

An Exploratory Analysis of Customer Satisfaction with Network Portability Among Mobile Phone Users Using *One Way Anova*

¹Mrs. S. Kavitha, ²Dr. K. Muthulakshmi

¹Research Scholar of Commerce, Bishop Heber College (Autonomous) (Affiliated to Bharathidasan University), Tiruchirappalli, Tamil Nadu, India.

²Research Supervisor, Associate professor in commerce, Bishop Heber College (Autonomous) (Affiliated to Bharathidasan University), Tiruchirappalli, Tamil Nadu, India.

Abstract

A telecom service customer can switch operators without regard to location thanks to a mechanism called mobile number portability. A user can move his mobile number to any other service provider of his choosing if he is dissatisfied with the offerings of his present operator. Customers of cellular service providers offer the benefit of mobile number portability, which allows them to keep their mobile numbers while changing service providers across different types of technology inside a cellular circle (Shin and Kim 2018). The universe of the present study includes all the android mobile users of who are switching their mobile network service providers in the jurisdiction of Tiruchirappalli district of Tamil Nadu. There are 6 leading mobile network service providers are functioning in Tiruchirappalli district such as Airtel, JIO, Vodafone, Idea and BSNL whereas approximately 10,00,000 people have been switching their mobile network service providers during the data collection period in jurisdiction of Tiruchirappalli district of Tamil Nadu. This study analyzes the reason for satisfaction about current mobile network services, perception towards expectations from new service provider, problems facing while mobile number portability and satisfaction after mobile number portability.

Keywords: Network portability, mobile phone, customer satisfaction, one way ANOVA.

Introduction

The telecommunications sector has remarkably adapted to the dynamic and contemporary environment of today. Customer satisfaction is crucial for mobile service providers to maintain and increase their market share and profitability because as the market matures, mobile communication services become more homogeneous and the competition for attracting new customers and keeping the ones they already have intensifies. Organizations in competitive environments must take additional aspects into account to keep their consumers and gain a distinct competitive edge (Reddy and Sekhar 2019). Mobile carriers must thus discover the elements that affect customer loyalty and happiness in order to stay competitive in the market. These elements, which are confronted by effective retention management, account for customer dissonance and tempt customers to transfer services. The number of mobile users who move carriers more often since the advent of mobile number portability is increasing. The procedure by which a user may switch to a different operator of their choosing while keeping their current mobile number is known as mobile number portability (Garga, Maiyaki and Sagagi 2019). In a similar way, it has also been noted that cellular network subscribers typically sign up for specific network connections and then switch to others when they discover that their current services do not adequately address their unique communication requirements and that other networks offer superior services. Several variables may affect preference or choice of a specific mobile phone service provider. In order to increase the number of new clients, mobile phone service providers take these criteria into account. The true challenge facing service companies is keeping their current clientele. The service providers focus more on keeping existing clients since it is wiser and more cost-effective to do so than to acquire new ones. By ensuring customer satisfaction and giving clients high-caliber services with additional value, it can be attainable. If a consumer is unhappy with the tariff prices, connection, weak signal, or lack of speech quality, they frequently transfer to another service provider (Quoquab et al. 2018).

Review of literature

Verizon vs. T-Mobile: Network Portability and Coverage (2023) discusses network coverage and portability. Verizon was praised for its robust network, especially in urban areas, but it was noted that its 5G coverage was

limited to specific locations. T-Mobile, on the other hand, had the fastest 5G network and was rapidly expanding its coverage. The review highlighted that T-Mobile's network portability was seamless and efficient, making it a strong competitor against Verizon. Customer experiences showed T-Mobile's improvements in filling coverage gaps, though Verizon maintained stronger overall coverage in remote areas.

The Telecom Regulatory Authority of India (TRAI) released a draft regulation in 2023, which aimed to streamline the mobile number portability (MNP) process. The amendments proposed in the regulation were designed to reduce the porting time and improve the user experience. Stakeholders, including consumer groups and telecom operators, provided feedback that highlighted the need for more efficient and transparent processes. The regulation emphasized enhancing consumer rights and ensuring that the portability process was quick and reliable, thus boosting consumer confidence in switching providers without losing their numbers.

A comprehensive analysis on Reviews.org evaluated the best cell phone coverage in the US, taking into account network portability. The review found that while Verizon offered the best overall coverage, T-Mobile provided the fastest data speeds and a rapidly expanding 5G network. The ease of porting numbers to T-Mobile was particularly highlighted as a strong point, especially with its user-friendly processes and support for customers switching from other networks. Verizon's process, though reliable, was seen as slightly more cumbersome due to stricter verification procedures.

A report by Statista explored the trends in mobile number portability across various European countries, with a focus on Italy. The data showed a steady increase in the number of porting requests, reflecting consumers' growing willingness to switch providers for better deals or services. The report also discussed the regulatory environment in Europe, which supports consumer rights in portability, ensuring that the process is free of undue barriers. Customer feedback indicated high satisfaction with the streamlined porting processes in most European countries.

The Telecom Regulatory Authority of India (TRAI) periodically published consultation papers and draft regulations aimed at refining the mobile number portability framework. These documents provided insights into the technical challenges and proposed solutions to make the MNP process more efficient. One of the key focuses was on reducing the porting time and addressing issues related to fraudulent porting requests. Feedback from industry stakeholders and consumer groups highlighted the importance of maintaining a balance between security and ease of porting, ensuring that consumers could switch providers with minimal hassle while protecting against fraudulent activities.

Methodology

Sampling Technique

The general public who had plan to switch their mobile network service providers last year were considered as a sample for this study. The population of the study is floating in nature. Therefore, the researchers adopted non-probability sampling method for selecting the samples from universe. Non-probability sampling is a sampling method in which not all members of the population have an equal chance of participating in the study, unlike probability sampling, where each member of the population has a known chance of being selected.

The researcher has selected 784 general public who have switched their mobile network service providers in the last year as a sample for the present study. They have been selected through *purposive sampling method*. In the judgmental sampling method, researchers select the samples based purely on the researcher's knowledge and credibility. In other words, researchers choose only those people who they deem fit to participate in the research study. A purposive sample is where a researcher selects a sample based on their knowledge about the study and population. The participants are selected based on the purpose of the sample. Participants are selected according to the needs of the study applicants who do not meet the profile are rejected. The sample size (n=784) has been calculated and selected as per (<http://www.raosoft.com>) sample size calculator which is based on Krejcie and Morgan sample table (Krejcie and Morgan, 1970) and it has covered 95 percent confidence at 3.5 percent margin sample error for the population of 10,00,000. The minimum sample size was estimated to be 784 for this population. For the present study the researcher has selected 784 mobile network switchers as a sample, it is same sample size suggested by Krejcie & Morgan, so that the present study sample size is enough for the current study and it is more reliable.

- The respondents who are currently residing in the Tiruchirappalli District were included in the study.

All mobile phone users who have changed their mobile network service providers at least one time in a year were included in the study.

Exclusion Criteria

- All mobile phone users who have switched their network service providers very recently below one year were excluded from the study.

All mobile phone users who did not change their mobile network service providers in last one year were excluded from the study.

One way Analysis of Variance

Variance between percentage of satisfaction about current mobile network service and perception towards satisfaction after mobile number portability of the respondents

S. No	Source	SS	Df	MS	\bar{X}		Statistical Inference
1.	Network connection				G1=	3.62	F=23.031
	Between Groups	59.586	4	14.897	G2=	3.60	0.000<0.01
	Within Groups	503.851	779	.647	G3=	4.00	Highly Significant
					G4=	4.10	
					G5=	4.43	
2.	Customer Service				G1=	3.63	F=16.132
	Between Groups	42.408	4	10.602	G2=	3.46	0.000<0.01
	Within Groups	511.948	779	.657	G3=	3.81	Highly Significant
					G4=	3.93	
					G5=	4.21	
3.	Voice clarity				G1=	3.76	F=15.371
	Between Groups	35.789	4	8.947	G2=	3.54	0.000<0.01
	Within Groups	453.456	779	.582	G3=	3.86	Highly Significant
					G4=	4.03	
					G5=	4.19	
4.	Network coverage				G1=	3.16	F=25.598
	Between Groups	75.086	4	18.771	G2=	3.43	0.000<0.01
	Within Groups	571.260	779	.733	G3=	3.79	Highly Significant
					G4=	3.98	
					G5=	4.10	
5.	Discount/ Premium offer				G1=	3.21	F=14.380
	Between Groups	45.228	4	11.307	G2=	3.48	0.000<0.01

	Within Groups	612.547	779	.786	G3=	3.63	Highly Significant
					G4=	3.90	
					G5=	3.94	
6.	Service package				G1=	3.41	F=15.489
	Between Groups	43.994	4	10.999	G2=	3.58	0.000<0.01
	Within Groups	553.147	779	.710	G3=	3.76	Highly Significant
					G4=	4.02	
					G5=	4.12	
7.	Additional facility				G1=	3.32	F=12.287
	Between Groups	40.716	4	10.179	G2=	3.45	0.000<0.01
	Within Groups	645.345	779	.828	G3=	3.67	Highly Significant
					G4=	3.91	
					G5=	3.96	
8.	Overall level of Satisfaction after mobile number portability				G1=	24.1064	F=25.893
	Between Groups	2212.706	4	553.176	G2=	24.5370	0.000<0.01
	Within Groups	16642.677	779	21.364	G3=	26.5198	Highly Significant
					G4=	27.8688	
					G5=	28.9619	

G1= 50 to 60%, G2= 60 to 70%, G3= 70 to 80%, G4= 80 to 90%, G5= 90 to 100%

Inferences

It is proved from table 4.58 that there is a significant variance among the percentage of satisfaction about current Mobile network service providers of the respondents and their perception towards satisfaction after mobile number portability such as network connection, customer service, voice clarity, network coverage, discount/ premium offer, service package and additional facility.

Further, there is a significant variance among the percentage of satisfaction about current Mobile network service providers of the respondents and their perception towards overall level of satisfaction after mobile number portability (F=25.893, 0.000<0.01). It is exhibited from the statistical analysis that the percentage of satisfaction about current Mobile network service providers of the respondents influences on the perception towards satisfaction after mobile number portability. The mean score indicates (\bar{X} =28.9619) that the respondents who have 90-100% satisfaction about current Mobile network service providers had a high level of satisfaction after mobile number portability such as network connection, customer service, voice clarity, network coverage, discount/ premium offer, service package and additional facility.

Conclusion

A telecom service customer can switch operators without regard to location thanks to a mechanism called mobile number portability. Users can move telecom providers with the help of mobile number portability without having to change their current phone numbers. It's crucial to understand that switching network operators has no impact on network dependability. The phone will be able to finish a call inside this geographic region utilizing either the carrier's network or a partner network. Customer satisfaction is the emotion a person has while evaluating a

product's perceived performance (or outcome) in light of their expectations. In this research work it was found using 'F'- Test that there is a significant variance among the percentage of satisfaction about current mobile network service providers of the respondents and their perception towards satisfaction after mobile number portability such as network connection, customer service, voice clarity, network coverage, discount/ premium offer, service package and additional facility. Further, there is a significant variance among the percentage of satisfaction about current Mobile network service providers of the respondents and their perception towards overall level of satisfaction after mobile network portability ($F=25.893, 0.000<0.01$)

Suggestions

In the present, customers are using internet access and transitioning from 4G to 5G. Even while enticing offers may aid in luring some clients, they might not aid in keeping those customers without an appropriate plan/scheme and tariff rate. As a result, the internet facility should be improved by developing an appropriate price plan and expanding the use of 5G, a robust network, in order to long-term please and keep users.

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