Mobile Number Portability: Evaluation of Customer Satisfaction before and after

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Abstract: *This paper has been developed to evaluate the customer satisfaction before and after the mobile number portability. Nowadays many customers using mobile services are not satisfied with the services of service provider can port their number with the other service provider via mobile number portability facility. On the other hand, the porting decision may become a bad decision if the new service provider also provides ineffective services. Our study revealed that all the measures were reliable. Factor Analysis showed that there was not much difference in the factors which came out both before and after porting. To compare before and after porting, paired t-test was applied which revealed that there is a positive change in satisfaction level of customers in most of the attributes under study and they are reasonably satisfied with their new service provider.*

Keywords: *Mobile Number Portability, Mobile Service Provider, Service Quality and Customer Satisfaction*

1. INTRODUCTION

Telecom industry in India has grown by leaps and bounds in last two decades, especially the last one decade. Everyone nowadays possesses at least one mobile number (connection) and the customer base of various operators has risen to even billions of connections. Companies like Airtel, Idea, Vodafone, etc. have registered a phenomenal growth. Customers of these companies want satisfactory services at all times. Although they feel cheated many a times because of the various problems created for them like busy network, no network coverage, call drops, voice congestion, billing problems, etc. Therefore in the present context the customer satisfaction with mobile services has become more relevant and challenging at the same time. This paper has been developed to evaluate the customer satisfaction before and after the mobile number portability.

2. TELECOM INDUSTRY

Telecommunication network of fixed phone and mobile phone of India is the second largest network in the world. The network base of wireless subscriber increased from 881.13 million in November, 2013 to 886.30 million at the end of December 2013 (Source: TRAI Telecom subscription report Feb 2014), registered a monthly growth of 0.59%. Leading telecom companies like Idea Cellular, Bharti Airtel, Uninor, Vodafone and TATA Docomo are exploring the potential of big deal for retention of customer, marketize their mobile services and improvement in customer service for effectiveness.

3. MOBILE NUMBER PORTABILITY

"Mobile Number Portability" means the facility which allows a subscriber to retain his mobile telephone number when he moves from one Access Provider to another irrespective of the mobile technology or from one cellular mobile technology to another of the same Access Provider.(TRAI Notification, 23/09/2009).

MNP firstly launched in Singapore in 1997. In India, MNP launched after Pakistan (Khuhro et. al., 2011) firstly introduced in Hisar (Haryana) on 25th November 2010, and MNP was finally applied to all the states of INDIA in January 2011. MNP has opted more than 123.87 million (source: telecomtalk.info) subscribers, they request for port out to different operators to be benefited from the MNP to retain their same number while switching service provider, according to the data by end of June 2014 (TRAI, June, 2014). Consumers allowed switching operators only 90 days after a connection is activated, and various companies like Airtel, IDEA BSNL Cellular, and Vodafone emerged as most preferred mobile service operators in terms of MNP because ease of use, speed of use, perceived usefulness and price are the most important determinants of adoption of MNP. (Buehler, Dewenter and Haucap 2005) reported that implementation of MNP will benefit the entrant mobile service providers and surely will hurt the incumbent service provider.

4. CUSTOMER SATISFACTION

From marketing point of view the term "customer satisfaction" is important outcomes of marketing activity and used frequently, basically its measures customer expectations regarding how products or services supplied by company. (Spreng et al, 1996; Mick and Fournier, 1999; Oliver, 1980; Surprenant and Churchill, 1982). Prince (1992) argued that the customers who are satisfied with the products or services of company they tell to others and share experiences and this increases word of mouth regarding particular products or services. So, the customer satisfaction can be stated as

"Analysis of discrepancy of product or service quality between prior expectations of product or services and actual performance of product or services."

Although the main goal of organization/company is to maximize the customer satisfaction so customer oriented organization/company seeks to create high customer satisfaction, that's why in today's scenario customers face a vivid range of brand choice, product, varied prices etc.

5. CUSTOMER SATISFACTION IN MOBILE SERVICES

For telecom industry the customer satisfaction is very important for providing better mobile services. The mobile services industry is one of the leading sectors in the world economy due to this competition become very tuff and the survival for the companies is important, so mobile services companies totally focus on customer satisfaction (vranakis et. al., 2012). Customer satisfaction with basic mobile services can explain by using basic model by means of his/her 1) perceived usability of the services 2) personality traits and 3) actual usage of services (oliveira,). Customer expectation is a part of customer satisfaction and if customer of mobile service is satisfied according to expectation they are likely to share his experience to others this led to word of mouth advertising of mobile services (pandiya et. al., 2014)

6. RESEARCH METHODOLOGY

The study can be categorized as descriptive research and the population for this research was users of Mobile Number Portability in the Gwalior region and sample size of this study was randomly selected 192 respondents. For sampling, Non-probability purposive sampling technique was used. In this study self designed questionnaire tool which is based on likert scale was used for data collection and various data analysis tools used like Reliability test for measuring reliability measure, factor analysis for analysis before and after porting factors and paired t-test for paired difference.

7. RESULTS AND DISCUSSION

7.1 Reliability Measure

Reliability test (Cronbach Alpha) methods have been applied to calculate reliability of all items in the questionnaire for both before and after porting data. SPSS software (version 18) has been used and the reliability test measures are given below:

Tables showing Reliability Statistics for Customer Satisfaction

Table 1: Reliability Statistics-Before Porting	
Cronbach's Alpha	No. of Items
.832	20

It is considered that the reliability value more than 0.7 is good and it can be seen that in both the reliability methods applied here, reliability values (depicted in Table1 and Table2) were found quite higher than the standard value, so all the items in the questionnaire both before and after porting were highly reliable.

Table 2: Reliability Statistics-After Porting	
Cronbach's Alpha	No. of Items
.884	20

Factor Analysis for Customer Satisfaction (After Porting):

Before applying Factor Analysis (after porting) in this study the KMO (Kaiser–Meyer-Olkin measure of sampling Adequacy) which came out to be 0.911 and Bartlett's Test of Sphericity was found significant at 0.000; were confirmed as per the standards (minimum threshold). The raw scores of 20 items were subjected to factor analysis to find out the factors that contribute towards "Customer satisfaction of MNP Users after porting". Six factors were identified after the factor analysis.

Table 3: Factor Analysis after porting

S. No.	Factor name	Eigen value	% of Variances Explained	Items converged	Factor loaded
1	Serviceability and trust	4.528	22.642	Connectivity Network coverage Inefficient services Ready to shift Willing to switch due to better range and quality of services Service provider is trustworthy Intention is to stay loyal	.634 .669 .741 .682 .720 .727 .719
2	Price tolerance	2.527	12.634	Expensive tariff plan High promotional offers Value added services is enough and efficient Fulfilling the overall expectation	.547 .578 .753 .547
3.	Call drop, billing charges and roaming charges	1.756	8.779	Call drop Undue/fictitious charges/billing Expensive roaming charges	.612 .751 .706
4	Network problem and voice congestion	1.634	8.172	Voice congestion and distortion Serious network problem ('out of reach'	.728 .707
5	Perceived quality	1.341	6.706	Meeting my specific requirements Offered is close to other	.838 .769

| 6 | Overall satisfaction | 1.162 | 5.810 | Overall satisfaction | .775 |
| 7 | Perceived expectation | 1.101 | 5.503 | Quality of mobile services I pay | .847 |

8.   DESCRIPTION OF FACTORS (AFTER PORTING)

1) Serviceability and trust: This factor is important and has vital role in mobile services. Determinant of research with a total variance of 22.642. Major element of this factor includes, Connectivity, Network coverage, inefficient services, Ready to shift willing to switch due to better range and quality of services, Trustworthy, Intention to stay loyal.

2) Price tolerance: This factor describe that mobile services is also fulfilled price tolerance. Determinant of research with a total variance of 12.634 Major elements of this factor include, expensive tariff plan, high promotional offers, value added services is enough and efficient, fulfilling the expectation (overall).

3) Call drop, billing charges and roaming charges: This factor gives us determinants of call drop and roaming charges. Determinant of research with total variances of 8.779 Major element of this factor includes Call drop, Undue/fictitious charges/billing, and Expensive charges for roaming.

4) Network problem and voice congestion: This factor shows tolerance of price determinant of research with a total variance of 8.172. Major elements of this factor includes, Voice congestion and distortion, serious network problem ('out of reach').

5) Perceived quality: This factor implies satisfaction of the customers to the mobile services. Determinant of research with a total variance of 6.706.

6) Overall satisfaction: This factor realizes that customer is important and valuable. Determinant of research with a total variance of 5.810 Major elements of this factor includes Overall satisfaction.

7) Perceived expectation: This factor realizes that customer is important and valuable. Determinant of research with a total variance of 5.503 Major elements of this factor includes Quality of mobile services I pay.

For comparing the customer satisfaction before and after porting the paired t-test was applied. Table 5 depicts the mean, standard deviation and SE mean for both pre and post. Two of the items were dropped as they were found insignificant in the paired differences and the remaining 18 are depicted in Table 5.

2.	Pre connectivity	3.23	1.110	.113
	Post connectivity	2.79	.893	.091
3	Pre billing charger	2.76	.867	.089
	Post billing charger	3.99	.864	.088
4	Pre network coverage	3.34	1.304	.133
	Post network coverage	2.59	1.052	.107
5	Pre out of reach	3.04	1.075	.110
	Post out of reach	3.85	.846	.086
6	Pre tariff plans	2.56	1.186	.121
	Post tariff plans	3.44	.844	.086
7	Pre promotional offers	2.89	.950	.097
	Post promotional offers	3.82	.808	.082
8	Pre roaming charges	2.58	.804	.082
	Post roaming charges	3.78	.771	.079
9	Pre VAS	2.50	.808	.082
	Post VAS	3.72	.830	.085
10	Pre quality	2.28	.830	.085
	Post quality	3.50	.808	.082
11	Pre requirement	2.22	.771	.079
	Post requirement	3.42	.804	.082
12	Pre I am paying for	2.18	.808	.082
	Post I am paying for	3.11	.950	.097
14	Pre ready to shift	2.15	.846	.086
	Post ready to shift	2.96	1.075	.110
15	Pre just for a change	3.41	1.052	.107
	Post just for a change	2.66	1.304	.133
16	Pre offered better range	2.01	.864	.088
	Post offered better range	3.24	.867	.089
17	Pre trustworthy	3.21	.893	.091
	Post trustworthy	2.77	1.110	.113
18	Pre overall satisfaction	1.92	.959	.098
	Post overall satisfaction	3.52	1.170	.119

Table 5: Paired difference

Pair	Variables name	Mean	t-value	df	p-value
1.	Voice problem	-.740	-4.427	95	.000
2.	Connectivity	.438	2.367	95	.020
3	Billing charge	-1.229	-9.430	95	.000
4	Network coverage	.750	3.785	95	.000
5	Out of reach	-.813	-5.346	95	.000
6	Tariff plans	-.875	-5.961	95	.000
7	Promotional offers	-.938	-7.864	95	.000
8	Roaming charges	-1.198	-9.765	95	.000
9	VAS (Value Added Services)	-1.219	-9.306	95	.000
10	Quality	-1.219	-9.306	95	.000
11	Requirement	-1.198	-9.765	95	.000
12	I am paying for	-.938	-7.864	95	.000
13	Offered	-.875	-5.961	95	.000
14	Ready to shift	-.813	-5.346	95	.000
15	Offered better range	.750	3.785	95	.000
16	Just for a change	-1.229	-9.430	95	.000
17	Trustworthy	.438	2.367	95	.020
18	Overall satisfaction	-1.604	-9.994	95	.000

Table 4: Paired t-test

Pair	Variables name	Mean	Std. Deviation	SE mean
1.	Pre voice problem	3.34	1.280	.131
	Post voice problem	4.08	.959	.098

Interpretation

In category of *voice problem*, statistics t= -4.427 (P=0.000) that means voice problem have significant differences in opinion of customers' mind for before MNP and after MNP for service providers.

Here in case of *Connectivity, Billing charges and Network coverage* simultaneously statistics't= 2.367 (P=0.020), t= -9.430 (P=0.000) and t= 3.785(P=0.000) means Connectivity, Billing charges and network coverage have significant difference opinion in the mind of customers for before MNP and after MNP for services providers.

Observations of the table shows that *Out of reach, Tariff plans, Promotional offers and Roaming charges* have significant difference opinion in the mind of customers for before MNP and after MNP for services providers conditioned statistics t= -5.346 (P=0.000), statistics't= -5.961 (P=0.000), statistics't= -7.864 (P=0.000), statistics't= -9.765 (P=0.000).

In category of *VAS, Quality, Customer requirement, I am paying for* statistics t= -9.306 (P=0.000), statistics't= --9.306 (P=0.000), statistics't= -9.765(P=0.000), statistics't= -7.864(P=0.000) that means have significant differences in opinion of customers' mind for before MNP and after MNP for service providers.

Table 6 shows that Offered, Ready to shift, Offered better range have significant difference opinion in the mind of customers for before MNP and after MNP for services providers conditioned statistics't=-5.961(P=0.000), statistics't=-5.346(P=0.000), statistics't=3.785(P=0.000).

There was a significant difference in the mind of customers for before MNP and after MNP for services providers in the terms of Just for a change, Trustworthy, Overall satisfaction conditioned that statistics't= -9.430(P=0.000), statistics't= 2.367(P=0.020), statistics't= -9.994(P=0.000).

9. CONCLUSION

The study has resulted in standardized and reliable measures of customer satisfaction with respect to the mobile services. All the measures are reliable as indicating by their reliability measure which is higher than 0.7. In the factor analysis (both before and after porting) it has been described that the determinants of customer satisfaction in terms of factor name which includes perceived quality, perceived expectation, price tolerance, promotional offers etc. There was no major difference in the factors which came out both before and after porting.

The paired t-test describes that there is a positive change in satisfaction level of users after the portability in most of the attributes of satisfaction, that is, after porting the customers have become reasonably satisfied with their new service provider.

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