

Exploration of Product Centric Factors in Telecom Industry

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ABSTRACT

Purpose

Telecom industry is one of those industries which has changed dramatically during the past decade. With more and more players entering in this industry, competition is ever increasing. The war between these players is slowly shifting from the price to the augmentation. This paper aims at exploring such factors which influence a customer's preference of one telecom service provider (TSP) over the other. It is a descriptive research where study has been conducted among the consumers of different telecom service providers (TSPs).

Design/methodology/approach

By reviewing the existing literature in this domain, we explored different factors which affect the consumer's decision to prefer one telecom service provider over the other. A consumer targeted questionnaire was designed where consumers were asked about the factors they consider (with their relative importance quantified using Likert scale), before buying a new network connection to know the relative importance of the various factors. Factor Analysis was performed to club various variables into distinct factors. Statistical techniques then helped in identifying the relative importance.

Findings

From the Factor Loading matrix the following five factors were generated:- Overall service quality, Point of Purchase Differentiator, Promotion Measures, Tariff Plans and Size of the Network. Further study in the behavioural perceptions of consumer shows that the most important factor in influencing the customer buying behavior is Service Quality. The second most important factor is cost and various plans offered by the telecom service provider. Network connectivity was considered by almost all the respondents and consumers prefer the largest network player. The study also found that promotional measures don't influence the customers as expected.

Keywords: Customer Preference, Product Centric Factors, Telecom Industry, Buying Behaviour, Factor Analysis, Telecom Service Provider, Point of Purchase, Telecom Service Quality, Telecom Subscribers, Behavioral Perceptions

INTRODUCTION

Telecom industry has changed a lot over the past few years. Previously, mobile phones were considered a luxury product but now, they have not only become affordable but also a necessity. By June 2014, the number of subscribers including wireless and wireline stood at 942.95 million (TRAI, 2014). The overall wireless tele-density in India has reached 75.80 with the total Urban wireless Tele-density as high as 146.24. Thus, with improvement in technology and lifestyle, mobile phones have indeed become an integral part of our lives.

In this era of liberalization, privatization and globalization, service organizations in emerging economies are facing tremendous competition which has forced them to focus their strategy on customer satisfaction through better service quality. Telecom Industry gives a more priority to service quality in comparison to technical aspects. In this competitive environment where the customer has 4-6 choices when it comes to operator selection in a circle, maintaining loyalty and profitability of the operators heavily depends upon the quality of services being offered. Customer's need, values, ethics, and wants are changing. Today, the consumer is constantly looking out

for different options in search for better alternatives at minimal cost. Thomas (1978) argued that determining the price for a service in service industry is extremely difficult. On one side high prices leads to raised expectations by customers while price-cutting can hamper the revenue as the consumers resent the normal price (DeVecchio, Krishnan & Smith, 2007). The ever increasing quest for deriving maximum value for money has resulted in the market to become customer driven rather than being seller driven.

Considering such a scenario in this industry, there is a need to identify various factors which affect the decision of a consumer to select a particular TSP. Similar studies have been done in the past but with the advent of new technology and services offered by the telecom sector, the preferences and choices of its consumers have changed.

This paper focuses on finding what the customers look for when they choose a telecom service provider? This study will help companies to know what they should focus on to increase their market share?

LITERATURE REVIEW

Garbacz and Thompson (2005) studied price elasticity for mobile telephone service providers. Chabossou et al. (2008) corroborated that the relationship between the income of customer and his/her expenditure on the usage of mobile services is in-elastic in nature. This clearly states that for every one percentage increase in income of the customer, the increase in proportion of mobile services expenditure to individual income is less than one percentage increase. Batt & Katz (1998) found out that income is not a good factor to judge the customer preferences and choices towards their mobile usage and other telecom services. Hence it is common to observe in the research studies which reveals the fact that smaller income customer group has more spending than the higher income group in terms of percentage of their income towards cellular mobile services. Overall, consumers don't spend a major chunk of their income on mobile phones.

Quality of service being offered in conjunction with consumer satisfaction and the value added to the customer are vital for the telecom service providers. These factors determine the success of the organization in terms of higher average revenue per user (ARPU). According to the research done by Wang & Lo (2002) service quality, customer value and satisfaction are being driven by network quality. They observed a negative impact by customer perceived sacrifice on customer value which

also includes the price element. This leads to negative influences on behavior intentions and satisfaction of the customers. Kuo, Wu & Deng (2009) identified four dimensions of service quality which looks at the quality of the content being provided, ease of use in terms of visual presentation and navigation on the screen, reliability of the system and the quality of the connection, better management and friendly customer service. In their study, all the dimensions of service quality had significant effect on perceived value and they both had influenced customer satisfaction positively (except navigation and design). They also found that relationship between post-purchase intention and service quality is not that significant to be reported. Their study ranked customer service and system reliability as the most influencing dimension on perceived value. Lim, Widdows & Park (2006) in their exploratory factor analysis on mobile service quality, they have identified five dimensions and later studied their direct and indirect effect on loyalty intention through economic, emotional value and customer satisfaction. Grönroos (1984) proposed Technical Quality and Functional Quality as the two distinctive service quality dimensions. He stated that in service industry customer satisfaction would depend on the service functional attributes whenever the technical attributes of service fail and no longer can create the differentiation among the competitors. Lai, Griffin & Babin (2009) found that image perceptions by the customer and the perceive value would get influenced directly by the service quality. Vanka (2011) concluded that customer's rate service quality as a more important factor in their purchase decisions than the brand.

Anckar & D'incau (2002) stated that mobile VAS (Value added Services) has the future potential among all m-commerce applications in the telecom industry as it caters to the needs of the subscribers which are time-critical, spontaneous, mobility, efficiency and entertainment related. Wang & Li (2012) corroborated that new services to cater the needs of the consumers are being launched all the time, the revenue generation of these services will depend upon how the services appeal to the consumers with their key m-commerce attributes and the way the consumer attitudes are being shaped by the brand equity components and the ability of the brand to generate positive purchase intentions. The movement of market from the growth stage to maturity results in development and introduction of more homogenous services and the increased difficulty level to acquire and retain the subscribers. According to Zhao et al. (2012), states in competitive environment customer satisfaction plays a prominent role and will be the key for sustainability in the market place. In their research model they mentioned

two cognitive bases of customer satisfaction to be Justice and Service Quality. Zeithaml (1988) viewed satisfaction as broader concept than assessment of service quality even though both of the concepts have certain common attributes.

Davidow (2003) found that word of mouth activity affects the perceived fairness during the complaint management process and also has an influential role in impacting the customer satisfaction and repurchase intentions. In mobile industry, Dierkes, Bichler & Krishnan (2011) observed that word of mouth (WOM) has a prominent role in affecting the level of churn and cross buying decisions of the neighbours. Kisioglu & Topcu (2011) corroborated that negative relationship exists between the customer switching tendencies and attributes such as brand credibility, Word of Mouth, commitment and satisfaction. They also observed the prominent role the Brand credibility plays in enhancing the word of mouth activity.

Network size of an operator plays an important role in getting new subscribers. Sobolewski & Czajkowski (2012) studied the effect of the size of the network as an additional source of value. This is known as the network effect. Kim & Kwon (2003) revealed using conditional logic analysis that consumers would like to associate with largest operators in terms of subscribers when other parameters are equal. Upon further investigation they found out the discounts given in intra-network calls and the signal quality effect were likely to be the sources of the size effect. Regulatory policy measures are needed and are very important to maintain healthy competition and provide enough opportunities for new operators in the market place.

Aydin & Özer (2005) found that telecommunication sector consists of highly price sensitive customers. For such customers the purchase decisions are highly influenced and impacted by pricing decisions of the organization (Vanka, 2011). Kisioglu & Topcu (2011) analyzed customer churn by applying Bayesian Belief Network approach and found that customer churn can be explained by the important variables such as call frequency from other operators, tariff type, average minutes of calls and billing amount. Liu (2002) ascertained that step-down brand availability at affordable prices caters to the need of a new consumer groups who are enthusiastic about such offers and this results in the increased sales of both the mobile phone franchisee and in turn adds on more number of subscribers to the service providers as well.

Batt & Katz (1998) noted that there exists a very narrow margin regarding the price range that is acceptable and at the upper end of the range we can see a dramatic drop in willingness to pay. In certain services, more than half of the customer base is lost by shifting from perceived inexpensive to somewhat expensive prices. Lee, Lee & Feick (2001) found that the link between customer loyalty and satisfaction can be best explained by the switching costs which play a prominent role and give insights regarding this link. Thus price/tariff is a crucial variable in determining customer churn.

Research done by Sweeney & Swait (2008) explains the long term customer relationships are anchored by the significant role the brand plays. It is true that the brand creates a mental picture in the mindset of the customer which helps him/her to differentiate various service providers at the point of purchase. They mentioned that customers indicate the defensive role is being played by brand credibility as per the results from the sample of Long Distance Telephone Company and the Retail Bank.

Louis & Lombart (2010) have examined the impact of brand personality on the customers' trust, attachment and commitment to the brand. Vanka (2011) states that right positioning at the right time would be the key for long term relationships in the market place for a corporate brand. The bench mark in the market place should be looked into and the efforts of the organization should be directed towards achieving that bench mark.

RESEARCH GAP

The increasing competition is making it difficult for the telecom service providers to increase their market share. With new players entering into the segment due to the relaxation of government policies, it has become a major challenge for the TSPs to preserve their customer base. For this purpose, it is essential for them to identify the necessary parameters responsible for customer's preference. In account of such scenario in this industry, there is a need to identify the various factors which affect the consumer buying behavior at the point of purchase. Similar studies have been done in the past but with the advent of new technology and services offered by the telecom sector, the preferences of the consumers have changed significantly. The consumers have now become more aware about their alternatives and this has led to the increased expectations. Hence a fresh perspective to the factors exploration was required to accommodate the changing mindset of the consumers and the changing scenario of the Telecom Industry.

RESEARCH OBJECTIVES

The primary problem of this research is to explore the product centric factors affecting customer preferences in telecom industry.

To achieve this, the following objectives have been stated for our study:-

- i. *Research Objective 1*:- To find the factors affecting the consumer buying preferences for telecom service providers.
- ii. *Research Objective 2*:- To obtain the relative importance of these factors.

RESEARCH METHODOLOGY

To explore the factors, following methods were used:-

- i. *Research Methodology 1*- Reviewing the existing literature in this domain, we explored different factors which affect the consumer's decision to prefer one telecom service provider over the other.
- ii. *Research Methodology 2* - A consumer targeted questionnaire was designed where consumers were asked about the factors they consider (with their relative importance quantified using Likert scale), before buying a new network connection to know the relative importance of the various factors. Factor Analysis was performed to club various variables into distinct factors. Statistical techniques then helped in identifying the relative importance.

FACTORS OBTAINED

The various factors obtained from the secondary research are as follows:-

- i. **Tariff and Data Plans** -The amount the consumer pays for the services. It is the cost incurred by the user for using various services and communication network provided by the TSP.
- ii. **Service Quality**- Customer perception regarding the specific dimensions of services is being measured by the service quality. This is a very important factor where the dimensions include the reliability of the service being offered, responsiveness, tangible benefits, empathy and assurance (Zeithaml & Bitner, 2000). It represents the overall quality of

the calls, services and the network provided by the TSP.

- iii. **Word of Mouth**- It is the interpersonal/oral communication an individual (mostly not employed by the organization) identify preferences either explicitly or subconsciously and these preferences are communicated with other people within their networks. It represents the recommendations by family or friends regarding the services provided by TSPs.
- iv. **Value Added Services**- These are the additional services a TSP offers to its consumers. These include any non-voice based services such as video on demand, access to internet services, SMS/MMS, Video Conferencing and gaming.
- v. **Advertising**- This communication platform is non-personal in nature and is usually paid form where the company promotes their products, ideas, services by sponsors through different media channels available (Bovee & Arens, 1992). It aims at making the consumers aware of the services offered by the TSPs. These are the promotional activities which lead to the positioning of the brand.
- vi. **Brand Ambassador**- A brand ambassador is an individual who helps the organization in conveying the brand identity to the customer by endorsing and representing the product/service. Brand Ambassador in our context includes celebrities hired by the TSPs to endorse their brand.
- vii. **Size of the Network**- The geographical span covered by the network service provider. It refers to the various regions (nationwide and worldwide) where the TSP provides service.
- viii. **Point of Purchase**- The place where consumer buys the product. These are the brand outlets or stores where a network connection can be bought.

DEVELOPMENT OF QUESTIONNAIRE

To develop the questionnaire, each of the factors defined above were taken into consideration. Few Factors were further sub-divided into different dimensions. For example:-

- a. Tariff was divided into cost and plans offered.
- b. Service Quality was divided into frequency of call blocked, sound quality, overall call quality, network reachability, customer care service.

- c. Advertising was divided into extent of advertising and quality of advertising.
- d. Point of purchase was divided into verbal and non verbal communication.

Responses are being collected on a 5 point likert scale which ranges from Strongly Agree to Strongly Disagree and Very Good to Very Poor. The sample consisted of 100 students from various universities of India. These students were in the age group of 19-22 and their monthly bill ranged from Rs.100 to Rs.700. Online Google forms and social networking sites were used to get the responses.

To test the reliability of the questionnaire, Cronbach’s alpha method is employed which measure the internal consistency. The alpha value was computed for first 30 responses using SPSS. Reliability means that the scale which we used for the study should be reflecting the construct which it is intended to measure. The value of this test is very easy to report and understand. The alpha values lies between 0 and 1 which means greater internal consistency is reported if the values are closer to 1. George (2006) provides the following rules of thumb 0.7 is acceptable and values below 0.5 are unacceptable. The values for certain factors were found to be below 0.5. The questionnaire was redesigned till the Cronbach’s alpha coefficient for all the factors came out to be between 0.5 to 0.7.

FINDINGS/DISCUSSION

Factor analysis is an interdependence technique which is widely used to identify the underlying constructs among several variables of the study. This technique is focused on correlations among the variables in the data set. We carried out factor analysis using SPSS 17 with the data collected from 100 respondents. Since the variables are independent in nature we opted for one of the orthogonal rotation technique. With the aim for getting the maximum inter-correlation between the factors, we have selected Varimax rotation in our analysis. Only factors with loading greater than 0.5 and Eigen value greater than 1 have been taken into consideration. The findings of the analysis are as shown in Table 1.

Table 1: Mean And Standard Deviation of Factors

FACTORS	Mean	Std. Deviation
GEOSPAN	1.9231	0.68158
COST	2.7308	1.03119

PLANS	3.4423	1.34912
CALLQUAL	2.1923	0.84107
REACHABILITY	2.75	0.98767
BLOCKED	2.2115	1.21003
SOUNDQUALITY	2.5577	0.91638
VAS	4.0962	1.48535
CCARE	3.4231	1.09089
QUALADV	2.4231	0.97711
STOPADV	3.0385	1.17091
CELEB	4.5192	0.67127
WOM	2.9808	1.40713
POP	2.9615	0.96936
SALESREP	3.0577	1.03684

Following results can be concluded from the above table:-

- i. Most of the consumers don’t pay much attention to different offers but they try to get a plan to reduce the costs. The relative high value of standard deviation shows that the importance attached to costs varies depending on the financial support a person has.
- ii. All the service quality measures have values less than 3, signifying the fact that consumers consider quality to be the most important factor in buying while buying a network connection.
- iii. Very high value of VAS signifies that most of the respondents don’t use these services frequently and hence, they don’t play a major role in deciding their preference while buying a network connection.
- iv. Low values of advertising measures show that advertising influences consumer’s buying behavior but high value for brand ambassador shows that it the brand ambassador is not able to influence the customers that much.
- v. Point of purchase parameters are relatively neutral. This shows that while some consumers get affected by sales representatives and the surroundings at point of purchase, there are others who research beforehand and are not influenced.
- vi. Similarly, Word of Mouth also has an average score signifying its impact on some and not so much on others. Its high variation shows that either customers are totally influenced by others or either they go by their own research.

For the given constructs in the study, the suitability of factor analysis can be checked by two indicators namely

KMO and Bartlett's sphericity test. Kaiser-Mayer-Olkin (KMO) test measures the sample adequacy of our study and the output value of this test ranges from 0 to 1. The acceptable value for KMO would be 0.5 or more for the factor analysis to be conducted. Some studies argue that the acceptable value would be 0.6 or more for proceeding towards factor analysis. From the results depicted in the figure 1, the KMO measure for our study is 0.639.

For the factor analysis to perform, the data set should have correlations/relationships among the variables which are significant enough. The construct validity can be tested by Bartlett test of Sphericity. Bartlett's test results if found significant will confirm us that correlation matrix is not an identity matrix. Figure 1 shows the associated probability is 0.004 which is less than acceptable limit of 0.05. Hence the factor analysis would be appropriate for our study.

Figure 1: KMO measure & Bartlett's test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.639
Bartlett's Test of Sphericity	Approx. Chi-Square Significance	146.758 .004

The factor analysis technique is used for data reduction and reduces the overall number of factors by combining the related factors. Factor loading matrix contains the output of principle component analysis with orthogonal rotation which is also termed as varimax rotation. The factor loadings less than 0.4 in value are not displayed because of the criteria used in the test. This matrix presents the factor loadings of each variable onto each factor as shown in the table below.

Table 2:- Factor Loading Matrix

Variables	F1	F2	F3	F4	F5
Cost				0.463	
Plans				0.749	
Call Quality	0.674				
Reachability	0.625				
Sound Quality	0.764				
Blocked Calls	0.566				

Customer Care	0.962				
Presence of Adv.			0.538		
Quality Of Adv.			0.542		
Brand Ambassador			0.525		
Word Of Mouth	0.543				
Non Verbal Comm. at POP		0.854			
Verbal Comm. at POP		0.769			
Size of Network					0.699

This analysis helped us in finalizing the five factors under which all the variables are loaded as shown below:-

From the Factors Loading matrix, following five factors were generated:-

Factor 1:- It consists of Call Quality, Reachability, Sound Quality, Blocked Calls, Customer Care and Word Of Mouth. We call this factor as overall service quality as it is dependent on various service quality measures. Word of mouth is also loaded over this factor because word of mouth itself is dependent on the quality of the service. Better the quality, more the people talk about it and suggest it to their friends and family.

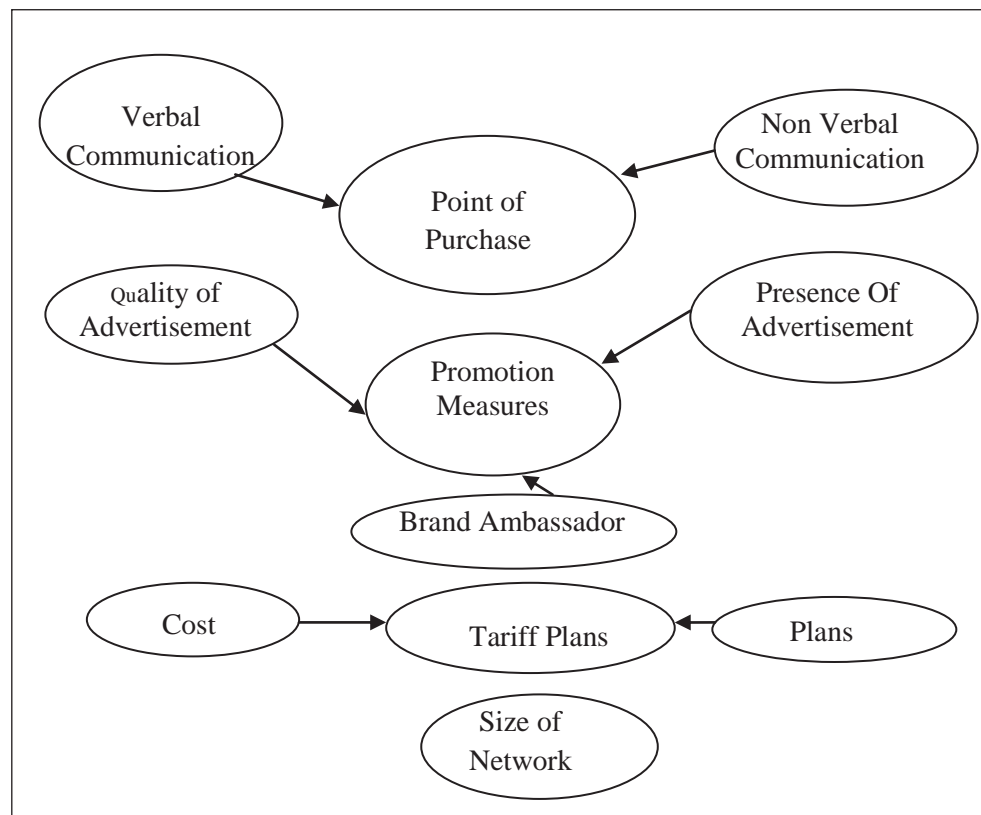
Factor 2:- It consists of Non Verbal and Verbal Communication at Point of Purchase. This factor is called Point of Purchase Differentiator. This includes the impact of sales representative and visual surroundings at point of purchase which effect the consumer's decision.

Factor 3:- It consists of Presence Of Advertisement, Quality Of Advertisement and the Brand Awareness. We call this factor as Promotion Measures. Various promotion measures, taken by brands to increase consumer awareness have an impact on customer's buying behavior.

Factor 4:- It consists of cost and plans. This factor is called Tariff Plans. Telecom service providers offer different Tariff Plans to lure the consumer from various income groups.

Factor 5:- It consists of Size of the Network. More the geographical area covered by the telecom service provider, more is it preferred by the consumer. This is so because the customers want to stay connected with their friends and family when they are far away from their home. Hence, they prefer the networks having nationwide and worldwide existence.

Figure 2: Reduced Factors By Factor Analysis



CONCLUSION

In the history of telecommunication, liberalization process and policies adopted by the government created a competitive environment in developing countries. Increased number of operators per circle, dwindling ARPU and mobile number portability has resulted in a highly competitive environment among service providers both internally within the organization to main the growth levels and externally in the market place. Time has come for the mobile telecom service providers to reorient and structure the business processes in terms of customer service parameters to differentiate among themselves by emphasizing more on improvement of service quality for the customer which helps in achieving the organization objectives.

This study focused on understanding and examining the consumer behavioral perceptions which often help them in choosing the mobile TSPs. The results of the study show that Service quality is the most important factor which influences the customer buying behavior. Today, with comparable rates and services, a good service quality is what the consumer looks for. The second most important factor is cost and various plans offered

by the telecom service provider. A TSP which provides various low cost plans, suitable for all customer groups will definitely have large no. of sales compared to others. Point of purchase differentiator is also as important as the cost plans. The sales staff and visual merchandise at point of purchase can influence the buying decision of the customer at the last moment. Moreover, consumers prefer a TSP having its network connectivity all over the country so that they remain connected wherever they go. This factor was considered by almost all the respondents before buying the network connection. Surprisingly, promotional measures like hiring a brand ambassador which costs TSP huge amounts of money don't influence the customers as expected. Consumers preferred to buy a network connection which provides good service quality at reasonable rates rather than buying a network connection which is endorsed by different celebrities of the country.

LIMITATIONS

Since the respondents were all students between the age of 19-22 from different universities, the opinions of people of different ages and occupation were not taken into account. The results would not deviate much as the

youth represents the majority of the consumers using the telecom services.

Moreover, the respondents were all from metropolitan cities and hence, the rural population is not taken into account. However, the students in these universities were a mix of diverse economic backgrounds where people from different parts of the country including the rural segment come for fulfilling their dreams. Due to time and resource constraint, the sample size of 100 was taken which is relatively moderate for such study. For future researchers it would be interesting to observe the factor analysis results with increased sample size.

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