

Analysis of user satisfaction on the discord application using the Electronic Service Quality (E-SERVQUAL) method

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Abstract: The rise of digital communication platforms based on the internet has heightened the demand for service quality that aligns with user expectations. Discord, a Voice over Internet Protocol and Instant messaging application, is widely embraced by various communities; however, complaints regarding system stability, service responsiveness, and user support continue to arise. This study aims to evaluate user satisfaction with the Discord application using the Electronic Service Quality (E-SERVQUAL) method. Employing a descriptive quantitative approach, data was collected through an online questionnaire from 128 active Discord users in Indonesia, selected via purposive sampling. The research instrument was crafted based on the six dimensions of E-SERVQUAL: Efficiency, Reliability, Fulfillment, Privacy, Responsiveness, and Contact, comparing users' expectations with their perceptions. The findings reveal that all dimensions of E-SERVQUAL exhibit negative gap values. The Total Electronic Service Quality score of -0.44 indicates that the overall service quality of Discord falls short of user expectations, with the Responsiveness dimension showing the most significant gap. The study concludes that enhancing service quality, particularly in Responsiveness and user support, is vital for improving user satisfaction.

Keywords: user satisfaction; Discord; E-SERVQUAL; digital service quality

1. Introduction

Improving Information Technology (IT) has integrated digital communication systems into societal systems, forming key components of society's systems. Digital media have now become core media of communication tools while also serving the purpose of strategically conveying relevant information within the social, educational, and occupational domains (Fu, 2023). Digital communication tools, such as instant messaging, video conferencing, and online work collaboration tools, continue to undergo development to enhance real communication with the bypassing of the limits of time and distance. Such development continues to raise the expectations of users on the quality of digital services, reliability, and promptness (Quariach et al., 2023).

One digital communications network that has received a lot of attention is Discord. Although initially peaking interest from game developers and the gaming community, Discord has expanded its service to new users and market segments, including students, creators, and other professionals (Lauricella et al., 2024). As a Voice over Internet Protocol (VoIP) service, Discord is equipped with a myriad of functions, including instant messaging, and voice and video calling. It also gives users the opportunity to manage and customize community and communication servers to interact with other users online (Craig & Kay, 2023). The platform has numerous servers and users, however, it still receives an overwhelming number of complaints. The complaints are usually regarding issues like lag, unresponsive servers, and a lack of communication from staff. The complaints received by Discord show that user service expectations are contradicted by what is being offered. Services user expectation contradicted from what it being offered. From a user satisfaction perspective, service quality assessment is extremely important.

User satisfaction is an important indicator in assessing the success of a digital application and is greatly influenced by the quality of service experienced during use (Sulistianingsih et al., 2024). To evaluate the quality of digital services, this study uses the E-SERVQUAL method, which measures the gap between user perceptions and expectations. A number of previous studies have shown that the E-SERVQUAL approach is effective in identifying weaknesses in digital services in various contexts, such as e-commerce platforms and information systems, which generally still show a negative gap in several service dimensions (Sindi, 2024). Compared to other methods, such as Web-Qual and the Technology Acceptance Model, E-SERVQUAL is considered more appropriate because it focuses directly on the quality of service perceived by users through the dimensions of efficiency, reliability, fulfillment, privacy, responsiveness, and contact (Shankar & Datta, 2020; Sindi, 2024).

Based on these considerations, this study aims to analyze the level of user satisfaction with the Discord application using the E-SERVQUAL method and to identify service dimensions that require improvement. This study contributes to the literature in three ways. First, it extends the application of the E-SERVQUAL framework to a real-time digital communication platform, whereas most prior studies have focused primarily on e-commerce services. Second, it provides empirical evidence regarding service quality gaps in a VoIP-based community platform context. Third, the findings offer practical recommendations for improving responsiveness and overall service performance in digital communication applications.

2. Material and methods

The research methodology was systematically designed to measure the gap between users' expectations and perceptions of the digital services provided by Discord. The research stages include determining the research approach, establishing the population and sample, developing research instruments, collecting data, and analyzing data based on E-SERVQUAL.

2.1 Research design

Figure 1 illustrates the overall research framework in this study. The research process began with problem identification and literature review, followed by the development of an E-SERVQUAL-based questionnaire covering six dimensions of service quality. Data were collected from selected respondents through purposive sampling using an online survey. The collected data were then processed and analyzed using the E-SERVQUAL gap approach to evaluate service quality at the dimensional and overall levels through the Total Electronic Service Quality (TESQ) score, which formed the basis for drawing conclusions and recommendations.

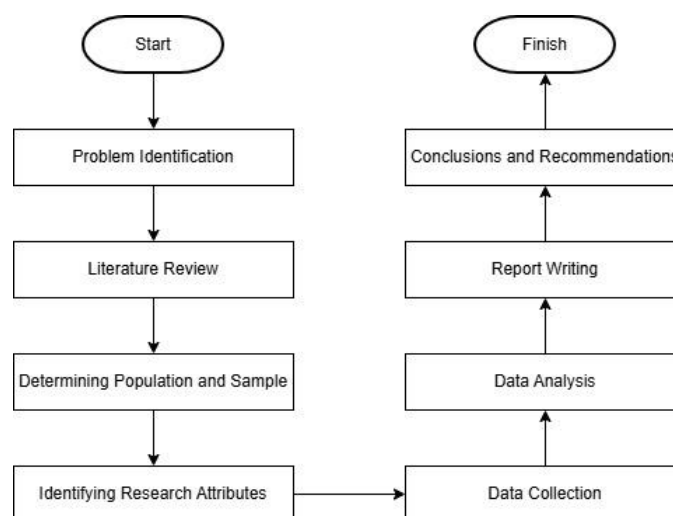


Figure 1. Research framework

To implement this framework, the study employed a descriptive quantitative approach aimed at objectively describing Discord's service quality based on user perceptions and expectations. The quantitative approach was chosen because it converts user assessments into numerical data suitable for statistical analysis, while the descriptive design maps service quality without examining relationships between variables. Data were collected online using a structured questionnaire with a five-point Likert scale, which is appropriate for measuring user satisfaction in digital service environments.

2.2 Population and sample

The population in this research is all active users of the Discord application in Indonesia. Since there is no official data available on the number of Discord users in Indonesia, the population is categorized as a large population or unknown. The sampling technique used was purposive sampling ([Putri et al., 2024](#)), with the following respondent criteria:

1. Active users of the Discord application,
2. Residing in Indonesia,
3. At least 17 years of age, and
4. Have used Discord in the last six months.

According to ([Cochran, 1963](#)), the Cochran formula can be used to determine the sample size when the population size is unknown. Based on this formula, the required sample size for this study was 97 respondents.

2.3 Data collection techniques

Data collection was conducted by distributing online questionnaires to respondents who met the research criteria. The questionnaire consisted of two assessment sections, namely:

1. Expectations regarding the quality of Discord's services
2. Perceptions regarding actual experiences of using the service

The assessment was carried out using a five-point Likert scale, ranging from 1 (very dissatisfied) to 5 (very satisfied). This scale was used to make it easier for respondents to provide quantitative and consistent assessments ([Liu et al., 2015](#)).

Table 1. Likert scale questionnaire on perceptions and expectations

Value	Perception questionnaire	Expectation questionnaire
1	Very Dissatisfied	Very Dissatisfied
2	Dissatisfied	Dissatisfied
3	Neutral	Neutral
4	Satisfied	Satisfied
5	Very Satisfied	Very Satisfied

The questionnaire indicators were developed based on the six dimensions of E-SERVQUAL, namely efficiency, reliability, fulfilment, privacy, responsiveness, and contact ([Zeithaml et al., 2002](#)). Details of the dimensions and indicators used in this study are presented in Table 2.

Table 2. Operational dimensions of E-SERVQUAL

Dimension	Code	Statement
Efficiency	E1	Discord is easily accessible anytime and anywhere without obstacles
	E2	The login process to Discord is fast and uncomplicated
	E3	Discord's interface is easy to understand and use
Reliability	R1	Discord rarely experiences disruptions or errors during use
	R2	Voice and video connections on Discord are stable during use
	R3	Discord functions well in accordance with the features provided
Fulfilment	F1	Discord's features meet my needs for communication and collaboration
	F2	The sound and video quality on Discord meets my expectations
	F3	Discord provides server and community features that support my activities
Privacy	P1	My personal data on Discord is secure and not misused
	P2	I can easily manage my account privacy on Discord
	P3	I can hide my identity or activities from other users
Responsiveness	RS1	Discord responds quickly to user reports or complaints
	RS2	Discord's "help" feature or support center is easily accessible when I need assistance
	RS3	Discord provides clear and helpful solutions when problems arise
Contact	C1	Discord provides official contact information (such as a help site and Twitter) that is easy to find
	C2	I can easily contact Discord if I encounter any issues
	C3	Discord provides active and responsive user support services

Data collection was conducted online using Google Forms distributed through social media and the Discord community. Prior to the main distribution, the questionnaire was pilot tested to ensure the clarity and feasibility of the research instrument.

2.4 E-SERVQUAL data analysis technique

This method emphasizes analyzing the gap between user expectations and their actual perceptions, calculated using the following formula: E-SERVQUAL Gap Score = Perception Score - Expectation Score (Hung et al., 2023). The calculation analysis of the E-SERVQUAL value according to Anwarudin et al. (2022) is shown in the following formula:

The average perception value for each indicator is calculated using (1).

$$\overline{P}_{ij} = \frac{\sum P_{ij}}{n} \quad (1)$$

The average expectation value for each indicator is calculated using (2).

$$\overline{H}_{ij} = \frac{\sum H_{ij}}{n} \quad (2)$$

The average perception value and the average expectation value for each dimension are calculated using (3)

$$\overline{Pd}_r = \frac{\sum P_{ij}}{m_r} \quad \text{and} \quad \overline{Hd}_r = \frac{\sum H_{ij}}{m_r} \quad (3)$$

The gap value for each respondent for each statement is calculated using (4).

$$eSQ = \overline{P}_{ij} - \overline{H}_{ij} \text{ atau } S = P - H \quad (4)$$

The overall service quality value or Total Electronic Service Quality (TESQ) is calculated using (5).

$$TESQ = \frac{\sum P_{ij}}{n} - \frac{\sum H_{ij}}{n} \quad (5)$$

The TESQ score identifies whether the quality of service provided by the service provider to its users is satisfactory or not. If the TESQ score is zero (0), the service quality is considered “satisfactory” if the TESQ score is positive or greater than 0 (>0), the service quality is considered “very satisfactory” and if the TESQ score is negative or less than 0 (<0), the service quality is considered “unsatisfactory” (Anwarudin et al., 2022).

3. Results and discussion

This section discusses the findings of a study on user satisfaction with the Discord application based on the E-SERVQUAL method. The discussion not only presents the results of data processing but also provides an interpretation of the findings, compares them with previous studies, highlights the uniqueness of this study, and explains the practical implications, limitations, and future research directions.

3.1 Validity and reliability analysis

Prior to the main data analysis, validity and reliability tests were conducted as a pilot study to ensure that the research instruments were suitable for measuring the quality of electronic services. The pilot test involved 38 respondents who met the research criteria. The validity test was conducted using the product-moment correlation method with the help of SPSS version 31 software. The validity of each statement item was determined by comparing the r_{count} value with the r_{table} as a reference. With a significance level of 5% and $N = 38$, the r_{table} value of 0.320 used as a benchmark. If the r_{count} value was equal to or greater than 0.320, the statement item was declared valid. Conversely, if the r_{count} value is below 0.320, the statement item is categorized as invalid (Malik & Priyadi, 2021). The results indicate that all statement items met the validity criteria and were suitable for further analysis. Reliability testing was conducted using Cronbach’s Alpha to assess the consistency of the measurement instrument. The results show that the user expectations questionnaire obtained a Cronbach’s Alpha value of 0.934, while the user perceptions questionnaire achieved a value of 0.947. Both values exceed the minimum reliability threshold of 0.60, indicating that the instrument is highly reliable and consistent for measuring service quality (Malapane & Ndlovu, 2024). High reliability values suggest that the questionnaire items consistently capture users’ perceptions and expectations of Discord’s service quality.

Table 3. Summary of reliability test results

Category	Cronbach’s alpha	Description
User expectations	0.934	Reliable
User perceptions	0.947	Reliable

3.2 Respondent characteristics

The main survey involved 128 respondents who met the research criteria. The majority of respondents were male and aged between 21 and 23 years. In terms of usage duration, most respondents had been using the Discord application for more than one year. This indicates that the respondents had substantial experience with the platform, enabling them to provide informed and reliable evaluations of Discord’s service quality. The dominance of young adult users is consistent with Discord’s positioning as a communication platform widely used by students, gamers, and online communities.

Table 4. Respondent characteristics

Characteristic	Category	Number (n)	Percentage (%)	Total respondents
Gender	Male	75	58.59	128
	Female	53	41.41	
Age	17-20 years old	13	10.16	128
	21-23 years old	92	71.88	
	24-26 years old	17	13.28	
	27-31 years old	6	4.69	
Duration of discord use	6-12 months	38	29.7	128
	>1	90	70.3	

3.3 E-SERVQUAL analysis

E-SERVQUAL analysis was conducted by comparing the average perceived service scores and average expected service scores across six service quality dimensions: Efficiency, Reliability, Fulfillment, Privacy, Responsiveness, and Contact. The gap value, calculated as the difference between perception and expectation, indicates whether the service performance meets user expectations.

3.3.1 Gap analysis at the indicator level

The results show that all E-SERVQUAL indicators have negative gap values, ranging from -0.35 to -0.55 . This indicates that, for all service attributes, users' perceptions of Discord's service quality are lower than their expectations. The largest gap values were found in indicators RS3 (-0.55) and RS2 (-0.54), both of which belong to the Responsiveness dimension. This suggests that users perceive shortcomings in the speed, clarity, and effectiveness of responses or support services provided by Discord. The results of calculating the average perception, expectation, and gap values for each E-SERVQUAL indicator are presented in Table 5.

Table 5. Operational dimensions of E-SERVQUAL

Statement	Average perception	Average expectation	GAP
E1	4.14	4.55	-0.41
E2	3.98	4.41	-0.43
E3	3.81	4.20	-0.39
R1	3.70	4.13	-0.44
R2	3.91	4.40	-0.49
R3	4.01	4.38	-0.37
F1	4.07	4.46	-0.39
F2	3.99	4.42	-0.43
F3	3.96	4.40	-0.44
P1	3.84	4.25	-0.41
P2	3.90	4.39	-0.49
P3	3.98	4.33	-0.35
RS1	3.61	4.04	-0.43
RS2	3.66	4.20	-0.54
RS3	3.65	4.20	-0.55
C1	3.73	4.18	-0.45
C2	3.67	4.11	-0.44
C3	3.73	4.27	-0.53

These findings are consistent with previous E-SERVQUAL studies on digital platforms, which frequently report responsiveness as a critical weakness, particularly in platforms with large user bases and limited direct customer support channels. In contrast, the smallest gap values were found in indicators P3 (-0.35) and R3 (-0.37), indicating that aspects related to privacy and system reliability are relatively closer to user expectations. This reflects Discord's strength in maintaining system stability and data security, which are essential factors for real-time communication platforms.

3.3.2 Gap analysis at the dimension level

To obtain an overview of service quality at the dimension level, the gap values were then averaged for each E-SERVQUAL dimension. The results of these calculations are presented in Table 6.

Table 6. Gap values per dimension

Dimension	Average perception	Average expectation	GAP
Efficiency	3.98	4.39	-0.41
Reliability	3.87	4.30	-0.43
Fulfillment	4.01	4.43	-0.42
Privacy	3.91	4.32	-0.42
Responsiveness	3.64	4.14	-0.51
Contact	3.71	4.18	-0.47

Based on Table 6, at the dimension level, the calculation results show that the average perception value for all dimensions is in the range of 3.64 to 4.01, while the average expectation value is in the range of 4.14 to 4.43. This condition indicates that user expectations for Discord services are relatively high. The gap calculation shows that all E-SERVQUAL dimensions have negative gap values, ranging from -0.41 to -0.51. The Responsiveness dimension shows the largest gap -0.51, indicating that this dimension represents the primary area requiring improvement. The Contact dimension also shows a relatively large gap -0.47, suggesting that users experience difficulties in accessing assistance or communicating with support services. Conversely, the Efficiency dimension has the smallest gap value -0.41, indicating that users generally perceive Discord as easy to access and use. This result aligns with previous studies on digital communication platforms, which emphasize that system usability and efficiency are often perceived positively, even when other service aspects require improvement. To clarify the comparison of gap values between dimensions, the gap value visualization is presented in Figure 2.

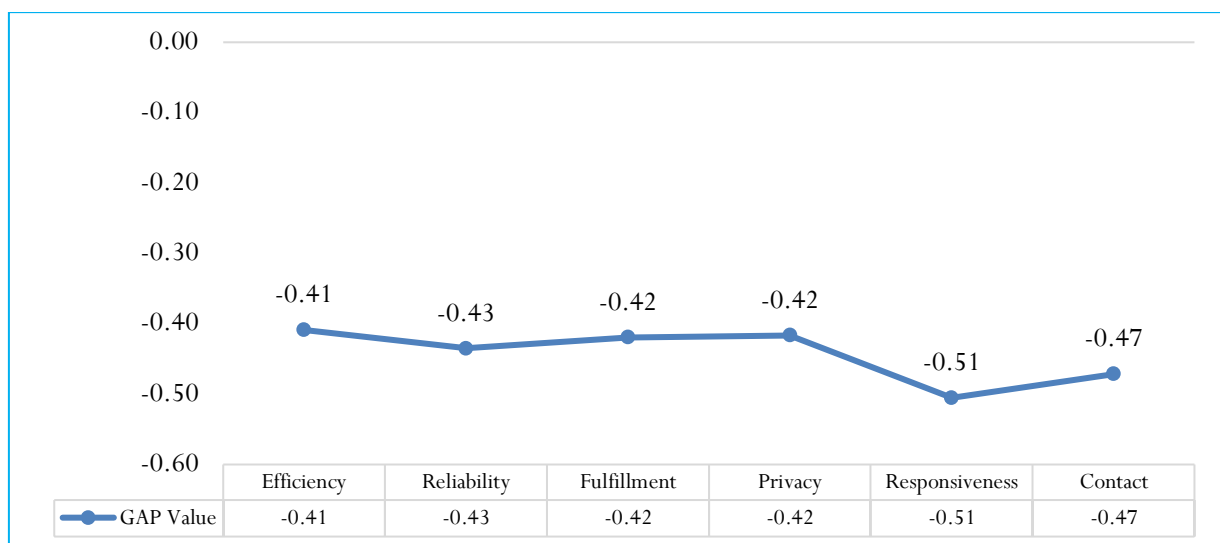


Figure 2. Gap graph per dimension

3.3.3 Total Electronic Service Quality (TESQ)

The overall service quality, measured using the Total Electronic Service Quality (TESQ) index, yielded a value of -0.44 . A negative TESQ value indicates that, overall, users' perceptions of Discord's service quality do not fully meet their expectations. According to the TESQ evaluation criteria, a value below zero (< 0) places Discord's service quality in the unsatisfactory category. However, the magnitude of the gap can be categorized as moderate rather than severe. This suggests that while users are not fully satisfied, the dissatisfaction level is not extreme. Similar findings have been reported in previous E-SERVQUAL studies on digital platforms, where moderate negative gaps indicate opportunities for service improvement rather than fundamental service failure.

3.4 Discussion

This study analyzes user satisfaction with the Discord application using the E-SERVQUAL model. As digital communication platforms continue to evolve, users increasingly expect not only system stability but also responsive and reliable service support. Therefore, evaluating service quality is essential to understand whether user expectations are being met. The results show that all E-SERVQUAL dimensions have negative gap values, indicating that users' perceptions remain below their expectations. Among the six dimensions, Responsiveness has the largest gap, suggesting that response speed and user support are the primary weaknesses of the platform. This finding is consistent with previous electronic service quality studies, which often identify responsiveness as a critical challenge in digital services ([Annawaf & Pusparini, 2024](#); [Anwarudin et al., 2022](#); [Khotijah et al., 2022](#); [Rafi et al., 2023](#)). Conversely, Efficiency has the smallest gap, indicating that users generally perceive Discord as easy to access and use, aligning with prior research emphasizing the importance of usability in digital platforms ([Arada, 2025](#); [Kristian et al., 2023](#)).

This study differs from many previous E-SERVQUAL studies that focus on e-commerce or transactional services. Instead, it examines a real-time communication platform, where continuous interaction and system responsiveness play a central role. Thus, this research extends the application of the E-SERVQUAL model to a communication-based digital environment. Practically, the findings suggest that Discord should prioritize improving responsiveness and support accessibility while maintaining strengths in efficiency and system usability. Although the overall TESQ value indicates that service quality is not fully satisfactory, the moderate gap suggests that improvements are achievable. This study is limited by its reliance on quantitative survey data and a sample dominated by young users. Future research may incorporate qualitative approaches or comparative studies across different communication platforms to obtain deeper insights into electronic service quality in digital ecosystems.

4. Conclusion

This study aims to analyze the level of user satisfaction with the Discord application based on digital service quality using the E-SERVQUAL method. Based on the analysis of 128 active Discord users in Indonesia, it can be concluded that all dimensions of E-SERVQUAL, namely efficiency, reliability, fulfillment, privacy, responsiveness, and contact, have negative gap values. This indicates that, in general, the quality of service perceived by users is still below their expectations. The Total Electronic Service Quality (TESQ) calculation shows a value of -0.44 , which indicates that the overall quality of Discord's service does not fully meet user expectations. However, this gap value is moderate, so the level of user dissatisfaction is not extreme. This finding suggests that Discord is still perceived as a fairly good communication platform, but still needs improvement in several aspects of its service. The responsiveness dimension is the dimension with the largest gap value, indicating that users still feel limitations in terms of system response speed and service support when encountering obstacles. Conversely, the efficiency dimension has the smallest gap value, indicating that the ease of access and use of the Discord application is relatively better than other dimensions. Based on these findings, this study implies that Discord developers need to

prioritize improvements in the dimensions with the largest gap values, particularly responsiveness and contact, in order to improve overall user satisfaction. This study is also expected to serve as a reference for future research examining service quality and user satisfaction in digital communication applications using the E-SERVQUAL approach.

Author's declaration

Author contribution

Jesica Pitos Dwi Putri: Conceptualization, methodology, investigation, data curation, formal analysis, validation, writing-original draft, writing-review & editing, visualization. **Pradita Eko Prasetyo Utomo:** Conceptualization, supervision, validation, and writing-review & editing. **Dewi Lestari:** Conceptualization, supervision, validation, and writing-review & editing.

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Data availability

The raw data and research data are accessible upon request.

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Conflict of interest

There are no conflicts of interest in this research.

Ethical clearance

This study was conducted in accordance with established research ethics guidelines and received ethical approval from the Institute for Research and Community Service (LPPM), Universitas Jambi (Number: 122/DST/UN21.11/PT.01.00/2026). Participation was voluntary, and informed consent was obtained from all respondents prior to data collection through an online questionnaire. Respondent anonymity and data confidentiality were strictly maintained, and the information collected was used exclusively for academic research and publication purposes.

AI statement

The grammatical structure of this article was improved by using Grammarly and the authors have rechecked the accuracy and correctness of the generated sentences with the topic and data of this study. The data and language use in this article have been validated and verified by an English language expert and none of the AI-generated sentences are included in this article.

Publisher's and Journal's Note

Researcher and Lecturer Society as the publisher, and Editor of Journal of Computer-based Instructional Media state that there is no conflict of interest towards this article publication.

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