TO STUDY THE FACTORS THAT INFLUENCE CUSTOMER SWITCHING IN TELECOM INDUSTRY IN TIER I AND II CITIES IN INDIA OVER PAST SIX YEARS(2016-2022)

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ABSTRACT. Telecom is one of India's fastest growing and most competitive industries. Today the telecom market in India is facing challenges to satisfy their customers due to the cutthroat competition by new players, market disruptions, stringent regulatory norms, and challenging market conditions. Consumer switching behavior is one of the most important factor that affect the telecom service companies market share and profitability. Therefore, it is important to look at the factors that drive consumers to switch to other mobile networks. The data required for this research was collected using a structured questionnaire which was filled by the users of various telecom service providers in Tier I and II cities in India. The research study surveys 150 telecom customers to explore the customer switching behavior in India's telecom service market. The research reveals that offer plans, network quality, service quality and affiliations have been found significantly associated with customer switching behavior

Keywords: Telecom Industry, Brand Switching, Network Quality, Service Quality.

1   Background

The foundation of India's telecommunication revolution was laid in India in the 1980s and now telecom is one of the India's fastest growing industries. India is also the world's second-largest internet subscriber country. India is one of the largest data consumers of the world. According to TRAI, the average monthly wireless data use per wireless data subscriber was 11 GB in FY20. The number of app downloads in the country climbed from 12.07 billion in FY2017 to 19 billion in FY2019, with 37.21 billion predicted by

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FY2022. According to TRAI (2021), in the month of February, 2021, 11.68 million subscribers submitted their requests for Mobile Number Portability (MNP). Thus the cumulative MNP request since the implementation of MNP increased from 552.24 million at the end of January 2021 to 563.92 million at the end of February 2021. As the numbers of switching from one provider to another is relatively high, it is important to shed light on the factors that influence such behaviour due to the increasing competition and low prices.

2   Introduction

The Indian telecom sector has become deserted with only a few players left in this sector. Brand switching in the telecom sector refers to the process in which a customer switches/moves from one service provider to another offering a similar or better service. As very players are left in the telecom sector, the market competition is fierce, thus it is possible that even the customers are satisfied with the service still they may move over to another service provider providing a better service with better customized plans and network quality at a lower price. With the advancing and ever-growing technology, unimaginable internet speed and uninterrupted communication is one of the core benefits which fulfills the telecom customer needs. The market is full of opportunities and the telecom providers are not behind in grabbing any opportunity in their way. In order to ensure the company's market existence, the telecom service providers try to retain their customers by providing better offers and value-added services like OTT subscriptions, providing offers on movie tickets, etc. The telecom service providers also leave no stone unturned to attract the customers by advertising their services. Better plans, better network and service quality, promotions and affiliations are some of the driving factors that induce customers to switch to another telecom service providers.

3   Literature Review

In the paper by Ajgaonkar researched to find brand switching behaviour in Telecommunication among young adults in Mumbai Region. The sector faced a lot of competition after the entry of Jio while some telecommunication operators merged as they couldn't compete with Jio. The data was collected from 186 respondents from Mumbai and Mumbai suburbs between the age group 18-30 years and the same was analysed through SPSS. Factor analysis was used to find out the factors that caused brand switching among young adults. The factors indicating price were free services, better value, attractive offers and pricing issue while the factors indicating quality were call drop, network, customer care and internet speed. The factor analysis results found that Price based and Quality based factors had an impact on brand switching in the telecommunication sector.

In this paper by Mohammed conducted a research on the importance and consequences of satisfaction in the competitive telecom industry in Bahrain. Factors such as offers, rent, charges were significant in determining satisfaction, retention and switching behaviour from one provider to another. Data was collected from 228 individuals through structured

survey questionnaire consisting of 20 questions over a span of 3 months and analysed using SPSS.On analysis of the data, it indicated that a large portion of the respondents had already switched from one telecom provider to another due to a better offer from the other provider. Loyalty scores were also analyzed against each of the determinant factors of retention using a Pearson's Chi-square test. Results of all the analysis revealed a poor relationship between retention and loyalty while a significant positive relationship was found between satisfaction and retention.

In this paper by Shaila Brand switching is the process in which customer changes the present service/product provider to another service provider for various reasons. The objectives of the study were to investigate the customer preference between different telecom service providers in India. To probe the factors responsible for customer switching in telecom sector in India, and to examine customer satisfaction on various qualitative parameters to measure customer loyalty. The research uses both primary as well as secondary data. The primary data is collected by online questionnaire using random sampling technique. The independent variables are age, gender, network quality, call drop rates, price for dependent variable of customer switching. Chi- Square test and Factor analysis is used to analyze the data.

In this paper by Simon has reviewed the literature regarding customer switching behavior. The literature and theories reviewed were as follows,1. Product importance-based switching model, 2. A model of consumer switching behavior,3. Service provider switching model, 4. The switching process in retail banking, 5. The three component model of consumer commitment to service provider, 6.Catalytic Switching model, 7.Push Pull Mooring model of service switching, 8.General System Theory of Customer Switching, 9. Agency Theory of consumer switching, 10. Prospect Theory of Switching behavior.

In this paper Dhava studied and researched the impact of mobile number portability on the consumers in the Saurashtra Region. The present study focused on Consumer Perception towards MNP and the factors considered for switching over the other operator by the customers. Over 300 consumers of various Mobile Service Providers in Saurashtra were subjected to descriptive research using the convenience sample method. The number of customers who port in and out for each given network was determined through hypothesis testing. For analysis F – Test was applied and the ANOVA table was used for the comparison of 10 service providers. It was concluded that there is a significant difference between the number of subscribers joined and leaves among the various service providers. The introduction of MNP has created a great competition among all the telecom companies. Those who provide superior service in terms of network, call rate, low call drops, etc., will surely gain the customer and maximum customers will switch over to their network.

In this paper by Gaurav conducted an empirical study on factors that influence Consumer Preference and Switching Behaviour of the Telecom industry in Punjab state. The study focused on the research hypothesis of the relationship between overall customer satisfaction and service quality towards services rendered by selected cellular operators. A sample size of 200 subscribers was chosen for the study and a questionnaire was distributed among the respondents. The questionnaire was largely based on the SERVQUAL scale of service quality. The responses were framed on a five-point Likert scale. The results con-

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cluded a negative relationship between customer satisfaction and propensity to switch. The subscribers continue to use the existing service provider if he/she has no intention to change their current service provider. The cellular operators should aim to retain their existing profitable customers.

In this paper by Sivakumaran conducted an study on factors that affect consumer switching behaviour. A conceptual model was developed by incorporating the psychological approach of Theory of planned behaviour and the Five-factor model of personality to assess switching behaviour. Consumers switching between very similar product and services are majorly driven by the personality traits and other psychological factors.

In this paper by Chigwende conducted a study on mobile telecommunications sector by highlighting the effect of the sector on the economy.It was followed by a discussion of the different types of contracts, with much focus on customer switching, so as to highlight that this industry is highly susceptible to customers switching service providers. It then progressed to why customers switch, the costs and barriers associated with switching and what can be done to minimize such behaviour. A thorough review of relevant literature on consumer behaviour in general and customer satisfaction, customer loyalty and consumer switching behaviour in particular,as well as the antecedents of the aforementioned constructs, culminated in the development of a conceptual model for managing customer switching in the mobile telecommunications industry.

In this paper by AliRodan different algorithms to predict telecom customer churn rate are discussed and also their efficiency.Technological improvements have enabled data driven industries to analyze data and extract knowledge. Data mining techniques facilitate the prediction of certain future behavior of customers. As customer churn rate is one of the most important factor for company as it directly affects the profitability of company,In today's industry, a wealth of choices help customers take advantage of highly competitive markets. You can choose a service provider that offers better service than others. As a result, profitable organizations competing in saturated markets, such as banks, telecommunications and internet service companies, and insurance companies, have focused more on retaining existing customers than on attracting new ones.

In this paper by AlvaroRocha(**?**)search on Cross-Company Churn Prediction (CCCP) It is a research field where one business (goal) is insufficient. We may use data and data from another company (source) to successfully predict customer attrition. To support CCCP, inter-company data is typically transformed into a similar normal distribution set of target company data before building the CCCP model. However, it is still unclear which data conversion method is most effective for the CCCP. Also, the impact of data conversion methods on the performance of CCCP models using various classifiers has not been extensively studied in the telecommunications sector. This study simply developed a model of CCCP using data conversion methods (log, zscore, rank, boxcox) and presented a comprehensive comparison to examine the impact of these conversion methods on CCCP. Telecom using a baseline-classifier (ie Naive Bayes (NB), KNearest Neighbor (KNN), Gradient Boosted Tree (GBT), Single Rule Induction (SRI), Deep Learner Neural Net (DP)) Predict customer attrition in the sector. The above data conversion method. Experiments were conducted using datasets published by the telecommunications sector. The results show that most data conversion methods (Log, Rank, Boxcox,

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etc.) significantly improve the performance of the CCCP. However, the ZScore data conversion method did not give better results compared to the other data conversion methods in this study. In addition, the NB-based CCCP model is superior on average in transformed data and DP, ANN, and GBT, while the SRI classifier is a commonly used rating scale (ie, that is).Detection, false alarm probability, area under the curve and g Average)

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In this paper by **?**

4 Conceptual Diagram

It helps to visualise how the solution of problem statement would look like
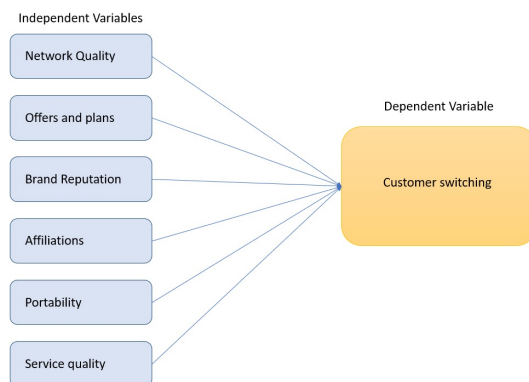
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Figure 1: IV and DV relationship

4.1 Dependent and Independent Variables

Independent Variables	*Dependent Variable*
Network Quality	Customer Switching
Offer/plan	
Brand reputation	
Affiliations	
Portability	
Service quality	

5 Research Objective

The objective of this study is to investigate the importance, determinants, and consequences of customer switching in the mobile telecom industry in Tier I and II cities in India. To do this we have have identified six independent variables from literature review and also have stated them in above conceptual diagram. So a questionnaire is designed to for each of the variable and responses are taken on a 5-point likert scale

5.1 Questionnaire

Questionnaire is designed for each of the Independent Variables and dependent variable on five point likert scale.

1. Your network operator has good network coverage nationwide.
   O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

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2. The quality of voice calls made through your network operator is good.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

3. The internet connectivity / speed provided by your telecom operator is good.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

4. The offers/plan provided by your operator are value for money.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

5. OTT subscriptions/value added services may encourage you to change your current operator.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

6. The cost of plan/tariff rates may influence you to switch to a different telecom provider.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

7. Your network operator has better image than compared to its competitors.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

8. Your network provider complies with government regulations/norms.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

9. As a user you will recommend your current service provider to others.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

10. You have an emotional attachment with your current service provider.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

11. Your network operator provides ease of portability in minimal time..
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

12. Cost of portability is reasonable with your current service provider.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

13. Your network operator provides quick and efficient service.
O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly agree

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14. Your network operator provides information clearly and objectively.
    O Strongly disagree O Disagree O Neither agree nor disagree O Agree O Strongly
    agree

15. You would switch to other telecom operator.
    O Yes O No

6   Research Methodology

The research is conducted through primary data. In all 150 samples were collected
through google forms submitted on various social media platforms. Out of 150 ,100
samples were collected with the help of random sampling and scaling is done on 5 point
likert scale where scales ranging from strongly agree to strongly disagree. SPPS Tool
was used for analysis purpose and Binomial logistic regression was used as independent
variables were in interval scale and dependent variable is in dichotomous nominal scale.

7   Results and Conclusions

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	14.209	6	.027
	Block	14.209	6	.027
	Model	14.209	6	.027

Figure 2: Omnibus test result

Omnibus test of model coefficient - The significance value is less than 0.05 which implies
model is good fit when variables are added with respect to null model (i.e. when only
constant or intercept taken into consideration)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	111.165[a]	.132	.185

a. Estimation terminated at iteration number 4 because
parameter estimates changed by less than .001.

Figure 3: Model summary

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Pseudo R square / Model summary – Though impact of these r square values is not exactly be ascertained, but with analogy from r square values and from cox and snell r square and negelkerke's r square values we can say 13.2 to 18.5 percent variance in dependent variable is explained by independent variable.

Classification Table[a]

			Predicted		
			Would you switch to different telecom opertaor		
			customer will not switch	customer will switch	Percentage Correct
	Observed				
Step 1	Would you switch to different telecom opertaor	customer will not switch	10	22	31.3
		customer will switch	4	64	94.1
	Overall Percentage				74.0

a. The cut value is .500

Figure 4: Classification table

The classification table is one of the important factor in analysing model. Classification table provides an indication of how well the model is able to predict correct category once predictors are added into category. Specificity (also called true negative rate) refers to percentage of cases observed to fall into non-target category (e.g. customer who will not switch) who were correctly predicted by model to fall into that group. In our case its 31.3 percent .Sensitivity (also called true positive rate) refers to percentage of cases observed to fall into target category (e.g. customer who will switch) who were correctly predicted by model to fall into that group. In our case its 94.1 percent. The percentage accuracy in classification is 74 percent i.e. out of 100 times our model will give correct result 74 times.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Network quality	.961	.349	7.597	1	.006	**2.614**	1.320	5.177
	Offer/plan	.268	.341	.620	1	.431	**1.307**	.671	2.548
	Brand reputation	-.333	.422	.623	1	.430	**.717**	.313	1.639
	Affiliations	.188	.344	.300	1	.584	**1.207**	.616	2.367
	Portability	-.257	.353	.531	1	.466	**.773**	.387	1.545
	Service quality	-.037	.325	.013	1	.910	**.964**	.510	1.823
	Constant	-1.854	1.876	.977	1	.323	**.157**		

a. Variable(s) entered on step 1: Network quality, Offer/plan, Brand reputation, Affiliations, Portability, Service quality.

Figure 5: Variables in the equation

In case of binary logistics regression if probability of factor less than 0.5 (i.e. the factor is not significant) then its exponential beta value comes less than 1. e.g. for brand reputation IV exponential beta value is 0.717 p/1-p = 0.717 p = 0.4175 , which is less than 0.5 hence this factor is not more significant similarly e.g. for network quality exponential beta value is 2.614 p/1-p = 2.614 p = 0.7232 , which is more than 0.5 hence this factor is more significant same analysis can be applied to other factors. Hence, The factors that will have most impact on customer switching will be one's who will have high exponential value (higher the exponential value, higher the probability of customer switching due to that IV). The factors who will have highest impact on DV (customer switching) in descending oder are as follows 1. Network Quality 2. Offer/plan

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3. Affiliations 4. Service quality 5. Portability 6. Brand reputation

For each independent parameter we can say that The odds of customer switching to desired/intended telecom provider offering better network quality is 2.614 times higher than those of customer choosing his existing provider with same network quality. The odds of customer switching to desired/intended telecom provider offering better offers or plans is 1.307 times higher than those of customer choosing his existing provider with same offers or plans. The odds of customer switching to desired/intended telecom provider due to his affiliations (suggestions, influence) is 1.207 times higher than those of customer choosing his existing provider with no affiliations. The odds of customer switching to desired/intended telecom provider offering better Service quality is 0.964 times higher than those of customer choosing his existing provider with same service quality. The odds of customer switching to desired/intended telecom provider offering ease of portability is 0.773 times higher than those of customer choosing his existing provider with same process of portability. The odds of customer switching to desired/intended telecom provider having better brand image/reputations is 0.717 times higher than those of customer choosing his existing provider with same service quality.

8 Implications Of Study

Network quality, offer plan and affiliation are 3 major areas to be focused to enhance business for telecom giants. For improving network quality funds can employed to build better network infrastructure. Various telecom operators need to show improvement in network performance and should work towards maintaining a decent quality of 4G-5G network to have a better grip over their customers. Offers/Plans- A market research can be done to know the expectations of customer and based on this survey can develop plans and offer to stop switching and attract new customers. . If an unlimited plan is something that customers view as a valuable perk in working at their comfort, then including more unlimited plans may pay off better for telecom providers. Affiliations- Can plan a promotion strategy in this aspect and make an emotional appeal to customers.The portability, brand image and the standards of service provided by the telecom sector plays a secondary role to in influencing the crowd towards other telecom providers. So marketing in these areas don't likely to give better results in short time.

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9   Limitations of study

The research study conducted for the topic has been conducted in Tier 1 and Tier 2 cities. As this research was conducted in the Tier 1 and Tier 2 cities, it only caters to the consumer behavior in urban area. The perception and requirements of urban region and rural region are different. To cater to both urban and rural area appropriate sampling technique should be used, and the analysis should be performed. The sample size of the research is 150. The research uses Binomial Logistics Regression analysis to predict customer switching in Telecom sector. The prediction is more significant if the sample large. Therefore, the research study can be improved by increasing the sample size.

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