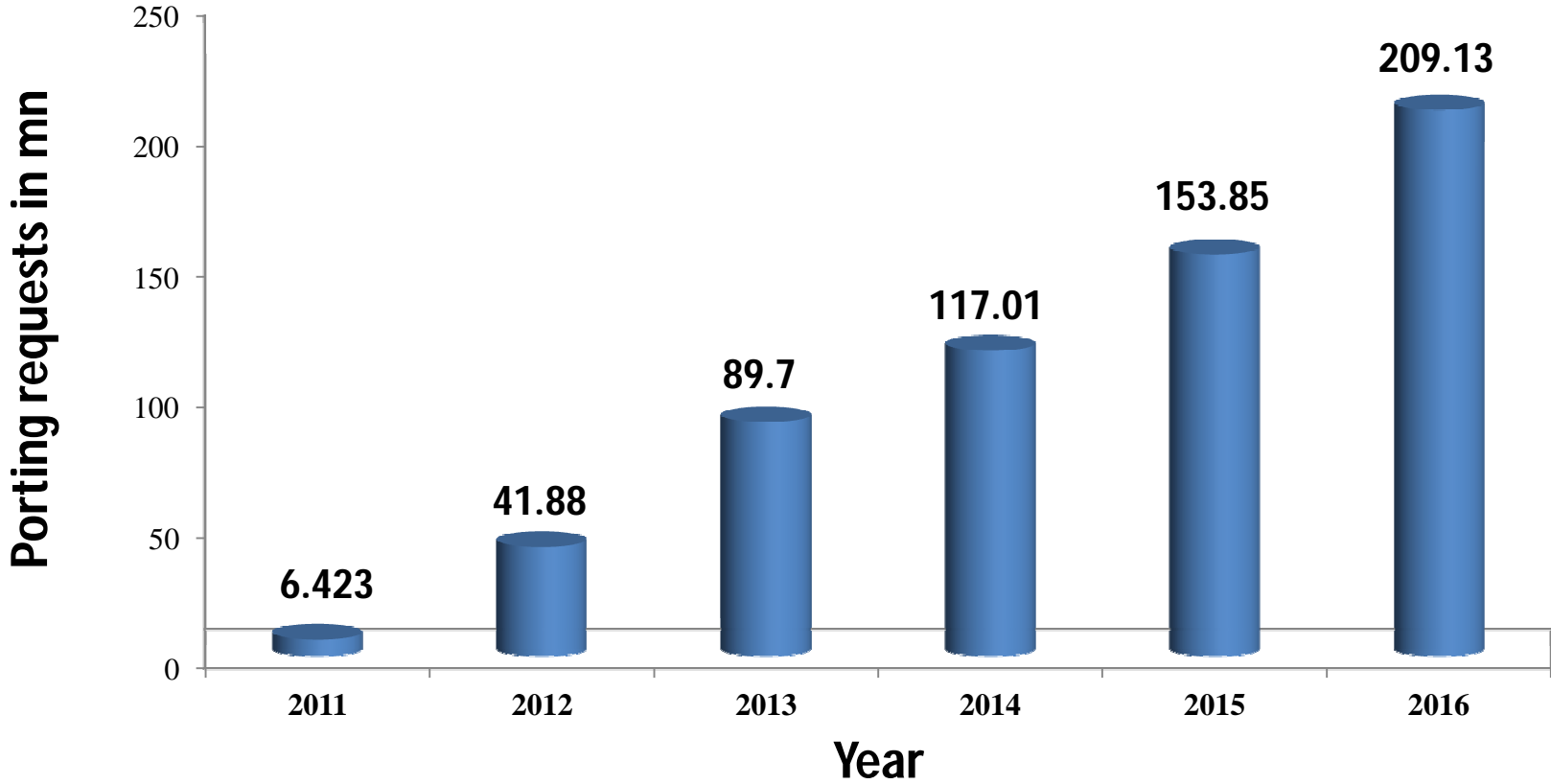
Cumulative MNP requests in Kerala over years

Service provider wise MNP status-Kerala telecom circle
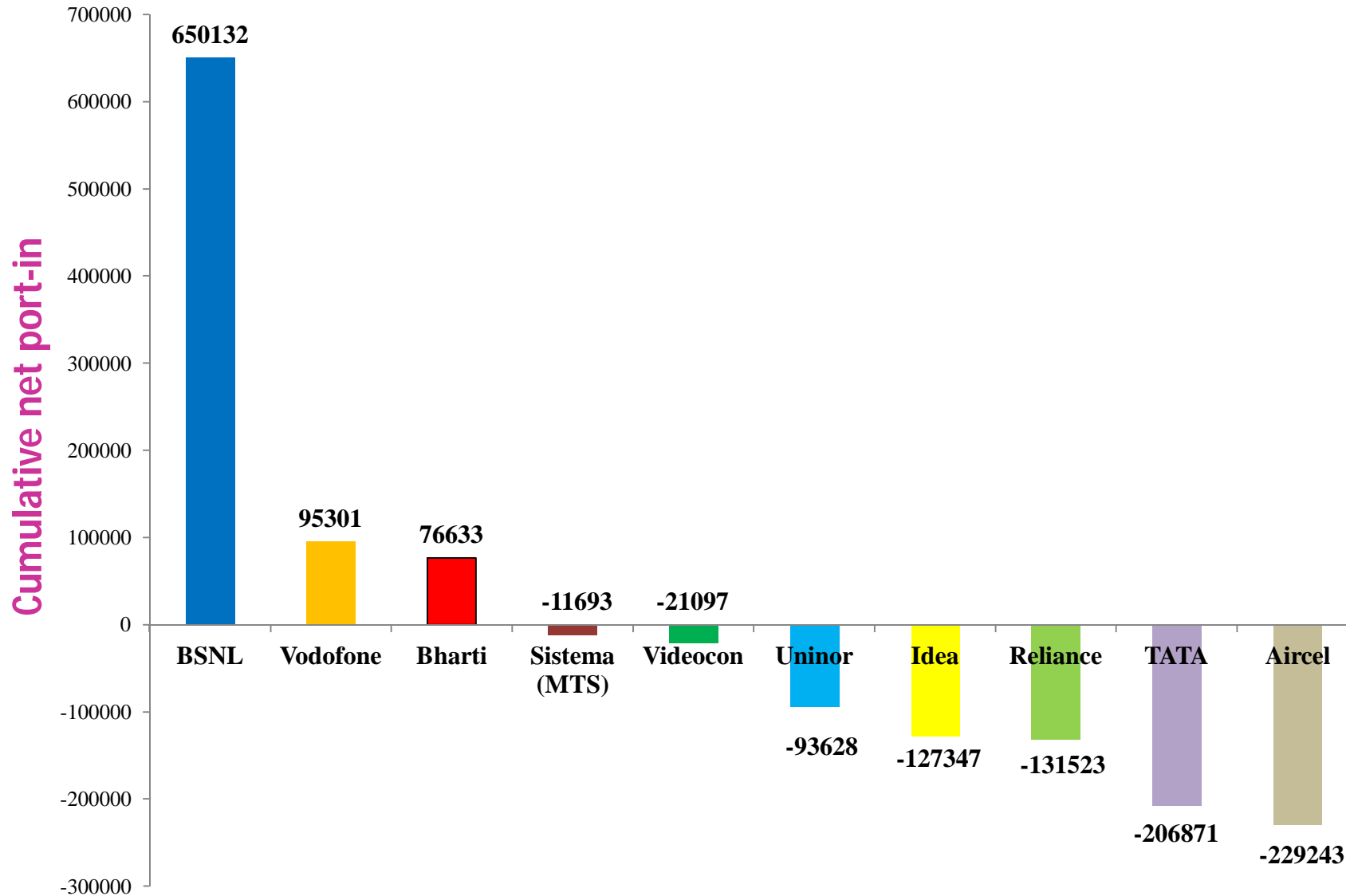
Y-O-Y GROWTH IN MOBILE 2016-17

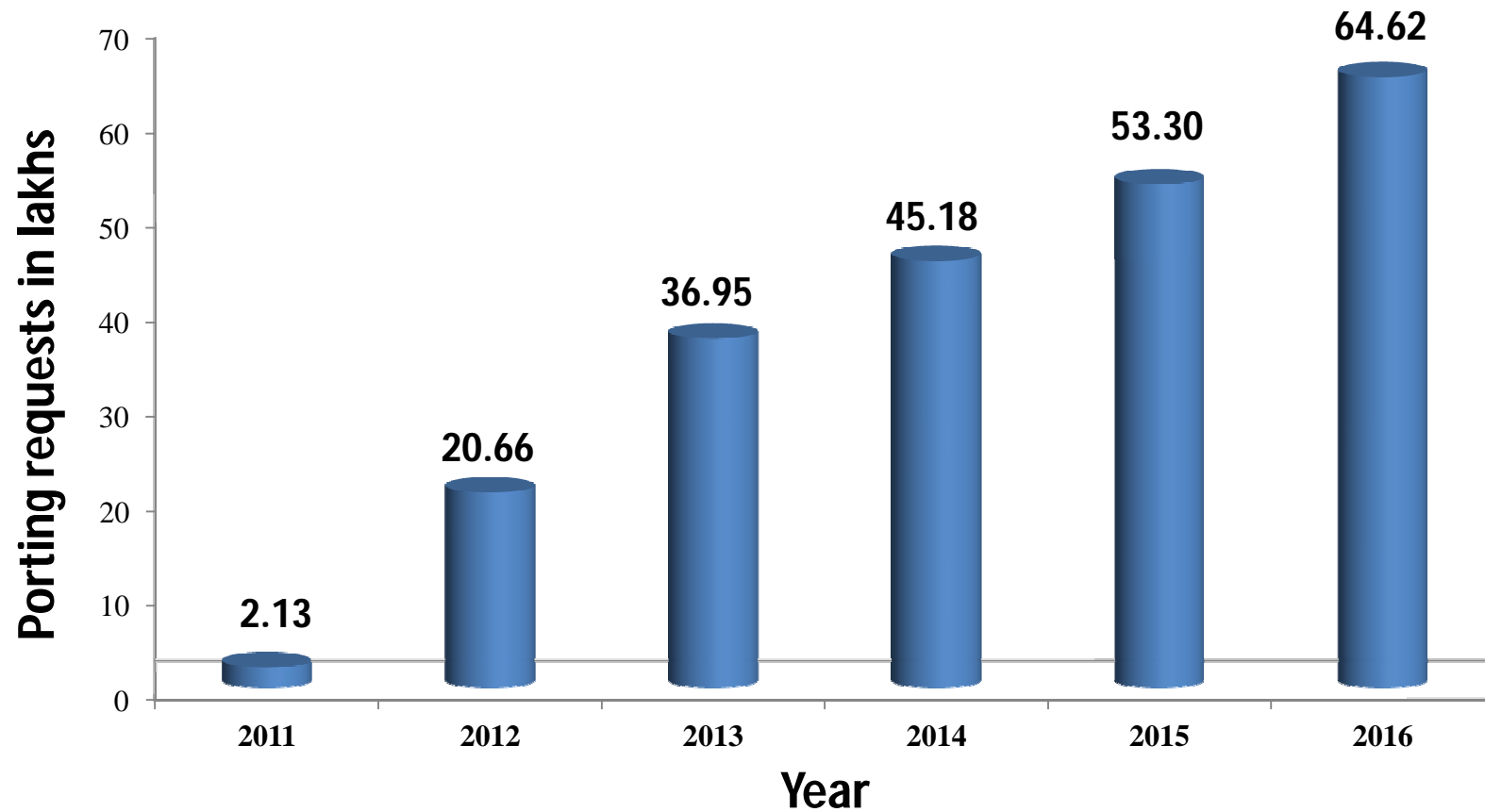| Company	Value
BSNL	1531900
Idea	613748
Vodafone	182717
Airtel	140530
Aircel	78478
Sistema	-121144
Tata	-296789
Reliance	-832659
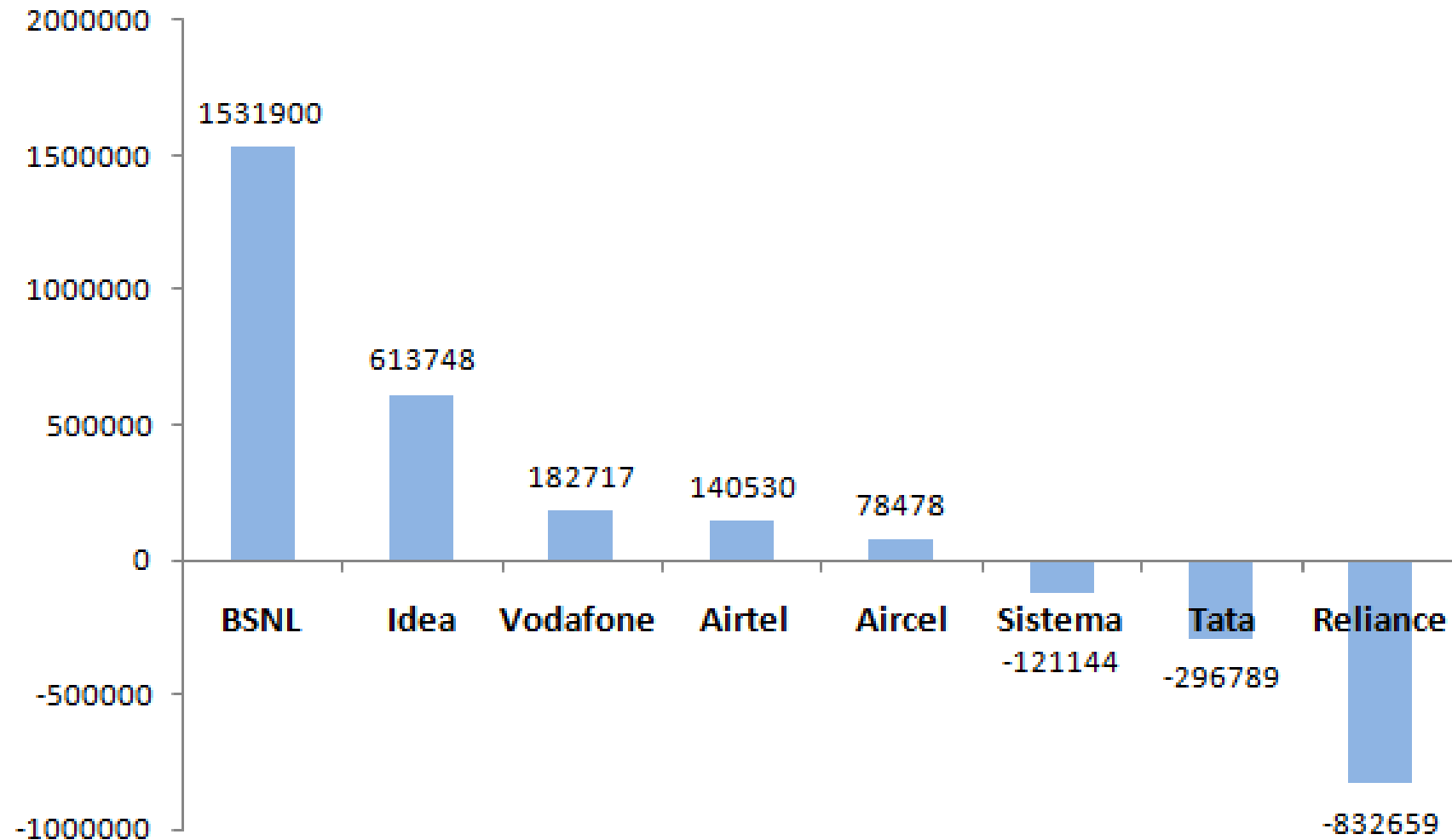
Statement of the problem

- After the implementation of MNP in January 2011, over 209 mn (>20%) customers switched their service provider all over India till March 2016.

- India's mobile service market is dominated by prepaid subscribers (>95%)

- Prepaid customers are price sensitive, low spend and enjoying freedom of no commitments- **Wertime & Fenwick (2011)**

- Average Revenue per user (ARPU) has come down from Rs.434 in 2005 to Rs.120 in 2015

Statement of the problem (contd)

- Decreasing ARPU, increasing operational expenditures etc., mobile service providers find it hard to be profitable

- Protecting existing customer base and enhancing the customer loyalty appear to be crucial for competitive advantage in this hyper competitive environment.

- Long-term customers are more profitable than short-term customers -Reichheld and Sasser (1990)

Statement of the problem (contd)

- Customer Relationship Management (CRM) has been recognised as an important tool for building long term relationship with customers- **Baran et al. (2008)**

- Telecom companies have realized the importance of CRM and its potential to help them retain existing ones, to acquire new customers and maximize their lifetime value.

- But even after implementing various CRM initiatives, mobile service providers face the problem of customer churn from its networks.

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
- 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

Objectives of the study

- To study the various factors that affect the consumer switching intention in mobile services
- To study the relationship between various factors that affect the consumer switching intention in mobile services
- To study the impact of CRM on consumer switching intention in mobile services
- To study the impact of CRM on various factors that affect consumer switching intention in mobile services
- To study the relationship between various demographic factors and consumer switching intention in mobile services
- To propose a model that explains the consumer switching intention in mobile services
- To compare the switching determinants between BSNL and other prominent mobile operators in Kerala

Proposed Theoretical Model
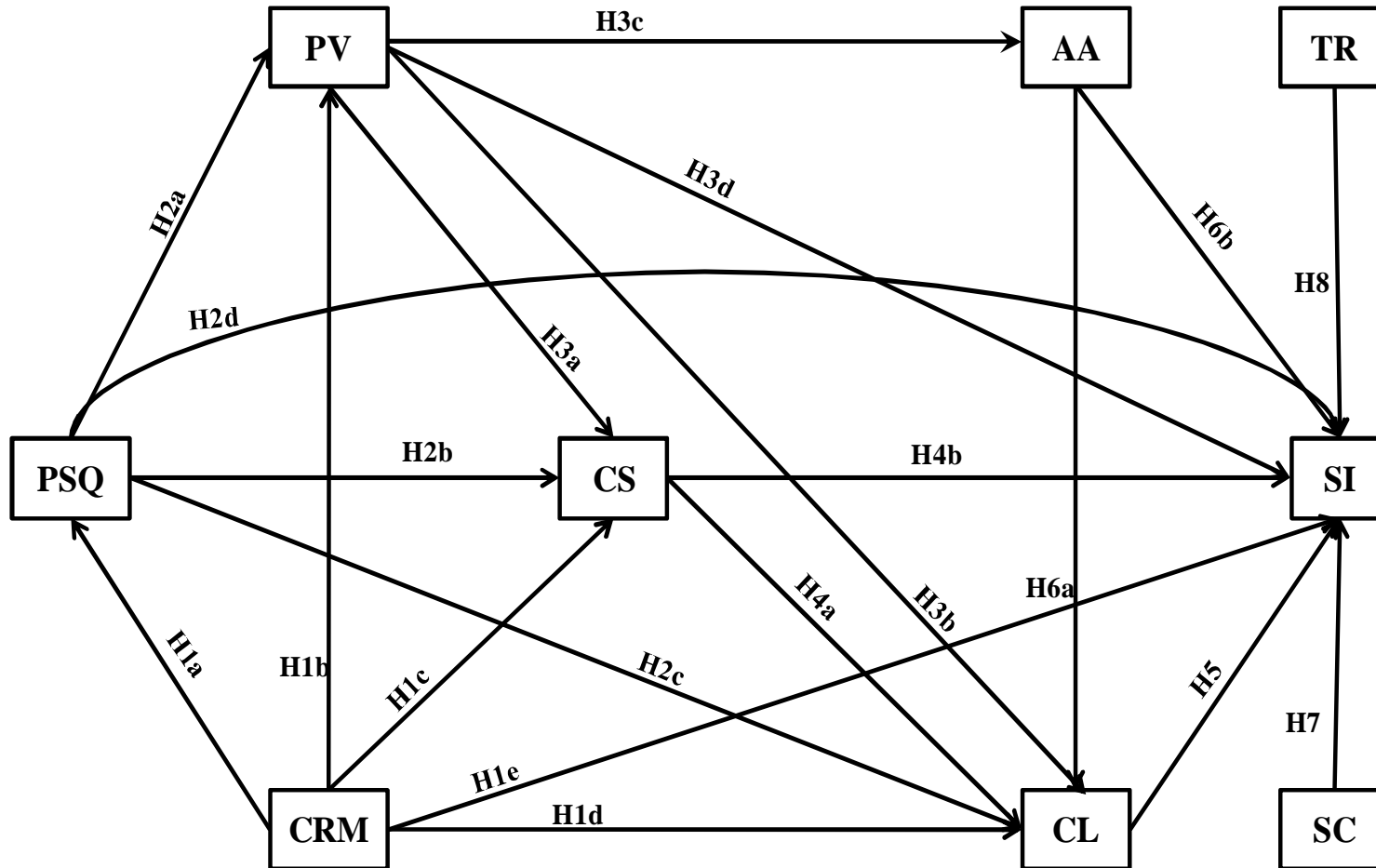
Legend: PSQ- Perceived service quality; CRM- Customer Relationship Management; PV- Perceived value; CL- Customer Loyalty; CS- Customer Satisfaction; SC- Switching Cost; TR- Trust; AA-Alternative Attractiveness; SI- Switching Intention.

Hypotheses

No	Hypothesis
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
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
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
H4a	Customer satisfaction positively influences customer loyalty
H4b	Customer satisfaction negatively influences consumer switching intention
H5	Customer loyalty negatively influences consumer switching intention
H6a	Alternative attractiveness negatively influences customer loyalty
H6b	Alternative attractiveness positively influences consumer switching intention
H7	Switching costs negatively influences consumer switching intention
H8	Trust negatively influences consumer switching intention

Research methodology

- **Universe of the study**
  - Individual cellular mobile customers of Kerala telecom circle
- **Sample size**
  - SEM is used for hypothesis testing
  - Rule of thumb: sample size=10* no of observed variables more than adequate (**Westland, 2010**)
  - For 80 observed variables, 800 samples
- **Sampling technique**
  - Stratified multistage random sampling technique
  - population is divided into three strata namely urban, sub-urban and rural (corporation/municipality/ panchayat).
  - Sample of 270 respondents from each stratum
  - 3 corporations*90 samples; 9 municipalities* 30 samples; 18 panchayats*15 samples
  - Total of 810 samples collected
- **Data collection**
  - Primary data collection- Questionnaire survey

SAMPLING IN SEM

- According to Westland (2010) -optimum sample size:

  n ≥ 50 r2-450r+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

- Ratio of the number of cases to the number of observed variables is recommended to be 10:1 -**Mueller (1997)**

- The rule of thumb for sample size in SEM is choosing of 10 observations per indicator- **Westland (2010)**

SAMPLING FRAME

KERALA

Corporations   : 6
Municipalities   : 87
Grama panchayats   : 941

SAMPLE DESIGN

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                    SAMPLE COLLECTED
                         (810)
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STRATUM

	270	270	270
	URBAN (CORPORATION)	SUB URBAN (MUNICIPALITY)	RURAL (PANCHAYAT)
	3/6	9/87	18/941

URBAN (CORPORATION)
- Thiruvananthapuram (90)
- Thrissur (90)
- Kannur (90)

SUB URBAN (MUNICIPALITY)
- Neyyattinkara(30)
- Changanacherry(30)
- Nilambur(30)
- Karunagapally(30)
- Perumbavoor(30)
- Feroke(30)
- Adoor(30)
- Pattambi(30)
- Kalpetta(30)

RURAL (PANCHAYAT)
- Maranalloor (15)
- Cherthala (15)
- Trithala (15)
- Thirupuram(15)
- Kadampanad (15)
- Wandoor (15)
- Amboori (15)
- Manarcadu (15)
- Kalikavu (15)
- Anchal (15)
- Nedumbassery (15)
- Angadippuram (15)
- Panmana (15)
- Pavaratty (15)
- Kuttippuram (15)
- Ambalapuzha (15)
- Vadakkencheri (15)
- Perambra (15)

Research methodology

- **Pilot study**
  - Conducted among 50 respondents in Trivandrum district
  - For pre testing research instrument, detect deficiencies, check logical sequence, minor modifications
- **Questionnaire design**
  - Section 1: Personal profile of the respondent
  - Section2: Questions for measuring various constructs related current mobile service used by the subscriber on 5 point Likert's scale
- **Data screening**
  - Data checked for missing data, outliers etc
  - 22 unengaged responses removed, 788 sample data set used for analysis
- **Proposed model tested with SEM using IBM SPSS AMOS 20- ML**
- **Descriptive statistics using IBM SPSS 20**
- **Type of research:** Applied- Integration of descriptive, correlational & explanatory aspects-
- **Approach-** Structured => Quantitative

STEPS IN SEM

- SEM – for testing a set of regression equations simultaneously
- It helps examination of more complex relationships and models
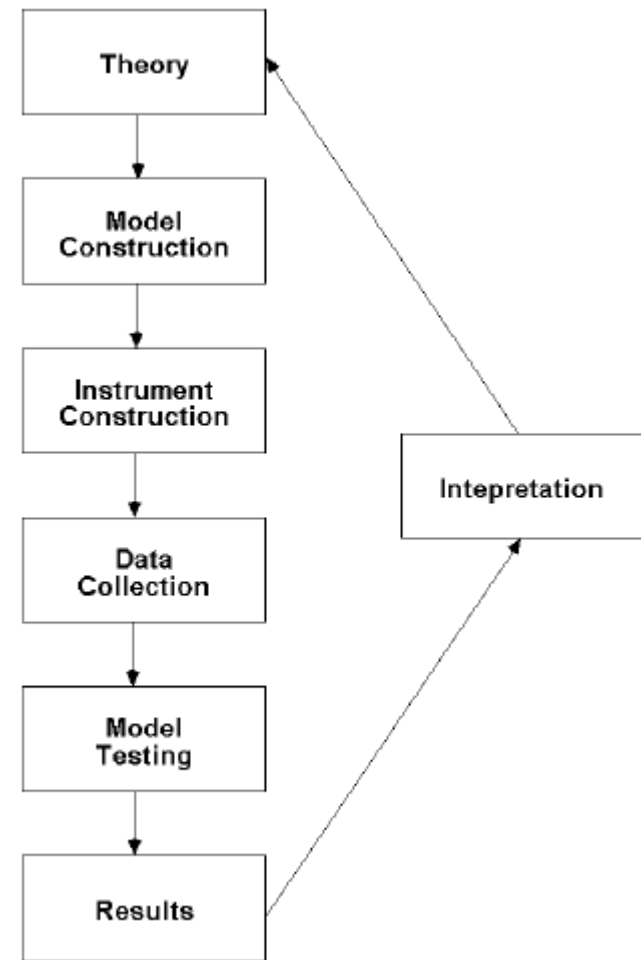
Reliability of the instrument

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

Overall Model Fit Indices

- Chi-square/df ratio (CMIN/df)
- Goodness of Fit Index (GFI)
- Adjusted Goodness of Fit Index (AGFI):
- Comparative Fit Index (CFI):
- Root Mean Square Error of Approximation (RMSEA)
- Tucker Lewis Index (TLI)

Threshold value for overall model fit

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

Hooper et al. (2008) and Hu and Bentler (1999)

Measurement model-CFA
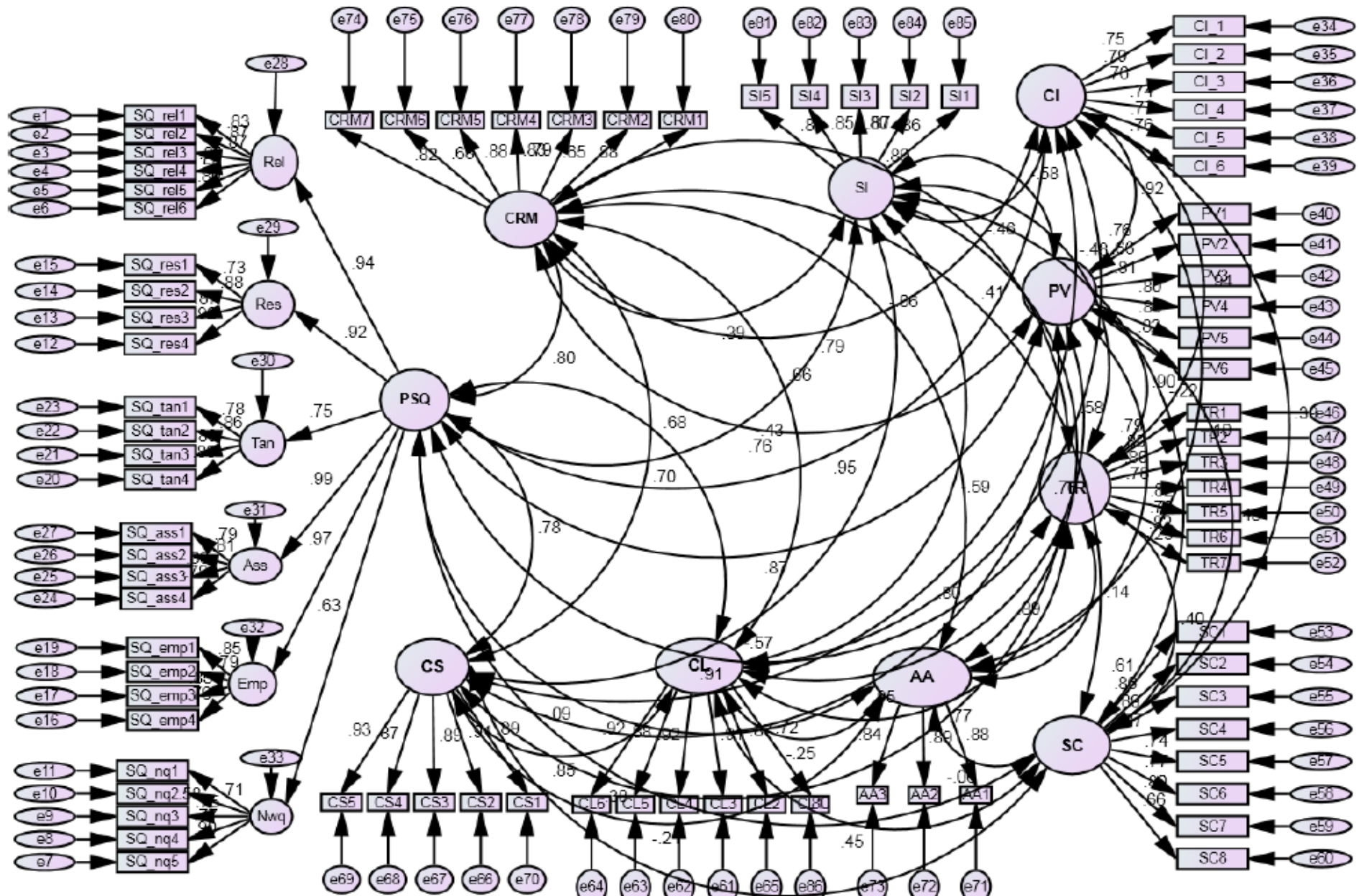
Fit statistics of measurement model

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	0.047
P close	0.397

Structural path diagram
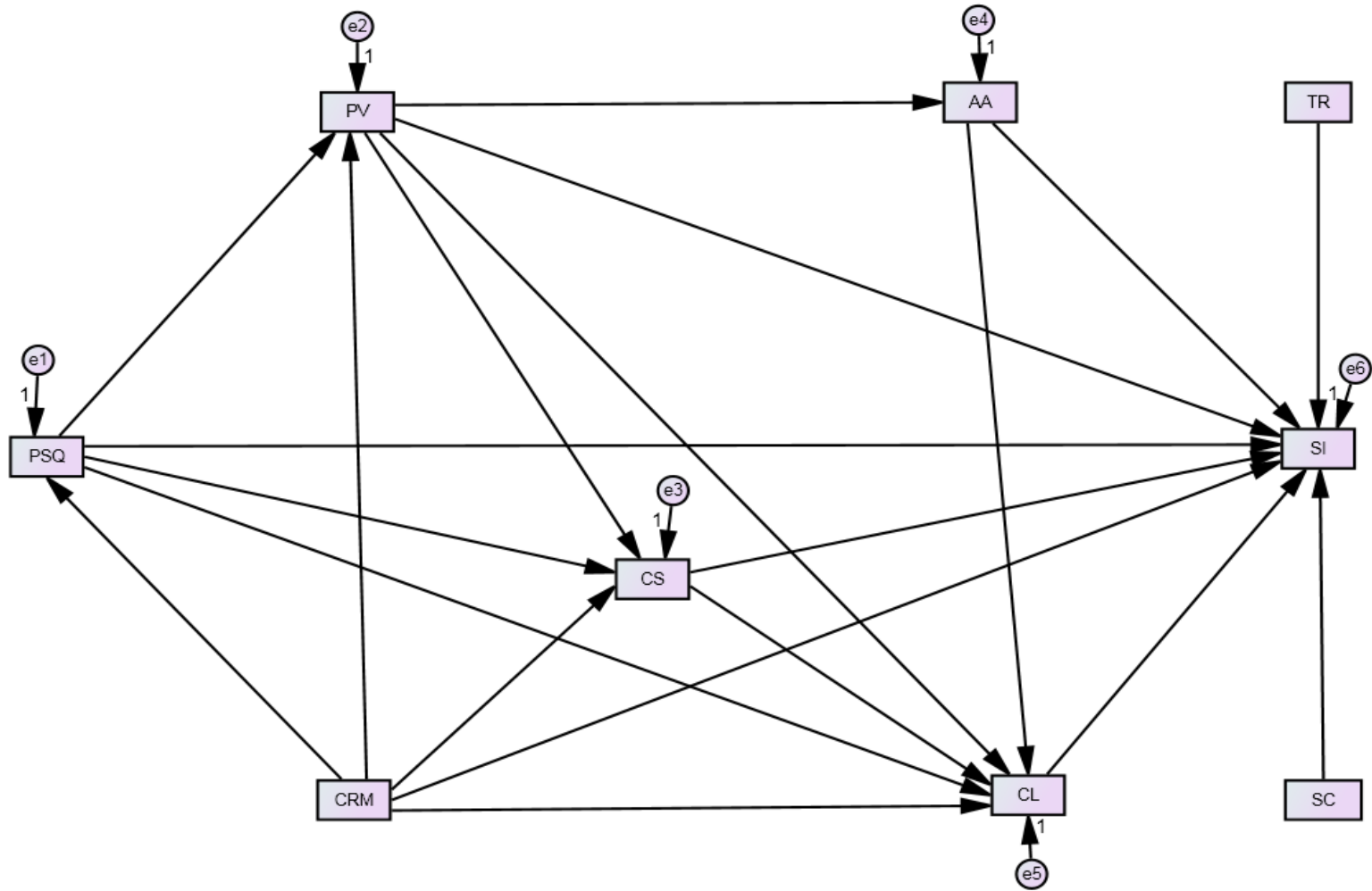
Standardized regression weights for the proposed initial path model

Path			Standardized Estimate	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%

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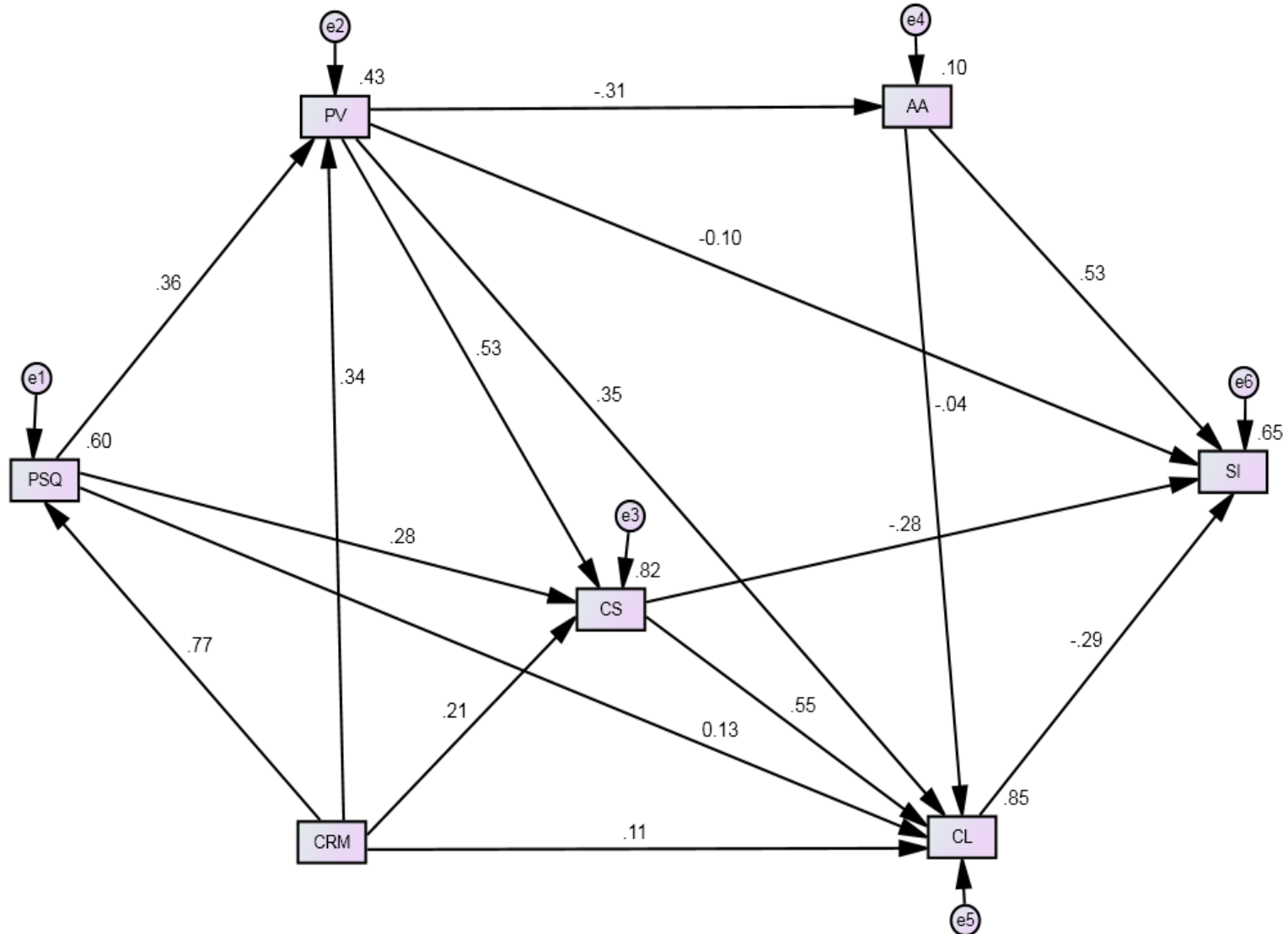
cmin/df=1.851   gfi=.997   agfi=0.981   TLI=.996   cfi=.999   rmsea=.033   sig=.099   pclose=.774

Fit statistics of respecified structural 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

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

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[#]

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

Results of hypothesis testing

No	Hypothesis	β-value	p-value	Remarks
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 costs 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

Indirect effect of CRM on consumer switching intentions

Relationship	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- Standardised regression coefficient

- All the four indirect paths from CRM to consumer switching intentions are significant with maximum effect through perceived service quality

- Inference: CRM has a negative indirect effect on consumer switching intentions in cellular mobile services

Matching findings

Sl	Impact of	Result	Matching findings
1	CRM on PSQ	CRM +vely influence PSQ	Rootman (2006)/Al-Refaie et al. (2014)
2	CRM on PV	CRM +vely influence PV	Kurniati et al. (2015)
3	CRM on CS	CRM +vely influence CS	Mithas et al. (2005)/Chen and Popovich (2003)/Long et al. (2013)/Ata and Toker (2012)
4	CRM on CL	CRM +vely influence CL	Bolton et al. (2000)/Ndubisi (2007)/Roberts-Lombard (2011)/Long et al. (2013)/Kurniati et al. (2015)
5	PSQ on PV	PSQ +vely influence PV	Zeithaml, 1988; Andreassen and Lindestad, 1998; Sweeney et al., 1999; Cronin et al.,(2000) / Choi et al., 2004; Lai et al., 2009
6	PSQ on CS	PSQ +vely influence CS	Bansal and Taylor (1999)/Gerpott et al. (2001)/Lin and Ding (2005)/ Deng et al. (2010)/
7	PSQ on CL	PSQ +vely influence CL	Cronin et al. (2000)/ Sharma and Patterson, (1999)/ Zeithaml et al. (1996/Bell et al. (2005)
8	PV on CS	PV +vely influence CS	Chen and Chen (2010)/Lam et al. (2004)/Lai et al. (2009)/ McDougall and Levesque (2000)
9	PV on CL	PV +vely influence CL	Karjaluoto et al. (2012)/Pura (2005)Yang and Peterson (2004)/Lai et al. (2009)/Johnson et al. (2006)
10	PV on AA	PV -vely influence AA	Giovanis et al. (2009)
11	PV on SI	PV -vely influence SI	Cronin et al. (2000)/ Chen and Chen (2010)/Chen (2008)/Wang et al. (2004)
12	CS on CL	CS +vely influence CL	McDougall and Levesque (2000)/Kim et al. (2004)/Yang and Peterson (2004)/Aydin et al.(2005)/Platonova et al. (2008)/Lai et al. (2009)/Deng et al. (2010)/Vilares and Coelho (2003)
13	CS on SI	CS -vely influence SI	McDougall and Levesque (2000)/Han et al. (2011)/Shin and Kim (2008)/ Chuang (2011)/Zhao et al. (2012)/Kim et al. (2011)
14	CL on SI	CL -vely influence SI	Gerpott et al. (2001)/Platonova et al. (2008)
15	AA on CL	AA -vely influence CL	Jeng (2004)/Tung et al. (2011)/Magalhães (2009)/Siswoyo and Supriyanto (2013)/Platonova et al. (2008)
16	AA on SI	AA +vely influence SI	Keaveney (1995)/Kim et al. (2011)/Chuang (2011)/Bansal and Taylor (2015)/Patterson and Smith(2003)/Bansal et al. (2004)

Relationship between gender and consumer switching intentions

Ho: There is no significant relationship between the gender and consumer switching intentions

Ha: There is a significant relationship between the gender and consumer switching intentions
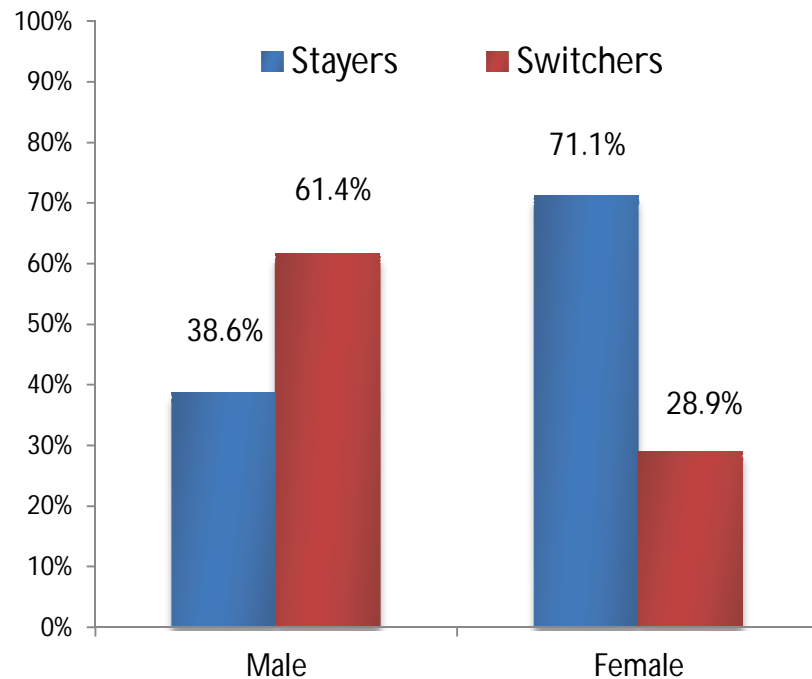
Result:

Gender has a significant relationship with consumer switching intentions

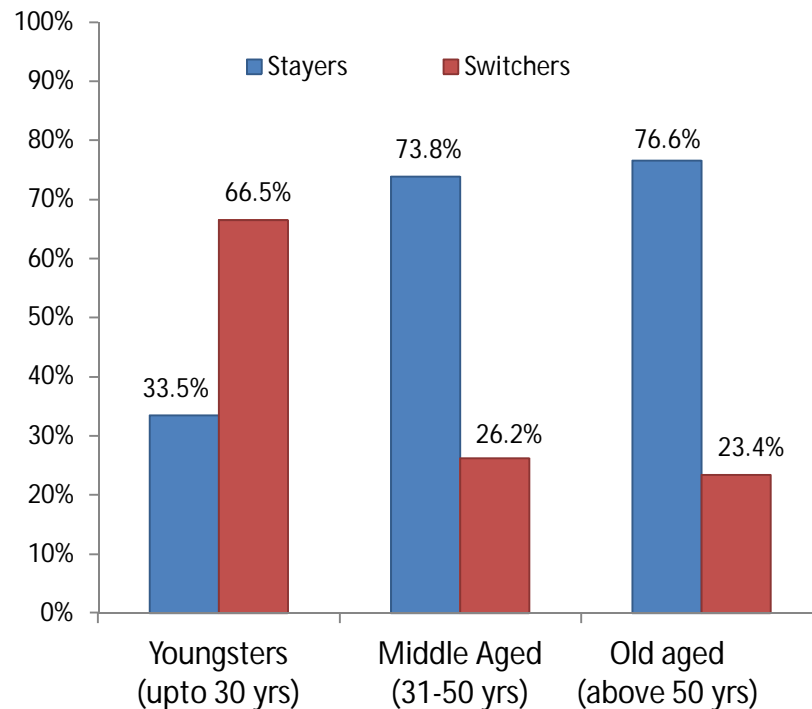| Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	75.019[a]	1	.000
Continuity Correction [b]	73.728	1	.000
Likelihood Ratio	76.797	1	.000
Linear-by-Linear Association	74.924	1	.000
N of Valid Cases	788		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 136.15.

Inference: Males have higher switching intentions than females

Relationship between age and consumer switching intentions

Ho: There is no significant relationship between the age and consumer switching intentions

Ha: There is a significant relationship between the age and consumer switching intentions

Result:

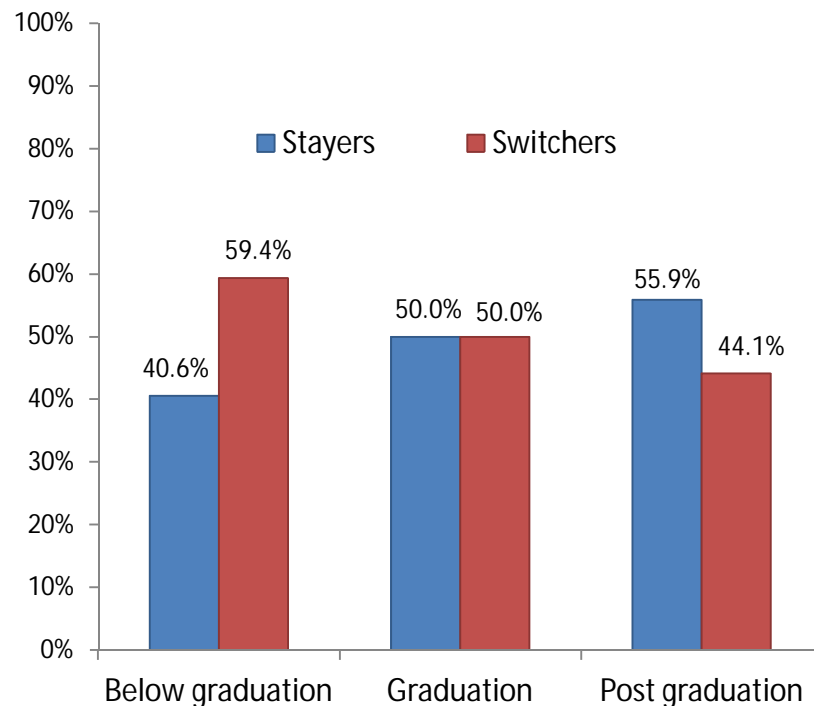Age has a significant relationship with consumer switching intentions

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.			

Inference: Youngsters show more switching intentions whereas middle/ old aged show more staying intentions

Relationship between education and consumer switching intentions

Ho: There is no significant relationship between the education and consumer switching intentions

Ha: There is a significant relationship between the education and consumer switching intentions

Result:

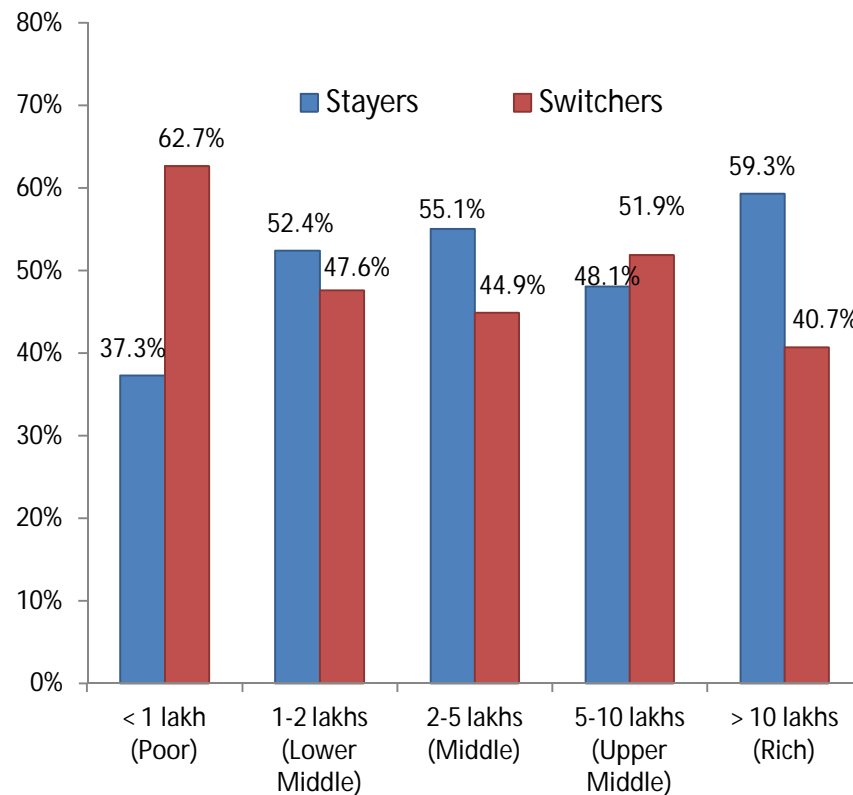Education has a significant relationship with consumer switching intentions

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.			

Inference: Customers with low educational level show more switching intentions whereas highly educated customers show more staying intentions

Relationship between annual family income and consumer switching intentions

Ho: There is no significant relationship between annual family income and consumer switching intentions

Ha: There is a significant relationship between annual family income and consumer switching intentions

Result:

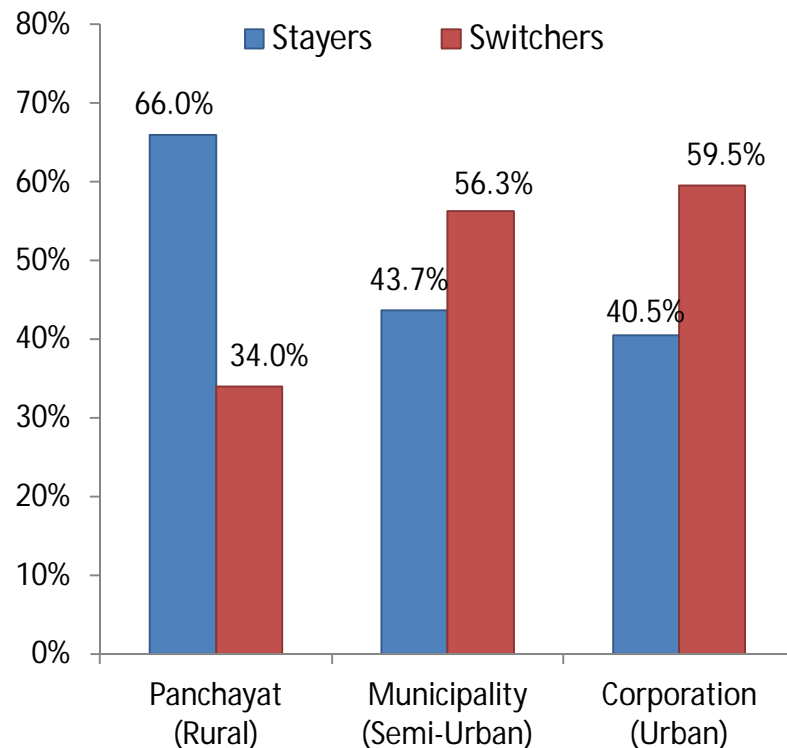Annual family income has a significant relationship with consumer switching intentions

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.			

Inference: Customers with very low income (poor) show more switching intentions whereas the very high income group (rich) show more staying intentions

Relationship between locality and consumer switching intentions

Ho: There is no significant relationship between locality and consumer switching intentions

Ha: There is a significant relationship between locality and consumer switching intentions

Result:

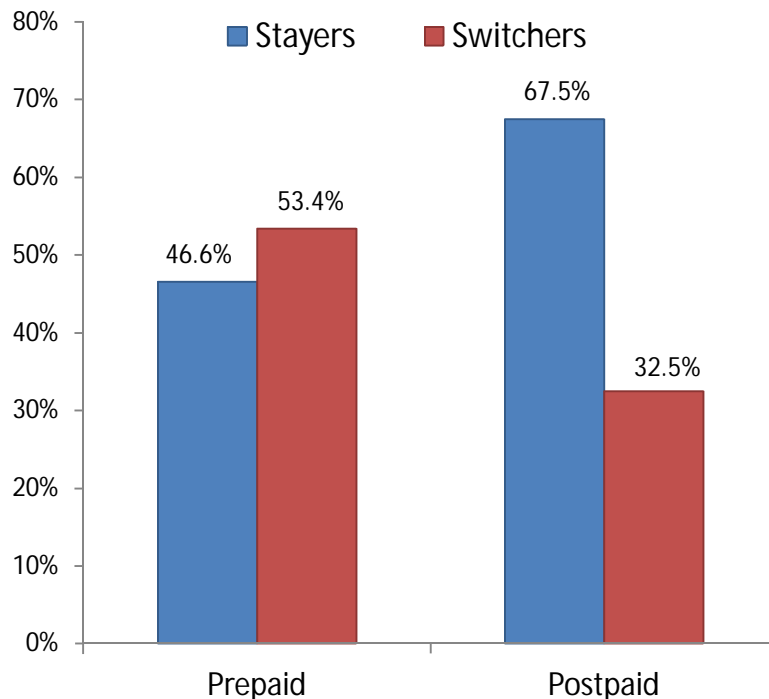**Locality has a significant relationship with consumer switching intentions**

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.			

Inference: **Rural customers show more staying intentions whereas semi- urban /urban customers show higher switching intentions**

Relationship between type of connection and consumer switching intentions

Ho: There is no significant relationship between type of connection and consumer switching intentions

Ha: There is a significant relationship between type of connection and consumer switching intentions

Result:
There is a s significant relationship between type of connection & consumer switching intentions

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.073[a]	1	.000
Likelihood Ratio	18.397	1	.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.			

Inference: Post-paid show more staying intentions whereas pre-paid customers show higher switching intentions

Relationship between type of service provider and consumer switching intentions

Ho: There is no significant relationship between type of service provider and consumer switching intentions

Ha: There is a significant relationship between type of service provider and consumer switching intentions

Result:

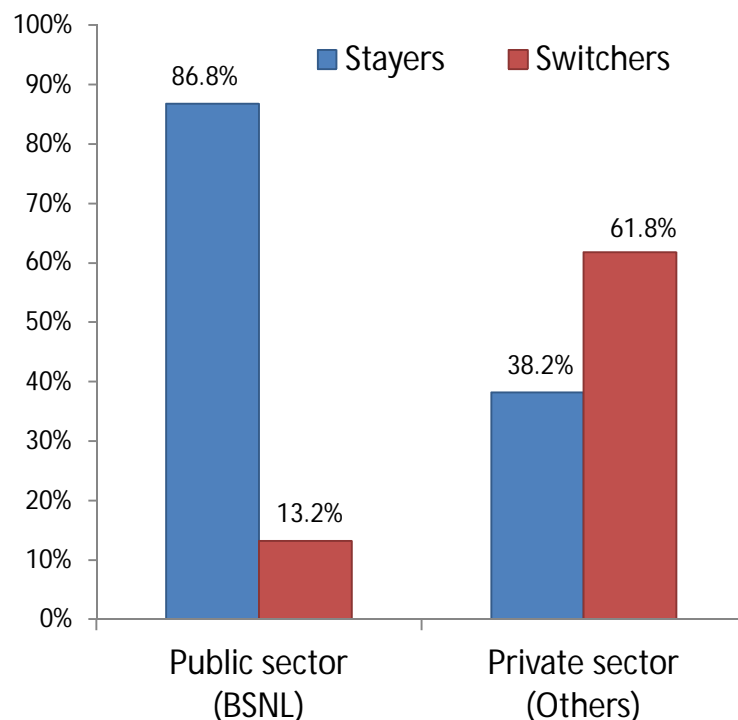There is a s significant relationship between type of service provider & consumer switching intentions

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	135.414[a]	1	.000
Likelihood Ratio	147.828	1	.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.			

Inference: BSNL customers show high level of staying intentions whereas private sector customers show higher switching intentions

Relationship between amount of service usage and consumer switching intentions

Ho: There is no significant relationship between amount of service usage and consumer switching intentions

Ha: There is a significant relationship between amount of service usage and consumer switching intentions

Result:

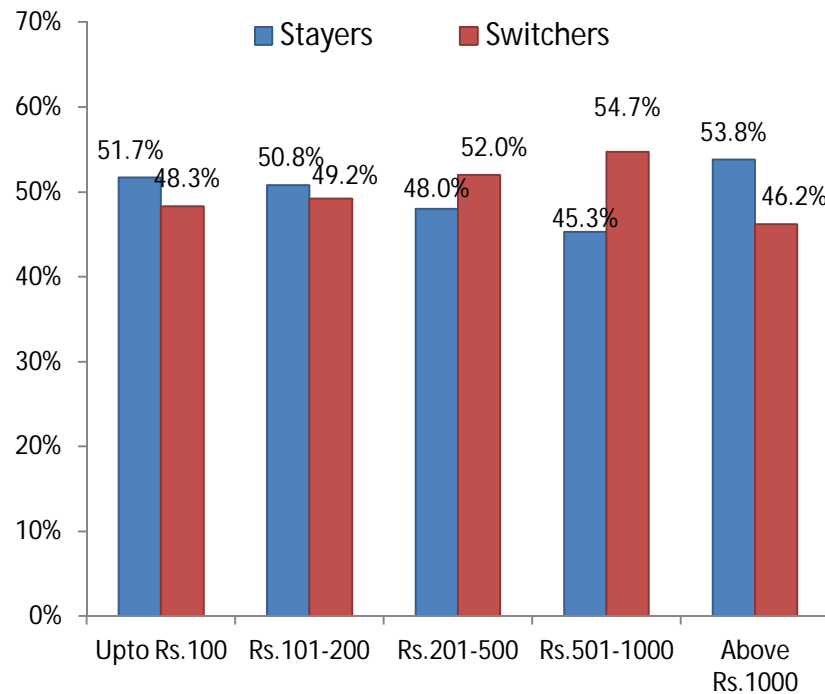There is a no relationship between amount of service usage & consumer switching intentions

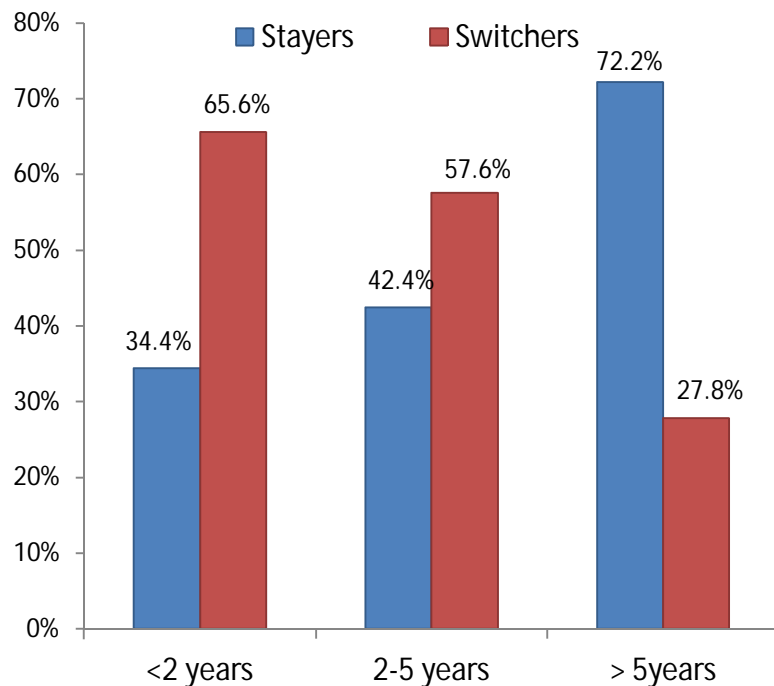| Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.263[a]	4	.868
Likelihood Ratio	1.265	4	.867
Linear-by-Linear Association	.426	1	.514
N of Valid Cases	788		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.97.			

* **P value is >0.05 hence the null hypothesis is accepted**

Relationship between period of association with a service provider and consumer switching intentions

Ho: There is no significant relationship between period of association and consumer switching intentions

Ha: There is a significant relationship between period of association and consumer switching intentions

Result:

There is a s significant relationship between period of association with a service provider & consumer switching intentions

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.			

Inference: Customers with more years of association show more staying intentions whereas customers with fewer years of association show higher switching intentions

The relatedness of demographic profile of respondents and consumer switching intentions-SUMMARY

No		Hypothesis	Pearson χ2	Significance
H 9.1	Ho	There is no significant relationship between the gender and consumer switching intentions	75.019	0.000
	Ha	There is a significant relationship between the gender and consumer switching intentions		
H 9.2	Ho	There is no significant relationship between age and consumer switching intentions	126.76	0.000
	Ha	There is significant relationship between age and consumer switching intentions		
H 9.3	Ho	There is no significant relationship between education and consumer switching intentions	7.407	0.025
	Ha	There is significant relationship between education and consumer switching intentions		
H 9.4	Ho	There is no significant relationship between annual family income and consumer switching intentions	14.776	0.005
	Ha	There is significant relationship between annual family income and consumer switching intentions		
H 9.5	Ho	There is no significant relationship between locality and consumer switching intentions	31.489	0.000
	Ha	There is significant relationship between locality and consumer switching intentions		
	Ha	There is significant relationship between the period association with a service provider and consumer switching intentions		

The relatedness of demographic profile of respondents and consumer switching intentions-SUMMARY

No		Hypothesis	Pearson χ^2	Significance
H 9.6	Ho	There is no significant relationship between the type of connection and consumer switching intentions	18.073	0.000
	Ha	There is a significant relationship between the type of connection and consumer switching intentions		
H 9.7	Ho	There is no significant relationship between type of service provider and consumer switching intentions	135.414	0.000
	Ha	There is significant relationship between type of service provider and consumer switching intentions		
H 9.8	Ho	There is no significant relationship between amount of service usage and consumer switching intentions	1.263	0.868
	Ha	There is significant relationship between amount of service usage and consumer switching intentions		
H 9.9	Ho	There is no significant relationship between the period association with a service provider and consumer switching intentions	64.069	0.000
	Ha	There is significant relationship between the period association with a service provider and consumer switching intentions		

Demographic factors vs switching intention

Sl No	Factor	Results	Matching findings
1	Gender	Males showing higher switching intention than females	Ranganathan et al. (2006); Valenzuela (2010)
2	Age	Youngsters (<= 30 years) show more switching intention whereas the middle and old aged showing more staying intention.	Ranganathan et al. (2006) ; Kisioglu & Topcu (2011); Keramati & Ardabili (2011);Shin & Kim (2008)
3	Education	Low educational level (below graduates) show higher switching intention whereas highly educated customers show higher staying intention.	Keaveney and Parthasarathy (2001)
4	Income	Very low income (poor) showing more switching intention and very high income (rich) group showing more staying intention	Keaveney and Parthasarathy (2001);Maddan et al. (1999)
5	Locality	Rural customers showing higher propensity to continue the service whereas semi-urban/urban customers show higher propensity to switch	Kisioglu & Topcu (2011)
6	Type of conn	Prepaid customers showing more switching intention whereas postpaid customers showing more staying intentions.	Srinuan et al. (2011)
7	Period of Assn	Customers with fewer years of association show high switching intention; customers having more than 5 years of association show high staying intention	Kisioglu & Topcu (2011)

Role of WOM in decision making

- The role of word-of-mouth on consumer decision making such as to switch or stay with an operator is measured using six questions measured on a 5-point Likert Scale

- 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

- mean is 3.56 with a low standard deviation of 0.815 which implies that the WOM is having a role on consumer decision making for selecting an operator or switching a service provider

Details	N	Minimum	Maximum	Mean	Std. Deviation
WOM	788	1.00	5.00	3.5565	.81517
Valid N (listwise)	788				

1=Strongly Disagree, 2=Disagree, 3= Uncertain, 4= Agree and 5= Strongly Agree

Inference: WOM plays an important role in consumer switch or stay intentions

Comparative analysis of switching determinants: BSNL vs others

- The study finds that CRM, PSQ, CS, PV, CL, AA, Trust, Switching cost, Corporate image & switching intention as the major switching determinants in mobile service

- The normality of distribution of the variables tested using Kolmogorov-Smirnov test and Shapiro-Wilk tests and found to be non-normal

- Kruskal-Wallis test is used to test the hypothesis & Mann-Whitney U test is used for the non-parametric post hoc procedures

Kruskal-Wallis test -CS

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

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

Descriptive statistics -CS

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

Mann-Whitney U test: CS

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

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

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

Details	Customer satisfaction
Mann-Whitney U	14911.0
Wilcoxon W	41246.0
Z	-5.498
Asymp. Sig. (2-tailed)	.000

Comparison of switching determinants: BSNL vs Others

Sl No	Variable	Result
1	**Customer Satisfaction**	BSNL has significantly higher levels of CS than Idea, Vodafone, Airtel
2	**Customer Loyalty**	BSNL has significantly higher levels of CL than Idea, Vodafone, Airtel
3	**Corporate Image**	BSNL has significantly higher levels of CI than Idea, Vodafone, Airtel
4	**Perceived Value**	BSNL has significantly higher levels of PV than Idea, Vodafone, Airtel
5	**Customer Relationship Management**	BSNL has significantly higher levels of CRM than Idea & Vodafone but no difference with Airtel
6	**Switching Cost**	BSNL has significantly higher levels of SC than Idea, Vodafone, Airtel
7	**Alternative Attractiveness**	BSNL has significantly lower levels of AA than Idea, Vodafone, Airtel
8	**Perceived Service Quality**	BSNL has significantly higher levels of PSQ than Idea, Vodafone but no difference with Airtel
9	**Trust**	BSNL has significantly higher levels of Trust than Idea, Vodafone, Airtel
10	**Switching Intention**	BSNL has significantly lower levels of switching intention than Idea, Vodafone, Airtel

Conclusions

- The study finds CRM, PSQ, PV, CS, CL &AA as the major switching determinants in mobile services

- While PV, CS & CL are found to have a direct negative effect on consumer switching intention, AA is found to have a direct positive effect on consumer switching intention.

- CRM is found to have a strong direct influence on PSQ, PV,CS & CL, there by rendering an indirect influence on switching intention. So CRM plays an important role in regulating switching intentions

- CKM, Loyalty programs, customization, efficient customer support service, two way communication and feedback management are identified as the major components that determine CRM effectiveness

Recommendations

- Customer's perceptions, preferences, needs change over time. CRM tools shall be used to continuously track, realign product/ promotions

- CRM shall be used to enhance customer perceived value through customization, loyalty schemes, 24x7 customer efficient support service.

- Use of electronic channels for gathering customer information, feedbacks, delivering product related info etc

- Explore the power of word-of-mouth in customer attraction/ retention

- Demographic profile of customers shall also be used while designing loyalty/retention programs

- Increase switching cost to arrest customer churn

Limitations

- Study confined to individual cellular mobile customers in Kerala
- Switching behaviour may vary across cultures

Scope for future research

- Test the model in B2B environment
- Test model across different cultures
- Extend the model to other service sectors
- The effect of CI, TR, SC on other switching determinants may be explored

List of publications

- 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).

- Unnikrishnan.B (2015).Impact of switching cost on consumers in Indian cellular mobile services. Review of social sciences, XVI(2),90-97. (ISSN: 0974-9004)

- 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).

Thank You