

TELECOM SERVICE PROVIDERS AND CUSTOMER SATISFACTION IN INDIA – A REVIEW PAPER

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ABSTRACT: Customers are backbone of any industry. Telecommunications, being service oriented industry, always assign priority to its customers being satisfied and happy. Aim of this study is to identify those factors which impact the level of satisfaction of customers in Indian Telecom Industry. More satisfied customers lead to increase of customers in any organization. Maximum profit can be generated through customer satisfaction. Internal & external performances of any company can be measured through customer satisfaction. Funds allotment to various activities is also controlled through customer satisfaction. Cost of retention of current customers is certainly less as compared to cost of bringing in new customers. The study has identified seven factors through extensive review of literature which affect customer satisfaction for Telecom Operators in India. These factors are hereby listed as service quality, customer/call center services, price fairness, promotional/attractive offers, company image, signal quality, bill payment system. Telecom Service Providers should focus on these factors which influence customer satisfaction.

KEYWORDS: Customer Satisfaction, Telecom Service Provider, Telecom Industry

I. INTRODUCTION

Telecommunication Sector plays an important role in socio economic development of the country & society as a whole. Telecom Network is expanding in all regions of India with advanced technology. Three main agencies playing important role for growth of Telecom Sector are Department of telecommunications (D.O.T), Telecommunication Regulatory Authority of India (T.R.A.I), Telecom Dispute Settlement & Appellate Tribunal (T.D.S.A.T).

Total subscribers base of India is 1183.51 million as on 31.3.2019 along with overall tele-density as 92.45%. Telecom sector has shown exponential growth after liberalization of the sector. There is very tough competition in Indian Telecom Sector. Due to this, different telecom service providers have launched promotional plans with low cost and low tariff. Consumer have been immensely benefited due to this. There is tremendous growth in number of subscribers and revenue earned. But, there is downturn in Telecom Sector growth from 2011 onwards due to less profitability and debt accumulation.

Indian telecom Market stands at 2nd rank as on 31-03-2019. For Google play download, India was ranked as World's fastest growing market in 2nd & 3rd quarter of 2018. Contribution to Gross domestic Product by Indian Mobile Economy is substantial. Telecom sector Foreign Direct Investment (FDI) cap has been increased from 74 % to 100 %. It is estimated that Revenue of Telecom Sector will grow to US \$ 26.38 billion by 2020. Internet subscribers are expected to be doubled to 829 million & data traffic is expected to grow four times by 2021 due to implementation of 100 Smart City Projects.

Seamless coverage is expected after deployment of 5G. Consumer experiences also keep on changing due to technological advancements. Reliability of communication network will improve with low latency and high data rate. Billions of Internet of Things (IOT) devices will be connected. 5G network will help in real time data analytics. Ultra reliable and low latency networks will be available for critical applications such as Tele-surgery and autonomous cars.

In India, There are mainly four Telecom Service Providers namely Bharti Airtel Limited, Bharat Sanchar Limited (BSNL), Reliance Jio, Vodafone Idea. These TSP's are providing Pan-India Telecom services. As on 31-03-2019, Their Market share is as given below :

Table 1: Market Share of Telecom Service Providers in India

| S.No | Name of Operator | Market Share |
|------|------------------|--------------|
| 1 | Bharti Airtel | 27.99 |
| 2 | BSNL | 9.96 |
| 3 | Reliance Jio | 26.40 |
| 4 | Vodafone Idea | 33.98 |

Source: TRAI, The Indian Telecom Services Performance Indicator Report

Traditional marketing was product centric. Modern marketing focuses on the end users of a product and their needs and demands. Consumer behavior is very difficult to be understood. This basically examines how different types of customers choose, purchase and promote various goods and services for satisfaction of their needs and demands. Various types of marketing factors, personal factors and psychological factors, social factors and cultural factors affect consumer behavior.

Customer satisfaction is defined as the number of customers or a percentage of total customers whose reported experience with a firm, its products or services (ratings) surpasses specific satisfaction goals. It also indicates as to how products and services supplied by a company meet and exceed expectations of a customer.

Suppliers' behavior on customer expectations is also exhibited by customer satisfaction. Purchase intentions and loyalty are also shown by customer satisfaction. Prompt provision of services, management efficiency also show level of customer satisfaction. Quality of products, services, complaint redressal system, responses on customers' problems and queries post delivery services, marketing etc. are all related to customer satisfaction. Frequent communication and interaction with the customer is prime pre-requisite for increasing customer satisfaction.

Customer satisfaction is key performance indicator (KPI) of business. It is essential to know the factors responsible for customer satisfaction. Wireless telecom industry in India has gone through various technological advancements. There is a change from voice centric communication to high speed data communication.

Facing tough competition has become need of the hour in present scenario. There is struggle for survival by various Telecom Service Providers. Due to this, customer needs & wants have to be given special attention. It has become a tough challenge for the TSPs to retain a satisfied customer. Due to strong competition, new ideas are to be innovated by the TSPs.

For survival in long run, different strategies have to be developed by businesses. Satisfaction of customers is one of the best strategies for long term growth. Benefits in retaining the customers are well known to various organizations. Different businesses strive hard to know the reasons that will have impact on the choice of brand for reducing the churn rate. Any organization can achieve long term profitable relationship with the customers through customer satisfaction. It is well known that cost of acquiring new customers is certainly higher as compared to the cost of retaining the existing customers.

II. CRITICAL FACTORS

Various factors such as price fairness, attractive offers, signal quality, pricing structure, quality of call center services, service quality, bill payment facility, company image, switching cost, staff response, user friendly website, assurances, empathy, tangibility & reliability retail/service shops availability, Usage of advanced technology, friendliness of Telecom Service Provider are likely to affect Customer satisfaction. In today's competitive scenario, many alternatives are available to customers in Telecom Industry. Customers has options to choose any Telecom Service Provider as per their needs & demands.

Review findings after reviewing research papers relating to Customer satisfaction, Branding, Loyalty, Promotion, Quality of Service, customer Churning & Customer Segmentation are listed in the table given below :

| S.No | Author's name | Topic | Research Methodology | Findings | Research Gaps |
|---|---------------|-------|----------------------|----------|---------------|
| | Year | | | | |
| Studies Related to Customer Satisfaction in Telecom Industry | | | | | |

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| 1 | Marinkovic 2017 | Antecedents of customer satisfaction in mobile commerce: Exploring the moderating effect of customization | Validity of the model was checked by using confirmatory factor analysis. Moderated regression analysis was used for ascertaining main and interaction effects. | Important drivers of Customer Satisfaction are Trust, Perceived usefulness & perceived enjoyment. | 1. It would be useful to compare different age or gender groups. |
| 2 | P Viriri and Maxwell 2017 | Studied customer satisfaction in Zimbabwe Telecommunication Industry & found that many customers were dissatisfied with the Telecom services. | Data collection was done from customers, senior management and staff of six Telecom Companies in Zimbabwe. Analysis was done to find out determinants of customer satisfaction. | Telecommunication service Operators should target on providing Value Added services, Promotional Campaigns, Delivery Of Service, Network Coverage improvement to improve Customer Satisfaction. | 2. No proper estimation can be done by a model if there is linear relationship between its predictors. 3. Potential non-linear relationship among model constructs should be suitably considered. |
| 3 | Akhtari, Akhtari and Torfi 2015 | Measuring customer satisfaction in food industry in Bonny Chows National distribution company. | After collection of data, analysis of Hypothesis is done which is found on expert survey and hence descriptive. | Success of the firm depends on Attitude & its performance towards its customers. | 4. Requirements of segmented customers should be properly communicated to Telecom Service Provider. |
| 4 | Sharma 2014 | Customers satisfaction in telecom sector in Saudi Arabia: an empirical investigation | Structured questionnaire was used for collection of primary data on random basis. Data Analysis tools were used for analysis. | Important difference in satisfaction was observed between different groups of income & between different groups of educational standard. | 5. Activities & services of Customer Managers at the time of service provisioning towards customers should be monitored properly. |
| 5 | LU, LI and BIN-ZHANG 2014 | A fuzzy assessment on customer satisfaction of mobile telecommunication enterprises based on analytic hierarchy process”. | For mobile customer satisfaction assessment, Analytic hierarchy process (AHP) method was used. | Customer Satisfaction Index of China Mobile was evaluated in scientific & effective way. This has been observed to be of higher level. | 6. Further study is required for matching Quality of Services & competitive pricing. |
| 6 | Uddin, Haque and Bristy 2014 | Customer Satisfaction of Telecom Industry in Khulna City, Bangladesh | STATA Statistical software package was used for model testing. | Customer Satisfaction depends on Company Image, Perceived Quality, Perceived Image, Personal & Market Factors. | |

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| 7 | Pandiya, Kumar and Chaudhary 2014 | A Study of Customer Satisfaction on Telecom Service Providers”. | For processing & data analysis, computer aided tool was utilized. | Customer Satisfaction Level for mobile services is determined by service counts offered by Mobile Service Providers in the present market scenario. | <p>7. Variables affecting Service Switching, Loss of business & cause of Disloyalty should be further studied for influence on Customer Satisfaction.</p> <p>8. Customer Satisfaction patterns should be examined with larger samples & for all regions.</p> <p>9. Weak links affecting Customer Satisfaction have to be identified. Accordingly, strategy for increasing Customer Loyalty & Customer Happiness can be devised.</p> <p>10. Following variables should also be included in the study :</p> <p>a. Advanced technology</p> <p>b. User friendly website</p> |
| 8 | Das and Kumar 2013 | Research in Bangladesh regarding telecom services customer satisfaction. | Primary data was collected using structured questionnaire. Proper data analysis tools were applied. | Network coverage, Network Quality, Tariff, Value added services, Customer Care, Internet, Bill payment System, promotional Offers affect Customer Satisfaction. | |
| 9 | Turkyipmaz et al 2013 | Study to find out relationship of universal structure modeling approach & customer satisfaction index. | For testing path models, Conventional Structural Equation modelling and universal structure modelling was used. | Quality was found to be most important impact on Customer Satisfaction followed by Company Image. | |
| 10 | Popli, G.S and Madan 2013 | Determinants of customer satisfaction in Telecom Industry- A Study of Indian telecom industry”. | Correlation & regression along with descriptive statistics were applied along with SPSS version 17.0 | Fairness in the Prices & Coverage Area were observed as two factors leading to Customer Satisfaction. Requirements of customers of various segments should be a focus area. | |
| 11 | Siddique et al 2012 | Customers’ Satisfaction towards the Services of Customer Care Centers of Grameen phone: A Study on Dhaka and Khulna Cities | Judgment sampling method along with structured questionnaire was used for survey. SPSS version 16.0 was utilized for data analysis. | Quality of Telecom Service is dependent on the Telephone Network and the supporting services. | |

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| 12 | Yirenkyi and K.A. 2012 | Factors Affecting Customer Satisfaction and Preference in the Telecommunications Industry: A Case Study of MTN Ghana | Systematic sampling method was used for data collection. Correlation analysis was done for confirmation of conceptual framework. | Customer Satisfaction in Cellular Industry is certainly & importantly related with Service Provider’s Service Quality, Price Fairness, Service Provider’s Brand Image & Employees Orientation towards customers. | c. Service Reliability d. Service Assurance 11. Large samples from all regions should be collected. |
| 13 | Khan and Afsheen 2012 | Determinants of Customer Satisfaction in Telecom Industry A Study of Telecom industry Peshawar KPK Pakistan | Descriptive statistics, correlation & regression were applied for statistical investigation. | Fairness of Price, Coverage & Customer Service are three significant elements affecting Customer happiness. | |
| 14 | Loke et al 2011 | Service Quality and Customer Satisfaction in a Telecommunication Service Provider | Regression analysis was done for testing the relationship between service quality & customer satisfaction levels. Gap analysis was carried out with t-test. | There is a significant positive relationship between Customer Satisfaction & Service Quality. Reliable & Prompt services are essential to serve, attract & retention of customers. | |
| 15 | YU, BAI and SHAN 2011 | A research on customer satisfaction with household appliances industry service | Structural Equation Modelling has been used for the research study. | Tough competition among Enterprises exists on Quality of Services. Customer Satisfaction & Customer Loyalty are essentials for development of Enterprise. | |
| Studies Related to Loyalty, Branding & Promotions in Telecom Industry | | | | | |
| 16 | Strenitzerová and Gana 2018 | Customer Satisfaction and Loyalty as a Part of Customer-Based Corporate Sustainability in the Sector of Mobile Communications Services | European customer satisfaction index (ECSI) model was adapted for the research study | Customer Satisfaction affects variables that measure Customer Loyalty & long term Customer Relationship. | 1. Study is required to be done all over the country. Analysis should include more Telecom Brands. |

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| 17 | Algahtanis et al 2016 | Customer satisfaction with mobile services in telecommunication companies | American customer satisfaction index (ACSI) was used through empirical investigation. | Customer Satisfaction is vital element for success of all Enterprises. | <p>2. Further study regarding the impact of Cross Cultural Factors on the effect of Customer Satisfaction & Customer Loyalty on Customer Lifetime Value is needed.</p> <p>3. Following variables should also be included in the study:</p> <ul style="list-style-type: none"> a. Convenience in procedure b. Level of satisfaction c. Staff readiness to assume responsibility d. Responsiveness e. Service Assurance f. Delivery of promises by the Company g. Role of corporate social responsibility for enhancing Brand loyalty h. Empathy i. Having retail/service shops at many places |
| 18 | Chen, Aihui et al 2014 | Can Customer Satisfaction and Dissatisfaction Coexist? An Issue of Telecommunication Service in China | Theoretical framework was proposed through the research study. | Customer Satisfaction & Dissatisfaction co-exist. This co-existence influences Customer Loyalty. | |
| 19 | Lin et al 2014 | The Impacts of Service Quality and Customer Satisfaction in the e-Commerce Context | For analysis of collected data, Structural equation modelling with AMOS 20 was applied. Proposed research hypothesis was tested through this. | e-Service Quality, Logistics Service Quality are strongly associated with Customer Satisfaction. Service Quality impacts Customer Satisfaction & Loyalty. | |
| 20 | Alam and Rubel 2014 | Impacts of Corporate Social Responsibility on Customer Satisfaction in Telecom Industry of Bangladesh | Factor analysis was used for data analysis | Customer Satisfaction is influenced more by service quality. | |
| 21 | Aksoy et al 2013 | A Cross-national Investigation of the Satisfaction and Loyalty Linkage for Mobile Telecommunications Services across Eight Countries | Data analysis was done using ANOVA | Impact of Satisfaction on Loyalty in mobile services depends on cultural differences. | |
| 22 | Qi et al 2012 | Are customer satisfaction and customer loyalty drivers of customer lifetime value in mobile data services: a comparative cross-country study | AMOS 17.0 software was used for conducting tests. | Customer Loyalty drives Customer Lifetime Value (CLV) while Customer Satisfaction does not. | |

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| 23 | HUO & XU 2011 | Research on relationship between customer satisfaction and customer loyalty in the banking service industry | Canonical correlation analysis method was used for two groups of variables along with SAS software. | Customer Satisfaction has specific momentous effect on Customer Loyalty in the Banking Industry. Relationship between them becomes more strong specially with income improving. |
| 24 | Gloria and Aagyapong 2011 | Analysis of the Antecedents of Customer Loyalty of Telecommunication Industry in Ghana: The Case of Vodafone (Ghana) | Multiple & logistics regression analysis was used for studying the relationship between service quality & customer loyalty. | Quality of Service plays an important role for retention of customers by a Telecom Service Provider. Service Quality has positive relationship with Customer Loyalty. |
| 25 | Chen et al 2011 | The causes of customer satisfaction in telecommunication service: An empirical study | In-depth interview was used for identifying the variables to be used in the study. Then, empirical investigation was done for testing the relationship between these variables. | Customer viewpoints about five attributes of Telecom Service are vital factors affecting Customer Satisfaction. |
| 26 | John 2011 | Research to analyze the customer loyalty in telecom sector with special reference to BSNL. | Samples were collected from 100 customers & were further analyzed for identification of factors affecting customer loyalty by using data analysis tools. | Service Reliability directly forecasts Customer Loyalty while Service Assurance does not. |
| 27 | Waidi Adeniyi Akingbade 2015 | Study to find out the effect of competitive strategies on performance of Telecom Company & how these can prove to be useful for improving customer satisfaction, loyalty & retention in selected Nigerian Telecom companies | Structured questionnaire was used for survey. Cronbach's alpha test was applied for testing validity & reliability. | In spite of adopting different competitive strategies by Nigerian telecom companies, poor services are observed along with high tariff. |

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| 28 | Moiesescu 2015 | The Impact of Customers' Perception of CSR on Corporate Brand Loyalty: The Case of the Romanian Mobile Telecom Industry | 1464 Samples were collected through survey & were then analyzed using proper data analysis tools. | Customer Perceptions of Companies Responsibilities towards public authorities, Customers, The Environment, Community Development & Sponsorship have important effect on Corporate Brand Loyalty. | |
| 29 | AlZu'bil and Kakeesh 2013 | The effect of services marketing mix elements on customer based brand equity: An empirical study on mobile Telecom service recipients in Jordan | Quantitative methods were used for data analysis of 1492 respondents. | Customers Brand based equity is affected greatly by Services Marketing Mix Elements. | |
| 30 | Abayomi and Sunday 2011 | GSM Marketing Service Providers Operations and Customers Satisfaction in Nigeria: An Empirical Investigation | Purposive sampling technique was used for data collection. SPSS version 16.0 was used for analysis of data. | Different factors affecting subscriber's satisfaction level were analytically important. | |
| 31 | Hanif, Hafeez and Riaz 2010 | Factors Affecting Customer Satisfaction | Factors affecting customer satisfaction were identified using various data analysis tools. | Fair tariffs & remarkable client services play an effective role for success of a company in long run. | |
| Studies Related to Quality of Service in Telecom Industry | | | | | |
| 32 | Nurdaulet et al 2019 | Study on Factors Affecting Customer Satisfaction in Mobile Telecommunication Industry in Malaysia | Quantitative research & multiple regression analysis were used for empirical investigation. | No moderation effect has been observed among Service Quality, Perceived Value & Customer Satisfaction. | 1. Free & Open Wi-Fi poses strong challenge to Mobile Service Providers. |

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| 33 | Izogo 2017 | Customer loyalty in telecom service sector: the role of service quality and customer commitment | For finding reliability & validity of measurement model along with proposed hypothesis, partial least square structural equation modelling was utilized. | There is direct positive effect of Affective Commitment on Loyalty. Co-relation between Service Reliability & Customer Loyalty is negotiated partly by customer loyalty. | <p>2. Large samples should be collected in future Research proposals. These proposals should also examine the negotiating role of individual elements of Commitment in the relationships between Service Quality individual components & Customer Loyalty.</p> <p>3. Future research should utilize developed research instrument for finalizing the successful communication forms & description.</p> <p>4. Following variables should also be included :</p> <p>a. Competitive pricing should be matched with Service Quality</p> <p>b. Consumer Reliability</p> |
| 34 | Awan and Cheng 2016 | Improve Communication Quality by Understanding Customer Switching Behavior in China's Telecom Sector | Quantitative research was used for survey. Proper data analysis tools were used for analysis. | Growth of long term Consumer Reliability can be forecasted by communicating & classifying the active & passive customers. | |
| 35 | Gautam and Vikas 2015 | Service Quality Perceptions of Customers About Mobile Telecommunication Services: A Case of India | Multiple regression analysis was used for finding out the service quality perceptions of customers. Exploratory factor analysis was utilized for finding out the service quality dimensions. | Highest importance was attributed by the customers to Employee Performance followed by Transmission Quality, Competitiveness, Reliability, Credibility, Support Attributes, Convenience & Operational Efficiency. | |
| 36 | Chm, Tasleem and Iqbal 2015 | The impact of employee satisfaction and service quality on perceived firm's performance in high contact service industry of Pakistan | Structural equation modelling was used for empirical testing of research model. | Customer Satisfaction, Employee Satisfaction, Customer Loyalty are significantly related to firm's performance. | |
| 37 | Pavlickova 2015 | Evaluation of customer satisfaction using the Quality Function Deployment | Service quality model was developed using data analysis tools. | Service quality is closely related to Customer Satisfaction and Customer Loyalty. | |

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| 38 | Zhang et al 2015 | Location selection with user behavior analysis for telecom operator's service halls | Genetic algorithm was used for location selection. Planning mechanism for feasibility & flexibility is verified with MATLAB. | Feasibility and flexibility of the planning mechanism are critical for deciding location of Telecom Service Halls. | |
| 39 | Kumar, Shankar and Debnath 2015 | Analyzing customer preference and measuring relative efficiency in telecom sector: A hybrid fuzzy AHP/DEA study | Hybrid AHP/DEA model is used for determining consumer's preference weights. | Network Parameters is most preferred value for determining customer's preference by mobile subscribers followed by low tariff scheme. | |
| 40 | Burke and McKenna 2014 | A Capability map of effective & efficient delivery of Telecom managed services" | Telecom managed service delivery probable architecture chart was finalized using proper data analysis tools. | Complete business evolutions can be decided by TSP's for successful delivery of Telecom Managed Services due to convergence of IT and Telecom Network. | |
| 41 | Kushwah and Bhargav 2014 | Service quality expectations & perception of Telecom sector in India". | Quota sampling was done for data collection. Data analysis was completed through Statistical tool "Z" test. | Service quality constitutes an important component of service marketing. | |
| Studies Related to Customer churning & segmentation in Telecom Industry | | | | | |
| 42 | Mannan, Mahafug et al 2017 | Customer satisfaction, switching intentions, perceived switching costs, and perceived alternative attractiveness in Bangladesh mobile telecommunications market | Developed model was tested through PLS-SEM | Customer Satisfaction is significantly and positively affected by financial, technological and customer service factors. | 1. Further research study needs to be done for linking Customer Satisfaction, Perceived Switching Costs, Switching Intentions & Perceived Alternatives Attractiveness. |
| 43 | Joshi 2014 | Customer experience management: "An exploratory study Parameters affecting customer experience for cellular mobile services of a Telecom company". | Exploratory study was done for identifying parameters influencing customer experience. Data analysis tools were used for analysis. | Customer experience should be better managed for retention of highly paying customers. | 2. Further study is needed for designing Customer Loyalty programs. |

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| 44 | Srinuan, Srinaun and Bohlin 2014 | Research study to determine the factors for buying multiple services. | A generalized Poisson regression mode was used for identifying the factors influencing customer decision. | Service providers discount and consumer income affect the customers buying decision. | <p>3. Following variables should also be included :</p> <p>a. Switching Cost</p> <p>b. Staff Friendliness</p> <p>c. Quality of call centers.</p> <p>d. Frequency of interaction by Telecom Service Provider</p> |
| 45 | Pushpa & Shobha 2013 | Socio-centric and egocentric measures for identifying the key players in telecom social network | Telecom Social Network analysis (TSNA) was used for knowing customer's social network. | Churn rate of Telecom Social Networks is decided by some key players. | |
| 46 | Silva et al 2013 | Customer Retention: With Special Reference to Telecommunication Industry in Sri Lanka | Questionnaire for survey was prepared for data collection from corporate sector users. Data was analyzed for identifying the factors affecting customer loyalty. | Ability of service provider to add value to the customer's business process is the most important factor deciding the Customer Loyalty. | |
| 47 | Yabas , Cankaya and TurkerInce 2012 | Customer Churn Prediction for Telecom Services | Weka data mining technique was used for accurate predictions. Data analysis tools were applied. | Customer Churn prediction accuracy depends upon the efficient use of computational resources. | |
| 48 | Pan 2010 | On Customer Churn and Early Warning Model of Telecom Broadband | CRISDM data mining model over Clementine 11.0 data mining software was used for classification of churn of customers Data mining process used C 5.0,logistic regression & neural network algorithm. | Customer churn management early warning model is finalized by applying data mining techniques rather than traditional market research methods. | |
| 49 | Qiuru et al 2012 | Customer Segmentation in Telecom Industry which is cluster oriented. | In-depth analysis of customer algorithm is done through Clustering engineering based on K-means method. | Grouping customers help in analyzing customer consumption accurately. | |
| 50 | Horvath and Michaikova 2012 | Monitoring customer satisfaction in service Industry-A cluster analysis approach". | Cluster analysis has been used for customer segmentation. | Customer satisfaction can be monitored using cluster analysis for customer segmentation. | |

After going through the review findings as listed above, critical factors affecting Customer Satisfaction have been identified as service Quality, Customer/Call centre Services, Price Fairness, Promotional/Attractive offers, Brand/company image, Signal Quality and Bill Payment System.

Service quality is being treated as one of the most significant parameters for Telecom Service Provider as it affects customer satisfaction. Service quality plays a decisive role in business processes. Customers perception of service quality refers to customers' assessment of overall service quality as the gap between expectations and perceptions of service performance levels.

Customer services are the central point of the Telecom Operators for commercial as well as other reasons. Customer Service basically comprises of customer support systems, dealing with the complaint and redressal thereof, comfort of recording complaint and warmth during complaint recording. Telecom Service Operators have to be additionally vigilant for providing service to clients for improving happiness among customers.

Price fairness is basically related to judicious sale price. The way, a tariff is fixed and offered by Telecom Service Providers, has a great impression on customer happiness.

Promotional/ Attractive offers - Promotion is the medium through which a Telecom Service Provider communicates about its products/services to the customers. Telecom Service Provider eventually targets the customers and finally persuade them to buy. Consumers purchasing behavior & decisions towards that particular brand are definitely affected by promotions. Promotional offer by a Telecom Service Provider comprises of several different objects for generating better sale impact e.g. coupons, discounts, frequent buyer program etc. Promotional offers eventually lead to better customer satisfaction.

Brand/company image proposes every judicious satisfaction opinion gained by the consumers with regard to value offerings. Strong brand image can be built through proper product & brand management. This will help in generation of short term & long term profit. For telecom service providers, Brand preference is determined by emotional perceptions. Brand image and personality affects consumer attitudes and behavior, specially customer satisfaction and loyalty.

Signal quality - There is exponential growth of mobile customers. Telecom Service Providers have to provide high quality data and voice services. Proper signal strength is required for coverage inside the buildings especially for high data rate services. Better signal parameters result in enhanced services which make more customers happy. Poor signal leads to voice misinterpretation & hanging of mobile calls.

Bill payment system – Bill Payment System sends subscribers monthly invoice amount to affiliated payment services. As per the previous studies, billing is accurate & easy to understand (Levesque & MacDougall 1996, Sharma et al. 1999). After payment by mobile subscriber, it then posts these payments to his telecom accounts. Proper billing system of Telecom Service Provider enables new and convenient payment channels, applies subscriber payments to all their accounts, reconciles payments. Improved bill payment system results in increased customer satisfaction.

III. THEORETICAL FRAMEWORK

Dependence of customer satisfaction upon seven important factors is displayed in the following diagram. It is indicated by the framework that company image, price fairness, service quality, bill payment system, customer/call center services, promotional/attractive offers & signal quality influence customer satisfaction.

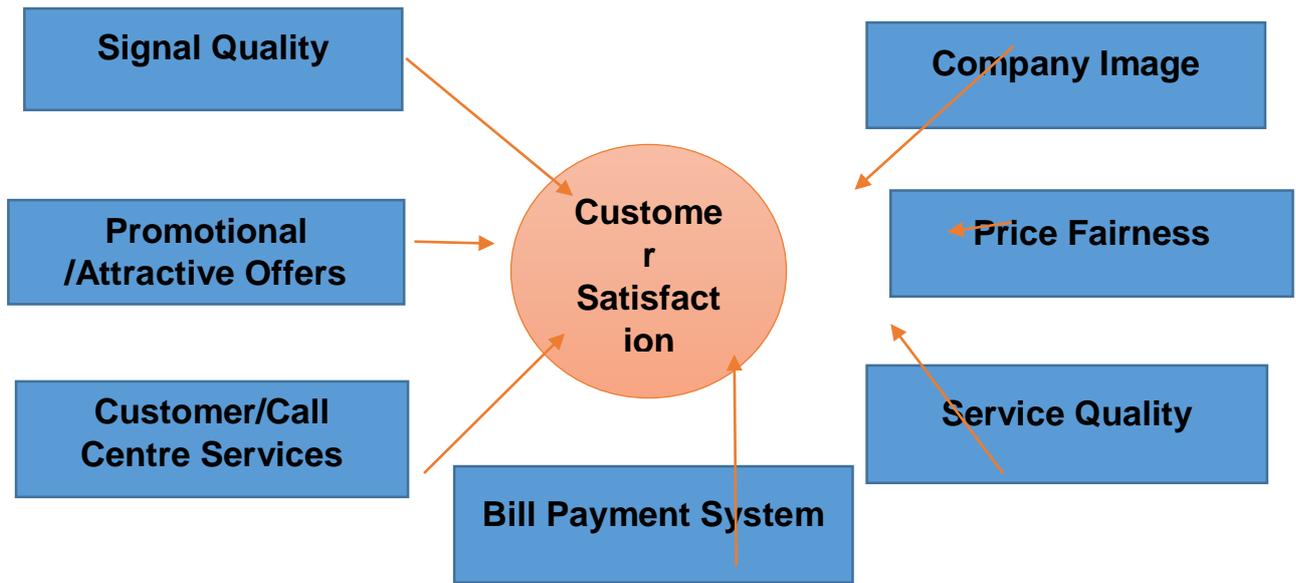


Fig. 1: Theoretical framework for customer satisfaction

IV. CONCLUSION

Main aim of Review Paper was to examine the various findings related to Customer Satisfaction provided by various Telecom Service Providers. After detailed examination of the review findings, It is concluded that Signal Quality, Promotional/Attractive offers, Call center services, Brand/Company image, Price fairness, service quality and bill payment system play a dominant role in influencing customer satisfaction in Telecom Industry. Telecom Service Providers should always accord special priority on these factors. Some of these factors are co-related. Better signal quality leads to improved coverage. Coverage contributes immensely to customer satisfaction improvement. Poor coverage may lead to brand switching of the customers to some other service provider which is having better coverage in any particular area. Improved Signal quality also results in better service quality. Telecom Service Providers should always improve service quality & offer new services for increasing customer satisfaction.

Price fairness, Promotional/Attractive offers also have a bearing on customer satisfaction. Telecom Service Providers should be well aware of the competitor’s prices, plans, schemes being offered at particular point of time. But price wars should be avoided so that network quality is not compromised. Further Telecom Service Providers should be more bothered about their products or services image & overall brand/company image. Customer/Call center services also augment customer satisfaction. Call center staff should be well trained about the procedure for disposal of various types of complaints related to telecom services. They should also be well apprised about the various promotional offers, plans/schemes being offered at a given point of time. Availability of easy & convenient payment channels & proper accounting thereof is also an important factor for improving customer satisfaction.

Telecom Service Providers should concentrate on these factors which have great impact on customer satisfaction. Telecom Service Providers should also focus on particular areas having poor coverage. In this way, Telecom Service Providers can attract new customers & retain existing customers. This will lead to more loyal customers. Customer satisfaction is also influenced by category of customers such as gender, age, status, profession etc.

V. REFERENCES

- [1] Aaker, J. (1997). Dimensions of Brand Personality. *Journal of Marketing Research*, 34(3), 347-356. doi:10.2307/3151897
- [2] Abayomi, Adebisi Sunday, (2011) “GSM Marketing Service Providers Operations and Customers Satisfaction in Nigeria: An Empirical Investigation”, *Acta Universitatis Danubius: Oeconomica, Economica*, Vol 7, No 3 (2011).
- [3] Akhtari, P., Akhtari, A., & Torfi, A. (2015). Measuring customer satisfaction in food industry. *Management Science Letters*, 5(3), 235-244.

- [4] Akingbade, Waidi Adeniyi, Competitive Strategies and Improved Performance of Selected Nigeria Telecommunication Companies (March 15, 2015). *Journal of Entrepreneurship, Management and Innovation*, Vol. 10, Issue 4, 2014, pp. 143. Available at SSRN: <https://ssrn.com/abstract=2578700>.
- [5] Aksoy, L., Buoye, A., Aksoy, P., Larivière, B., & Keiningham, T. L. (2013). A cross-national investigation of the satisfaction and loyalty linkage for mobile telecommunications services across eight countries. *Journal of Interactive Marketing*, 27(1), 74-82.
- [6] Alam, N., & Rubel, A. K. (2014). Impacts of Corporate Social Responsibility on Customer Satisfaction in Telecom Industry of Bangladesh. *ABC Journal Of Advanced Research*, 3(2), 26-37.
- [7] Al-Dmour, H., Zu'bi, M. F., & Kakeesh, D. (2013). The effect of services marketing mix elements on customer-based brand equity: An empirical study on mobile telecom service recipients in Jordan. *International Journal of Business and Management*, 8(11), 13.
- [8] Ali, Turkyilmaz and Asil, Oztekin and Selim, Zaim and Omer, Fahrettin Demirel, (2013) "Universal structure modeling approach to customer satisfaction index", *Industrial Management & Data Systems*, Vol. 113 Issue: 7, pp.932-949, <https://doi.org/10.1108/IMDS-12-2012-0444>.
- [9] Althonayan, A., Alhabib, A., Alrasheedi, E., Alqahtani, G., & Saleh, M. A. H. (2015). Customer satisfaction and brand switching intention: A study of mobile services in Saudi Arabia. *Expert Journal of Marketing*, 3(2).
- [10] Awan, S., & Cheng, Y. (2016). Improve Communication Quality by Understanding Customer Switching Behavior in China's Telecom Sector. In *Ibusiness* (pp. 70-83).
- [11] Boohene, R., & Agyapong, G. K. (2011). Analysis of the antecedents of customer loyalty of telecommunication industry in Ghana: The case of Vodafone (Ghana). *International Business Research*, 4(1), 229-240.
- [12] Ch, J. I., Tasleem, M., & Iqbal, R. (2015, March). The impact of employee satisfaction and service quality on perceived firm's performance in high contact service industry of Pakistan. In 2015 International Conference on Industrial Engineering and Operations Management (IEOM) (pp. 1-8). IEEE.
- [13] Chen, A., Zhang, H., Cai, W., Lan, K., & Wang, H. (2011, November). The causes of customer satisfaction in telecommunication service: an empirical study. In 2011 7th International Conference on Advanced Information Management and Service (ICIPM) (pp. 129-132). IEEE.
- [14] Chen, Aihui and Lu, Yaobin and Gupta, Sumeet and Xiaolin, Qi, Can Customer Satisfaction and Dissatisfaction Coexist? An Issue of Telecommunication Service in China (September 2014). *Journal of Information Technology*, Vol. 29, Issue 3, pp. 237-252, 2014. Available at SSRN: <https://ssrn.com/abstract=2481542> or <http://dx.doi.org/10.1057/jit.2013.26>.
- [15] D.O.T <https://dot.gov.in/sites/default/files/Network%20Status-%20%20April%202019.pdf>
- [16] D.O.T <https://dot.gov.in/sites/default/files/Monthly%20Telecom%20Scenario%20March%202019.pdf>
- [17] Das, Sumon Kumar, Customer Satisfaction of Mobile Operators in Bangladesh (November 12, 2013). Available at SSRN: <https://ssrn.com/abstract=2353433> or <http://dx.doi.org/10.2139/ssrn.2353433>.
- [18] Freo, M. The impact of sales promotions on store performance: a structural vector autoregressive approach. *JISS* 14, 271–281 (2005). <https://doi.org/10.1007/s10260-005-0114-x>
- [19] Gautam, Vikas, (2015) "Service Quality Perceptions of Customers about Mobile Telecommunication Services: A Case of India", *Journal of Global Marketing* Volume 28, 2015 - Issue 1.
- [20] Hanif, Muzammil and Hafeez, Sehrish and Riaz, Adnan, (2010), "Factors Affecting Customer Satisfaction", *International Research Journal of Finance and Economics*, ISSN 1450-2887 Issue 60 (2010).
- [21] Horváth, M., & Michalkova, A. (2012). Monitoring Customer Satisfaction in Service Industry: A Cluster Analysis Approach. *Quality Innovation Prosperity*, 16(1), 49-54.
- [22] Izogo, E. E. (2017). Customer loyalty in telecom service sector: the role of service quality and customer commitment. *The TQM Journal*, 29(1), 19-36.
- [23] John, J. (2011). An analysis on the customer loyalty in telecom sector: Special reference to Bharath Sanchar Nigam limited, India. *African journal of marketing management*, 3(1), 1-5.
- [24] Joshi, S. (2014). Customer experience management: An exploratory study on the parameters affecting customer experience for cellular mobile services of a telecom company. *Procedia-Social and Behavioral Sciences*, 133, 392-399.ss
- [25] Kim, M.K., Park, M.C., and Jeong, D.H. (2004), "The effects of customer satisfaction and switching barrier on customer loyalty in Korean mobile telecommunication services", *Electronics and Telecommunications Research Institute, School of Business, Information and Communications University, Yusong-gu, Hwaam-dong, Taejon 305-348, South Korea*.
- [26] Kukar-Kinney, M., Xia, L., & Monroe, K. B. (2007). Consumers' perceptions of the fairness of price-matching refund policies. *Journal of Retailing*, 83(3), 325-337.

- [27] Kumar, A., Shankar, R., & Debnath, R. M. (2015). Analyzing customer preference and measuring relative efficiency in telecom sector: A hybrid fuzzy AHP/DEA study. *Telematics and Informatics*, 32(3), 447-462.
- [28] Kushwah, S. V., & Bhargav, A. (2014). Service quality expectations and perceptions of Telecom sector in Indias. *International Journal of Advancements in Technology*, 5(1), 1-10.
- [29] Lin, Y., Luo, J., Zhou, L., Ieromonachou, P., Huang, L., Cai, S., & Ma, S. (2014, June). The impacts of service quality and customer satisfaction in the e-commerce context. In 2014 11th International Conference on Service Systems and Service Management (ICSSSM) (pp. 1-6). IEEE.
- [30] Loke, S. P., Taiwo, A. A., Salim, H. M., Downe, A. G., & Petronas, U. T. (2011). Service quality and customer satisfaction in a telecommunication service provider. In *International Conference on Financial Management and Economics* (Vol. 11, pp. 24-29).
- [31] Lu, Y. L., & Li, S. S. (2014, July). A fuzzy assessment on customer satisfaction of mobile telecommunication enterprises based on analytic hierarchy process. In 2014 International Conference on Machine Learning and Cybernetics (Vol. 2, pp. 684-688). IEEE.
- [32] Mannan, Mahafuz and Mohiuddin, Md. Fazla and Chowdhury, Nusrat and Sarker, Priodorshine,(2017) "Customer satisfaction, switching intentions, perceived switching costs, and perceived alternative attractiveness in Bangladesh mobile telecommunications market", *South Asian Journal of Business Studies*, Vol. 6 Issue: 2, pp.142-160, <https://doi.org/10.1108/SAJBS-06-2016-0049>.
- [33] Moisescu, O. I. (2015). The impact of customers' perception of CSR on corporate brand loyalty: The case of the Romanian mobile telecom industry. *Central European Business Review*, 4(2), 21-30.
- [34] N.Nurdaulet , N.Navaz, B.Chan Yin Fah (2019), Study on Factors Affecting Customer Satisfaction in Mobile Telecommunication Industry in Malaysia *International Journal of Recent Technology and Engineering* Volume-7 Issue-5S, 299-306.
- [35] Pan, D. (2010, October). On Customer Churn and Early Warning Model of Telecom Broadband. In 2010 Third International Symposium on Information Processing (pp. 157-160). IEEE.
- [36] Pandiya, D. K., Kumar, B., & Choudhury, M. H. (2014). A Study of Customer satisfaction on Telecom Service Providers. *Indian Journal of Research*, 3(5), 57-60.
- [37] Pavlickova, M. Evaluation of customer satisfaction using the Quality Function Deployment. In *Proceedings of the 2015 16th International Carpathian Control Conference (ICCC)*.
- [38] Popli, G. S., & Madan, D. (2013). Determinants of Customer Satisfaction in Telecom Industry-A Study of Indian Telecom Industry. Available at SSRN 2277570.
- [39] Qi, J. Y., Zhou, Y. P., Chen, W. J., & Qu, Q. X. (2012). Are customer satisfaction and customer loyalty drivers of customer lifetime value in mobile data services: a comparative cross-country study. *Information Technology and Management*, 13(4), 281-296.
- [40] Shahzad Khan, S. A. (2012). Determinants of customer satisfaction in telecom industry; a study of telecom industry Peshawar KPK Pakistan. *Journal of Basic and Applied Scientific Research*, vol, 2(12), 12833-12840.
- [41] Sharma, R. B. (2014). Customer satisfaction in telecom sector in Saudi Arabia: An empirical investigation. *European Scientific Journal*, ESJ, 10(13).
- [42] Shobha, G. (2013, March). Sociocentric and egocentric measures for identifying the key players in telecom social network. In 2013 IEEE International Conference ON Emerging Trends in Computing, Communication and Nanotechnology (ICECCN) (pp. 366-372). IEEE.
- [43] Siddique, Md. Nur-E-Alam and Akterujjaman, S. M. and Perveen, Rumana, Customers' Satisfaction towards the Services of Customer Care Centres of Grameenphone: A Study on Dhaka and Khulna Cities (August 5, 2012). *ASA University Review*, Vol. 6 No. 2, July–December, 2012. Available at SSRN: <https://ssrn.com/abstract=2570703>.
- [44] Silva, K. A., & Yapa, S. T. W. S. (2013). Customer retention: with special reference to telecommunication industry in Sri Lanka.
- [45] Examination of a Model of Perceived Service Srinuan, P., Srinuan, C., & Bohlin, E. (2014). An empirical analysis of multiple services and choices of consumer in the Swedish telecommunications market. *Telecommunications Policy*, 38(5-6), 449-459.
- [46] Strenitzerová, M., & Gaña, J. (2018). Customer satisfaction and loyalty as a part of customer-based corporate sustainability in the sector of mobile communications services. *Sustainability*, 10(5), 1657.
- [47] TRAI Financial report https://main.trai.gov.in/sites/default/files/FR_07062019.pdf
- [48] Uddin, M. R., Haque, M. E., & Bristy, J. F. (2014). Customer satisfaction of telecom industry in Khulna City, Bangladesh. *European Journal of Business and Management*, 6(23), 87-94.
- [49] Veljko Marinkovic, Zoran Kalinic, (2017) "Antecedents of customer satisfaction in mobile commerce: Exploring the moderating effect of customization", *Online Information Review*, Vol. 41 Issue: 2, pp.138-154, <https://doi.org/10.1108/OIR-11-2015-0364>.

- [50] Virri, Piason and Phiri, Maxwell, (2017) “Determinants of Customer Satisfaction in Zimbabwe Telecommunication Industry”, *Journal of Communication*, Volume 8, 2017 - Issue 1.
- [51] Xia, L., Monroe, K. B., & Cox, J. L. (2004). The price is unfair! A conceptual framework of price fairness perceptions. *Journal of marketing*, 68(4), 1-15.
- [52] Yabas, U., Cankaya, H. C., & Ince, T. (2012, July). Customer Churn Prediction for Telecom Services. In 2012 IEEE 36th Annual Computer Software and Applications Conference (pp. 358-359). IEEE.
- [53] Ye, L., Qiuru, C., Haixu, X., Yijun, L., & Guangping, Z. (2013). Customer segmentation for telecom with the k-means clustering method. *Information Technology Journal*, 12(3), 409-413.
- [54] Yirenkyi, K. A. (2012). Factors affecting customer satisfaction and preference in the telecommunications industry: a case study of MTN Ghana (Doctoral dissertation).
- [55] Yu, Q., Bai, Y., & Shan, X. L. (2011, September). A research on customer satisfaction with household appliances industry service. In 2011 IEEE 18th International Conference on Industrial Engineering and Engineering Management (pp. 2008-2011). IEEE.
- [56] Zhang, J., Rui, L., Guo, S., Qiu, X. S., & Xiong, A. (2015, August). Location selection with user behavior analysis for telecom operator's service halls. In 2015 17th Asia-Pacific Network Operations and Management Symposium (APNOMS)(pp. 157-162). IEEE.