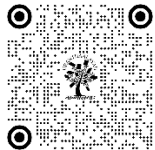


AN ANALYSIS OF CONSUMER SATISFACTION WITH MOBILE TELECOM SERVICES AND THEIR IMPACT ON SUBSCRIBERS IN NAGPUR CITY

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ABSTRACT

The Indian economy is a developing economy. Various sectors contribute to the development of the economy telecommunication is one of these sectors in the boom. The Telecom industry is contributing a lot toward technological innovation, with the help of digitalization telecom industries are providing various facilities to their customers to serve them and attract them so that to get various subscriber bases, with the effect of those services on its subscribers a research study has been undertaken in the city of Nagpur. To recognize the purchaser's delight toward cellular telecom offerings supplied through distinct telecom providers. This study additionally researched diverse components that display the effect of nice offerings on purchaser retention.

Recently, the industry has experienced a significant transformation as consumers have increasingly moved from fixed-line services to wireless options. The main aim of the study is to focus on the quality of service provided by telecom operators and its effect on the sales revenue of the company and help them to forecast future profitability as well as make them aware of providing more and more satisfying services to their consumers to retain them for a longer period for a better future prospectus.

Keywords: Consumer Satisfaction, Telecom Services, Telecom Subscriber Base

1. INTRODUCTION

In the rapidly evolving digital era, mobile telecom services have become essential to everyday life, offering communication solutions and access to various services such as internet connectivity, mobile banking, and entertainment. The rapid growth of the telecom sector in India has significantly transformed how individuals and businesses communicate, making mobile services a critical factor in the country's socio-economic development. As competition among telecom providers intensifies, understanding customer satisfaction has emerged as a key priority for companies seeking to differentiate their services and retain loyal customers.

In the telecom sector, customer satisfaction is primarily shaped by various factors, including the quality of the network, customer service, pricing, and the level of service innovation. With increasing consumer expectations, telecom companies are constantly striving to enhance their offerings to meet or exceed these demands. Satisfied customers not

only contribute to a company's success through repeat business but also through positive word-of-mouth, which can influence the choices of potential new subscribers.

Nagpur, one of the rapidly growing cities in India, offers a unique context for studying consumer satisfaction in the telecom industry. The city's diverse population and varying levels of digital infrastructure make it an ideal location to explore how mobile telecom services impact subscribers and how well service providers are meeting customer expectations.

This study aims to investigate consumer satisfaction with mobile telecom services in Nagpur city and assess the effects of these services on subscribers. By analyzing key factors such as network performance, customer service, pricing, and service quality, this research seeks to provide insights into the current state of consumer satisfaction and offer recommendations for telecom providers to improve their service offerings. Through a structured survey of subscribers, the study will evaluate how these services influence consumers' daily lives and identify areas for improvement to enhance customer satisfaction.

Consumer Satisfaction Consumer satisfaction refers to the extent to which a company's products or services fulfill or surpass the expectations of its customers. It is critical to the success of any business because the primary goal is to satisfy customers by meeting their requirements and preferences. While not every consumer will become a devoted customer, providing a great experience for those interacting with the company's offerings is critical.

Customer satisfaction is typically measured by evaluating how content a customer is after using a product or service. This feedback helps organizations assess their performance and identify areas for improvement. A satisfied customer is more likely to continue using the service, recommend it to others, and foster a positive brand image. In essence, customer satisfaction reflects how well a company understands and addresses the needs and expectations of its consumer base.

Subscribers are individuals who actively pay to receive a specific service or product regularly. In the context of this study, subscribers refer to customers who regularly use and pay for mobile telecom services. Telecom operators closely monitor their subscriber base as a key metric of the company's performance and growth. The size and satisfaction level of the subscriber base provide valuable insights into the company's market position, service quality, and overall business health. A growing and loyal subscriber base is often seen as an indicator of strong operational performance and customer satisfaction.

Telecom Services refer to a range of communication services provided by telecom operators to facilitate voice, data, and multimedia transmission. These services include mobile voice calls, SMS, internet access, and value-added services such as video streaming, mobile banking, and digital payments. In the context of this study, telecom services encompass the various offerings that subscribers rely on daily, such as:

- 1) **Voice Services:** Traditional mobile calling, including local, national, and international calls.
- 2) **Data Services:** Internet connectivity through 3G, 4G, and emerging 5G networks, allowing users to browse the web, stream content, and use apps.
- 3) **SMS & Messaging Services:** Basic text messaging as well as enhanced messaging platforms like RCS (Rich Communication Services).
- 4) **Value-Added Services (VAS):** Additional services such as mobile banking, entertainment content, news updates, and ring-back tones.
- 5) **Customer Support Services:** Assistance provided to subscribers for billing inquiries, technical issues, and service upgrades.

Telecom operators aim to improve the quality and reliability of these services to meet consumer needs and enhance customer satisfaction.

Telecom Subscriber Base refers to the total number of individuals or entities that have signed up and actively use a telecom operator's services. This includes users of mobile voice, data, and any other telecom services offered by the operator. The subscriber base is a key performance indicator for telecom companies, as it reflects the reach, market share, and overall customer engagement with the company's services.

In the telecom industry, operators closely monitor their subscriber base to:

- 1) **Assess Market Share:** A larger subscriber base indicates a stronger market presence and competitiveness.

- 2) **Evaluate Service Adoption:** The size of the subscriber base helps companies understand how well their services are being adopted, particularly new offerings like 4G, 5G, or value-added services.
- 3) **Measure Financial Performance:** The subscriber base directly impacts revenue generation through service fees, data plans, and additional services.
- 4) **Analyze Churn Rate:** A shrinking subscriber base may indicate customer dissatisfaction or high churn, while a growing base suggests successful customer acquisition and retention.

Telecom companies often segment their subscriber base by factors like **prepaid vs. postpaid users**, **data vs. voice consumers**, and **urban vs. rural users**, to better understand customer behaviour and preferences, helping them tailor their services accordingly.

2. LITERATURE REVIEW

1. Concept of Customer Satisfaction

Business success heavily depends on its customers, as they are often regarded as the "king of the market." Customer satisfaction is crucial for organizational growth, profit, and reputation. Meeting customer expectations and ensuring their satisfaction is a key priority for any organization. According to Sakthivel and Kalaiselvan (2021), customer satisfaction is fundamentally an assessment of how effectively a company's products or services fulfill or surpass customer expectations. It highlights the importance of maintaining a strong customer focus in business operations.

2. Customer Satisfaction as a Key Factor in Organizational Success

As a vital component of accomplishing corporate objectives, customer happiness has been the subject of much research in the marketing field. According to Munusamy and Chelliah (2011), it functions as a benchmark for the performance of an organization and can be utilized as an indicator of excellence by any business. Consumer satisfaction increases the likelihood that a consumer will stick with a firm, refer others to it, and support its long-term success.

3. Expectation-Performance Satisfaction Model

The relationship between customer expectations and business performance is pivotal in determining satisfaction levels. According to Kotler and Keller (2015), customer satisfaction occurs when the performance of a product or service meets expectations. If performance falls short, the customer becomes dissatisfied, while performance that exceeds expectations can result in highly satisfied or "delighted" customers. This model emphasizes the importance of consistently meeting or surpassing customer expectations to ensure satisfaction.

4. The Influence of Service Quality on Customer Satisfaction

The quality of services offered plays a crucial role in determining customer happiness. Research indicates that customer satisfaction is closely linked to the perceived value derived from various aspects of service quality. Turel and Serenko (2006) found a strong positive relationship between customer satisfaction and perceived service quality. This suggests that to enhance customer happiness, telecom companies should focus on improving the quality of their services.

5. Factors Influencing Choice of Mobile Service Providers

Singh (2012), in an exploratory study on consumer preferences for mobile service providers, identified network quality and service charges as the two most important factors influencing customer choice. The study, conducted with 150 mobile users of varying occupations, income levels, and age groups, found that customers prioritize network quality when selecting a service provider. The study also highlighted the need for service providers to build emotional relationships with customers through innovative plans, better connectivity, and strong service quality.

6. Service Quality Dimensions and Their Influence on Satisfaction

The impact of different service quality dimensions on customer satisfaction is not uniform. Samara and Shehada (2020) found that factors like reliability, responsiveness, and empathy have a notably positive effect on customer satisfaction, while tangibility and assurance do not show a statistically significant connection. These findings imply that telecom companies should prioritize reliability and responsiveness to enhance customer satisfaction.

7. Customer Loyalty and the Impact of Liberalization on Indian Telecom

Debnath (2008) discusses how service providers can establish a devoted clientele by evaluating their performance and keeping on board current clients. The study points out that the Indian Government's liberalization policies in the

telecom sector, including allowing private firms to offer services, have opened up new opportunities for telecom companies. Foreign investment and competition have led to improved service quality, ultimately benefiting consumers.

8. Bridging the Gap Between Promised and Actual Services

Kalavani (2006) analyzed customer satisfaction with mobile services and found that while most customers are satisfied, some service gaps still exist. The study emphasized the need for service providers to fill the void between the services they claim to provide and what they deliver. While customers are generally content with existing services, there is still demand for additional features and improvements. This points to the importance of continuous innovation in telecom services to meet evolving consumer expectations.

3. OBJECTIVES OF THE STUDY

Numerous scholars have examined client satisfaction and the caliber of services offered by telecommunications companies. Customer expectations and needs have been narrowed down to the satisfaction level using this investigation.

- 1) To study customer satisfaction towards services provided by telecom operators.
- 2) To study the impact of quality services on customer satisfaction.
- 3) To study current satisfaction levels according to the needs and expectations of customers.
- 4) To analyze the satisfaction level of consumers for the quality services provided by telecom operators.

Hypothesis:

H0: Quality service provided by telecom operators significantly impacts consumer satisfaction in society.

H1: Quality service provided by telecom operators negatively impacts consumer satisfaction in society.

Sampling Framework: The sample size refers to the group of respondents selected from the overall target population. This study draws on the responses of 111 participants, reflecting a broad spectrum of demographic variables, collected via a comprehensive questionnaire.

Sampling Period

The data collection for this study was conducted throughout [Jan to August 2023]. This period was chosen to ensure an adequate and diverse set of responses, accounting for any seasonal or temporary fluctuations in service usage or satisfaction levels that may affect the results.

4. DATA COLLECTION METHOD

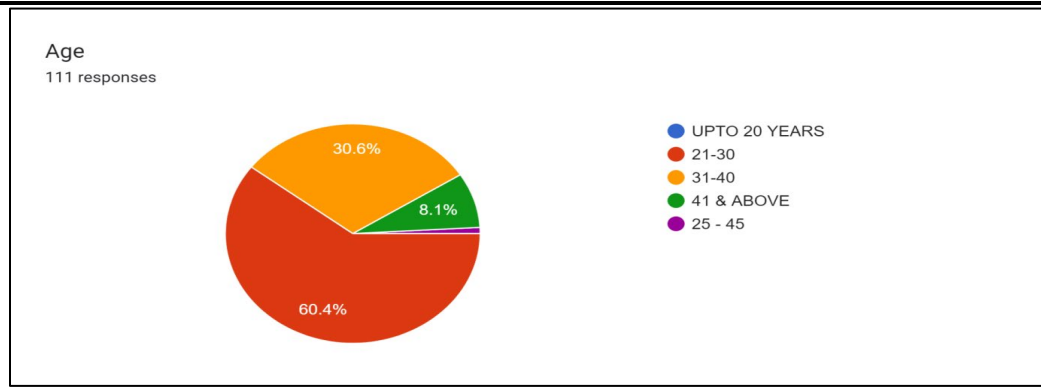
- **Primary Data:** Questionnaires were administered online or through in-person interviews at popular public spots like telecom service centers, malls, or markets.
- **Secondary Data:** Data can be gathered from telecom company reports, previous studies on consumer satisfaction, and governmental or regulatory authority reports on telecom services.

This study adopts a descriptive approach, utilizing primary data collected through direct personal interviews and structured questionnaires. A well-designed questionnaire was developed specifically for the study, featuring targeted questions aligned with the research objectives. Responses were captured using a five-point Likert scale to facilitate analysis of the study's objectives.

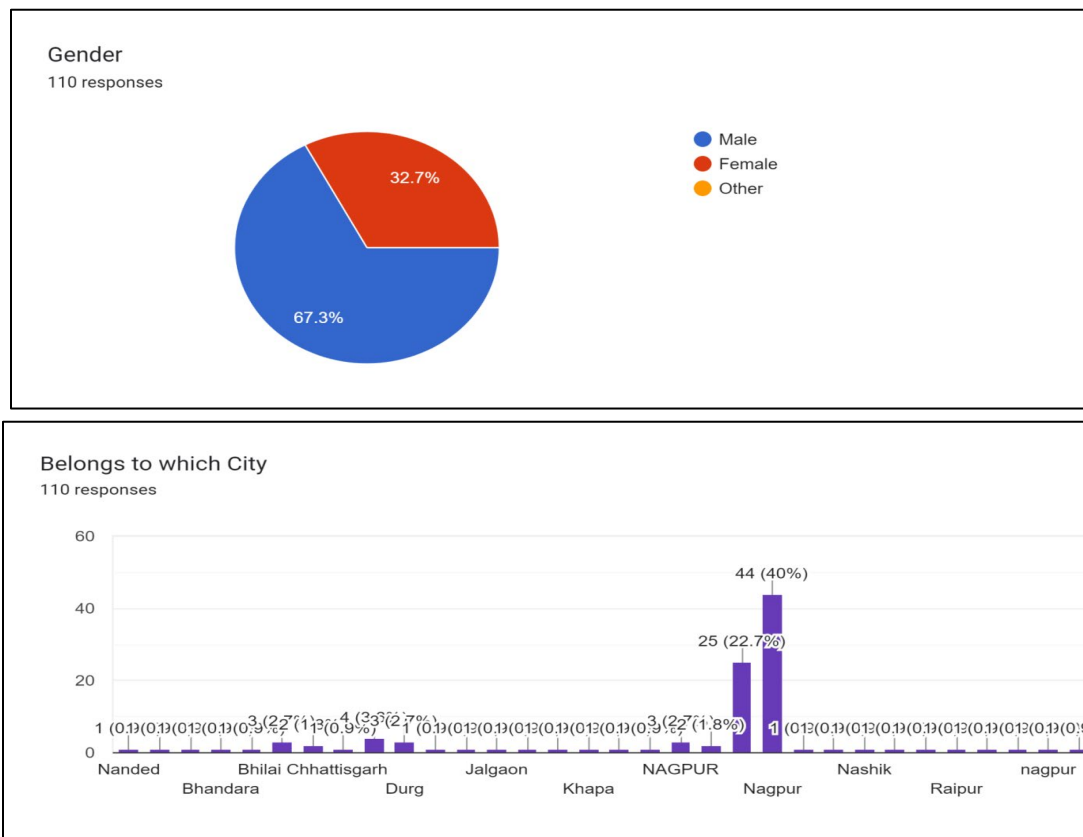
In addition to primary data, secondary data was also utilized, which consists of previously gathered and analyzed information from earlier research. For this study, references from various academic journals and telecom company websites were reviewed.

5. DATA ANALYSIS & FINDINGS

One method for summarizing nominal data or visually presenting the various values of a specific variable is by using a pie chart. Data analysis has been done in the percentage method in this research study. Accordingly, we can see that the age group between 21- 30 & 31- 40 has been given weightage for using telecom services and is more aware.



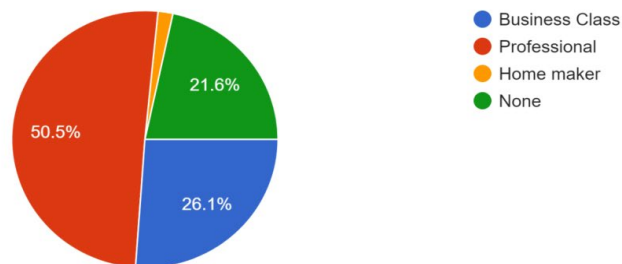
The following two chart shows that about 67.3% of males have much awareness and 32.7% of females use mobile telecom services. Most of the respondents are from Nagpur city i.e. nearly about (62%) approx.



Occupation 50 % of the population among the 100 sample size are professionals and 26 % are business class people if we see further analysis of income all show that those who have no income 29 % still use mobile telecom services and are satisfied, 26 % people are having income between 1lakh to 2lakh, 23 % of people are having income between 2 to 3 lakh, 19.8 % are having 4lakh and above. Whatever be the income age and occupation we can see from the graph that most of them use telecom services and very much aware of the services provided by the telecom operators as it has been said earlier in this study that telecommunication is one of the crucial parts of the economy and large population or we can say almost all population contributes towards telecommunication without this we cannot imagine about our life it is a very important aspect of everyone's life, also this sector is contributing much more towards economic growth of our country by providing various services to their customer.

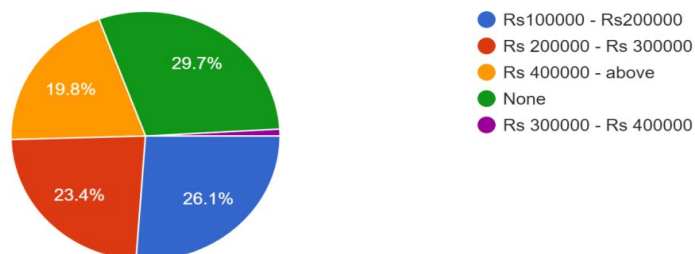
Occupation

111 responses



Income

111 responses



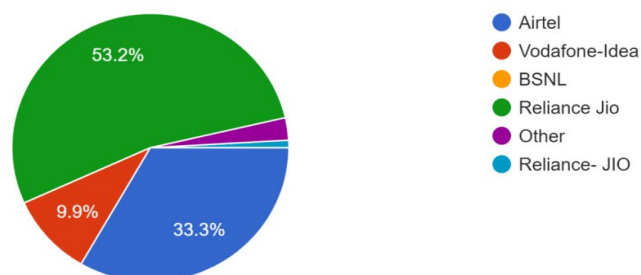
Further analysis of the pie chart shows that the usually preferred telecom operator by the sample population is

- 53.2% of people prefer Reliance Jio
- 33.3% use Airtel
- Only 9.9 % use Voda-phone idea

Rest telecom operators are not that popular amongst the population or we can say they are not providing services to their customers they have lost their market almost.

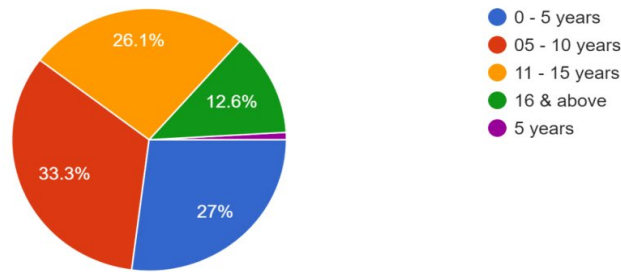
Which mobile telecom operators you usually prefer ?

111 responses



Since how many years you are using mobile telecom services?

111 responses

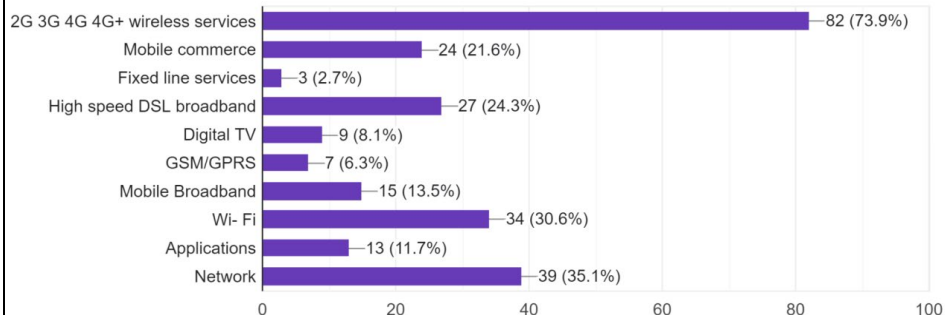


The next graph is a Bar graph representation of the analysis. As we can see in further analysis the services provided by telecom operators are as follows and most of the consumers about 82 among the 100 sample size 73.9 % people are contributing their vote towards wireless 2G, 3G & 4G services, 3 % of the population are voting for networking, 24.3% broadband contributing towards high-speed DSL broadband.

So we can say from this analysis that individuals are giving importance to services that are largely related to digitalization and are used in greater popularity.

Which telecom service satisfy you more to opt a particular operator?

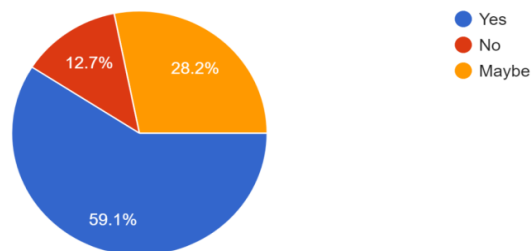
111 responses



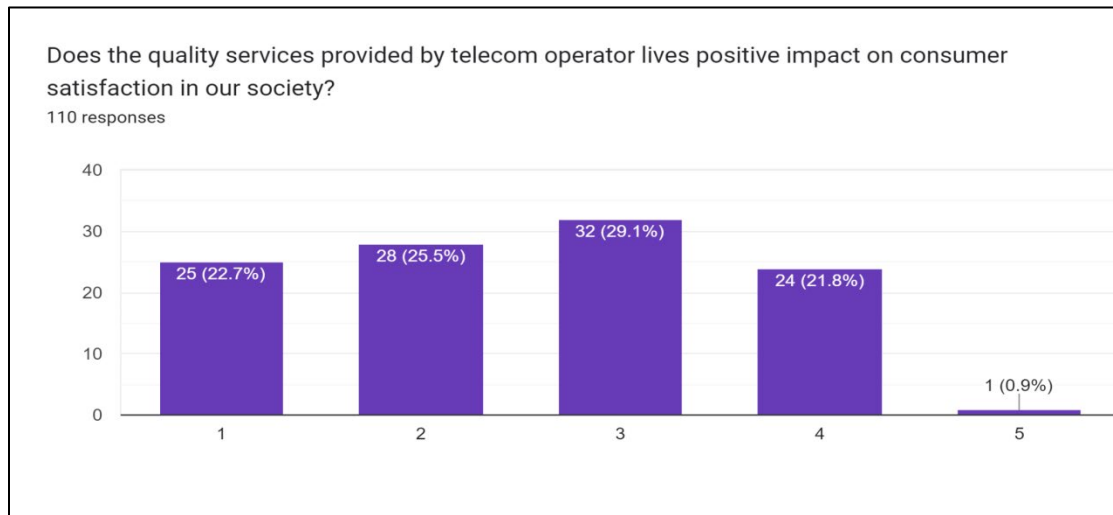
To achieve the objective of this research study, the following pie chart indicates that approximately 59% of respondents are satisfied with the telecom services offered by the operators and are pleased with the quality of these services.

Do you satisfy with the quality services provided by telecommunication company?

110 responses



Further Likert scale chart shows the impact of quality services provided by telecom operators have a positive impact on society and the customers are satisfied with the services 22 % strongly agreed, 25 % agreed with the point and 29 % were neutral, about the impact level of on consumer satisfaction toward mobile telecom services.



Hypothesis Testing:

To test the hypothesis "Quality service provided by telecom operators significantly impacts consumer satisfaction in society", linear regression has been applied taking Consumer Satisfaction as dependent variable and Service Quality of telecom industry as independent variable, the results are indicated as under:

Table 1.1

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949 ^a	.901	.901	.45093

a. Predictors: (Constant), The quality of service provided by my telecom operator meets my expectations.

b. Dependent Variable: I am satisfied with the overall service quality of my telecom operator

The Model Summary from the regression analysis provides valuable insights into the relationship between the level of service that telecom providers offer and overall consumer satisfaction. The correlation coefficient (R) is 0.949, signifying a very strong positive relationship between the two variables. This implies that as the perceived quality of service enhances, consumer satisfaction rises considerably.

An R Square value of 0.901 indicates that 90.1% of the variation in consumer satisfaction is accounted for by the quality of service delivered by telecom operators. This high value demonstrates the strong explanatory power of the model. The Adjusted R Square, also at 0.901, confirms that the model remains robust and does not suffer from over fitting, given that there is only one predictor in the analysis.

Finally, the standard error of the estimate is 0.45093, representing the average deviation between the actual satisfaction values and the predicted values. On average, the predicted satisfaction levels deviate from the actual values by 0.45 units, indicating that the model's predictions are fairly accurate.

Table 1.2 ANOVA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	200.958	1	200.958	988.297	.000 ^b
	Residual	21.960	108	.203		
	Total	222.918	109			

a. Dependent Variable: I am satisfied with the overall service quality of my telecom operator

b. Predictors: (Constant), The quality of service provided by my telecom operator meets my expectations.

The ANOVA table offers a statistical assessment of the significance of the regression model that analyzes the relationship between service quality and consumer satisfaction. The regression sum of squares is 200.958, suggesting that the independent variable accounts for a substantial portion of the variation in customer satisfaction, specifically the perceived quality of service. In contrast, the residual sum of squares is 21.960, indicating the variance in consumer satisfaction that remains unexplained. Together, these values result in a total sum of squares of 222.918, which represents the overall variability in consumer satisfaction prior to accounting for the impact of service quality.

The degree of freedom for the regression model is 1, as there is one predictor variable (quality of service). The residual degree of freedom is 108, which is derived from the total sample size of 109 minus the two estimated parameters (the intercept and the predictor). The mean square values are 200.958 for the regression and 0.203 for the residuals, representing the average variance explained and not explained by the model, respectively.

The F-statistic of 988.297 indicates that the regression model fits the data very well and significantly explains the variance in consumer satisfaction compared to a model with no predictors. Finally, the p-value (Sig.) of 0.000 confirms that the relationship between the quality of service and consumer satisfaction is statistically significant, as it is well below the conventional threshold of 0.05. **This implies that service quality provided by telecom operators has a significant impact on consumer satisfaction.**

Table 1.3 Coefficients

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.160	.109		-1.475	.143
1 The quality of service provided by my telecom operator meets my expectations.	.963	.031	.949	31.437	.000

a. Dependent Variable: I am satisfied with the overall service quality of my telecom operator

The Coefficients table offers essential insights into the relationship between the independent variable (service quality expectations) and the dependent variable (consumer satisfaction). The unstandardized coefficient (B) for the constant is -0.160, which is not statistically significant ($p = 0.143$), indicating that the intercept is not relevant for predicting satisfaction. The unstandardized coefficient (B) for service quality is 0.963, signifying that a one-unit increase in perceived service quality results in an increase of 0.963 units in consumer satisfaction. The standardized coefficient (Beta) of 0.949 demonstrates a very strong positive relationship between the two variables. The high t-value of 31.437 and the p-value of 0.000 further validate the significance of this relationship. This suggests that the level of service excellence provided by telecom operators is a crucial predictor of consumer satisfaction.

The linear regression equation based on the provided coefficients can be written as:

$$\text{Consumer Satisfaction} = -0.160 + 0.963 \times (\text{Quality of Service})$$

6. CONCLUSIONS

The telecommunication sector is majorly contributing to the Indian economy. The rapid growth, development, and contribution of the telecommunication industry are enhancing the urgency of the presence of the telecommunication industry in any economy as it is the most advanced and important technological tool for sharing information as well as a base for establishing a financially valuable commodity market. From the above pie chart and other analyses charts, we can conclude that the telecommunication services are satisfying the consumers in regards to services. Also most of the population agrees with the point about the impact level on consumer satisfaction toward mobile telecom services in the

society. To retain in the market and to capture the market in terms of Sales revenue and profitability these companies should majorly focus on the service as follows:

- Network services
- Internet services
- High-Speed broadband services

The observations above also indicate that telecom service providers are addressing the satisfaction needs and expectations of their customers. As a result of these satisfactory services, the subscriber base of telecom companies is expanding. Additionally, the analysis reveals a strong and significant positive relationship between the quality of service provided by telecom operators and consumer satisfaction. With a high standardized coefficient (Beta = 0.949) and a significant t-value (31.437, $p < 0.001$), the findings suggest that enhancements in service quality lead to considerable increases in consumer satisfaction. The regression model accounts for 90.1% of the variance in satisfaction, reinforcing the idea that service quality is a key factor in customer contentment within the telecom industry.

7. LIMITATIONS

- 1) **Geographical Scope:** The study is confined to the Nagpur district, which may not accurately reflect consumer satisfaction trends in other regions or on a global scale. Thus, the findings may not be applicable beyond this specific geographical area.
- 2) **Sample Size:** The study used a small sample size of 111 respondents, owing to schedule restrictions. This limited sample may not fully represent the broader population, and as a result, the conclusions drawn from this study may not be generalized to the entire universe of telecom consumers.
- 3) **Regional Focus:** Since all data were collected exclusively from respondents within the Nagpur district, the results may not account for variations in consumer satisfaction that might exist in different regions, both within India and globally. Therefore, the study's findings should be interpreted with caution when considering broader applications.

These limitations underscore the parameters and constraints under which the study was carried out, indicating that future research involving a larger and more diverse sample could improve the generalizability of the findings.

CONFLICT OF INTERESTS

None.

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