Service Quality and Customer Satisfaction
With Reference to Cellular Phone Industry of Nepal

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Abstract

Over the past decades, the Nepalese telecommunications sector has grown remarkable due to increasing use of smartphones in various purposes. Quality in cellular phone service is always assumed as primary factor to attract and retain customer, thus customer satisfaction in relation to this industry is vital for the companies. The users of cellular phone expect quality on various service provided and wish fair value and satisfaction. The purpose of the paper is to assess customer perception in five dimensions of service quality (i.e.; tangibility, reliability, responsiveness, assurance, and empathy) using SERVPERF model and their association with customer satisfaction. A structured questionnaire survey conducted to collect opinions from 336 sample representing service users of various service providers. The collected data was processed and analyzed using SPSS software. The questionnaire including 22 service quality measures and four satisfaction measures was used. The results from descriptive analysis suggested the presence of acceptable service quality. In addition, the Pearson's correlation indicated positive and significant associations between the five dimensions of service quality and customer satisfaction.

Keywords: service quality, customer satisfaction, cellular phone industry, SERVPERF model

Introduction

The telecommunications system has been the fastest-growing medium of communication, revitalizing global interface interactions. Today's development of communication technology has played a primary role in the globalization of various means and created the "global village" phenomenon. After the introduction of mobile phones and smartphones, the global village concept has been boosted and has led to the competition today. This industry seems to be prime market activities that aim at attaining competitive advantages through permutations and combinations of multiple service variables without confining it to particular geographical regions (Chan-Olmsted & Jamison, 2001).

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Telecommunication history in Nepal began with the establishment of the state-owned Nepal Telecommunications Corporation (NTC) in 1975. After 29 years, NTC was transformed into Nepal Doorsanchar Company Limited in 2004. The company is known to the public by the brand name Nepal Telecom (NT) as a registered trademark. The government of Nepal undertook liberal policy in the sector in 2004 by introducing the Telecommunications Policy, which paved the way for the liberalization of the telecom sector in Nepal. After that, a batch of private sector operators such as United Telecom Limited (UTL), N Cell, STM Telecom Sanchar Pvt. Ltd., Smart Telecom, and Nepal Satellite have entered the Nepalese telecom sector. Since the telecommunications sector is experiencing exceptional change with the liberalization and privatization of the sector in Nepal, which in turn widens fierce competition (Shah, 2012). Due to the competition and service quality as well, only NT and N Cell are enjoying more customer holdings and business success.

The mobile operating service industry is one of the most widely expanding service businesses globally and in Nepal as well. The service has opened an ocean of opportunities for potential consumers to enjoy versatile choices among the service providers. This industry operates in a highly complex and dynamic environment. Tough competition among service providers is common. The extended services provided by the operators and the quality of their services are basic tools for gaining market share and competitiveness. The argument has shifted from "quality costs money" to "quality makes money," according to Harrington (1987), which is also relevant to this industry.

The mobile service providers that are able to provide customers with new advanced features and updated technology at reasonable prices are achieving success, thus making companies capable of attracting and retaining customers and enjoying long-term success and growth. Mobile service providers are expected to compete in terms of both price and quality of service. The success of such companies largely depends on their proficiencies in meeting consumers' requirements and expectations. Service quality is a crucial factor in attracting and retaining customers (Kotler & Keller, 2006). The competitors within the mobile service industry also consider customers to be more valuable assets and consider customer satisfaction through better service quality offerings.

Research Objectives

The telecommunications industry of Nepal at present is facing the major obstacles of relentlessly increasing market rivalry as well as increasing customers' expectations regarding service quality. This industry passes in the environment as stated by the Juran Institute (1994): "To survive in today's environment of global competition, never-ending change and complexity, rising customer expectations, and continuous cost pressures,

focusing on quality is no longer a choice; it is mandatory." Customers have very few choices of selection among the mobile service providers based on their satisfaction level, affordability, and the quality of service being provided. In the context of the Nepalese mobile service industry, not only must quality and profit be understood to be non-exclusive (Mizuno 1992), but quality has also emerged as a critical differentiator in order to thrive in a market that is becoming more and more competitive.

This problem arises in the sense that the current consumer is becoming more informed, the risk of changing mobile service operators is greater, and the products and services available in the market are becoming increasingly similar, making the quality of service the main differentiating factor and source of customer satisfaction. The main issues of the current study are the existing status of service quality and the associated satisfaction level of the sector. In this context, this study has been conducted to analyze customer perceptions on service quality of the operators in terms of five dimensions (i.e., tangibility, reliability, responsiveness, assurance, and empathy) and satisfaction, and to examine the associations between service quality and customer satisfaction.

Review of Literature

Concept of Quality. Quality is the judgment made by a customer after the use of a product or service. It is an evaluative judgment whereby a customer compares their expectations with regard to the product and their perceptions achieved after use. In general, when customers perceive equal or more features or utilities in the product, quality is perceived. Customers determine quality as the degree to which the essential competences of the product satisfy both the implicit and explicit necessities of the customers. In a general sense, quality is about more than a product simply working properly, avoiding complaints, and defect-free operations.

Haider (2001) mentioned quality as the totality of features and characteristics in a product or service that bear upon its ability to satisfy needs. Quality arises when a product or service is free of deficiencies or has characteristics that satisfy customer needs.

Quality is an important determinant of customer satisfaction. It depends on whether the companies sell products or services to customers; the evaluation of quality varies according to the different dimensions. There are two kinds of quality, which are service quality and product quality. Similarly, Gravin (1987) termed quality using five various approaches: First, there is the presence of transcendent or innate excellence. Second, product-based, or the quantity of a desirable attribute that is present. Third, user-based in the context of fitness for use. Fourth, manufacturing-based or conformance to specification; and final, value-based or satisfaction relative to price.

Product Quality and Service Quality. Product quality is based on tangible product features. Thus, the term "conformance" is used to denote product quality, which is the degree to which a product characteristic meets preset standards. Similarly, product performance is also widely used to evaluate the quality of a product; the defect- and error-free performance makes the user positive about the product. Garvin (1987) outlined various eight dimensions representing product quality. These dimensions include performance, denoted by the operating characteristics of a product, product features, reliability as conformance against failure, durability, match of design with standards, serviceability in terms of speed and competency of repair, ascetics of the product, and finally, the perceived quality evaluated by comparing with similar products.

In contrast to products having tangible features, services are intangible and based on experience gained by the service user, thus based on perceptions, which can be subjective. Different types of perceptual factors—responsiveness to customer needs, courtesy and friendliness of staff, promptness in resolving complaints, atmosphere, etc.—are dimensions used in defining quality. Service by nature is intangible, inseparable, and heterogeneous; thus, it cannot be measured in terms of features but is assessed subjectively by a customer based on the premise of service performance. Services cannot be seen, touched, held, or stored; they cannot be packaged and put in a bag to take home when customers purchase them (Zeithaml & Bitner, 2003). Further, service quality is a measure of how well the service level delivered matches customer expectations (Weitz & Wensley, 2002).

Measurement of Service Quality. Service quality is an evaluative judgment of a customer based on their expectations and perceptions. Service quality is a dynamic concept; a customer receiving the same service across different time intervals may perceive it differently. Measuring service quality is a highly subjective and challenging task. Douglas and Connor (2003) attributed service quality measurement to two aspects. First, the higher the customers' perception of quality is based on the degree of shortcomings, and these customers consider the attributes of service (heterogeneity, inseparability). Secondly, service quality also depends on the delivery process of services. Eventually, the outcomes and the processes will be the criteria for customers to evaluate the service quality. Gronroos (1983) also stated that service quality perceived by customers is affected by two dimensions: technical quality and functional quality. The technical quality emphasizes 'what' the customer actually receives from service, and the functional quality focuses on 'how' service is delivered. More importantly, the behavior of employees and speed of service delivery are the important elements of functional qualities.

Assessment of service quality is concerned with measuring the attitudes of service users on various dimensions of service quality. It is subjective and qualitative, too. Diverse forms of measures have been developed for this purpose, such as the Grönroos' model (Grönroos, 1984), SERVQUAL (Parasuraman et al., 1988), and SERVPERF (Cronin Jr. & Taylor, 1992), as generic measuring tools of service quality.

SERVQUAL Model. The SERVQUAL model was developed by Parasuraman et al. (1985) and is known as the gap model. The subsequent SERVQUAL instrument is intended to identify and measure the gaps between customers' expectations and perceptions of the service received. The model is consumer-centric, whereby customers evaluate the direction and degree of difference between the expected service and the perceived service. The gap between expectations and perceptions of performance fixes the level of service quality. The SERVQUAL instrument measures the gap between expected and perceived services within the five dimensions of service quality.

SERVPERF Model. Cronin and Taylor (1992, 1994) preferred and referred to using the SERVPERF model instead of the SERVQUAL instrument. They reasoned that simple perceptions could be adequate for measuring service quality and that those expectations should not be included in the measurement; thus, they developed the SERVPERF model by eliminating the expectations component from the SERVQUAL model. This is a single-score perceptions-only model and a service performance-based model. The model advocates that service quality is a vital precursor to consumer satisfaction. This model also uses the same five-dimension, 22-item construct to measure service quality. Due to its simplicity, this model has been widely used to measure perceived service quality in various service sectors.

Customer Satisfaction. A customer assessment and the degree to which their expectations are met determine customer satisfaction. Customers assess the quality of a service by contrasting their expectations with their impressions of what they actually receive. According to Alan et al. (2012), customer satisfaction is defined as the customer's assessment of a product or service in terms of how well it meets their requirements and expectations. In marketing literature, customer satisfaction is viewed as the result of a customer's perception of the value received in a transaction or relationship, where value equals perceived service quality relative to price and customer acquisition costs (Heskett et al., 1990) relative to the value expected from transactions or relationships with competing vendors (Zeithaml et al., 1996). According to Gerpott et al. (2001), a customer's perceived experience of how well a provider meets his or her expectations serves as a proxy for customer satisfaction.

A consumer's attitude toward a used good or service that comes from a series of contacts is also known as customer satisfaction. Through a series of interactions with suppliers of goods and services, consumers will form opinions about the quality of those goods and services, and their level of satisfaction will depend on how well those goods and services are evaluated overall (Yi, 1990). Similarly, customer satisfaction is frequently described as the result of the services or products as evaluated by the customers after the purchase (Fornell, 1992). Furthermore, the accumulation of favorable service encounters might also lead to increased customer satisfaction (Jones & Suh, 2000, 147). Positive experiences undoubtedly boost customer satisfaction.

A key component of long-term corporate success is customer satisfaction. Companies utilize customer satisfaction surveys to obtain objective assessments of how well their goods or services are doing. Higher levels of customer satisfaction for competing products and services guarantee greater client loyalty and retention. Businesses that continuously meet the needs of their clients benefit from higher customer retention rates and enhanced profitability as a result of the clients' greater loyalty (Wicks & Roethlein, 2009, p. 83).

Service Quality and Customer Satisfaction Association. Parasuraman et al. (1985) suggested that when perceived service quality is high, it will lead to an increase in customer satisfaction. Saravana and Rao (2007) accepted that customer satisfaction is based upon the level of service quality provided by the service provider. The results of Negi (2009) in relation to the mobile industry found that reliability and network quality (an additional factor) are the key factors in evaluating overall service quality, but they also highlighted that tangibles, empathy, and assurance are also important in evaluating perceived service quality and customer satisfaction.

The study by Fen and Lian (2005) proved a close link between service quality and customer satisfaction. They found that both service quality and customer satisfaction have a positive effect on customers' re-purchase intentions. Ojo (2010), in the case of the Nigerian telecom industry, concluded that to ensure customer satisfaction levels are high, telecom organizations must first of all know the expectations of the customers and how they can meet those expectations.

The study by Egena (2013) in the context of Nigerian telecom service quality revealed that higher customer satisfaction was associated with lower switching intention, and lower customer satisfaction correlates with a higher switching intention among the subscribers. In addition, Bhagat (2014) found a positive relationship between service quality and customer satisfaction and loyalty with reference to Indian mobile service operators' quality. Kushwaha and Vargav (2014) concluded that there is a statistically

service quality have shown a positive and significant effect on customer satisfaction.

Safi and Alagha (2020) found a significant relationship between service quality and customer satisfaction of the Indian private telecom sector. Similarly, the results of Abd-Elrahman (2023) revealed a strong positive relationship between service quality dimensions and customer satisfaction and loyalty. Shava (2021) revealed a significant effect of the service quality dimensions of assurance, tangibility, reliability, and empathy on customer satisfaction. However, his result showed a moderately positive effect on customer satisfaction.

Methods

This study attempts to analyze the service quality and customer satisfaction of the mobile network industry in Nepal. The descriptive research design has been used to explain the status of various dimensions of service quality in the networks and customer perceptions of satisfaction and loyalty. The comparative research design (especially the correlational research design) has also been applied to examine the association among five service quality dimensions with customer satisfaction.

Kemp (2023) claimed that a total of 42.78 million cellular mobile connections were active in Nepal in early 2023, which is 139.2% of the total population at the date. These users use cellular mobile services provided by major operators like Nepal Telcom, N Cell, Smart Cell, etc. The first two operators are major players and rivals in this industry. All mobile phone users in Nepal are thus the study population. This study has used purposive and snowball sampling techniques for sampling. A total of 339 smartphone service users are considered the study population using services from the aforementioned mobile service operators.

This study uses quantitative data collected from primary sources through a questionnaire. The source of information is the opinions reflected by the users of mobile network services provided by three major mobile phone operators. The structured questionnaire based on the SERVPERF model was used to collect the perceived performance of service quality within five dimensions of a 22-item instrument. The final set of questionnaires was administered after a pilot test with some experts, academicians, and mobile service users. There were three sections of the questionnaire, each belonging to: respondents' profiles, service quality dimensions, and customer satisfaction, along with a cover letter. The first section was used to tick or circle the classification or characteristics and fill in the blanks type of questions, and in the remaining two sections,
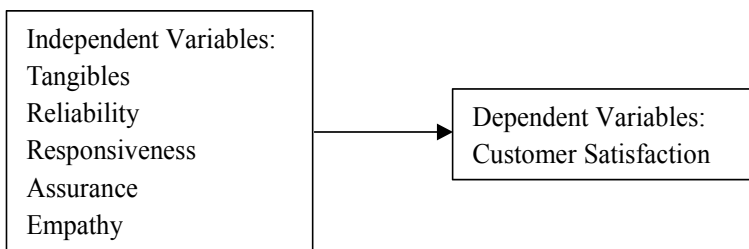
a five-point Likert type scale ranging from strongly disagree (1) to strongly agree (5) was used. The statistical analysis program SPSS was used to process and analyze the data collected from the survey. The descriptive statistics, including mean, standard deviation, minimum, and maximum scores, were used for the descriptive analysis of the study variables. Similarly, Pearson's correlation analysis was used to assess the association between service quality dimensions and customer satisfaction.

Conceptual Framework, Definition of Variables and Hypotheses

Service quality is an evaluative judgement done by a customer by perceiving service after use in relation to expectations. The assimilation theory developed by Frestinger in 1957 assumes customer satisfaction is a state of balance between the customer's previous expectations and actual product or service performance. Similarly, contrast theory by Hovland et al. (1957) argued that customers tend to perceive satisfaction when product performance matches the advertising. Anderson (1973) advocated assimilation-contrast theory that merges assimilation and contrast theories. The idea behind this theory is relatively comparable to the zone of tolerance. Customers still purchase a product or service if a gap occurs within the tolerance zone, even if there is a failure to meet customer expectations.

Figure 1

Theoretical Framework of the Study

To measure service quality of cellular phone service, this study uses five dimensions of service quality (tangibles, assurance, responsiveness, assurance, and empathy) as independent variables and customer satisfaction as dependent variable (Figure 1). These dimensions are suggested by most used models of service quality measurement models-SERVQUAL proposed by Parsuraman et. al. (1985) and SERVPERF by Cronin and Taylor (1992, 1994). This study uses SERVPERF model considering customer perception only to measure service quality which leads to customer satisfaction. Table 1 reports brief concept of service quality dimensions and items used for measurement.

Table 1

Definitions of Study Variables

Dimensions of service quality	Variable definition	No of items
Tangibility	Measures how dependable a customer views a service provider to be based on the quality of its most visible attributes, which may include physical facilities, equipment, and staff appearance.	4
Reliability	Measures the ability of the service provider to perform a promised service dependably and accurately.	5
Responsiveness	Measures service provider's willingness to offer customers prompt service.	4
Assurance	Measures knowledge, courtesy, and ability of the organization's employees to inspire trust and convey confidence among its customers.	4
Empathy	Measures service provider's depth of caring, approachability, and giving of individual attention to the organization's customers.	5
Customer satisfaction	Measures the degree of meeting expected quality after use of the service	4

Based on the conceptual framework, the study hypotheses have been developed with view to measure association between service quality dimensions and customer satisfaction as listed.

H1(1): The tangibility of service providers is positively associated with customer satisfaction.

H1(2): The reliability of service providers is associated positively with customer satisfaction.

H1(3): The responsiveness of service providers is associated positively with customer satisfaction.

H1(4): The assurance of service providers is associated positively with customer satisfaction.

H1(5): The empathy of service providers is positively associated with customer satisfaction.

Results

The computed SARVQUAL items' Cronbach's alpha is .818, indicating a high level of internal consistency of the scales, hence the higher reliability of the scale. Accordingly, Cronbach's alpha of satisfaction measure items is found .521, proving an acceptable level of internal consistency for the e scale used.

Table 2

Frequency of the Respondents Based on Demographic Variables

Baseline Characteristics	N	Percent
Gender		
Male	187	55.7
Female	149	44.3
Age Group		
Below 15	2	0.6
Between 16 to 25	106	31.5
Between 26 to 40	201	59.8
Between 41 to 60	25	7.4
Above 60	2	0.6
Education		
Up to SLC/SEE	28	8.3
Higher secondary/ Intermediate	111	33
Bachelor's degree	100	29.8
Master's degree	92	27.4
Other	5	1.5

Note. N = 336

So far, the demographic features of the respondents are concerned, the majority of respondents are male, accounting for 55.7% of the sample, i.e., 187 respondents (Table 2). The majority of the respondents fall between the ages of 26 and 40 years (59.8%) followed by 31.3% of 16 to 25 years of age.

On the other hand, a total of 111 respondents have higher secondary/intermediate level of education followed by 100 and 92 respondents having bachelor's degree and master's degree respectively.

As depicted in Table 3, the tangibility dimension of customer perceptions of service instructions (mean = 3.70) and operator-provided facilities (mean = 3.65) is more

impressive. Employee appearance and accessibility for the disabled were also found satisfactory. The average tangible dimension of the mobile service operators was found to be moderately satisfactory by the customers. The service users also found some reliability constructs satisfactory, such as meeting deadlines (mean = 3.56), providing services as per contract (mean = 3.54), and the operator's ability to perform services on the first try (mean = 3.51). The remaining two constructs of the dimensions also exceed mid-range.

Table 3

Descriptive Statistics of Service Quality Dimension and Customer Satisfaction

Items	Mean	Std. Dev.
Tangibility		
The employees are groomed appearance and dress appropriately for the functions they perform	3.27	0.854
The facilities of your network operator attractive / appropriate.	3.65	0.646
Your network operator has good accessibility for the disabled.	3.44	0.778
The instruction about the products / services provided by your network operator is clear and self-explanatory	3.7	0.735
Reliability		
The systems, equipment and their network operator tools are modern and effective	3.34	0.88
Network operator provides entertainment waiting time (e.g. background music, magazine, television, etc.)	3.42	0.835
Your network operator can perform its services on the first try	3.51	0.89
Your network operator meets the deadlines	3.56	0.785
The provision of services by the network operator occurs as contracted	3.54	0.798
Responsiveness		
Your network operator provides information clearly and objectively	3.42	0.92
As a user, when you have an unresolved situation, your network operator demonstrates determination to solve it	3.4	0.875
Your network operator provides a quick and efficient service	3.48	0.904
Your network operator always tries to help you	3.48	0.897
Assurance		
The employees of the network operator are clear and objective in information they provide	3.41	0.87
The employees of the network operator have a response capacity in answering to the client's complaints	3.49	0.88
Your network operator is effective in solving problems	3.52	0.853
Your network operator always provides information about when the contracted services will be performed	3.48	0.877

Items	Mean	Std. Dev.
Empathy		
You feel safe regarding the information you provide to your network operator, because it will not disclose them or use them incorrectly	3.41	0.887
The employees of your network operator transmit you confidence and make you feel safe	3.54	0.932
The employees of your network operator are always kind and polite you	3.62	0.857
The employees of your network operator have the expertise to answer the questions you ask them	3.55	0.797
Your network operator provides you with individualized attention and personalized service (e.g. indicating the best tariff, i.e. which best suites your needs)	3.4	0.855
Customer Satisfaction		
I am satisfied with the overall service quality offered by this operator	3.52	0.842
I am satisfied with the professional competence of this operator	3.56	0.861
I am satisfied with the performance of the frontline employees of this operator	3.62	0.754
I am comfortable about the relationship with this operator	3.66	0.763

Note. Minimum value of all the items is 1 and maximum is 5

Source. Questionnaire Survey, 2021

The four statements used to measure the responsiveness quality of the mobile service operators have almost similar mean values, ranging from 3.40 to 3.48, and these scores represent service users' agreed perceptions of those constructs. Providing quick and efficient service (mean = 3.482) and the operator's willingness to help (mean = 3.485) are their most favored attributes.

Assurance, the fourth service quality measurement dimension used in the study, has a satisfactory score, as all four statements have mean scores near 3.50, indicating the agreement of the user that the service providers have assured them of their services. The construct—operators are effective in solving problems (mean = 3.52), always provide information about contracted services (mean = 3.48), and operators having response capacity in answering clients' complaints (mean = 3.49), indicate the success of the operators in ensuring their customers.

The empathy dimension, with five measurement statements, has favorable scores on behalf of their service quality as perceived by the respondents. Among the five constructs used, kind and polite employees (mean = 3.62), expertise in answering questions (mean = 3.55), and network operators' ability to transmit confidence and make a safe feel (mean = 3.54) are the qualities more preferred by the customers.

The customer satisfaction scores of all four items exceed the mean value of 3.50, indicating satisfactory perceptions of the service user. The statements; customers are comfortable with their relationship with the operator (mean = 3.66), satisfied with

frontline staff (mean = 3.62), satisfied with the professional competencies of the operator (mean = 3.56), and satisfied with the overall service quality of the operators (mean = 3.52), clearly indicating satisfied customer responses to the service being provided by the operators.

Table 4

Correlation Matrix of the Study Variables

	Tangibles	Reliability	Responsiveness	Assurance	Empathy	Satisfaction
Tangibles	1					
Reliability	.403**	1				
Responsiveness	.384**	.468**	1			
Assurance	.363**	.411**	.487**	1		
Empathy	.329**	.389**	.460**	.523**	1	
Satisfaction	.483**	.463**	.464**	.411**	.480**	1

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

The correlation matrix (Table 4) shows Pearson's correlation coefficient and significance scores for the study variables. The association of all five dimensions used to measure service quality with customer satisfaction is moderately correlated with customer satisfaction. The correlation between tangibles and customer satisfaction was found to be positive and significant (correlation coefficient:.483, p-value:.000). Furthermore, the result revealed that the reliability theme has moderately positive and significant associations with customer satisfaction (correlation coefficient:.463, p-value:.000). Similarly, the correlation between responsiveness and customer satisfaction was found to be moderately positive and significant (correlation coefficient:.464, p-value:.000). The next service quality measure, assurance, was found to be positively and significantly associated (correlation coefficient:.411, p-value:.05) with customer satisfaction. In addition, the correlation between empathy and customer satisfaction was found to be positive and significant (correlation coefficient:.480, p-value:.000). On the basis of these results, all five alternative hypotheses that claimed positive associations with customer satisfaction have been accepted.

Discussion

The purpose of this study was to determine the status of service quality being offered by Nepalese mobile telecom companies on the basis of customer perceptions on five dimensions: tangibles, reliability, responsiveness, assurance, and empathy, respectively. The result of the descriptive analysis indicated a satisfactory level of all these

dimensions, as the mean score of all dimensions exceeded average. The customers have perceived the existing service quality of these companies positively.

The empirical results indicated a positive and significant correlation of all five service quality dimensions with customer satisfaction in the context of Nepalese cell phone service providers, which is consistent with the findings of many previous studies (Abd-Elrahman, 2023; Bhagat, 2014; Fen & Lian, 2005; Ojo, 2010; Safi & Alagha, 2020; Shava, 2021; Shrestha & Ale, 2019). The findings indicated that the companies still need to improve their service quality. More specifically, policies and programs enhancing reliability, assurance, responsiveness, tangibleness, and empathic behavior would also lead to increased customer satisfaction.

Further, the study revealed that customer satisfaction was positively and significantly correlated with all five service quality dimensions. The correlation between service quality dimensions and customer satisfaction was found to be moderate.

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