

# An analytical study on service quality of telecom service providers in India with help of SERVQUAL tool

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**Abstract**—Over the past ten years, India's telecom sector has grown significantly. Increased competition and lower tariffs are the results of the telecom industry's rapid expansion, which is opening doors for numerous telecom companies from Europe, Asia, and other regions of the world. Customers' perceptions of the services they receive and their behavioural intentions are crucial factors in the process of switching service providers in the current competitive climate. Finding the discrepancy between customer expectations and perception is crucial given the evolving standards for service excellence. In this regard, the current study's objectives are to determine the current discrepancy between customer expectations and perceptions and look into the connection between consumers' behavioural intentions and their post-experience perception of service quality. One hundred clients in India, provided the data. Multiple correlation analysis and the paired sample t-test were used. The study's findings highlight the main areas, such as responsiveness and dependability, where there are appreciably large service differences. Customer behavioral intentions, such as "Reducing usage with a particular service provider," "Switching to another service provider," and "Complaining to customer service if a problem occurs," have demonstrated a substantial correlation with service quality. The findings of the study confirm that the perceptions of customers regarding the quality of service received definitely have an impact on their behavior.

**Index Terms**—service quality, expectations, perceptions, behavioural intentions, telecom service providers.

## I. INTRODUCTION

Telecommunications is one of the key sectors that has shown itself to be significantly influencing the growth of the Indian economy. The liberalization of government laws, favourable demographics, changing lifestyles, and expanding economic opportunities have made India a popular site for telecom service providers. In terms of telephone connections, the Indian telecom network is the "second-largest network

after China" (Mani, 2005; Yadav, 2014). According to the Telecom Regulatory Authority of India (2017), there were only 898.02 million phone customers in the telecom sector overall in March 2013, but by the end of September 2017, that number had grown to 1206.71 million, representing a 308.69 million growth. It is one of the most competitive and rapidly expanding telecom sectors in the world, and it accounts for around 2% of the nation's GDP. Additionally, the sector has been revitalized by robust consumer demand. Along with the government of India's efforts to empower its citizens by transforming India into a digital economy, the telecom sector in India is also playing a big part (Ministry of Electronics and Information Technology, 2018). However, success won't be achieved solely by altering business plans and coming up with fresh ideas for making money; rather, it will also require focusing on raising service quality and taking into account customer feedback and shifting mindsets (Ojiaku & Osarenkhoe, 2018). Indian consumers are calling for higher-quality services more and more due to growing awareness and expectations (Chopra & Chawla, 2018). "The rise in subscribers' switching behavior to other service providers is also concerning, even though these operators are finding it difficult to maintain their customers' perceptions and expectations" (Pandey & Kumar, 2018).

The term "consumer behaviour" describes the act of using goods or services. According to Glenn Wilters, "Human behaviour refers to the total process by which individuals interact with their environment," Consumer behaviour is the process through which individuals decide whether, what, when, where, how, and from whom to purchase goods and services. Planning and executing marketing plans would be greatly aided by an understanding of consumer behavior. What a firm is decided by its customers.

Drucker, Peter F. The act of using a product or service is known as consumer behavior.

Background of the Study:

India's telecom market has grown significantly in recent years, making it one of the biggest and most competitive in the world. With the rapid advancement of technology, increasing mobile phone penetration, and the demand for high-speed internet, telecom companies have expanded their services across urban and rural areas, making telecom a crucial part of everyday life. The emergence of new players, along with aggressive pricing and service offerings, has increased competition in the industry, forcing service providers to continuously enhance their offerings to maintain customer satisfaction.

Because it has a direct impact on customer loyalty, retention, and corporate performance, service quality is a crucial component of the telecom sector. In a setting where price wars rule and service differentiation is scarce, customer choices are frequently determined by the quality of the services provided. Telecom operators must so comprehend and evaluate service quality in order to enhance their offerings, satisfy client demands, and gain a competitive edge.

The SERVQUAL model, created by Parasuraman, Zeithaml, and Berry in the late 1980s, is among the most widely used instruments for evaluating service quality. SERVQUAL assesses service quality in five important areas: Assurance, Empathy, Responsiveness, and Tangibles. Numerous businesses, particularly telecoms, have made extensive use of the concept to gauge and contrast consumer opinions of service quality with their expectations.

In the context of India, telecom service providers face a diverse and dynamic market where customer expectations are shaped by factors such as regional differences, cultural influences, and varying levels of access to technology. Therefore, using the SERVQUAL model can help gain deeper insights into the gaps between customer expectations and perceptions of service quality, enabling telecom companies to identify areas of improvement and make informed decisions on how to enhance their services.

Using the SERVQUAL approach, this study attempts to evaluate the service quality of telecom service providers in India. In order to better understand the current status of service delivery, pinpoint areas of dissatisfaction, and propose viable methods for enhancing service quality in the Indian telecom industry, the study will assess customer perceptions and expectations. In addition to improving consumer satisfaction, the study is essential for giving telecom businesses insightful information about how to maintain their competitiveness in a rapidly changing industry.

## II. PROBLEM STATEMENT

The Indian telecom market has grown and changed quickly, making it one of the biggest and most competitive in the world. Despite this expansion, fierce rivalry, price sensitivity, and a wide range of customer expectations make it difficult for telecom service providers to maintain excellent service quality. Since service quality has a direct impact on customer loyalty, retention, and the overall business performance of telecom businesses, customer happiness is fast emerging as the primary differentiator in this industry.

However, service quality in the telecom industry often suffers from gaps between customer expectations and their perceptions of actual service delivery. The vast and varied customer base, coupled with the constant technological advancements, adds complexity to understanding and improving service quality. Existing studies and reports show that telecom companies in India frequently struggle to meet customer expectations, leading to dissatisfaction, churn, and negative brand perception.

The SERVQUAL model, which assesses service quality across five dimensions—Tangibles, Reliability, Responsiveness, Assurance, and Empathy—offers a comprehensive framework to analyze customer expectations and perceptions. Despite its wide application in various industries, there is a lack of in-depth research that evaluates the service quality of telecom providers in India using the SERVQUAL tool, particularly in the context of the growing and competitive landscape of the sector.

By applying the SERVQUAL approach to analyze the service quality of telecom service providers in India, this study seeks to close this gap. Finding the gaps between customer expectations and actual service delivery, assessing telecom providers' advantages and disadvantages, and suggesting methods for enhancing service quality will be the main goals of the study. The study's conclusions will be essential for telecom firms looking to improve customer happiness, expand their service offerings, and obtain a competitive advantage in the Indian telecom sector.

### III. SPECIFIC PROBLEMS PERSISTING FOR THE STUDY

1. **Gap Between Expectations and Perceptions:** Customers' expectations often do not align with the actual service quality provided by telecom operators, leading to dissatisfaction and churn.
2. **Regional Inconsistencies:** Service quality varies across different regions, with rural and remote areas often experiencing lower standards than urban centers.
3. **Lack of Comprehensive Assessment:** There is a shortage of in-depth studies using well-established frameworks like SERVQUAL to assess overall service quality across telecom providers in India.
4. **Price Sensitivity Impacting Quality:** Intense competition and price sensitivity often cause telecom companies to prioritize affordability over service quality, affecting customer satisfaction.
5. **Technological Challenges:** The rapid adoption of new technologies, such as 5G, creates challenges in maintaining consistent service quality across networks.
6. **Poor After-Sales Service:** Many telecom companies suffer from inadequate customer support, long response times, and unresolved complaints, damaging customer trust.
7. **Customer Loyalty and Service Quality:** Inconsistent service quality leads to higher churn rates, as customers are less loyal to telecom companies that fail to meet their service expectations.

By assessing service quality using the SERVQUAL technique, this study seeks to solve these problems and provide guidance for enhancing customer loyalty and happiness in the Indian telecom industry.

### IV. OBJECTIVES OF THE STUDY

1. To use the SERVQUAL methodology to evaluate consumer expectations and perceptions of the quality of telecom services in India.
2. To assess service quality deficiencies in telecom service providers in terms of a number of factors, including responsiveness, empathy, assurance, tangibility, and reliability.
3. To evaluate the service quality of India's main telecom carriers and pinpoint their service delivery's advantages and disadvantages. to examine how customer loyalty and satisfaction are affected by service quality in the telecom industry.
4. To pinpoint the main causes of client discontent and offer fixes to raise the calibre of services.
5. To offer suggestions to telecom providers on how to close the gap in service quality and enhance the client experience.

The study highlights significant gaps between customer expectations and perceived service quality among telecom providers in India, as analyzed through the SERVQUAL model. Addressing these gaps by enhancing reliability, responsiveness, and customer-centric services can improve customer satisfaction and loyalty in the competitive telecom sector.

### HYPOTHESIS -

- 1.H1. Does the SERVQUAL model's measurement of telecom service providers' opinions of service quality in India differ significantly from that of their customers.
- 2.H2. Does customer satisfaction and loyalty in the Indian telecom sector significantly depend on service quality as evaluated by SERVQUAL dimensions.

### IV. RESEARCH METHODOLOGY

**Research Design-**The study follows a descriptive and analytical research design to assess the service quality of telecom service providers in India using the SERVQUAL model.

#### DATA COLLECTION METHOD

- **Primary Data:** Collected through a Google Form survey, designed to measure customer expectations and perceptions across the five

SERVQUAL dimensions (Tangibility, Reliability, Responsiveness, Assurance, and Empathy).

**Sampling Method & Size**

Sampling Technique: Convenience sampling method is used to gather responses from telecom service users across different demographics in India.

Sample Size: A minimum of 100-200 respondents (or as per data availability) will be targeted for meaningful statistical analysis

**DATA ANALYSIS METHOD**

SERVQUAL Gap Analysis: The difference between customer expectations and perceptions will be calculated for each SERVQUAL dimension.

Descriptive Statistics -To summarise the results, the mean, percentage, and standard deviation will be employed.

Inferential Statistics:

T-test or ANOVA (to check for significant differences between groups).

Regression Analysis (to examine the impact of service quality on customer satisfaction and loyalty).

**Research Tools & Software**

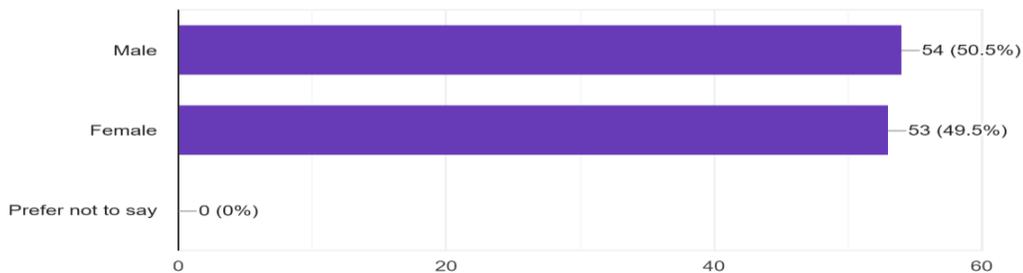
- Microsoft Excel (for data cleaning, statistical analysis, and hypothesis testing).
- Google Forms (for data collection).

**LIMITATIONS OF THE STUDY**

- The study relies on self-reported data, which may be subject to bias.
- The sample may not fully represent all telecom users across India.
- The study focuses only on the SERVQUAL model and does not incorporate other service quality frameworks.

**V. DATA ANALYSIS AND INTERPRETATION**

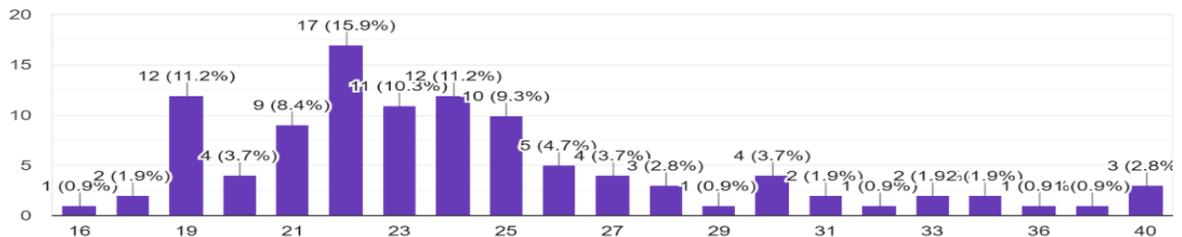
**Gender**  
107 responses



**Interpretation-**

- Male: 54 responses, representing 50.5% of the total.
- Female: 53 responses, representing 49.5% of the total.
- Prefer not to say: 0 responses, representing 0% of the total.

**Age**  
107 responses



Interpretation-

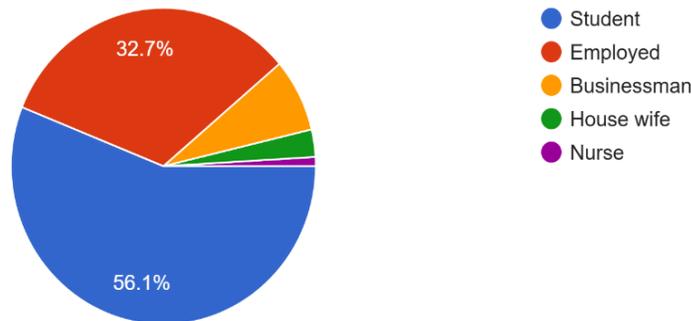
Peak Age Group: Twenty-year-olds make up the biggest percentage of responders (17 replies, 15.9%).  
 Concentrated Age Range: A younger population is indicated by the fact that most responders are between the ages of 19 and 25.

Decreasing Frequency with Age: After the age of 20, the number of responders often declines, indicating that older age groups are not as well represented in the data.

Fewer Older Respondents: The proportion of respondents in their 30s and 40s is quite small.

Occupation

107 responses



Interpretation-

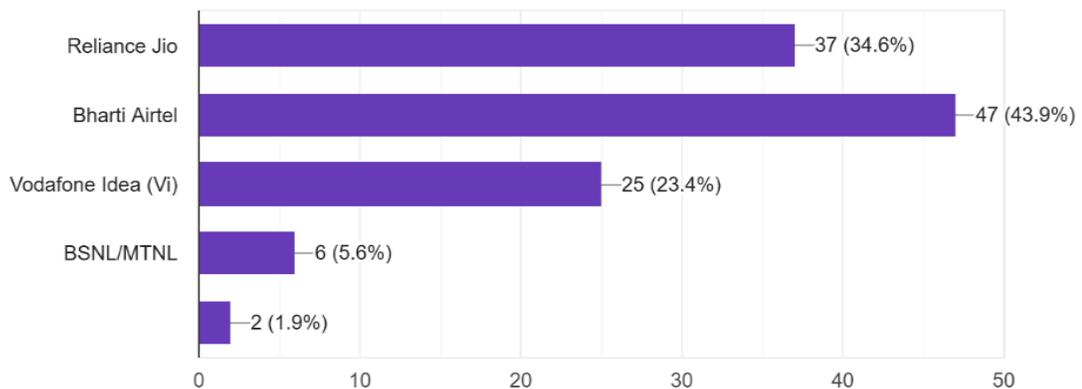
Dominant Category: With 56.1% of all responses, students make up the largest group of respondents.

Significant Portion Employed: Of those surveyed, a significant 32.7% are employed.

Other Categories: A lesser percentage of respondents fall into the remaining categories of businessman, housewife, and nurse.

1 . Which telecom service provider do you currently use?

107 responses

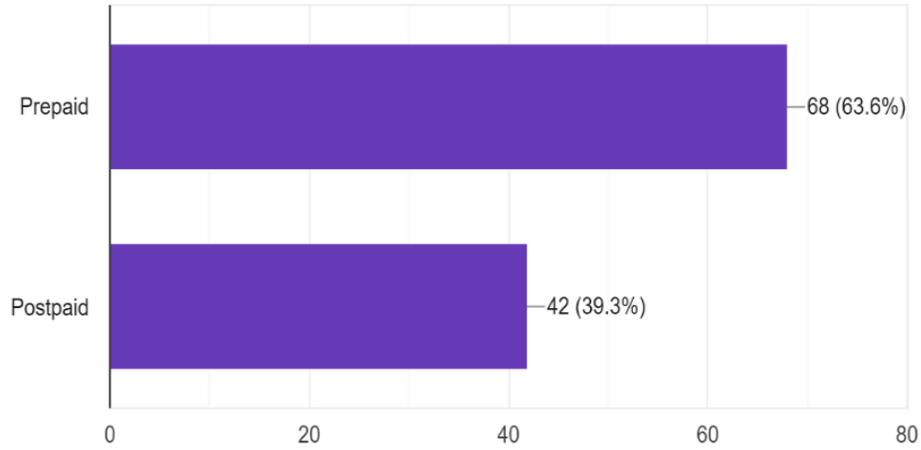


Interpretation-

Bharti Airtel is the leading telecom provider in this sample, followed by Reliance Jio and then Vodafone Idea (Vi). BSNL/MTNL has a very small share, and there's an anomaly with the negative value.

### 2 . What type of plan do you use?

107 responses

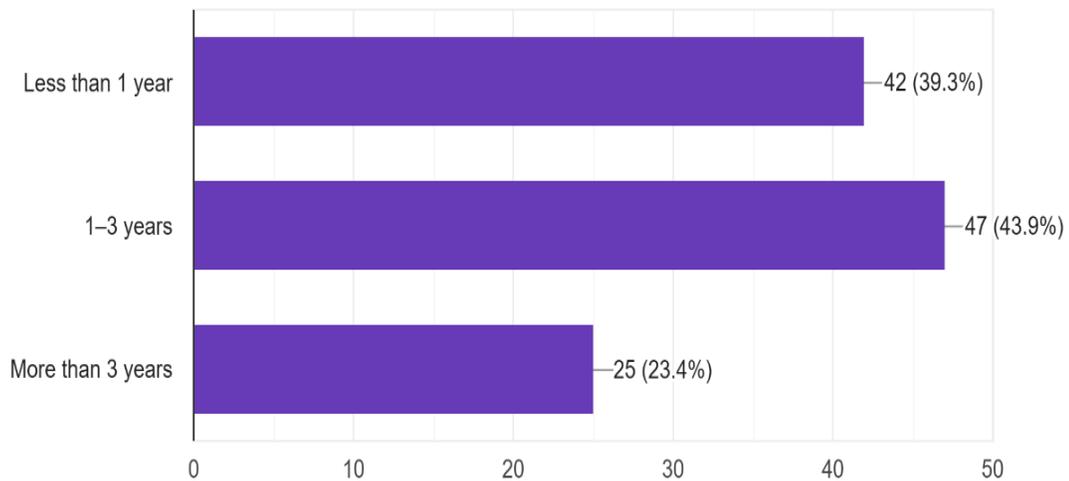


#### Interpretation-

Prepaid plans are significantly more popular than postpaid plans among the respondents in Mumbai, with 63.6% opting for prepaid over 39.3% for postpaid.

### 3 . What type of plan do you use?

107 responses

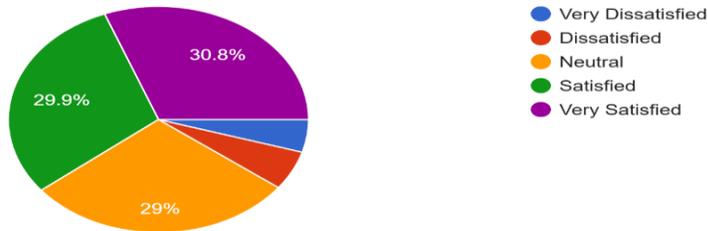


#### Interpretation-

The majority of respondents have been using their current telecom plan for 1-3 years (43.9%), indicating moderate customer loyalty. A significant portion (39.3%) have been using their plan for less than a year, suggesting a dynamic market with recent acquisitions.

4 . How satisfied are you with the physical facilities (e.g., network towers, customer care centers) provided by your telecom provider?

107 responses

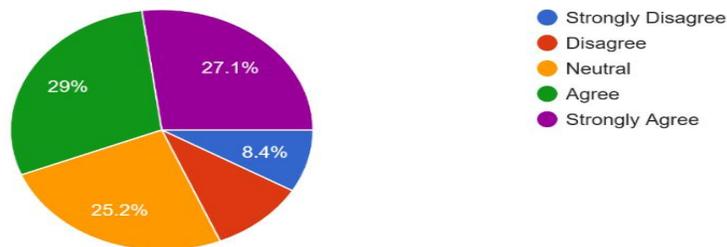


Interpretation-

The distribution of satisfaction with telecom provider physical facilities is relatively balanced. A significant portion of respondents are either very satisfied (30.8%) or satisfied (29.9%), indicating positive experiences. However, a notable 29% remain neutral, and a smaller percentage are dissatisfied or very dissatisfied. This suggests a mixed perception of the physical facilities provided.

5 . Does the provider offer clear and attractive promotional materials?

107 responses

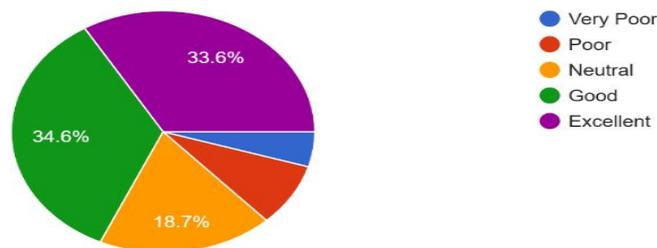


Interpretation-

There's a mixed response regarding the clarity and attractiveness of telecom provider promotional materials. While a significant portion agree (29%) or strongly agree (27.1%), a considerable number are neutral (25.2%) or disagree (8.4%), with some strongly disagreeing (8.4%). This suggests a need for providers to review and potentially improve their promotional strategies.

6 . How reliable is the network connection in your area?

107 responses



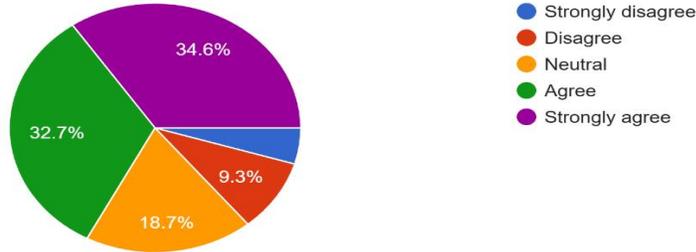
Interpretation-

The reliability of network connections shows a polarized response. A significant portion of respondents rate their network connection as either excellent (33.6%) or good (34.6%), indicating generally positive experiences.

However, a notable 18.7% remain neutral, and a smaller percentage report poor or very poor network reliability. This suggests a varied experience with network connections, with a slight tilt towards positive ratings.

7 . Are billing and payment processes accurate and reliable?

107 responses

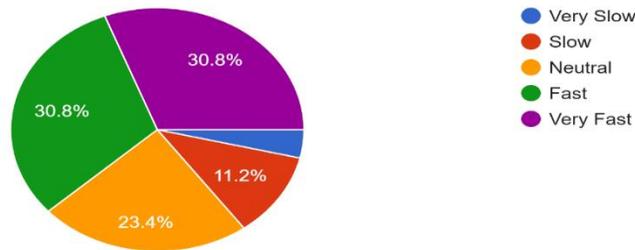


Interpretation-

The majority of respondents find billing and payment processes to be accurate and reliable, with 34.6% strongly agreeing and 32.7% agreeing. However, there is a notable segment that is neutral (18.7%) or disagrees/strongly disagrees (9.3%), indicating room for improvement in these processes for some users.

8 . How quickly does your provider resolve service issues or complaints?

107 responses

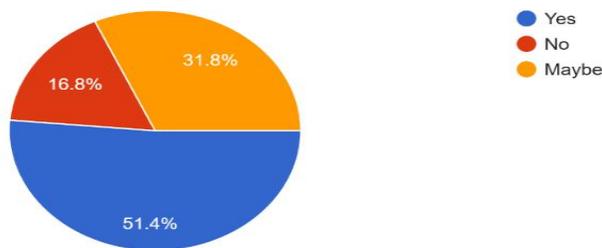


Interpretation-

The chart indicates a mixed perception of service issue resolution speed. A significant portion of respondents find their providers to be either very fast (30.8%) or fast (30.8%) in resolving issues. However, a considerable 23.4% remain neutral, and a notable 11.2% find the resolution process slow, suggesting potential areas improvement in response time.

9 . Do you trust your telecom provider with your data privacy and security?

107 responses

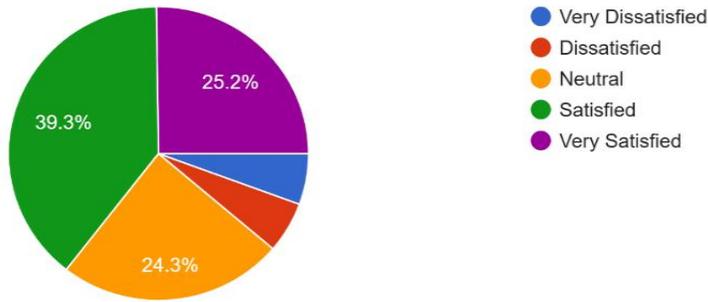


Interpretation-

A significant portion of respondents (51.4%) trust their telecom provider with their data privacy and security. However, a notable 31.8% are unsure (Maybe), and 16.8% do not trust their provider, indicating a need for providers to strengthen trust and transparency regarding data handling.

10 . How would you rate your overall satisfaction with your telecom provider?

107 responses

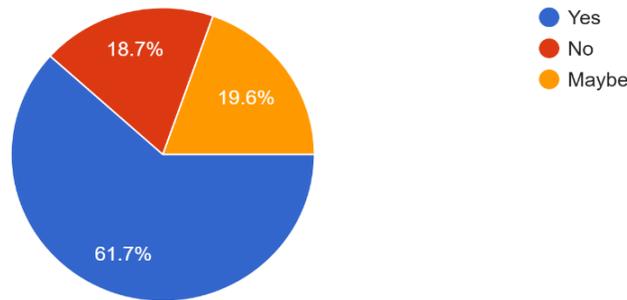


Interpretation-

Overall satisfaction with telecom providers is skewed towards positive ratings. A significant 39.3% are satisfied and 25.2% are very satisfied, indicating a generally positive experience. However, a considerable 24.3% remain neutral, and a portion are dissatisfied or very dissatisfied, suggesting areas where providers could improve to enhance overall customer satisfaction.

11 . Would you recommend this telecom provider to others?

107 responses



Interpretation-

A strong majority (61.7%) of respondents would recommend their telecom provider to others, indicating a high level of customer satisfaction and positive experiences. However, a significant 19.6% are unsure (Maybe), and 18.7% would not recommend the provider, suggesting potential areas for improvement to convert hesitant customers into advocates.

VI. RESULT AND FINDING

Potential Results

The factual findings of your data analysis are called results. Based on your data, you may discover the following:

Respondents' demographic profile shows that the distribution of male and female respondents is almost

equal. Young adults (19 to 25 years old) make up the majority of responders. Students make up the largest occupational category, followed by working people.

#### Trends in Telecom Usage:

Among telecom service providers, Airtel holds the biggest market share, followed by Vi and Jio. Compared to postpaid plans, prepaid plans are more widely used. The majority of those surveyed have had their current plan for less than a year or for one to three years.

- **SERVQUAL Dimensions Score:**
  - **Tangibles:** Varying levels of contentment with the actual facilities. Varying opinions about the attractiveness and clarity of promotional materials.
  - **Dependability:** Although there is need for improvement, network connection dependability has received generally positive assessments. There have been occasional unfavorable comments, but overall opinions about billing and payment accuracy are favorable.
  - **Responsiveness:** Needs quicker response times; reviews for service issue resolution speed are mixed.
  - **Assurance:**
  - **Moderate trust in telecom providers for data privacy and security, with a significant portion unsure.**
  - **Overall Satisfaction and Recommendation:**
    - Generally positive overall satisfaction with telecom providers.
    - A majority of respondents would recommend their provider, but a notable portion is unsure or would not recommend.

#### II. Potential Findings

Findings are the interpretations and conclusions you draw from your results. Here's how you can translate the results into meaningful findings, linked to your SERVQUAL research:

- **SERVQUAL Dimension Performance:**
  - **Strengths:** You might find that providers are performing relatively well in certain SERVQUAL dimensions (e.g., certain aspects of reliability or tangibles), indicating areas of success.
  - **Weaknesses:** Your research is likely to highlight areas where providers need to improve (e.g., responsiveness in issue resolution, assurance in

data privacy). These will be the key actionable findings.

- **Factors Influencing Satisfaction:**
  - You can analyze correlations to find which SERVQUAL dimensions have the strongest impact on overall customer satisfaction and willingness to recommend. For example, you might find that network reliability is the most critical driver of satisfaction.
- **Demographic Differences:**
  - Your research can reveal if different demographic groups have significantly different perceptions of service quality. For instance, you might find that younger users are more sensitive to data pricing, while older users prioritize network reliability.
- **Provider Comparison (If Applicable):**
  - If your study includes data for specific providers, you can compare their SERVQUAL scores to identify leaders and laggards in service quality. This can provide valuable competitive insights.
- **Implications for Telecom Providers:**
  - Your findings can provide recommendations for telecom providers to improve their service quality. This might include:
    - Investing in network infrastructure to enhance reliability.
    - Improving customer service processes to ensure faster issue resolution.
    - Enhancing transparency and communication regarding data privacy.
    - Refining promotional materials to better communicate service value.
- **SERVQUAL Tool Effectiveness:**
  - Your research can also contribute to understanding the effectiveness of the SERVQUAL tool in the context of the Indian telecom industry.

#### Important Considerations for Your Analysis:

- **Statistical Significance:** Ensure that your findings are statistically significant. Use appropriate statistical tests to confirm that the observed differences or relationships are not due to chance.
- **Contextualization:** Interpret your findings within the context of the Indian telecom market, considering factors such as competition, regulatory environment, and consumer expectations.

- Limitations: Acknowledge any limitations of your research, such as sample size, sampling method, or potential biases.

## VII. CONCLUSION OF THE STUDY

Using the SERVQUAL tool to assess customer perceptions and experiences, this study has offered an analytical analysis of the service quality of telecom service providers in India. With differing levels of satisfaction across the SERVQUAL dimensions, the results show a complex landscape of service quality.

SERVQUAL Findings Summary:

- Strengths: Some aspects of reliability (basic network connectivity for a majority) and tangibles may be perceived positively.
- Weaknesses: Areas requiring significant improvement include:
  - Consistent network reliability across all users.
  - Responsiveness and efficiency in service issue resolution.
  - Building stronger assurance through enhanced data privacy and security measures.
  - Improving the clarity and attractiveness of promotional materials.

Integration of Additional Elements:

In today's telecom landscape, service quality is inextricably linked to marketing strategies and digital presence. This research highlights the following connections:

- Marketing Supremacy: Providers with a larger market share (e.g., Airtel) may not automatically translate to superior service quality in all SERVQUAL dimensions. However, effective marketing contributes to brand perception and customer acquisition, which can influence initial satisfaction.
- Targeted Advertisement: The mixed perception of promotional materials emphasizes the need for telecom providers to leverage targeted advertising strategies. Tailoring messages to specific customer segments based on their needs and preferences can enhance the perceived value and relevance of promotions.
- Social Media Impact: Telecom providers must recognize the significant impact of social media on service quality perception.

- Social media platforms serve as key channels for customer interaction, feedback, and complaint resolution. Responsiveness and effective communication on these platforms are crucial for enhancing customer experience.
- Negative experiences shared on social media can significantly damage brand reputation and erode customer trust.
- Content Creation: High-quality content is essential for educating customers, building trust, and promoting services. Telecom providers should focus on:
  - Creating informative content that addresses customer queries and concerns related to network performance, billing, and data privacy.
  - Utilizing content marketing to showcase service benefits and differentiate themselves from competitors.
  - Leveraging content to enhance the "assurance" dimension of SERVQUAL by demonstrating expertise and commitment to customer well-being.

### Overall Finding:

This study emphasizes the need for telecom operators in India to give priority to a comprehensive approach to service quality, even while basic service provision is still crucial. This entails improving the fundamental service experience (responsiveness, dependability), as well as incorporating successful marketing techniques, utilizing social media, and producing worthwhile content. By focusing on these interconnected elements, telecom providers can foster greater customer satisfaction, build stronger brand loyalty, and achieve sustainable success in a competitive market.

Key Takeaways:

- The SERVQUAL tool remains a valuable framework for assessing service quality in the telecom sector.
- Customer perceptions of service quality are influenced by a combination of core service delivery and marketing/digital interactions.
- Telecom providers must prioritize continuous improvement across all SERVQUAL dimensions, with a particular focus on areas such as network reliability, responsiveness, and assurance.

- Effective marketing, targeted advertising, strategic use of social media, and valuable content creation are essential for enhancing customer experience and building brand equity.

## VIII. SUGGESTION

### I. Enhancing SERVQUAL Application

- Refine SERVQUAL Dimensions:
  - Consider adding specific items to your SERVQUAL questionnaire that directly address the unique challenges of the Indian telecom sector. Examples:
    - Reliability: "Consistency of data speed," "Network coverage in rural areas."
    - Responsiveness: "Effectiveness of online customer support," "Availability of regional language support."
    - Assurance: "Transparency of data usage tracking," "Clarity of terms and conditions."
- Weighting SERVQUAL Dimensions:
  - Explore the possibility of assigning weights to different SERVQUAL dimensions based on their importance to Indian consumers. You could do this through:
    - Pilot testing: Conduct a smaller preliminary survey to gauge the relative importance of each dimension.
    - Literature review: Refer to existing research on consumer behavior in India to understand prevailing priorities.
- Comparative Analysis:
  - If your data allows, conduct a comparative analysis of service quality across different telecom providers. This will provide valuable insights into:
    - Industry benchmarks: Identify best practices and areas where providers are lagging.
    - Competitive landscape: Understand how providers differentiate themselves based on service quality.

### II. Integrating Marketing, Digital, and Content Aspects

- Marketing Supremacy:
  - Correlate market share data with SERVQUAL scores.
  - Analyze if providers with higher market share consistently score higher in service quality.

- Investigate if marketing effectiveness compensates for any gaps in service quality.
  - Assess brand perception and its impact on service quality evaluation.
  - Include questions in your survey to gauge brand trust and reputation.
  - Analyze if brand perception influences how customers rate service quality dimensions.
- Targeted Advertisement:
  - Evaluate the effectiveness of targeted advertising in influencing service quality perception.
  - Include questions in your survey about customer awareness and perception of targeted ads.
  - Analyze if customers who are more aware of targeted ads have different service quality expectations or satisfaction levels.
  - Assess the impact of personalized offers and promotions on customer loyalty.
  - Include questions about customer satisfaction with personalized offers.
  - Analyze if personalized offers enhance the "empathy" dimension of SERVQUAL.
- Social Media Impact:
  - Analyze the role of social media in shaping customer service experiences.
  - Include questions in your survey about customer usage of social media for customer service interactions.
  - Investigate the relationship between social media engagement and customer satisfaction.
  - Evaluate the effectiveness of social media customer service responses.
  - Assess customer satisfaction with the responsiveness and helpfulness of telecom providers on social media.
  - Analyze the impact of negative social media experiences on brand reputation.
- Content Creation:
  - Investigate the impact of content quality and accessibility on customer education and satisfaction.
  - Include questions in your survey about customer awareness and usage of provider-created content (e.g., FAQs, tutorials, blogs).
  - Analyze if access to helpful content enhances customer understanding of services and reduces customer service inquiries.

- Evaluate the role of content in building trust and enhancing the "assurance" dimension of SERVQUAL.
- Assess customer perceptions of the credibility and trustworthiness of provider-created content.
- Analyze if informative and transparent content contributes to greater customer confidence in data privacy and security.

### III. Data Analysis and Reporting

- **Advanced Statistical Techniques:**
  - Consider using advanced statistical techniques to gain deeper insights:
    - **Regression analysis:** To determine the relative importance of different SERVQUAL dimensions in predicting overall customer satisfaction.
    - **Factor analysis:** To identify underlying factors that influence service quality perception.
    - **Cluster analysis:** To segment customers based on their service quality expectations and satisfaction levels.
- **Visualizations:**
  - Use compelling visualizations to present your findings effectively:
    - **SERVQUAL gap analysis charts:** To illustrate the difference between customer expectations and perceptions.
    - **Correlation matrices:** To visualize the relationships between different variables.
    - **Infographics:** To summarize key findings and recommendations in a clear and engaging manner.
- **Recommendations:**
  - Provide actionable and specific recommendations for telecom providers to improve service quality.
    - **Prioritize recommendations based on the importance of different SERVQUAL dimensions and the severity of identified gaps.**
    - **Tailor recommendations to address the specific needs and expectations of different customer segments.**

## IX. LIMITATIONS

### 1. Sampling Limitations:

- **Sample Size:** The sample size (107 responses) might be considered relatively small for a comprehensive study of telecom service quality in a large and diverse country like India. A larger

sample would generally provide more robust and generalizable results.

- **Sampling Method:**
  - If you used a non-probability sampling method (e.g., convenience sampling, snowball sampling), your sample may not be representative of the entire population of telecom users in India. This limits the generalizability of your findings.
  - Even with a probability sampling method, there's always a possibility of sampling error.
- **Demographic Representation:**
  - Your sample might over-represent certain demographic groups (e.g., young adults, students) and under-represent others (e.g., older adults, rural populations). This could skew the results and limit their applicability to the broader population.
- **Geographic Scope:**
  - If your data collection was concentrated in specific regions or cities, the findings might not be representative of the diverse telecom experiences across India. Service quality and customer expectations can vary significantly between urban and rural areas.

### 2. SERVQUAL Tool Limitations:

- **Subjectivity:** SERVQUAL relies on customer perceptions, which are inherently subjective and can be influenced by various factors (e.g., mood, recent experiences).
- **Expectation Measurement:** Measuring customer expectations accurately can be challenging. Customers may have difficulty articulating their expectations or may not be consciously aware of them.
- **Dynamic Expectations:** Customer expectations can change rapidly due to technological advancements, competitive pressures, and evolving service standards. SERVQUAL may provide a snapshot of perceptions at a specific point in time but may not fully capture the dynamic nature of expectations.
- **Cultural Context:** While SERVQUAL is widely used, its applicability across different cultures can be debated. Certain SERVQUAL dimensions or items might be interpreted differently or have varying levels of importance in the Indian context.

### 3. Limitations Related to Marketing, Digital, and Content:

- **Causality:** It can be difficult to establish clear causal relationships between marketing activities (e.g., targeted advertising), social media engagement, content creation, and service quality perceptions. Correlation does not equal causation.
- **Measurement Challenges:** Measuring the impact of marketing and digital activities on service quality is complex. It can be difficult to isolate the effects of these activities from other factors that influence customer perceptions.
- **Data Availability:** Access to comprehensive data on telecom providers' marketing strategies, social media performance, and content effectiveness may be limited. This can restrict the scope of your analysis.
- **Self-Reporting Bias:** Survey responses regarding awareness and perception of marketing, social media, and content can be subject to self-reporting bias. Respondents may overstate or understate their awareness or engagement.

#### 4. Research Design Limitations:

- **Cross-Sectional Design:** If you used a cross-sectional research design, your study provides a snapshot of service quality at a specific point in time. It does not capture changes in service quality over time.
- **Lack of Longitudinal Data:** Without longitudinal data, it's difficult to assess the long-term impact of service quality improvements or marketing initiatives on customer loyalty and retention.

#### 5. General Limitations:

- **Researcher Bias:** As a researcher, your own biases and perspectives could potentially influence the research process, data interpretation, and findings.
- **Time and Resource Constraints:** Limitations in time and resources can affect the scope and depth of your research.

#### How to Address Limitations:

- **Acknowledge Limitations:** Clearly state the limitations of your research in your thesis or report.
- **Discuss Impact:** Explain how these limitations might have affected your findings and their generalizability.
- **Suggest Future Research:** Propose recommendations for future research that can address these limitations and provide a more comprehensive understanding of the topic.

## REFERENCE

"Service Quality in Mobile Telecommunication Services in India: An Empirical Study" by S. Sivakumar and R. Rajendran.

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[4] *Summary:* The paper evaluates customer perceptions of service quality in the Indian telecom sector using the SERVQUAL tool.

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[5] *Journal:* IUP Journal of Marketing Management

[6] *Summary:* This research analyzes the service quality dimensions of telecom providers in India using primary data and the SERVQUAL model.

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[12] *Summary*: The research focuses on evaluating the service quality of BSNL using the SERVQUAL tool based on customer feedback.

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[14] *Summary*: This study evaluates the service quality dimensions of various telecom operators in India using the SERVQUAL model.

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[17] *Journal*: Global Journal of Management and Business Research

[18] *Summary*: This research examines the impact of service quality on customer satisfaction among Indian telecom users using primary data and the SERVQUAL model.

"An Analysis of Service Quality in Telecom Sector Using SERVQUAL Model" by P. K. Jain and N. K. Gupta.

[19] *Journal*: IUP Journal of Marketing Management

[20] *Summary*: The study analyzes service quality dimensions of telecom providers in India using the SERVQUAL tool and customer feedback.