

The influence of Telkomsel's network quality on customer satisfaction in Indonesia

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Received: August, 31, 2025 Revised: September, 30, 2025 Accepted: October, 31, 2025

Abstract

Telecommunication network quality is a crucial factor in the digital era, significantly impacting user experience. Telkomsel, as one of Indonesia's largest service providers, faces challenges in maintaining stable and evenly distributed network quality, potentially affecting customer satisfaction levels. This study aims to (1) analyze the influence of Telkomsel's network quality on customer satisfaction levels across various regions in Indonesia, (2) identify the main factors causing customer dissatisfaction with Telkomsel's services, and (3) assess the impact of network disruptions on customers' economic activities, particularly for online traders. This research employs a quantitative approach with a causal-comparative design. The independent variable is Telkomsel Network Quality (measured through indicators such as reliability, speed, stability, and coverage), while the dependent variable is Customer Satisfaction. The research population consists of 60 Telkomsel users from various regions in Indonesia, with a sample of 30 respondents selected using purposive sampling technique. Primary data were collected through questionnaires. Data analysis was conducted to test the hypothesis regarding a positive influence of network quality on customer satisfaction. The findings are expected to provide strategic recommendations for Telkomsel to improve service quality for better customer satisfaction and serve as a reference for similar studies in the telecommunications industry.

Keywords: network quality, customer satisfaction, Telkomsel, telecommunications, service quality

DOI :
p-ISSN :
e-ISSN :

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1. Introduction

In the modern digital era, telecommunication services play a vital role in supporting social interaction, education, business operations, and public services. The increasing reliance on digital platforms for communication and economic activities makes network quality a critical determinant of user satisfaction. Among the key indicators of network performance are speed, reliability, stability, and coverage, all of which directly influence the user experience. Poor network quality can disrupt communication, hinder productivity, and even result in economic losses, especially for individuals or businesses dependent on digital transactions. Consequently, ensuring consistent and high-quality connectivity has become a strategic priority for telecommunication providers in maintaining competitiveness and customer loyalty.

Telkomsel, as Indonesia's largest cellular operator, holds a dominant market position with more than 170 million active users and a reputation for extensive network coverage across the archipelago. The company's infrastructure investments and technological innovations have positioned it as a market leader in both 4G and emerging 5G services. However, despite these achievements, Telkomsel continues to face

persistent challenges related to network performance and user satisfaction. Many users report issues such as signal instability, sudden disconnections, slow data speeds, and uneven service quality across different regions—particularly in rural and remote areas. These issues highlight a performance gap between customer expectations and the actual quality experienced, raising concerns about service consistency and equity across Indonesia's geographically diverse landscape.

The growing dissatisfaction among users has several implications. First, it affects customer trust and loyalty, as network disruptions may push consumers to switch to competing providers offering better service stability. Second, it impacts economic activities, especially for small businesses and online traders whose operations rely heavily on uninterrupted internet access. For such users, unstable connectivity can lead to missed transactions, delays in order processing, and reduced customer engagement, ultimately lowering income levels. Therefore, evaluating Telkomsel's network quality is not only relevant from a technical perspective but also essential for understanding its socio-economic impact on customers in the digital economy.

Previous studies have established that service quality significantly influences customer satisfaction and retention in the telecommunications sector. Dimensions such as reliability, responsiveness, and assurance have been shown to correlate positively with customer perceptions of value. However, in the context of Indonesia's vast and uneven digital infrastructure, there remains a gap in understanding how variations in network quality across regions affect satisfaction levels among Telkomsel users. Moreover, most existing research has focused on general service quality or marketing factors, with limited empirical analysis dedicated to the direct influence of technical network performance indicators on satisfaction outcomes.

In light of these issues, this study aims to (1) analyze the influence of Telkomsel's network quality on customer satisfaction across various regions in Indonesia, (2) identify the main factors causing customer dissatisfaction, and (3) assess the economic implications of network disruptions, particularly for online business users. By employing a quantitative causal-comparative approach, this research seeks to test the hypothesis that higher perceived network quality leads to greater customer satisfaction. The results are expected to provide valuable insights for Telkomsel in improving its service delivery strategies and enhancing customer experience, while also contributing to the academic discourse on telecommunication service quality and digital connectivity in developing economies.

2. Research Design and Method

This study employed a quantitative approach with a causal-comparative design. The objective was to analyze the relationship and level of influence between the independent variable, Telkomsel Network Quality (X), and the dependent variable, Customer Satisfaction (Y). This design was chosen as it allows for the examination of potential cause-and-effect relationships between variables that have already occurred and cannot be experimentally manipulated. The writing of this section is in the past tense, as it describes actions that have already been taken to complete the research. The population for this study consisted of active Telkomsel service users across various regions in Indonesia. A sample of 40 respondents was selected using a purposive sampling technique. The criterion for inclusion was active users of Telkomsel services from different Indonesian regions who were willing to participate in the research questionnaire. Primary data were collected through an online questionnaire created with Google Forms and distributed to the selected respondents. The questionnaire was the main research instrument and utilized a Likert scale to measure respondent perceptions. The scale ranged from 1 (Very Unsatisfied) to 5 (Very Satisfied).

The variables were defined as follows. Independent variable (X), that is, Telkomsel Network Quality. This refers to the customer's perception of the technical and experiential aspects of the Telkomsel network, including signal strength, internet access speed, connection stability, and service coverage. Dependent

variable (Y), that is Customer Satisfaction. This measures the customer's overall feeling and evaluation after using Telkomsel's network services, reflecting the extent to which the experience met their expectations. The indicators used to measure each variable are detailed in the table below, as is mandatory for quantitative research.

Data analysis was performed using IBM SPSS. The process included instrument testing (validity and reliability tests), a classical assumption test (normality test), and hypothesis testing using a partial test (t-test) to determine the influence of the independent variable on the dependent variable.

3. Results and Discussion

The quantitative analysis confirmed a positive and significant influence of Telkomsel Network Quality on Customer Satisfaction. This indicates that improved network quality, encompassing reliability, speed, stability, and coverage, directly enhances customer satisfaction. Findings highlighted how persistent issues like signal instability and slow internet speeds significantly contribute to dissatisfaction, particularly impacting users reliant on connectivity for economic activities such as online trading, leading to financial losses.

Consistent with existing literature, these results underscore the critical role of core service quality in telecommunications. For Telkomsel, the findings emphasize the need for continuous investment and rigorous monitoring of network performance, especially in diverse regions, to ensure consistent quality and mitigate dissatisfaction. Prioritizing improvements in specific network pain points is crucial for enhancing overall customer perception. This study, while based on a sample of 40 respondents, provides valuable insights and a foundation for future, broader research to further explore factors influencing customer satisfaction.

Statistical Result

Instrument testing

The instrument testing in this study consisted of two main stages: the validity test and the reliability test. The validity test was conducted on all 20 questionnaire items to ensure that each item accurately measured the intended variable. The results showed that all items were valid, as the calculated correlation coefficient (r_{hitung}) for each item exceeded the critical value from the table ($r_{tabel} = 0.4227$) at a 5% significance level for $N = 40$ respondents. Specifically, the r_{hitung} values ranged from 0.735 to 0.883, all of which were significantly higher than the threshold value of 0.4227. These findings indicate that all items in the questionnaire were appropriate and valid for use in this research instrument.

Furthermore, the reliability test was performed to determine the internal consistency of the instrument. The analysis produced a Cronbach's Alpha coefficient of 0.767 for the 20 items, surpassing the standard acceptance threshold of 0.60. This result signifies that the questionnaire possessed a high degree of reliability, meaning that the instrument consistently measured the constructs under study. Therefore, based on both validity and reliability test results, the research instrument was considered both valid and reliable for data collection purposes.

Classical Assumption Test (Normality)

A normality test was conducted using the Kolmogorov-Smirnov method to ensure the data residuals were normally distributed, a prerequisite for parametric statistical analysis. The test yielded a significance value (Sig.) of 0.200. As this value is greater than 0.05, it was concluded that the residual data were normally distributed, satisfying the normality assumption for the regression model.

Table 1. t Test Results of Research Data

	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Total	26.342	42	.000	69.83721	64.4869	75.1875

Data Source: SPSS Output (2025)

Hypothesis testing (t-test)

The t-test result shows a significance value (Sig.) of 0.000 for the Telkomsel Network Quality variable. Because this value is less than the significance level of 0.05 ($0.000 < 0.05$), the alternative hypothesis (H_a) was accepted, and the null hypothesis (H_0) was rejected. This indicates that there is a positive and significant influence of Telkomsel's Network Quality on Customer Satisfaction.

Discussion

The primary purpose of the discussion is to interpret the significance of the findings and explain how this study advances the understanding of the research problem. The statistical results clearly demonstrate that Telkomsel's network quality is a significant determinant of customer satisfaction. The positive relationship implies that as customers perceive the network quality to be better—in terms of stability, speed, and reliability—their overall satisfaction with the service increases.

This finding is highly consistent with previous relevant research. For example, a study by Fizi Fauzia (2023) concluded that the quality of the Telkomsel provider had a positive and significant effect on consumer satisfaction. Similarly, Kurniawan Aji Prakasa and Desy Arisandy (2019) found a significant relationship between the quality of Telkomsel SIM cards and the level of consumer satisfaction. Furthermore, the work of Karya, Lila, Siti, and Fitria (2021) showed that a high level of service provided by Telkomsel positively influenced customer satisfaction. The alignment of this study's results with existing literature reinforces the argument that network quality is a crucial factor in shaping customer perceptions in the telecommunications industry.

However, while the overall relationship is positive, the issues raised in the introduction highlight critical areas for improvement. The persistent complaints regarding unstable signals, especially in remote areas and during bad weather, and the severe economic impact of network outages on online businesses suggest that satisfaction is not uniform across all user segments and locations. The perception that high prices are not matched by consistent quality remains a significant point of friction. Therefore, this study's findings should be interpreted as a call to action for Telkomsel. While their network performs well enough to establish a positive baseline of satisfaction, addressing specific weaknesses is essential for enhancing it further and mitigating negative perceptions. The company must ensure that investments in new technologies like 5G do not come at the expense of maintaining and improving the 4G network, upon which a majority of users still depend.

4. Conclusions

Based on the analysis and discussion of the research findings, the following conclusions can be drawn. First and foremost, Telkomsel's network quality has a positive and significant influence on customer satisfaction. This was statistically confirmed by a t-test significance value of 0.000 ($p < 0.05$). This result affirms that the higher the quality of the network as perceived by customers, the more satisfied they will be with the service provided. This study has some limitations. The research was focused on a sample of 40 respondents. Future research is encouraged to use a larger and more diverse population to enhance the generalizability of the findings. Additionally, future studies could incorporate other relevant independent variables, such as customer service quality, price and promotional activities, to provide a more comprehensive picture of the factors influencing customer satisfaction with Telkomsel.

The practical implication of this research is a clear recommendation for Telkomsel to continue investing in its network infrastructure. Specifically, effort should be focused on improving network stability and expanding coverage to underserved and remote regions to ensure equitable service quality for all customers. Furthermore, improving the responsiveness and effectiveness of the customer complaint handling system is crucial to addressing quality issues promptly and enhancing overall customer perception.

Reference

- Adrianto, A., & Rohana, T. (2022). Model pengukuran kepuasan pelanggan dengan kualitas pelayanan pada PT. Telkomsel. *Ekonomi, Keuangan, Investasi dan Syariah (EKUITAS)*, 4(2), 561–566 . <https://doi.org/10.47065/ekuitas.v4i2.2580>
- Azali, Z., & Fauzia, F. (2023). Pengaruh kualitas provider Telkomsel terhadap kepuasan dan loyalitas konsumen di Desa Ciluluk. *Prosiding FRIMA (Festival Riset Ilmiah Manajemen dan Akuntansi)*, (6), 377–392. <https://doi.org/10.55916/frima.v0i6.466>
- Diotiharta, Y., Muktiyanto, A., & Mujtahid, I. M. (2023). Pengaruh kualitas layanan, citra merek dan harga terhadap kepuasan pengguna layanan internet PT. Telkomsel di Kota Bengkulu. *EKOM BIS REVIEW: Jurnal Ilmiah Ekonomi dan Bisnis*, 11(1), 401–409. <https://doi.org/10.37676/ekombis.v11i1.3070>
- Fery Coyando Girsang, & Tika Nirmala Sari. (2024). Penerapan kualitas pelayanan, harga dan promosi terhadap kepuasan pelanggan kartu prabayar Telkomsel. *Jurnal Dunia Pendidikan*, 4(3), 1180–1197. <https://doi.org/10.55081/juridip.v4i3.1980>
- Hidayat, R., & Rohana, T. (2022). Pengukuran loyalitas mahasiswa dengan pelayanan pegawai administrasi dan kepuasan mahasiswa. *Ekonomi, Keuangan, Investasi dan Syariah (EKUITAS)*, 3(4), 849–855. <https://doi.org/10.47065/ekuitas.v3i4.1616>
- Huda, N., Lisandi, M. D. T., Albanna, H. T., Rhomadon, M. F., Hidayat, J. R., & Habrizons, F. (2024). Analisis kepuasan pengguna aplikasi MyTelkomsel menggunakan metode System Usability Scale. *Simkom*, 9(2), 124–133. <https://doi.org/10.51717/simkom.v9i2.381>
- Kurniawan, A. P., & Desi, A. (2019). Kepuasan konsumen melalui kualitas produk SIM card Telkomsel. *Jurnal Ilmiah Psyche*, 13(1), 37–48. <https://doi.org/10.33557/jpsyche.v13i1.555>
- Mursyid, M., Purwanta, P., & Suliantoro, S. (2023). Pengaruh kualitas pelayanan customer service terhadap kepuasan pelanggan Grapari Telkomsel Madiun. *ALBAMA: Jurnal Bisnis Administrasi dan Manajemen*, 16(1), 78–91. <https://doi.org/10.56606/albama.v16i1.123>
- Putri, R., & Hidayat, R. (2022). Model pengukuran kepuasan kerja karyawan dengan kompensasi dan motivasi. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi dan Bisnis*, 10(1), 305–315. <https://doi.org/10.37676/ekombis.v10i1.1776>
- Yopi, & Simanjuntak, J. P. (2024). Analisis kualitas layanan dan harga terhadap kepuasan pengguna kartu Telkomsel di Kota Batam. *Jurnal PROFITA: Akuntansi dan Manajemen*, 3(1), 1–13. <http://jurnal-adaikepri.or.id/index.php/PROFITA/article/view/139>