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## **Subscriber Churning of Madhya Pradesh and Chhattisgarh Telecom Service**

### **Providers: A Factor Based Study**

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#### **Keywords:**

#### **Abstract**

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*Churn,  
Telecom Industry,  
Loyalty,  
Retention,  
Revenue.*

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Churn is the buzz word in the current scenario for telecom industry. Today the telecom companies need to pull and integrate enormous amounts of data. 'Churn' is a word derived from change and turn. It means the discontinuation of a contract (**Lazarov and Capota, 2007**). The Challenge is to increase the Customer Loyalty and shrink the churn. To achieve a 360° approach to 'customer know-how' and build a sustainable competitive advantage, telecom companies must gain a deep understanding and thought of customer attitudes, behaviors and actions apart from the promotional strategy. This is essential to improve customer acquisition and retention and will eventually help in reducing the churn. At the backend, it will help in improving operational efficiency, increase in revenue, reduce operating expenses and simplify business operations. Development of the business commandments and tactics by the telecom industry will play an important role to increase the opportunities and trim down the churn. In this study, subscriber churn factors were determined by applying factor analysis with the help of SPSS software. Data was collected through a field survey using a questionnaire from customer who ported-out and churn factors were identified.

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## **Introduction**

'Telecommunication' is a term coming from Greek and meaning 'communication at distance' through signals of varied nature coming from a transmitter to a receiver. In order to achieve effective communication, the choice of a proper mean of transport for the signal has played (and still plays) a fundamental role. In ancient times, the most common way of producing a signal would be through light (fires) and sound (drums and horns). However, those kinds' communications were insecure and certainly left room to improvement as they did not permit message encryption or a fast transmission of information on a large scale. The true 'jump' in terms of quality came with the advent of electricity. Electromagnetic energy, in fact, is able to transport information in an extremely fast way (ideally to the speed of light), in a way that previously had no equals in terms of costs reliability. Therefore, we may say that the starting point of all modern telecommunications was the invention of the electric cell by Alessandro Volta (1800) (<https://theinformr.in>).

Telecommunication is defined as the science and technology of communication over a distance. The ability to convey information quickly, accurately, and efficiently has always been one of the main focuses driving human innovation. From prehistoric man with their signal fires to the smartphone-wielding high-powered executives of today, communication still remains a key for survival and success ([www.shoretel.in](http://www.shoretel.in)).

In this aggressively competitive telecom market, subscribers demand custom-made products and superior services at lesser prices, while service providers relentlessly focus on acquisitions as their business objectives.

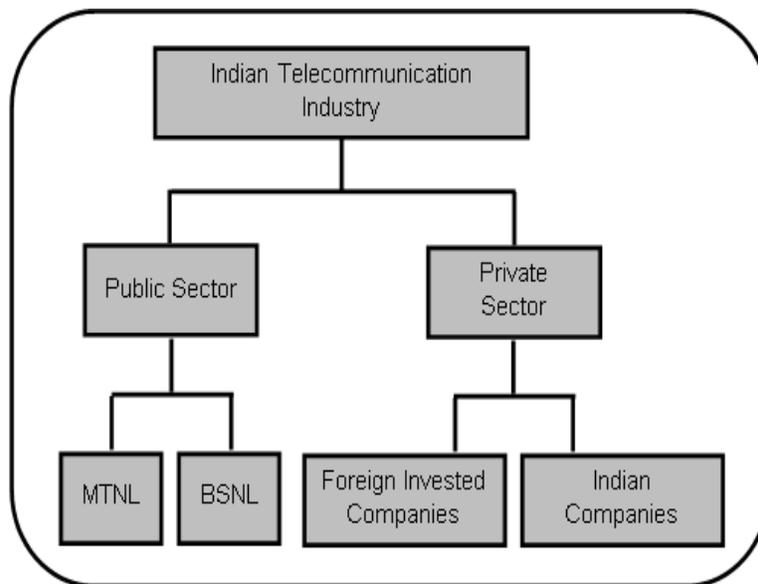
Telecom is a great way to understand the idiosyncrasies of an emerging market (**Mikhail Shamolin, 2012**). The Indian telecom industry has traversed a long distance from where it stood a decade ago. The mammoth scale of the industry has had sweeping impact on the lives of millions (**Kanika Atri, 2011**).

Indian telecom market is the fastest growing telecom market in the world with its large population provides extensive business opportunities for the services market. These include (i) Services for Network Operators (ii) Services for Telecom Service Operators, and (iii) Service for End-Users (**Huang Dabin, 2011**).

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**Figure 1 - Structure of Telecommunication Industry**  
**(Source: - D&B Research)**

As per the author, the telecommunications sector is changing radically. The changes are driven by a combination of market, business and technological forces. There are many factors that influence the market:

- ❖ The globalisation of the economy is forcing many multinationals to expand into new markets. These companies look for a single provider to meet all their telecom's needs.
- ❖ Telecom operators looking for new revenue streams are entering the international market place.
- ❖ New technologies like wireless, digital subscriber line (DSL) and voice over internet protocol (VoIP) are enabling new service opportunities. The demand for bandwidth and high-speed access is growing, driving the development of new services such as wireless broadband and DSL.
- ❖ Customer awareness and knowledge is increasing. Customers want services that satisfy their unique needs and demand reliable service delivery at competitive prices. Information must be easily accessed, anytime, anywhere and anyhow. One stop shopping must be possible and a choice of service providers available **(Evangelos Xevelonakis, 2004)**.

## Literature Review

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Managing customer churn is of great worry to global telecommunications service providers and as the market matures it is becoming a more severe problem.

Subscriber churn adversely affects the telecom service providers because they lose a great deal of price premium, decreasing profit levels and a possible loss of referrals from continuing service customers **(Reichheld & Sasser, 1990)**. With the telecommunications industry's experience of an average of 41% annual churn rate **(NCC, 2011)**, customer retention is now seen to be even more important than customer acquisition.

Churn is the action that a customer's telecommunications service is canceled. This includes both service-provider initiated churn and customer initiated churn. An example of service-provider initiated churn is a customer's account being closed because of guideline from TRAI. Customer initiated churn is more complicated and the reasons behind vary **(Lu, J., 2001)**. A churn can be defined as the percentage of subscribers moving from a specific service provider or service to another in a given period of time **(Kanniappan, S., 2014)**.

Customer churn is a popular measure of lost customers. Telecommunication companies often lose valuable customers and, thus, revenues to the competition **(Amal M. Almana et al., 2014)**.

Customer churn can be defined as the ceasing of a customer from the subscription to a service **(R. Mattison, 2005)**.

As per the authors, operational Prepaid Churn Definition is Customers are marked to have churned if they are registered to have two consecutive months of no activity, or more **(Dejan Radosavljevik, Peter van der Putten, Kim Kyllesbech Larsen, 2010)**. Customers become "churners" when they discontinue their subscription and move their business to a competitor. That is, churning is the process of customer turnover **(Marco Richeldi, and Alessandro Perrucci, 2002)**.

Churn is the discontinuation of the services of a mobile-service provider, and calculated by dividing the annualised number of disconnections during the period by the average monthly reported mobile subscriber base during the period. It is reported as an annualized percentage figure **(Mankum, E. 2011)**. In a general context, churn is a synonym for agitation or turnover. The term derives from a dairy procedure that results in butter (one agitates cream in a wooden container; churn is the word for both the container and the process), but is often used to refer to something

that is turning over, either literally or figuratively. In a business context, it generally refers to customer or employee turnover, and especially attrition (**Search mobile computing, 2005**).

### **Objectives**

To explore the factors responsible for subscriber churn of Madhya Pradesh and Chhattisgarh telecom service providers.

### **Research Design and Sample**

In this study, a convenient judgment sampling is used because a convenience sample results when more convenient elementary units are chosen from a population for observation and a judgment sample is obtained according to the discretion of someone who is familiar with the relevant characteristics of the population. Customers who churned are taken as sample to fill the questionnaire. A sample of 700 respondents was selected with the help of the sampling method. Also, a positive interest and response was shown in filling questionnaire through face to face interview and e-mail.

### **Data Collection Source**

Both primary and secondary sources have used to collect the data. A structured questionnaire has been considered to collect the primary data. The scale is based on 7-point Likert scale. Several journals, magazines, internet, etc. were used as secondary data collection sources.

### **Data Analysis Tool**

Statistical measure i.e. factor analysis was used to interpret the data. The tool was applied through Statistical Software SPSS 20.

### **Analysis and Findings**

Prepaid subscriber churn of Madhya Pradesh and Chhattisgarh Telecom service providers results in total of six factors with the following details: -

**Reliability Analysis - Scale (Cronbach's Alpha):** In the preliminary analysis data obtained was analyzed using SPSS 20.0 to study the factors responsible for subscriber churning of Madhya Pradesh and Chhattisgarh telecom service providers. Reliability and Validity check was performed and the reliability statistics shows the value of Cronbach's alpha as 0.948 which is closer to value 1.00 that shows that internal consistency is good. Hence, data is reliable for 700 numbers of Cases and 44 numbers of Items.

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<b>Table 1: Reliability Statistics</b>
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<b>Cronbach's Alpha</b>	<b>N of Items</b>
.948	44

**KMO Analysis:** The KMO (Kaiser-Meyer-Olkin) measures the sampling adequacy, which should be greater than 0.5 for a satisfactory analysis to proceed. Large value for the KMO measures indicated that the factor analysis of the variables is a good idea.

Another indicator of the relationship among the variable is Bartlett's test of sphericity. Bartlett's test of sphericity is used to test the null hypothesis that the variable in the population correlation matrix are uncorrelated. The observed significance is 0.000. It is concluded that the strength of the relationship among the variables is strong and it is good idea to proceed with the factor analysis for the data.

<b>Table 2: KMO and Bartlett's Test<sup>a</sup></b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.960
Bartlett's Test of Sphericity	Approx. Chi Square	16748.654
	Df	946
	Sig.	.000

a – Based on correlations

KMO Bartlett value is .960 representing that data is accepted for Factor analysis.

**Factor Analysis and Rotated Components of Prepaid Subscriber Churn of Telecom Service Providers:** The responses of sample were subjected to SPSS for factor analysis through which six common factors emerged. These factors are shown by the following summarized factors.

**Table 3: Factor Load Table<sup>a</sup>**

No.	Factor	Sub Factor	Factor Load	Q. No.
1	Customer Care, Innovation, and Reliability	Smooth National Roaming Facility	.744	Q12
		Good Customer Care / Call Centre	.740	Q31
		Complaints Management System	.738	Q37
		Give Apology for Inconvenience Caused	.730	Q43
		Busy Customer Care Helpline	.717	Q35
		Convenient Working hours for Customers	.711	Q36
		Timely SMS Delivery	.708	Q41
		Social Media Forums for Customers	.705	Q30
		Customer Unfriendliness	.701	Q26
		Market Share	.700	Q28
		Unwanted SMS and Calls	.699	Q34
		Complete Website	.694	Q44
		Recharge Availability in Home & Roaming	.690	Q16
		Unethical	.689	Q27
		Regular Meet & Greet Customers	.683	Q42
		Branch / Outlet Employee Service	.682	Q32
		Smooth International Roaming Facility	.662	Q13
		Reliability Issue	.651	Q17
		4G Services	.646	Q14
		Brand Image	.630	Q20
		Charging Issues	.583	Q15
		Easy MNP Process	.582	Q33
		Attractive Packages and Schemes	.568	Q18
Marketing Events and Sales Promotion	.558	Q19		
Innovative Products	.459	Q8		
	<b>Total Factor Load</b>	<b>16.670</b>		
2	Value Added Services and Benefits	Regular Update on Newly Launched Services	.686	Q40
		Availability of Recharge Options	.655	Q9
		High Talk time on Recharges	.644	Q10
		Value Added Services	.613	Q11

		Limited Products with Good Benefits	.597	Q38
		Loyalty Programs	.590	Q39
		<b>Total Factor Load</b>	<b>3.785</b>	
3	Mode of Advertising and Promotion	Newspaper	.686	Q23
		Hoardings	.664	Q24
		Television	.622	Q21
		Radio Jingle	.615	Q22
		<b>Total Factor Load</b>	<b>2.587</b>	
4	Network Quality	Call Quality	.792	Q2
		Call Drop	.774	Q3
		Network Coverage	.726	Q1
		<b>Total Factor Load</b>	<b>2.292</b>	
5	Tariff and Data Offerings	Cheap Tariff Plan	.813	Q5
		Varieties of Tariff Plans	.798	Q6
		Good Access to Data Services	.746	Q4
		<b>Total Factor Load</b>	<b>2.357</b>	
6	Word of Mouth and Product Bundling	Positive Word of Mouth	.598	Q29
		Retailer Influence	.524	Q25
		Product Bundling	.500	Q7
		<b>Total Factor Load</b>	<b>1.622</b>	

*Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a – Rotation converged in 7 iterations*

### **Factor 1: Customer Care, Innovation and Reliability (16.670)**

The first factor that was identified through the factor analysis was “Customer Care, Innovation and Reliability”. This is very crucial factor for any telecom service provider to control the churn. Through Product innovation, operators need to launch their products using latest technology in such a way that subscribers get everything he wishes for. Through fully equipped Customer care, operators need to ensure that subscribers get overwhelmed by services that were experienced by him by the customer care agents. Through Reliability, both the operators and subscribers need to have proper handshake i.e. operators need to present their brand in the market in such a way that the subscribers do not think of second chance and be reliable to the operator. For the survival of any operator in the market and for their consistent growth, operators need to work hard in all the

areas i.e. Product innovation, Customer care, and Reliability in parallel and in case any of the area seems to be lagging, necessary improvement needs to be carried out, so as to stop the movement of existing subscribers to other service providers.

This factor consists of twenty five subs-factors, i.e. Smooth National Roaming Facility (.744); Good Customer Care / Call Centre (.740); Complaints Management System (.738); Apology for Inconvenience Caused (.730); Busy Customer Care Helpline (.717); Convenient Working hours for the Customers (.711); Timely SMS Delivery (.708); Online Customer Forums (.705); Customer Unfriendliness (.701); Market Share (.700); Unwanted SMS and Calls (.699); Website is Complete in all Sense (.694); Recharge Availability in Home & Roaming (.690); Unethical (.689); Meet & Greet Customers on Regular Interval (.683); Branch / Outlet Employee Service (.682); Smooth International Roaming Facility (.662); Reliability Issue (.651); 4G Services (.646); Brand Image (.630); Charging Issues (.583); Easy MNP Process (.582); Attractive Schemes (.568); Marketing Events and Sales Promotion (.558); Innovative Products (.459).

### **Factor 2: Value Added Services and Benefits (3.785)**

The second factor that was identified through the factor analysis was “Value Added Services, and Benefits”. This is another very crucial factor for any telecom service provider to control the churn and to hold a strong position in the market. If failed to provide good services and benefits, customer may switch to other operator. Value Added Services can be considered as cherry on the cake through which operators can lure the subscribers and make good revenue out of it. Through Benefits like high talk time of recharges, loyalty benefits, retention benefits, etc. operators can make the subscribers stay in their network.

This factor consists of six subs-factors, i.e. Regular Update on New Services (.686); Availability of Recharge Options (.655); High Talk time on Recharges (.644); Value Added Services (.613); Limited Products with Good Benefits (.597); Good Loyalty Programs (.590).

### **Factor 3: Mode of Advertising and Promotion (2.587)**

The third factor that was identified through the factor analysis was “Mode of Advertising and Promotion”. This is yet another important factor for any telecom service provider to control the churn. Operators spend huge amount of money and manpower to launch any product or service in the market and post launch they need to ensure that there should be a proper way to advertise these products and services because without going through proper channel of promoting the products and services, operators will fail to make the same available before the target audience, which in turn result in losing the customer and revenue as well.

This factor consists of four subs-factors, i.e. Newspaper (.686); Hoardings (.664); Television (.622); Radio Jingle (.615).

#### **Factor 4: Network Quality (2.292)**

The fourth factor that was identified through the factor analysis was “Network Quality”. This factor is also a key factor for any telecom service provider to regulate the subscriber churn. Call quality means the voice clarity during the call i.e. no cracking of voice, Call drop means disconnection of call gets cut during the conversation, and Network coverage means coverage that allows the Voice, SMS and Data services to work. Proper availability of network is the main & basic technical aspects that any customer expects from his service provider and in case of any failure subscriber will not stick to the operator.

This factor consists of three subs-factors, i.e. Call Quality (.792); Call Drop (.774); Network Coverage (.726).

#### **Factor 5: Tariff and Data Offerings (2.357)**

The fifth factor that was identified through the factor analysis was “Tariff and Data Offerings”. Type of products that are being offered to the subscribers also plays a very important role to attract the customers from other operator and also to retain the existing ones. Subscribers always need cheap tariff plans, Varieties of tariff plans through which they can choose the correct one like Per Sec Billing (PSB), Per Minute Billing (PMB), Night Calling Tariff Plan, etc. In addition to this, their expectation is to have good internet speed at very low cost. If any of the service provider is able to provide the above mentioned, subscribers will definitely stick to the existing operator, moreover there are chances that they may attract subscribers of other operators too.

This factor consists of three subs-factors, i.e. Cheap Tariff Plan (.813); Varieties of Tariff Plans (.798); Good Access to Data Services (.746).

#### **Factor 6: Word of Mouth and Product Bundling (1.622)**

The fifth factor that was identified through the factor analysis was “Word of Mouth and Product Bundling”. This is the last and a vital factor for any telecom service provider to control the churn. If the products, services & freebies offered by the provider are at their best and per the commitment, your existing subscribers will be your brand ambassador and their word of mouth will attract many others.

This factor consists of three subs-factors, i.e. Positive Word of Mouth (.598); Retailer Influence (.524); Product Bundling (.500).

## Conclusion

After a continued strong growth over two decades, the telecom industry in India is now witnessing challenges that can potentially halt its pace. Cases in point: average revenue per user (ARPU) at historical lows, increased number of rotational churn primarily due to increasing number of operators in a circle, and onset of mobile number portability (MNP) to cause more churn (**Kaushik Sanyal, 2011**). For telecommunications companies to manage churn reduction, they not only need to predict which customers are at high risk of churn, but also need to know when these high-risk customers will churn. Hence, the telecommunications companies can enhance their marketing intervention resources to prevent as many customers as possible from churning. That is, they will be able to plan customized customer communication and treatment programs in a timely efficient manner.

## Abbreviations

4G	- Fourth Generation
ARPU	- Average Revenue Per User
BSNL	- Bharat Sanchar Nigam Limited
DSL	- Digital Subscriber Line
KMO	- Kaiser-Meyer-Olkin
M.P.	- Madhya Pradesh
MNP	- Mobile Number Portability
MTNL	- Mahanagar Telephone Nigam Limited
PMB	- Per Minute Billing
PSB	- Per Second Billing
SMS	- Short Message Service
SPSS	- Statistical Package for Social Science
TRAI	- Telecom Regulatory Association of India
VoIP	- Voice over Internet Protocol

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