The Relationship Between Service Quality And Customer Satisfaction

"Applied Study on Private Telecom Services in India"

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Abstract: service quality is one of the most effective tools to gain customer satisfaction and loyalty. This study aimed to examine the relationship between service quality and customer satisfaction on private telecom sector in India. The study based on primary and secondary data, a total of 310 customers of the private telecom sector companies were surveyed by applying a structured questionnaire. Statistical tools like Cronbach's alpha coefficient and correlation coefficients, frequencies and percentages, descriptive statistics analysis, correlation analysis are employed to assess the relationship between the dependent variable and independent variable. The results revealed that there is a significant relationship between service quality and customer satisfaction. This study contributes invaluable information for both academician and managers for their theoretical and practical purposes.

***Index terms*:** Service Quality, SERVQUAL, Customer Satisfaction.

1. Introduction:

Nowadays most organizations in their pursuit of best quality and lowest cost try to reach this end through products or services provided .Previously, the best mean to create competitiveness was to attain the total quality level in terms of production, but currently such a goal represents the first stage in a long journey due to the intense competition characterizing the marketplace. Therefore, any organization willing to increase profits is required to achieve customer satisfaction and to keep existing customers grateful, since recent studies point out to the fact that the attraction of new customers involves costs five times greater than the expenses incurred to keep existing customers. Meanwhile, the economic systems call for expansion in the present investment as a more effective strategy than the attempt to invest in new activities. Many studies have indicated that a 5% growth in customer satisfaction and loyalty can boost profits from 20% to 85% (reichheld and sasser 1990). Though, current research approves that customer satisfaction is not a guarantee for loyalty with a very fragile linkage between satisfied customers and the ability to remain with such customers when the variables of service quality exist Wittly and Hissan (1998). Moreover, no one controverts the importance of customer satisfaction for all business in the world. For example, the great goal of any organization is to make a profit and to survive in the business world forever, which could only occur if satisfied customers continue their purchase with this organization and transfer to loyal customers to patronize the organization. Over and above, recently customer satisfaction has been the focus of organizations for being the long-term source of profits with more emphasis placed on current customers rather than the attempt to attract new ones.

Service Quality has presented a revolution of philosophy from the traditional marketing concept that emphasizes the short-term transactional approach through the traditional marketing mix (product, price, promotion and place) to a long-term customer focused and mutually beneficial approach. Hence, organizations can accomplish higher financial performance, customer satisfaction, trust, and commitment (hsieh et al., 2002) which lead to customer loyalty (Henning-Thutau et al., 2001). Therefore, the organization should focus on providing high quality service to meet customers' needs and expectations (parasuraman et al., 1988) in order to obtain customer's loyalty. Consequently, product/service quality is an important mean to make a healthy relationship which leads to customer loyalty.

In terms of telecom sector reforms, the Indian telecom sector has experienced an enormous growth over the last few years. This has been augmented by the invasion of the foreign direct investment in this sector. India is emerging as the fastest growing telecom markets in the world that within 2020 India having the total number of telephone subscribers reached 1.18 billion, the number of wireless subscribers is over 1.17 billion, and the number of wireline subscribers is 20.58 million. ((TRAI)). So, Competition among existing player has also focused on both retaining their existing customers as well as attracting new ones. Thus, the telecom service providers should to increase their efforts on maintaining and enhancing the service leading to gain customers satisfaction and customers loyalty.

2. Background to the Study

Over the past decades, unprecedent economic growth has been noticed in Indian telecom sector. Telecom sector is categorized globally as one of the deriving forces for overall economic development in a nation. In terms of Indian telecom sector, it is a major economic sector of national and regional wealth creation. It is the second largest sector in the world by number of telephone subscribers reached 1.18 billion, the number of wireless subscribers is over 1.17 billion, and the number of wire line subscribers is 20.58 million in 2020.

A vital strategy which has been adopted by the economic sector recently to face these challenges is to concentrate on creating a long- term relationship with the customer, thereby building customer loyalty. These days, businesses are transferring from the strategy of gaining a higher market share to a long-term and profitable strategy that seeks to obtain customer satisfaction and loyalty. The advantage for this is that satisfied customers purchase more from one organization over their competitors so that its business sales increase, and they gain stronger market position. The same satisfied customers many times transfer to loyal customers start to produce a positive word of mouth towards the organization that attracts more customers. Many previous studies (Andreassen& Lindestad, (1998); Caruana, (2002); Khan, (2012); Boshoff& Gray, (2004); Chen& Chen, (2007); Howat et al., (2008); Akbar&Parvez, (2009); Mosahab et al., (2010); Amin , (2016) have declared that customer satisfaction has a significant impact on loyalty. It means that organizations have to develop and apply strategies to satisfy the customers to gain their loyalty after some time. Researchers declared that a highly satisfied customers is almost six times more expected to reveal loyalty and thereby repeat purchase then recommend the product/service to friends and family. Also a noticeable proof is that customer satisfaction and loyalty can be a logical outcome for applying service quality of the firm (Wong& Sohal, (2002); Munawar Khan &Fasih, (2014); Ali et al., (2016).Thus, many businesses started focusing on developing and implementing service quality as a basic strategy to build a long-term relationship with the customer through gaining their satisfaction and loyalty.

In terms of telecom sector, the Indian telecom sector is being exposed to a severe competition from both domestic and foreign competitors. In this case, organizations have to formulate their missions around providing the best quality of service to their customers to secure loyalty and to save them from transferring to other competitors; especially, customers nowadays have a lot of choices to make their purchasing decisions. Over the last few years, during (IBEF) the telecom sector in India has experienced an enormous growth, as many players have entered to the industry. For example (Jio Company) that launched its services on 27 December 2015, and the later services were commercially launched on 5 september 2016. Jio company has the highest market share (32.56%) with 376.53 million subscribers. As a result of continuous competition among existing and new companies, telecom service providers should focus on maintaining and enhancing the quality of services to gain customer satisfaction.

3. Literature Review

3.1. Service Quality:

Quality has gotten a noticeable attention from academic researchers in the recent decades. In spite of the significance of service quality in the context of marketing, there is no credible definition of service quality or its dimensions to understand and measure. Most 3of the definitions focused on meeting customer needs, for example, Babbar (1992) defines that “Quality of service is determined primarily by the individual customers through their perceived delivery for the service attributes that they expect”. Lewis (1991) defined service quality as” a measure of how well the service delivered matches customers’ expectations” or “providing the customer with what he/she wants, when he wants it, and at acceptable cost, within the operating constraints of the business, and providing a better service than the customer expects” (Lewis 1988, 1991. Wyckoff (1984) defined service quality as “the degree of excellence intended, and the control of variability in achieving that excellence, in meeting the customer’s requirements”. Besides, a number of definitions refer to the importance of the clients’/customer’ expectations of quality compared to perceptions, for instance, many researchers such as Gronroos, (1982); group interviews conducted by Parasuraman, et al.,’ (1985, 1988, 1991, 1994), Craman (1990); Teas, (1993); Cronin & Taylor, (1994); Idris& Morsy (1993) unambiguously advocate the thought that service quality, as perceived by consumers, stems from a comparison of what they feel service companies should offer rather than would offer (i.e., from their expectations) with their perceptions of the organizations’ performance that are providing the services (i.e., from the actual service performance). Gronroos (1984) for instance, defined perceived quality as “the outcome of an evaluation process, where the consumer compares his/her expectations with the service he/she has received. Furthermore, some authors described service quality as a form of overall evaluation of a product, similar to attitude (Parasuraman, et al., 1985, 1988; Bitner, 1990; Bolton & Drew, 1991; Cronin & Taylor, 1992) and this attitude is related, but not equivalent to satisfaction. For example, Parasuraman, et al., (1988) summarized perceived service quality as “a global judgment, or attitude relating to the superiority of the service”; it is shown as the degree and direction of discrepancy between customers’ perceptions and expectations. Perceptions are defined as consumer’s beliefs towards the received or experienced service (Parasuraman, et al., 1985; Brown & Swartz, 1989; Teas, 1993), and expectations are defined as what consumer desires from the service provider (Parasuraman, et al., 1988). Moreover, Zeithaml (1988) saw perceived service quality as “the customer’s assessment of the overall excellence or superiority of the service”. From Mattson's (1993) point of view service quality is “a creation of value for the customer”. According to Edvardsson’s (1998) definition, quality is “satisfies needs and meets expectations, those of the customers, employees and owners”.

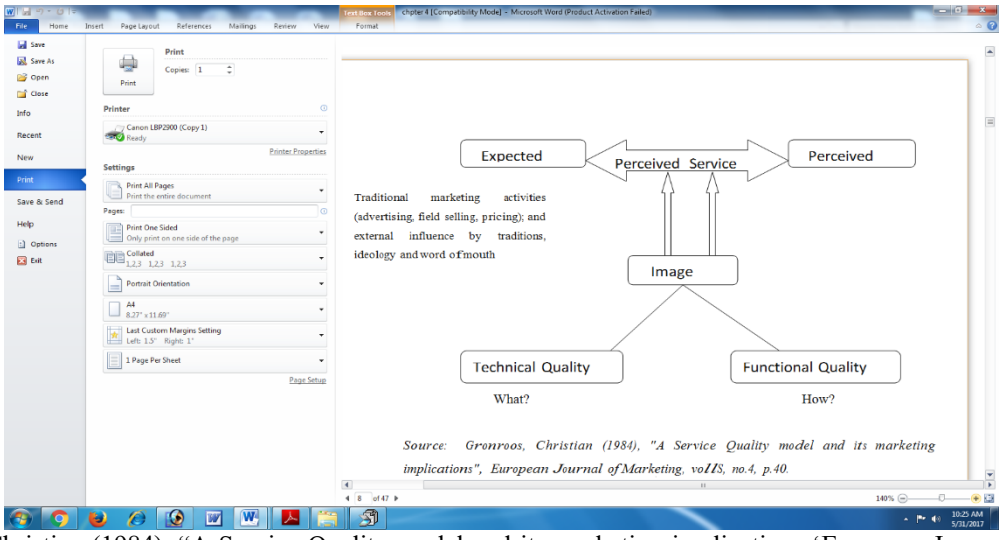
3.1.1. Models of Service Quality

As declared before, service quality has been the subject of remarkable enthusiasm by both practitioners and academic researchers in recent years. There are theoretical frameworks of the service quality models which are the most used in the service quality research. The European approach is used to be described as the Nordic school and originates from Gronroos' works (1982, 1984), the North American approach which is developed by Parasuraman, et al. ,1985, 1988).

3.1.1.1. The Nordic Perspective on Service Quality

Gronroos (1982, 1983, 1984), who is the most productive contributor of the Nordic School, has undertook research that led to the development of a service quality model. He conceptualized service quality as the outcome of the comparison between expected service and perceived service, and claimed that perceived service quality is dependent on these two variables, expected and perceived service. Gronroos (1983, 1984) identified three components of service quality; technical quality, functional quality, image (see figure (1). The three components are explained as following:

Figure (1): Nordic Perspective Model



Source: Gronroos, Christian (1984), "A Service Quality model and its marketing implications 'European Journal of Marketing, vollS, no.4, p.40.

3.1.1.2. North-American Perspective on Service Quality (The Gap Analysis Model

The North- American perspective on service quality is based on the researches of Parasuraman et al. (1985, 1988). They proposed that quality estimations were based on a comparison of consumer expectations of what they should receive with consumer perceptions of what they did receive. In other words; the gap analysis model defines quality as the difference between customers' expectations and perceptions of the service delivered. The model identifies a set of essential gaps that exist relating to executive perceptions of service quality and tasks related with service delivery to customers. Thus, the gap model is intended to be used for analyzing sources of quality problems and for helping managers to understand how service quality can be improved Parasuraman et al. (1985, 1988). According to the American perspective Parasuraman, et al, (1985) service quality gaps are measured by the differences between the two scores-performance-minus-expectations (P-E) (see figure (2), a positive result indicates a positive measure of service quality, they also suggested five possible gaps as following:

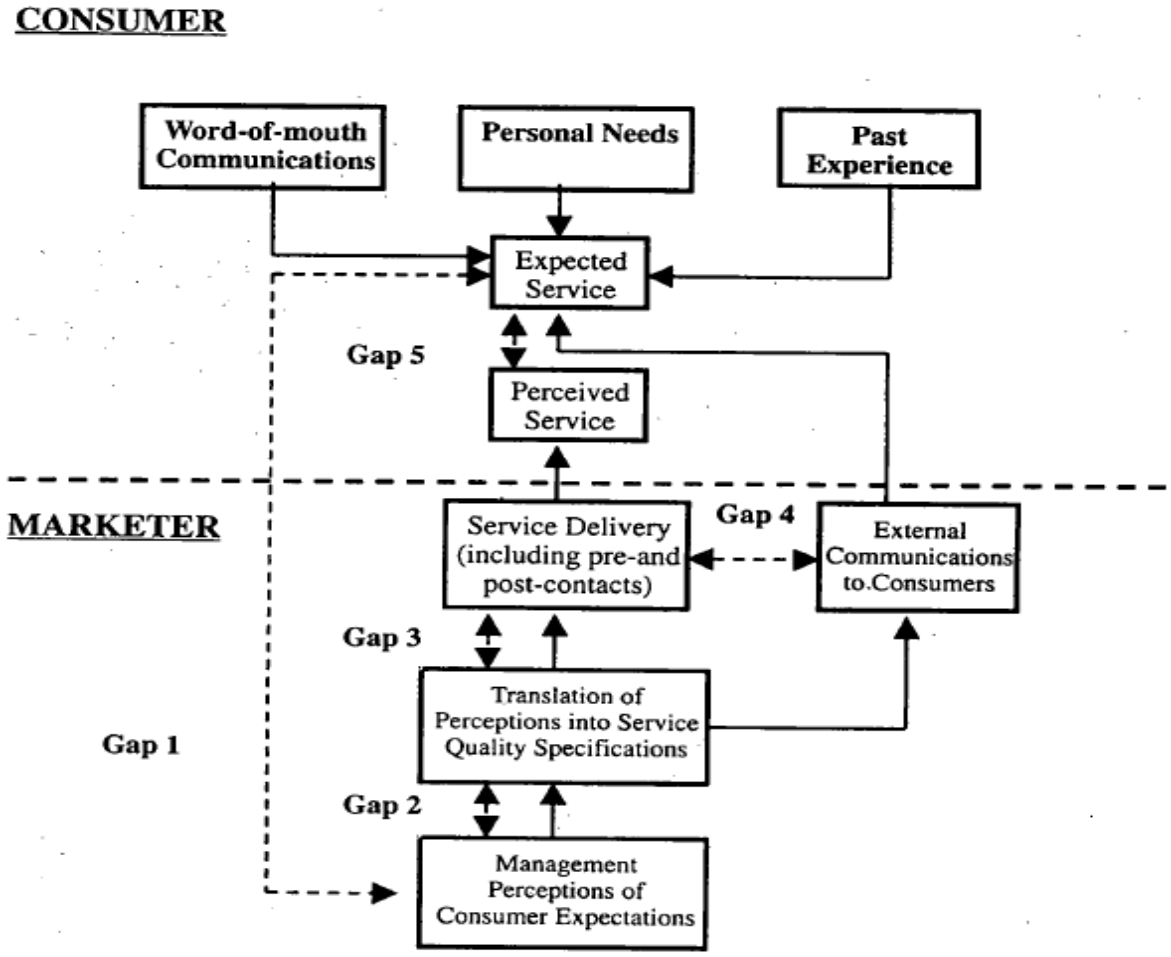
- Knowledge Gap (Gap 1) refers to the difference between customer's expectation and management perception.
- Standards Gap (Gap2) refers to the difference between management perception and the quality specifications set for service delivery.
- Delivery Gap (Gap3) refers to the difference between the quality specifications set for service delivery and the actual quality of service delivery.
- Communications Gap (Gap4) refers to the difference between the actual quality of service delivered and the quality of service described in the firm's external communication
- Service Gap (Gap5) refers to the difference between customer's expectation of a service and perception of the service actually delivered.

According to this model, service quality as perceived by a customer depends on the size and direction of Gap 5 which in turn depends on the nature of the gaps related with the design, marketing, and delivered services, i.e. Gaps 2, 3 and 4.

In this regard, Parasuraman, et al., (1985) proposed ten dimensions to determine service quality that related to characterizes of the service: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding (knowing) the customers, and tangibles. Therefore, they propound that the differences between perceived performance and expected

performance of these ten dimensions determine overall perceived service quality. Later Parasuraman, et al., (1988) were reduced to five dimensions.
Due to the emphasis on differences between expectations and perceptions, this type of model is also identified as a disconfirmation model. Also, Parasuraman et al. (1988) has suggested that SERVQUAL may be used to: (I) track service quality trends over time; (2) compare an organization with its competitors; and (3) categorize customers into perceived quality segments based on their individual SERVQUAL scores.

Figure 2: Gaps Model of Service Quality

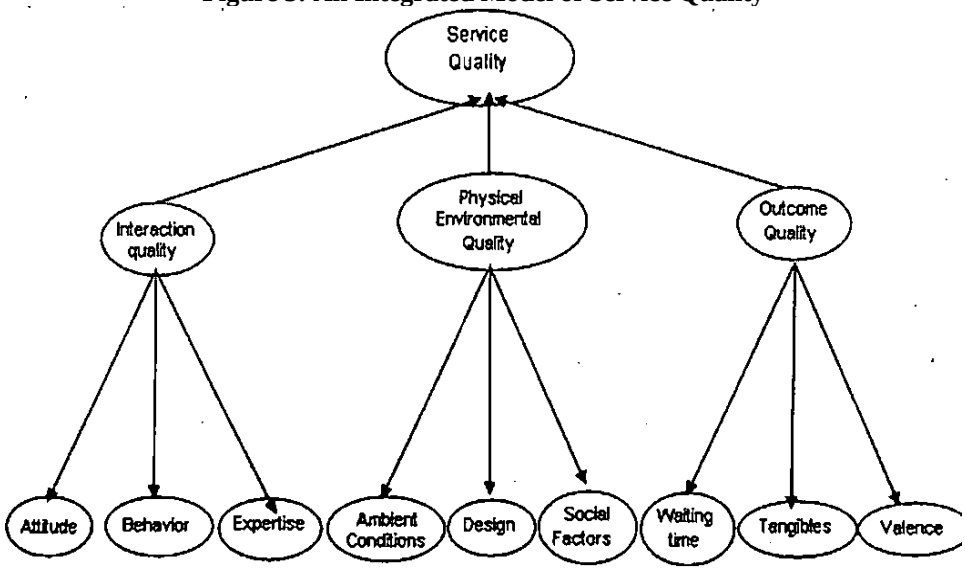


Source: Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. the Journal of Marketing, 41-50.

3.1.1.3. The Integrating Model of Service Quality

Brady and Cronin (2002), proposed a framework that pursued to integrate the Nordic and North-American perspectives of service quality models which presented in figure (3). In particularly, this model depended on the work of Gronroos (1984), Rust and Oliver (1994), and Parasuraman et al. (1985). Brady' and Cronin (2002) presented a hierarchical approach to the evaluation of services experience by consumers.
According to Brady and Cronin (2000) there are three direct determinants of perceived service quality: interaction quality, the quality of the physical environment, and the outcome quality, each one has three sub dimensions. Interactive quality is shown as being a function of how employees' attitudes, expertise, and behaviors are perceived to influence the quality of a service interaction. The service environment quality is conducted to be a function of the design and layout of the environment, the social factors and the ambient conditions (the atmosphere that is perceived). The outcome quality is held to be a function of tangibles, waiting time, and valence. In addition, Brady and Cronin have exposed their model to empirical analysis, and the results provided support for its validity. Further, they have succeeded in consolidating multiple service quality conceptualizations into a single, comprehensive, multidimensional framework with a strong theoretical base.

Figure 3: An Integrated Model of Service Quality



Source: Brady, M.k., and Cronin, 3.3. (2001), "Some New thoughts on conceptualizing perceived service quality: A hierarchical approach", Journal of Marketing, vol.65, July, p.37.

3.1.2. Dimensions of Service Quality

Over a decade ago, researches in service quality started to grow particular at the beginning of 1980s in different parts of the world by academic researchers and practitioners leading to several dimensions of service quality. The dimension of service quality is an issue that is currently unresolved in the literature. For example, Sasser et al (1978) emphasized the physical aspects of service quality by the level of materials and facilities, and added a personnel element as a third dimension of service quality (Abdelaziz, 2001). However, Lehtinen& Lehtinen (1982) have illustrated the dimensions of service quality by two approaches; first is a three-dimensional quality approach which refers to physical quality (from the environment), institutional quality, and interactive quality. Interactive quality involves the interactions between service provider and customers as well as between customers themselves. Institutional quality, includes a service company's image, and reputation while physical quality, or instrumental quality involves the physical aspects associated with service such as facilities, such as equipment and building. Second is a two-dimensional quality approach which divided service quality to process quality judged by customers during the service, and output quality that judged by the customer after the service is performed. Furthermore, the first approach which contains the three dimensions is empirically tested in another study by Lehtinen et al, (1996) in three service settings. As mentioned before, Gronroos (1984) introduces a trichotomy of service quality dimensions based on the technical quality, functional quality, and image, that

Supported the results of the trichotomy of service quality dimensions of Lehtinen and Lehtinen. The three-dimensional approach of Gronroos has been assumed in an empirical study containing the executives of Swedish service firms who had participated in a series of service marketing seminars. Additionally, this model has been used quite frequently in researches (e.g. Richard and Allaway, 1993; Sweeney et.al, 1997). Mels et.al (1997), studied the classification of service quality dimensions (technical/functional quality) by using similar dichotomy such as "extrinsic',' and "intrinsic" quality. The intrinsic service quality involves what Gronroos called functional quality. The extrinsic service quality involves the technical quality or the outcome quality.

Presently, the most well-known model of service quality is SERVQUAL. SERVQUAL originally contained ten service quality dimensions (reliability, responsiveness, competence, courtesy, communication, credibility, access, security, understanding / knowing the customer, and tangibles), but using factor analysis, they were subsequently reduced to five dimensions (three original dimensions: tangibles, reliability, and responsiveness. The two combined dimensions containing assurance combining communication (competence, credibility, courtesy, and security), and empathy combining access. (Parasuraman et al.1988). The definitions of these dimensions as following:

- Tangibles: physical facilities, appearance of personnel, equipment.
- Reliability: ability to provide the promised service dependably accurately and dependably.
- Responsiveness: willingness to serve customers and provide prompt service.
- Assurance: employees' knowledge and courtesy and their ability to inspire trust and confidence.
- Empathy: ability of the company to provide caring and individualized attention to its customers.

3.2. Customer Satisfaction

3.2.1. The Concept of Satisfaction

Satisfaction as a concept has been studied greatly in the literature; Rechield (1996) emphasized the role of satisfaction and its importance to give any company the major part for its success with customers. Anderson and Srinivasan (2003) considered

customer satisfaction as the positive response felt by customers towards their purchasing experience. Oliver (1997) defined satisfaction as "the consumer's fulfillment response". It is a judgment that a product or service provided (or is providing) at a pleasurable level of consumption- related fulfillment, including levels of under-or-over fulfillment. Oliver's definition makes an obvious distinction that has been unnoticed by several researchers in previous literature. It mentions the "consumer" rather than the "customer" as the word customer means the buyer, which at times may not be the direct user of the product or service and may be the one who pays for the product. From this distinction, the satisfaction as a concept should include only those who have had a direct involvement with the product or service, as they are the ones who are in a position to judge whether or not the product or service was satisfactory. This key distinction makes satisfaction more explicit and dependable when it is used in relation with other marketing concepts, as it leaves no area for mistakes or misinterpretation when dealing with the word customers versus consumers. However, this understanding changes due to specific industry under study

Satisfaction has been defined by Fecikova (2004) as an emotional response resulting from comparing expected and actual performance. The outcomes of Satisfaction differ by specific context as:

- Satisfying the needs and the desires of the customer (Besterfield ,1994)
  Resulting in delight (Kanji, 2002)
- Giving Pleasure (Fecikova, 2004)
- Satisfaction can be a mere result of things not going wrong (Fecikova, 2004)

Sharing the same view, Roberts- Lombard (2009), described satisfaction as the degree to which the performance of the product or service matches up to the expectation of the customer. Satisfaction definitions in most of the studies emphasized the significance of expectations (Churchill& Surprenant, 1982; Oliver, 1980; Tse& Wilton, 1988). One can say that, customers usually form their expectations due to their desired needs, values, past experiences and extrinsic indications about the product. Therefore, the customer's perception of what the product or service provider can actually provide forms these initial expectations. Upon evaluating the difference between what was expected and what was actually experienced, the consumer forms and expresses his emotional response. Thus, satisfaction depends on the customer's judgment. And their perception influences the judgment for both the delivered service and the expected quality (Hu, Kandampully& Juwaheer 2009). Balaji (2009) added that there is a direct link between perceived quality and total satisfaction. Furthermore, perceived quality is affected by initial expectations and overall brand choice. It plays a vital role in the customer's evaluation of satisfaction (Grounaris, Tzempelikos& Chatzipanagiotou, 2007).

3.2.2. Customer Satisfaction Theories and Models

Depending on the previous literature that studied customer satisfaction, there are two main categories of customer satisfaction models. These models are categorized as Macro-models and Micro-models. The Micro-models focus on the elements of the satisfaction construct itself in isolation from any outside influences. While the Macro-models study the place of the satisfaction construct within its external environment. These models come from a several literature of marketing research. Other related marketing researches involve models that integrate the concept of customer satisfaction in a network of related concepts as value, quality, complaining behavior, and loyalty.

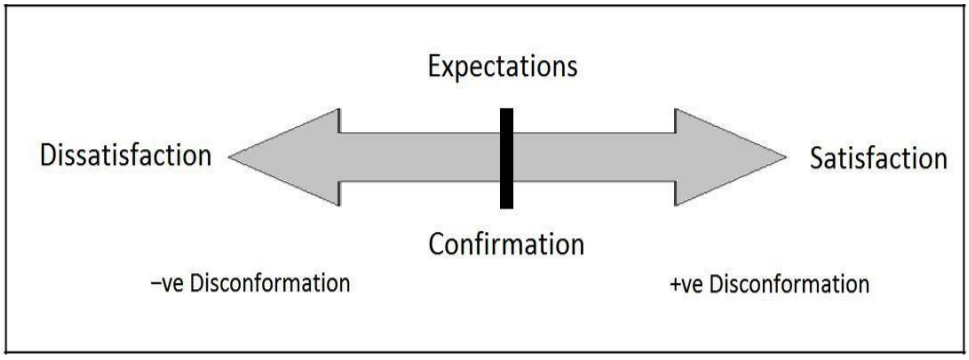
3.2.2.1. Micro Models of Customer Satisfaction

Oliver (1980) examined the concept of satisfaction in the service industries, and constructed the most prevalent models upon the "Disconfirmation of Expectations Paradigm". This model discusses that actual performance is measured against the customer's initial expectations to assess the state of satisfaction. Chiou& Spreng, (1996) defined "disconfirmation" as the calculation of "difference scores" (explicitly, the difference between a rating for expected performance and a rating for perceived performance). Sharma &Ojha (2004) also ensured that disconfirmation is "the difference between the post-purchase and post-usage evaluation of product or service performance and the expectations held prior to the purchase" (Sharma& Ojha, 2004).

Confirmation occurs when the performance matches up to the initial expectations; no more or less (Erevelles and Leavitt, 1992). On the other hand, "negative disconfirmation" occurs once actual performance is perceived to be worse than what was expected of the service initially. Here, the customer is dissatisfied, and the trend to retune to purchase the product or service in the future is rare (Zammit, 2000). When the actual performance is perceived to transcend the customer's initial expectations "positive disconfirmation" occurs, and the consumer is considered highly satisfied or even "delighted". Such positive experiences reinforce the tendency of the consumer towards the brand

The customer's comparison standards can come from several sources that can vary widely by individual, product/service type, and situation and are influenced by values, needs, past experiences, and extrinsic cues about the product (Woodruf and Gardial, 1996). So, the performance is either below or above par, and for that reason the evaluation process results in either a positive disconfirmation response (feelings of satisfaction) or a negative disconfirmation response (feelings of dissatisfaction) as shown in figure (4) below

Figure 4: Disconfirmation of Expectations Theory



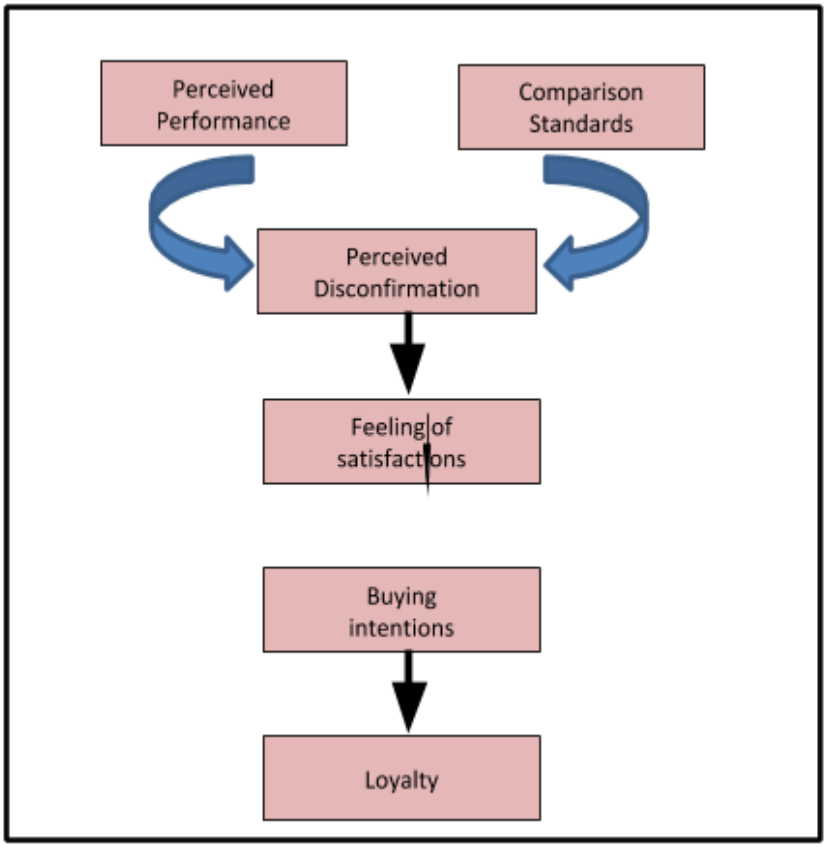
Another model was developed in 1984 by Kano. Kano model divides product or service attributes into three diverse categories: threshold attributes, performance attributes and excitement attributes. The "threshold attributes" are the basics of the product that present the minimum requirements which must be shown in the product or service, and will cause dissatisfaction if not fulfilled. Nevertheless, if they are fulfilled and exceeded, they will not produce satisfaction. (Furlan& Corradetti, 2010)

"Performance attributes" are unique features that increase customer satisfaction as additional features to be beyond the basic expectations, but if the performance attributes are weak, customer satisfaction will be reduced. Performance features are unfamiliar service level that differentiate the organization to gain a competitive edge in the market. On another side, the attributes that will produce delight and inspire loyalty when delivered are "excitement attributes", but these attributes will not produce dissatisfaction if they not occur in a product or a service. Excitement attributes represent the features that customer can't expect, but customer can receive some of these features as a bonus. (Furlan&Corradetti, 2010) Odindo and Delvin (2007) mentioned a similar study

Conducted by Johnson in 1995 to examine service quality in the UK organizations. Three categories of factors which have an effect on satisfaction were identified from the outcomes of the study. These categories are: hygiene factors, enhancing factors, and dual threshold factors. "Hygiene factors" are the expected aspects that present in a product or a service, and do not contribute in satisfaction. "Enhancing factors" are the features that lead to satisfaction, but the absence of these features doesn't produce dissatisfaction.

Another study was published in 2003 by Fredrick Flertzberg in the field of psychology to evaluate the employee satisfaction and motivation. The researcher mentioned this study because it can be used in understanding the general concept of satisfaction in other fields. Satisfaction and dissatisfaction are viewed as separated constructs in this study. That is to say factors that lead to satisfaction are separated from factors that lead to dissatisfaction. It means that the absence of the factors of dissatisfaction doesn't indicate that the customer is satisfied; although, it means that the customer is "not- dissatisfied". Thus here, satisfaction and dissatisfaction can be conceptualized as dual continuum as shown in the figure (5)

Figure 5: Hertzberg's Satisfaction/Dissatisfaction Dual Continuum



Source: Adapted by the researcher from Hertzberg (2003)

3.2.2.2. Macro Models of Customer Satisfaction

In macro-models of satisfaction, the researchers studied the concept of satisfaction within the external environment, and its relationship with other variables and constructs. Most of macro-model theories declared that satisfaction and dissatisfaction are separated concepts, and they are influenced by the existence of other attributes. These attributes are categorized by their effect on the states of satisfaction and dissatisfaction. So, to be "not dissatisfied" means that the customers are neutral; it doesn't mean the customer is satisfied. Thus, (Shahin et al., 2011; Kuusik, 2007) stated that the previous introduction could be the key for solving the secrecy of satisfaction- loyalty relationship, and claiming that not all satisfied customers are loyal. That is to say, the relationship between customer satisfaction and loyalty could be non- linear

The most basic form of macro-models is Woodruf and Gardial's 1996 "Traditional Macro- Model of satisfaction". This model concentrates on satisfaction in a raw form as a result of the disconfirmation that happens between perceived performance and expectation. It connects raw satisfaction to its outcomes as loyalty.

According to Odindo and Delvine (2007), the items of the model are considered the five most common variables by most satisfaction measurements models. These five items can be modified as the antecedents and outcomes of the "Disconfirmation Theory" as presented in figure (6

Figure 6: The Antecedents and Outcomes of the Disconfirmation Theory

Source: Author constructed based on literature

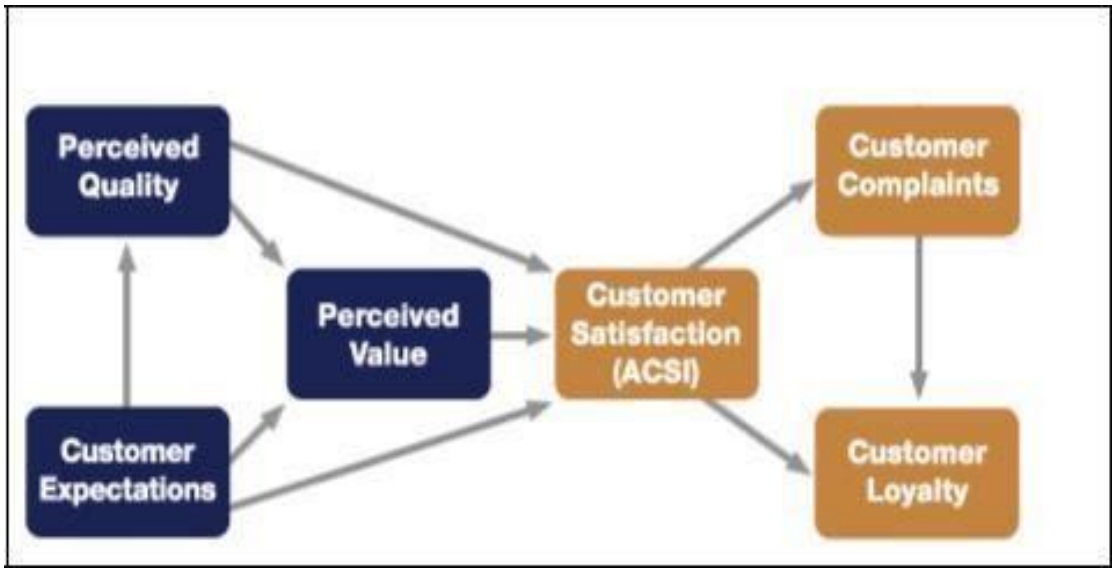
3.2.3. Measuring Customer Satisfaction

Due to the discussion above for the nature of satisfaction, most researchers used the gap or discrepancy between expectations and the perceived performance as a conductor of the satisfaction degree.

Many countries have developed national customer satisfaction indices. The most significant was the Swedish customer satisfaction barometer (SCSB). This barometer was developed by Fornell in 1992. Then he has developed the American customer satisfaction index (ACSI) in 1996 (Andreassen & Lindestad, 1998)

The ACSI has been developed in the University Of Michigan Ross School Of Business by Claes Fornelle. Many organizations have applied it as a macroeconomic measure of consumer behavior to measure their customers' satisfaction (Gerpott et al., 2001). ACSI model is a cause-and-effect model as shown in figure (7) in which it covers the drivers and antecedents of satisfaction on the left side: customer expectation, perceived quality, and perceived value. On the other hand, on the right side there are the outcomes of satisfaction: customer complaints and customer loyalty.

Figure 7: The ACSI Antecedents (Components) and Outcomes



Source: The ACSI Official Website 2013

The elements on the right and left are multivariable components measured by several questions that are weighted within the model. The arrows in figure (7) represent "impacts". The model is self-weighting to maximize the impact of the three stated customer satisfaction determinants and components (on the left) on the ultimate outcome of customer loyalty.

4. Statement of Problem

For (telecommunication sector in India) to keep its maintenance and gain customer satisfaction and loyalty in the complex and competitive market of today they should pay more attention to apply service quality as a vital marketing strategy that help in recognizing the needs of their customers. Thus, it could be easier to meet their needs to achieve customer loyalty and retention, so

consequently (telecommunication sector in India)) can save its market share. Accordingly, the statement of the problem can be stated in the following questions:

4. Research Questions:

4.1. Research Questions:

4.1.1. Research Question (1): Is there any significant impact of service quality on customer satisfaction?

4.1.1.1. Hypotheses of Research Question (1):

RQ1H01: There is no significant impact of 'price' on customer satisfaction.

RQ1H02: There is no significant impact of 'tangibles' on customer satisfaction.

RQ1H03: There is no significant impact of 'reliability' on customer satisfaction.

RQ1H04: There is no significant impact of 'responsiveness' on customer satisfaction.

RQ1H05: There is no significant impact of 'assurance' on customer satisfaction.

RQ1H06 There is no significant impact of 'empathy' on customer satisfaction.

RQ1H07: There is no significant impact of 'overall service quality' on customer satisfaction.

4.1.2. Research Question (2): Is there any significant difference in overall service quality (OSQ) across particular demographic attributes?

4.1.2.1. Hypotheses of Research Question (2):

Demographics play a very significant role in service quality studies (Mehta and Lobo, 2004. Following hypotheses have been formulated to address this research question:

RQ2H01: There is no significant difference in 'overall service quality' across gender.

RQ2H02: There is no significant difference in 'overall service quality' across age.

RQ2H03: There is no significant difference in 'overall service quality' across education.

RQ2H04: There is no significant difference in 'overall service quality' across income groups.

RQ2H05: There is no significant difference in 'overall service quality' across private telecom sectors.

4.1.3. Research Question (3): Is there any significant difference in customer satisfaction across particular demographic attributes?

4.1.3.1. Hypotheses of Research Question (3):

The hypotheses pertaining to this research question are given as under:

RQ3H01: There is no significant difference in 'customer satisfaction' across gender.

RQ3H02: There is no significant difference in 'customer satisfaction' across age categories.

RQ3H03: There is no significant difference in 'customer satisfaction' across education levels.

RQ3H04: There is no significant difference in 'customer satisfaction' across income groups.

RQ3H05: There is no significant difference in 'customer satisfaction' across private telecom sectors.

5. Research Objectives:

The general objective of this study is to explore the relationship between the application of service quality and customer satisfaction from the perspective of the customers of telecommunication sector in India.

Particularly the study seeks:

- To study the theoretical framework of service quality and customer satisfaction.
- To assess customers' expectations and perceptions of service quality.
- To measure the gap between customers' expectations and perceptions of service quality.
- To explore the differences among customers in overall service quality and customer satisfaction on the basis of their demographic attributes in telecom sector.
- To develop an integrated empirical model linked among service quality and customer satisfaction
- To propose suggestions, on the basis of results of the study, and ways to develop service quality in telecom sector to make overall telecom sector services more effective and efficient.

6. Delimitation of the study

- The sample of this study covers the customers of the private telecommunication sector in India that share the market share of telecommunication sector its competitors from public sector, so there is a need for another study that takes into consideration the whole telecommunication sector in India.
- The responses of the study have been collected from customers from Aligarh. The responses of the customers of Aligarh may vary from those of the rest of India.
- The customers of only the private Telecom Companies were selected for the present study. As a result, the generalization of the findings of the present study should be considered carefully.
- The present study has adopted six dimensions of service quality as suggested in previous studies taking in consideration the circumstances of the telecom sector in India. For this, a total of 31 parameters belonging to these 6 dimensions were used to measure the responses of the customers about service quality. There may still be a possibility of adding some new dimensions or some more parameters to the existing dimensions.
- Convenient sampling technique has been used for the collection of data from the respondents; thus, the generalization of the results should be looked carefully.
- The current study as all studies that are based on the primary data collected by the predesigned questionnaire suffers from the possibility of dissimilarity between what is recorded and what the truth of the respondents' answers is.
- It was not possible for the respondents to explain certain points related to the questions because the vital source of collecting the primary data was standardized and structured questionnaires.

7. Research Methodology:

7.1. Research Design

Analytical descriptive method has been used to sustain quantitative measurement and analysis. Data have been collected through different means which include:

Secondary resources: To introduce the conceptual literature of service quality and customer satisfaction, the researcher has depended on books, periodicals, articles, published papers and referred previous studies in different countries which have been conducted on the same subject, the Internet sites and the available electronic versions.

Primary resources: a questionnaire has been used as a primary tool for gathering data from the customers of private telecommunication Companies in order to analyze the qualitative and quantitative characteristics of the phenomena.

7.2. Study Population/Sample

The population of the study consists of the customers of private companies for telecommunications, which consists of well-known companies in India.

The sample consists of a total of (310) customers of private telecommunication sector in India. They have been requested to complete questionnaires (self-designed with the help of previous studies) that captured all the variables contained measures of the constructs of concern.

Sampling Method/ Sample Size:

The convenient sampling method has been used (310) Questionnaires administered to the respondents. All (310) questionnaires were dully filled and returned.

7.3. Data Collection Instrument:

The study employed a questionnaire as an instrument for data collection. The questionnaire consisted of three parts sections. The first part measures the demographic attributes of the respondents which include: gender, age, education, income, and company. The second part was designed to measure the respondents' expectations and perceptions of performance regarding the service quality of telecommunication sector with responses ranging from (1) strongly disagree to (5) strongly agree on five-point Likert scale. The third part consisted of five items designed to measure respondents' responses towards factors of customer satisfaction. 5 items were meant for the measurement of customer satisfaction as proposed by Woodruf and Gardial, (1996).

8. Data Analysis:

8.1. Methods of Data Analysis

The Statistical Package for Social Sciences (SPSS) was used to analyze the data. The following statistical procedures were used:

- Cronbach's alpha coefficient and correlation coefficients were calculated to assure the reliability and validity of study scales.
- Frequencies and percentages were calculated to describe the characteristics of the sample respondents.
- Descriptive statistics analysis was used to summarize the respondents' answers and to ranking the sub-items of each dimension.
- Correlation analysis was carried out to test the presence, strength and direction of the potential relationships among the variables of the study.

8.2. Reliability of the Scale

To check the reliability of the study instruments, cronbach's alpha coefficient was calculated. This coefficient generally varies between zero (for no reliability) and unity (for maximum reliability). Any values equal to or above 0.6 denote that the scale is of acceptable reliability. The closer the value is 1 the more reliable a scale.

Table (1) demonstrates that all reliability coefficient is acceptable, since they all exceed the benchmark of 0.60

Table (1): Values of cronbach's alpha coefficient

Scale Dimension	Observed Variables	Indicators	Reliability (Cronbach's alpha)
Expectations of Service Quality	Price	05	.866
	tangibles	05	.871
	reliability	06	.929
	responsiveness	05	.890
	assurance	05	.945
	Empathy	05	.966
Perceptions of Service Quality	Price	05	.832
	tangibles	05	.816
	reliability	06	.855
	responsiveness	05	.910
	assurance	05	.917
	Empathy	05	.921
Satisfaction		05	.880

8.3. Validity Analysis of the results

Internal consistency validity

To ensure the validity of internal consistency, the correlation coefficient between each item and the dimension to which it belongs was calculated. The results are shown in table (2)

Table (2): Item to Total Correlation Matrix (expectations)

PR	R	TAN	r	REL	r	RES	r	AS	r	EM	R
PR1	.785	TAN1	.820	REL1	.885	RES1	.866	AS1	.862	EM1	.861
PR2	.850	TAN2	.828	REL2	.849	RES2	.856	AS2	.890	EM2	.832
PR3	.848	TAN3	.845	REL3	.870	RES3	.871	AS3	.831	EM3	.870
PR4	.789	TAN4	.843	REL4	.881	RES4	.814	AS4	.922	EM4	.869
PR5	.784	TAN5	.866	REL5	.845	RES5	.814	AS5	.908	EM5	.832
				REL6	.817						

Source: SPSS 20.0 Output (based on Survey)

r: Correlation co-efficient, PR: Price, TAN: Tangibles, REL: Reliability, RES: Responsiveness, AS: Assurance, EM: Empathy.

**. Correlation is significant at the 0.01 level (2-taild)

Table (3): Item to Total Correlation Matrix (perceptions)

PR	R	TAN	R	REL	R	RES	r	AS	R	EM	R
PR1	.767	TAN1	.783	REL1	.820	RES1	.843	AS1	.859	EM1	.876
PR2	.814	TAN2	.803	REL2	.834	RES2	.805	AS2	.884	EM2	.853
PR3	.849	TAN3	.870	REL3	.821	RES3	.882	AS3	.889	EM3	.870
PR4	.827	TAN4	.893	REL4	.836	RES4	.841	AS4	.855	EM4	.894
PR5	.831	TAN5	.791	REL5	.804	RES5	.872	AS5	.871	EM5	.858
				REL6	.757						

8.4. Characteristics of respondents:

The following table shows the main characteristics of the sample respondents.

Table (4): Characteristics of the sample respondents

Characteristics		N	%
Academic Qualification			
	Diploma	45	22.5
	Bachelor	102	51
	High Education	53	26.5
	Total	200	100
Career Level			
	Top management	15	7.5
	Middle management	57	28.5

	Low management & first line employees	128	64
	Total	200	100
Years of Experience in telecom sector			
	1- 5	63	31.5
	5- 10	94	47
	Above 10	43	21.5
	Total	200	100

It can be concluded from the table above that:

- The sample consisted of 200 respondents; of whom 45 have diploma (22.5%), 102 have bachelor (51%), and 53 have a high education (26.5%).
- Regarding career level; more than a half of the total sample unites (64%) are in low management and first line employees, while (57%) of the respondents are in middle management, and (15%) are working in top management.
- In terms of years of experience in telecom sector, (31.5%) of the respondents have experience between 1-5 years, (47%) were between 5-10 years, while (21.5%) of the respondents their experience above 10 years.

9. Testing Hypotheses:

9.1. GAP Analysis of Service Quality

Quality is a comparison between expectations and performance (Parasuraman et al., 1985). Managers of service undertakings and researchers approve that service quality involves a comparison of expectations with performance (perceptions). Service quality is a measure of knowing whether the service level delivered is in line with customer expectations. Delivering quality service necessitates compliance with customer expectations on a regular basis (Lewis and Booms, 1983). In parallel with the previous philosophy, Gronroos, (1982) developed a model in which he claims that consumers compare their initial expectations of service with perceptions/performance of the service they are delivered with in assessing service quality. Smith and Houston, (1983) contend that satisfaction with services is allied to confirmation or disconfirmation of customer expectations. The quality that a consumer perceives in a service is a function of the magnitude and direction of the gap between expected service and perceived service (Parasuraman et al., 1985).

In the present study, service quality gap analysis has been performed with the aim to find out the shortfall (if any) - in service quality of the private telecom sector. However, in earlier empirical studies on telecom sector service quality, gap analysis has been performed to find out the level of service quality (Akbar& Parvez, (2009); Asif Khan et al., (2010); Ojo, (2010); Divya& Suresh, (2015); Dubey& Srivastava, (2016). Besides, paired sample t test has been performed to find out the significant differences in expectations and perceptions of service quality. Table (5) highlights the results of gap analysis performed in the context of service quality in private telecom companies (TC). As reflected in the Table (5), it can be asserted that these gaps were prominent and wide in private telecom sector which must be point of concern for them. By service quality shortfall, it is understood that perceptions of service quality are lesser than expectations of service quality. However, many prior studies on service quality in telecom sector have reported negative service quality gaps (Anjor et al., 2014; Chaudhary et al., 2014). Moreover, this study reports significant difference between expectations and perceptions of six of service quality dimensions ($t > 1.96$, $p < .05$).

Table 5: GAP Analysis (perception - expectation) (Private Telecom Sector)

Service Quality Attributes	No. of Items	Average Perception & (SD)	Average Expectation & (SD)	Average &Gap (SD)	t	Sig.
Price	05	3.41 (.867)	3.59 (.940)	-0.18 (.605)	2.52	.012

Tangibles	05	3.62(.859)	3.66(.813)	-0.04 (.629)	.690	.491
Reliability	06	3.59 (.861)	3.70 (.966)	-0.11 (.754)	1.57	.116
Responsiveness	05	3.65 (.888)	3.63 (.932)	0.02 (.671)	-.288	.774
Assurance	05	3.63 (.922)	3.54 (1.03)	0.09 (.760)	-1.183	.238
Empathy	05	3.61 (.889)	3.50 (.966)	0.11 (.732)	-1.39	.164

Source: *SPSS_20.0 output (based on survey data)*

9.2. Testing Research Question (1): Is there any significant impact of service quality on customer satisfaction?

In order to find out the answer to this research question the following hypotheses have been formulated:

RQ1H01: There is no significant impact of 'price' on customer satisfaction.

RQ1H02: There is no significant impact of 'Tangibles' on customer satisfaction.

RQ1H03: There is no significant impact of 'reliability' on customer satisfaction.

RQ1H04: There is no significant impact of 'responsiveness' on customer satisfaction.

RQ1H05: There is no significant impact of 'assurance' on customer satisfaction.

RQ1H06: There is no significant impact of 'empathy' on customer satisfaction.

RQ2H07: There is no significant impact of 'overall service quality' (OSQ) on customer satisfaction.

Preceding the examination of impact of independent variables on dependent variables, correlation statistics between criterion and predictor variables have been calculated. Correlation is a statistical tool used to find out the level of association between variables. In view of this, correlation statistics calculated for this study are furnished in Table 6:

Table 6: Correlation Statistics

Dependent Variables	Independent Variables							
	Price	Tangibles	reliability	Responsiveness	assurance	empathy	OSQ	CS
CS	.317**	.545**	.623**	.559**	.547**	.600**	.364**	1

Source: SPSS_ 20.0 output

**. Correlation is significant at the 0.01 level (2-tailed)

Note: CS: Customer Satisfaction, OSQ: Overall service quality.

As evident from the statistics in Table 6, there exists significant positive correlation between customer satisfaction and service quality variables. In addition, there also exists significant positive correlation between customer satisfaction and overall service quality. It is pertinent to mention that all the correlations are significant at 0.01% level of significance. This finding is consistent with the findings reported in earlier studies (Krishnan, 2013; Cronin and Taylor, 1992).

Table 7: Linear Regressions Customer Satisfaction by Service Quality Variables and Overall Service Quality

Attributes	Beta	T	Sig.	Adjusted R2	Model fitness (sig. value)	B	B Constant
Price	.316	16.693	.000	.099	.000	.307	2.380
Tangibles	.544	15.159	.000	.297	.000	.546	1.510
Reliability	.613	18.549	.000	.389	.000	.633	1.162
Responsiveness	.558	15.726	.000	.312	.000	.534	1.551
Assurance	.546	15.231	.000	.300	.000	.524	1.547
Empathy	.601	17.481	.000	.256	.000	.484	1.399
Overall Service Quality	.693	22.399	.000	.480	.000	.883	.293

Source: SPSS_ 20.0 Output (based on Survey data)

Dependent Variable/Constant: Customer satisfaction

Beta: Standardized coefficient

B: Unstandardized coefficient

Table 7 presents the results of linear regressions performed in order to find out the impact of service quality variables on customer satisfaction. As evident from the Table all the six attributes of service quality show significant positive impact on customer satisfaction ($t > 1.96$, $p < .05$). Moreover, Reliability ($t = 18.549$, Beta = .613) shows the highest impact on customer satisfaction. However, second in terms of range of impact is empathy ($t = 17.481$, Beta = .601) followed by price ($t = 16.693$, Beta = .316), responsiveness ($t = 15.726$, Beta = .558), assurance ($t = 15.241$, Beta = .547), and tangibles ($t = 15.159$, Beta = .544). These findings are in line with the findings reported in earlier studies (Sirajudeen, 2012; Shafeiha and Saeednia, 2011; Siddiqui, 2010). In addition, there is significant positive impact of overall service quality on customer satisfaction ($t >1.96$, $p <.05$).

From the results presented in Table 7, it can be revealed that the models are fit and appropriate, as the corresponding probability values of F-statistics for the models meets the appropriate statistical criteria at 5 percent level of significance (i.e., the corresponding P-values are less than .05). Also, the value of R squared shows that the independent variable (OSQ) explains 48. 0 percent of the entire variation in dependent variable (customer satisfaction). Therefore, predicted equations are formulated as here under:

i. SAT = 2.380 + .307 (price) + ε

ii. SAT = 1.510 +.546 (Tangibles) + ε

iii. SAT = 1.162 + .631(reliability) + ε

iv. SAT = 1.551 + .534(responsiveness) + ε

v. SAT = 1.547 + 524(assurance) + ε

vi. SAT = 1.399+.484(empathy) + ε

vii. SAT = .293 + .883(OSQ) + ε

Note: SAT: Customer satisfaction, OSQ: Overall service quality.

However, Table 8 provides the summary of hypotheses:

Table 8: Summary of Hypotheses of research Question (1)

S.No.	Hypotheses	T	P	Result
RQ1H01	There is no significant impact of 'price' on customer satisfaction	16.693	.000	Rejected
RQ1H02	There is no significant impact of 'tangibles' on customer satisfaction	15.159	.000	Rejected
RQ1H03	There is no significant impact of 'reliability' on customer satisfaction	18.549	.000	Rejected
RQ1H04	There is no significant impact of 'responsiveness' on customer satisfaction	15.726	.000	Rejected
RQ1H05	There is no significant impact of 'assurance' on customer satisfaction	15.231	.000	Rejected
RQ1H06	There is no significant impact of 'empathy' on customer satisfaction	17.481	.000	Rejected
RQ1H07	There is no significant impact of 'overall service quality' on customer satisfaction	22.399	.000	Rejected

Source: SPSS_20.0 output (based on survey)

It can be figured out from Table 8 that all the null hypotheses are rejected given the results suggest significant impact of all the six service quality variables and overall service quality on customer satisfaction.

9.3.Testing Research Question (2): Is there any significant difference in overall service quality (OSQ) across particular demographic attributes.

RQ2H01: There is no significant difference in 'overall service quality' across gender.

RQ2H02: There is no significant difference in 'overall service quality' across age.

RQ2H03: There is no significant difference in 'overall service quality' across education.

RQ2H04: There is no significant difference in 'overall service quality' across income groups.

RQ2H05: There is no significant difference in 'overall service quality' across private telecom sectors.

Table 9: Summary of Hypotheses of Reasearch Question (2)

No.	Hypotheses	T	F	P	Result
RQ2H01	There is no significant difference in 'overall service quality' across gender	2.444	-	.015	Rejected
RQ2H02	There is no significant difference in 'overall service quality' across age categories	-	3.487	.000	Rejected
RQ2H03	There is no significant difference in 'overall service quality' across education levels	-	8.651	.000	Rejected

RQ2H04	There is no significant difference in 'overall service quality' across income groups	-	1.605	.171	accepted
RQ2H05	There is no significant difference in 'overall service quality' across private telecom sectors	2.505	-	.013	Rejected

Source: SFSS _20.0 output (based on survey)

As pointed out in the Table 9 all five hypotheses are rejected owing to results indicating significant difference in overall service quality across all demographic attributes of the study except RQ_5H0_4 indicating that insignificant difference in overall.

9.4. Testing Research Question (3): Is there any significant difference in customer satisfaction across particular demographic attributes.

The hypotheses pertaining to this research question are given as under:

RQ3H01: There is no significant difference in 'customer satisfaction' across gender.

RQ3H02: There is no significant difference in 'customer satisfaction' across age categories.

RQ3H03: There is no significant difference in 'customer satisfaction' across education levels.

RQ3H04: There is no significant difference in 'customer satisfaction' across income groups.

RQ3H05: There is no significant difference in 'customer satisfaction' across private telecom sectors.

In order to test the above hypotheses t test and one way ANOVA have been performed on the data. Moreover, the results are given in below Table 10:

Table 10: Summary of Hypotheses of Researech Question (3)

S.No.	Hypotheses	T	F	P	Result
RQ3H01	There is no significant difference in 'customer satisfaction' across gender	-.415	-	.678	Accepted
RQ3H02	There is no significant difference in 'customer satisfaction' across age categories	-	6.995	.000	Rejected
RQ3H03	There is no significant difference in 'customer satisfaction' across education levels	-	12.818	.000	Rejected
RQ3H04	There is no significant difference in 'customer satisfaction across income groups	-	2.324	.056	Accepted
RQ3H05	There is no significant difference in 'customer satisfaction' across private telecom sectors	-.948	-	.343	Accepted

Source: SPSS_20.0 output (based on survey)

As reflected in the Table 10 null hypotheses RQ3H01, RQ6H04, and RQ3H05 are accepted owing to results indicating insignificant difference in customer satisfaction across gender, income, and public or private sector. RQ3H02 and RQ3H03 are rejected reflecting significant difference in customer satisfaction across **age and education level.**

10. Conclusion

The study examines "relationship between the service quality and customer satisfaction in private telecom sector in India." This study guided by objectives and 3 research questions, 17 hypotheses were proposed (7 hypotheses for research question 1, 5

hypotheses for research question 2, 5 hypotheses for research question 3). The dimensions of service quality in private telecom sector were identified from extent literature which includes (Reliability, assurance, empathy, responsiveness, tangibility, and price). Furthermore, research framework was developed relating the service quality and satisfaction. The overall service quality exerted a significant and a strong relationship with customer satisfaction.

11. Suggestions:

In line with findings of this study the following suggestions are offered to the telecom sector providers in India:

- Telecom companies need to improve their level of service quality in all 31items, represented in 6 dimensions of service quality. More specifically, improvement of service quality must be made in price where the service quality gap was wider.
- Private sector telecom companies need to improve their service quality in 18 items, represented in 5 items of price, 4 items of tangibles, 6 items of reliability, and 3 items of responsiveness.
- The present study found that the service quality level in private telecom sector was less than the service quality level in public telecom sector. Thus, to augment their level of service quality private companies should strive to minimize the service quality gaps by offering affordable prices for customers, listening to customer requests and queries, keeping customer updated on new services, restructuring plans as the customers' life changes, providing services at the promised time, and responding well to the needs of customers.
- The study found that attributes empathy and reliability show the highest positive impact on both customer satisfaction. As these attributes are related with customers and employees, both public and private telecom sector should take more initiatives to construct training programs for employees in human skills.
- The study has found from literature review that there is a strong positive effect of customer satisfaction on customer loyalty; thus, telecom companies should make efforts to increase the satisfaction levels of their customers by improving the level of service quality. Thereby, the improvement in service quality is more likely to have significant impact on customer satisfaction and customer loyalty.
- The study found that customers of private telecom sector are likely to switch their service providers and say negative words of mouth about their service providers; thus private telecom sector should endeavor to improve their overall service quality level which in turn enhances the level of customer satisfaction. Thereby, customers of private sector can be expected to remain loyal to their service providers due to the significant impact of customer satisfaction on customer loyalty. On the other hand, public sector should make efforts to enhance their overall service quality level which will motivate their customers to towards building long relationship with their service providers.
- The study found significant differences in customer satisfaction due to demographic attributes of gender, age, education, and income. So, telecom companies should take care of the customers' needs and interest due to their belonging to different segments with a view to satisfy them and gain their loyalty.
- Telecom sector companies should maintain continuous improvement in service standards.
- Telecom sector companies should introduce new innovative products and services.
- Telecom sector companies should also focus on employee satisfaction by enhancing internal service quality (i.e., improve the standers of employees selection, development, rewards, and recognition). Consequently, employee satisfaction will lead to customer satisfaction and loyalty.

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