



DOI: <https://doi.org/10.38035/gijea.v4i1>
<https://creativecommons.org/licenses/by/4.0/>

The Effect of E-Service Quality on Student Satisfaction At Jakarta State Polytechnic in Using Academic Information Systems

Syamsurizal Syamsurizal¹, Aulia Nur Cahyanti², Erwin Permana³

¹Politeknik Negeri Jakarta, Jakarta, Indonesia, Syamsurizal@pnj.ac.id

²Politeknik Negeri Jakarta, Jakarta, Indonesia, aulia.nur.cahyanti.an23@stu.pnj.ac.id

³Universitas Pancasila, Jakarta, Indonesia, erwin.permana@univpancasila.ac.id

Corresponding Author: erwin.permana@univpancasila.ac.id¹

Abstract: This study aims to analyze the influence of electronic service quality (e-service quality) on student satisfaction in using the KubacaPNJ application as a digital literacy platform at Politeknik Negeri Jakarta. The research employs a descriptive approach by analyzing user reviews on the Google Play Store platform. The results show that the KubacaPNJ application has generally been able to provide adequate services in supporting students' literacy needs, particularly in terms of system accessibility, availability of digital book features, and user data protection through account authentication mechanisms. Based on the analysis of user reviews, approximately 60% of users provided positive feedback, 27% gave negative feedback, and 13% did not provide any rating. These findings indicate that electronic service quality influences the level of student satisfaction, where the better the quality of electronic services provided by the system, the higher the level of student satisfaction in utilizing the digital service. Therefore, application developers are recommended to continuously improve service quality, particularly by minimizing bugs and errors, improving the clarity of system navigation, and enhancing the transparency of application information to ensure a more optimal user experience.

Keyword: E-Service Quality, Student Satisfaction, Digital Literacy, Kubacapnj Application, Digital Library Information System.

INTRODUCTION

The development of information and communication technology has accelerated the transformation of digital-based services across various sectors, including higher education. Increasing connectivity has become a major factor expanding the use of electronic services (e-services), as society increasingly relies on online services that are fast and accessible anytime. In Indonesian, the Indonesian internet service providers association reported that internet penetration in 2025 reached 80.66% or approximately 229 million people, increasing

from 79.50% in 2024. This condition indicates that the digital ecosystem is becoming more mature, leading to higher demands for the quality of electronic services.

In the context of higher education, the digitalization of academic services has become important because the number of university students in Indonesian is very large. Based on data from the central statistics agency sourced from PDDikti under the relevant ministry, the number of students (public and private universities) in 2025 reached approximately 9,241,945 students.

Table 1. Number of Higher Education Institutions, Lecturers, and Students (Public and Private) Under the Ministry of Higher Education, Science, and Technology by Region, 2025

Provinsi	Number of Universities Under the Ministry of Research, Technology and Higher Education - State	Number of Universities Under the Ministry of Research, Technology and Higher Education - Private	Number of Universities Under the Ministry of Research, Technology and Higher Education - State + Private	Number of Educational Personnel Under the Ministry of Research, Technology and Higher Education - State	Number of Educational Personnel Under the Ministry of Research, Technology and Higher Education - Private	Number of Educational Personnel Under the Ministry of Research, Technology and Higher Education - State + Private	Number of Students Under the Ministry of Research, Technology and Higher Education - State	Number of Students Under the Ministry of Research, Technology and Higher Education - Private	Number of Students Under the Ministry of Research, Technology and Higher Education - State + Private
Maluku Utara	1	20	21	860	947	1.807	19.793	19.793	39.773
Papua Barat	2	10	12	656	226	882	15.172	8.440	23.612
Papua Barat Daya	-	12	12	-	720	720	-	24.359	24.359
Papua	2	27	29	1.023	905	1.928	49.465	25.393	74.858
Papua Selatan	1	7	8	450	98	548	19.060	3.347	22.407
Papua Tengah	-	13	13	-	265	265	-	6.185	6.185
Papua Pegunungan	-	8	8	-	210	210	-	8.302	8.302
Indonesia	127	2.713	2.840	98.137	169.638	267.775	4.833.473	4.833.473	9.241.945

Source: Data was taken on December 2024 and December 2025 from Ministry of Higher Education, Science, and Technology

Source: www.statistik.bps.go.id

The large scale of users makes the existence of digital academic services not merely a complement, but an essential part of campus services. One form of such digital service is the Academic Information System (SIKAD), which is generally used by students for activities such as filling out the Study Plan Card (KRS), viewing KRS, checking class schedules, accessing grade information, obtaining digital book information, and other academic administrative services.

Politeknik Negeri Jakarta (PNJ), as a vocational higher education institution, also implements an Academic Information System to support academic processes and student administration. According to data from Badan Pusat Statistik Kota Depok (sourced from PNJ), the number of PNJ students in 2025 reached 9,588 students, distributed across various departments and faculties.

Table 2 Number of PNJ Students in 2025 by Faculty and Department

Faculty Name	Number of Students at Jakarta State Polytechnic by Faculty and Gender (Persons)		
	Men	Women	Men and Women
	2025	2025	2025
Civil Engineering	850	376	1.026
Mechanical Engineering	1.501	240	1.741
Electrical Engineering	1.065	310	1.375
Information Technology and Computer Engineering	876	305	1.181
Accounting	419	912	1.331
Business Administration	453	1.194	1.647
Graphics and Publishing Engineering	567	691	1.258
Postgraduate Programs	24	5	29
Total	5.555	4.033	9.588

Data Description:

Source: Jakarta State Polytechnic

Source: www.depokkota.bps.go.id

With internal users and the recurring need to access academic services, the quality of the SIAKAD electronic service becomes a crucial factor in ensuring good user experience.

Electronic service quality, or e-service quality, refers to the ability of an electronic-based system to provide services that are effective, efficient, secure, and reliable for its users. In digital academic services, aspects such as ease of access (efficiency), service fulfillment (fulfillment), system availability (availability), and data security (privacy) can influence users' perceptions of system quality. When electronic academic services meet student expectations such as fast access, system stability, accurate data, and protection of personal information, the level of student satisfaction tends to increase. Conversely, system disruptions, slow access, or unclear features may reduce student satisfaction.

Although the use of SIAKAD has become a routine necessity for students, empirical studies that specifically assess the influence of e-service quality on student satisfaction in the context of vocational education particularly at Politeknik Negeri Jakarta still need to be strengthened. On the other hand, the increasing penetration of internet usage and the very large number of students require higher education institutions to ensure that the quality of their digital services remains optimal. Therefore, this research is relevant in providing an empirical overview of the extent to which the quality of SIAKAD contributes to student satisfaction at PNJ.

Literature Review

Academic Information Systems in Higher Education

An Academic Information System (SIAKAD) is an information technology-based system used to manage academic data and processes in an integrated manner within higher education institutions. According to Pusparini et al. (2020), an academic information system functions as a tool for managing academic data aimed at improving efficiency, accuracy, and the quality of information services for students. Sidik et al. (2019) states that the use of website-based academic information systems increases the convenience of academic transactions and supports the effectiveness of institutional services.

The implementation of SIAKAD through websites or applications allows students to access academic services online without limitations of space and time. The SIAKAD system itself is designed to support the implementation of education through the management of student data, completion of the Study Plan Card (KRS), grade processing, lecture schedules, and academic administrative services digitally.

The Concept of E-Service Quality

Electronic service quality (e-service quality) is an extension of the service quality concept within the context of information technology-based services, particularly online services and digital systems. According to Valarie A. Zeithaml et al. (2005), e-service quality is defined as consumers' evaluation of the reliability, speed, and ability of electronic services to meet their expectations, which subsequently influences user satisfaction perceptions.

Similarly, Hidayat et al. (2020) explain that e-service quality includes several main dimensions:

- a. Efficiency (Ease and Speed of Access)
This refers to the level of ease and speed of system access, enabling users to find information quickly, providing clear navigation, and not requiring complicated procedures.
- b. Fulfillment (Service Conformity with Functional Needs)
This refers to the system's ability to provide services according to the functions and promises offered, ensuring that available features operate properly and that information is presented accurately according to user needs.
- c. Availability (System Availability without Disruption)
This refers to the level of system reliability and stability, meaning the system can be accessed anytime, rarely experiences network disruptions, and has a fast response time.
- d. Privacy (User Data Security)
This refers to information security that guarantees the protection of users' personal data and the security of stored information.

Furthermore, according to Utami et al. (2021), e-service quality significantly influences user satisfaction, as responsive, stable, and user-friendly systems create positive user experiences and reflect added service value. In the context of digital academic applications such as Academic Information Systems or educational support applications, the implementation of e-service quality becomes a determining factor for service success, since students utilize the system for their daily academic activities.

User Satisfaction

User satisfaction in the context of information systems is a form of user evaluation after interacting with a system, reflecting the extent to which the system meets information needs and helps users achieve their intended goals. According to Pibriana et al. (2022), user satisfaction can be measured through several perceptions:

- a. Content
Measurement of the completeness, relevance, and usefulness of the information provided.
- b. Accuracy
The level of precision and correctness of information produced by the system.
- c. Format
The system interface displays, including layout clarity, menu structure, and readability of information.
- d. Ease of Use
The extent to which the system can be operated and understood by users.
- e. Timeliness
Measurement of the speed and recency of the information displayed.

Furthermore, Ernawati (2020) positions user satisfaction as a core variable influenced by system quality or information quality and which subsequently contributes to net benefits. In the context of information systems (including academic applications), user satisfaction can be understood as an important indicator that reflects system performance, the quality of user experience, and the potential sustainability of system usage.

Rating and Online Review as Indicators of Satisfaction

Ratings (stars) and online reviews (text-based comments) on application distribution platforms such as Google Play Store can be positioned as indicators of user satisfaction because they represent evaluations of real user experiences after using digital services. Ratings function as a quantitative summary, the higher the star score, the stronger the signal that users perceive a positive experience.

Meanwhile, text reviews enrich the meaning of ratings because they contain the reasons behind user evaluations regarding application performance and service quality. According to Nadhifah (2024), ratings accompanied by reviews often contain user opinions about their satisfaction and are frequently used as considerations by prospective users before deciding to use an application. However, if reviews are numerous and unstructured, analytical techniques (such as sentiment analysis) are required to extract tendencies of satisfaction or dissatisfaction from the review texts.

Relationship Between E-Service Quality and Satisfaction

The relationship between e-service quality and satisfaction can be explained as a cause-and-effect relationship. When the perceived quality of electronic services increases, users' evaluations of their system experience also become more positive, ultimately encouraging satisfaction.

Conceptually, e-service quality describes how well digital services (such as applications or websites) can meet user needs through aspects such as ease of use, system availability, processing reliability, data security, service responsiveness, and problem resolution. According to Rahman et al. (2022), e-service quality has a positive and significant influence on e-satisfaction.

Additionally, in the context of website-based academic services, according to Handrianto (2016), e-service quality is a determinant of user satisfaction in academic service systems, reinforcing that the relationship between e-service quality and satisfaction is relevant for information systems used in campus activities.

METHOD

This research is a qualitative study with a descriptive design. According to John W. Creswell (2014), qualitative research methods are used to explore and understand the meanings given by individuals or groups to social or human problems, using evolving procedures, inductive analysis, and interpretation of meanings by researchers.

Furthermore, according to Sugiyono (2019), qualitative research is conducted under natural conditions where the researcher acts as the key instrument, data collection techniques may involve triangulation, analysis is inductive in nature, and research results emphasize meaning rather than generalization.

A descriptive approach is used because the research focuses on presenting the conditions of the object as they are. According to Burhan Bungin (2007), descriptive research aims to describe and summarize various conditions or social reality phenomena that become research objects and present the characteristics of these phenomena systematically.

In the context of this study, the phenomenon being described is the service quality of the PNJ academic information system application (based on user experiences on Google Play) and its relationship with user satisfaction.

RESULT AND DISCUSSION

Analysis Of E-Service Quality of The PNJ Academic Information System

Electronic service quality (e-service quality) is one of the important factors determining the successful implementation of digital-based information systems. In the context of academic information systems, service quality is not only related to system availability but also includes ease of use, system reliability, suitability of service functions, and user data security. According to Valarie A. Zeithaml et al. (2005), e-service quality describes the extent to which electronic services facilitate users effectively and efficiently in obtaining information or conducting transactions through digital media. The better the perceived electronic service quality experienced by users, the higher the level of user satisfaction with the system.

In this study, the analysis of service quality in the academic information system of Politeknik Negeri Jakarta (PNJ) refers to the e-service quality dimensions proposed by Hidayat et al. (2020), namely efficiency, fulfillment, availability, and privacy. The analysis was conducted by examining the actual conditions of the use of the PNJ academic information system application as well as user reviews available on the KubacaPNJ platform in the Google Play Store.

1. Efficiency (Ease and Speed of Access)

The efficiency dimension relates to the level of ease and speed experienced by users when accessing the system and finding the information they need. Based on the interface of the KubacaPNJ application shown in Figure 1, the system provides a simple login page. This page contains several main components, such as email and password fields, which function as a user authentication mechanism before accessing the services available in the KubacaPNJ application.

Under these conditions, the KubacaPNJ application has fulfilled the efficiency aspect because the system is designed to be simple, easy to use, and fast in the login process, enabling users to quickly access the features and services available within the application.



Figure 1. Login Menu Display

However, based on user reviews on the Google Play Store in Figure 2, students reported that the KubacaPNJ app sometimes experienced delays in access or a long loading

time when used at certain times. Furthermore, reviews also noted that the login process sometimes encountered issues, requiring users to try several times before successfully logging in.

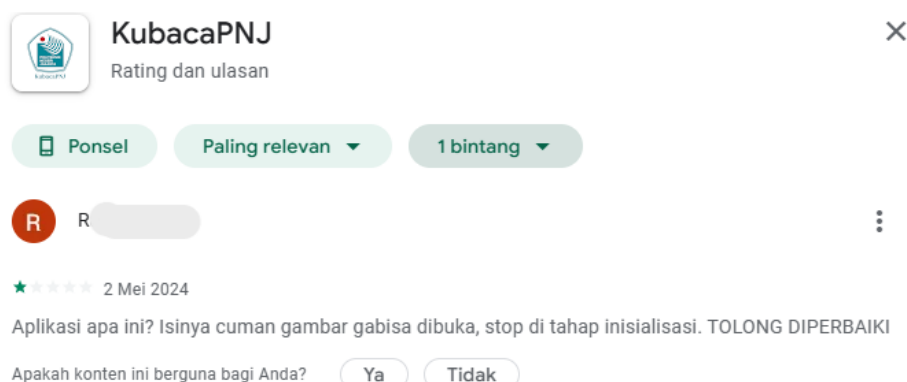


Figure 2. Display of User Reviews Through Google Play Store

2. Fulfillment (Suitability of Services to Functional Requirements)

The fulfillment dimension relates to the system's ability to provide services according to user needs and ensure that available features function properly. Figure 3 shows that the KubacaPNJ application provides news information and literacy activities. The homepage displays a "Popular Books" feature, which lists the books most frequently read or borrowed by other users. This demonstrates that the KubacaPNJ application functions not only as a digital book lending system but also as an information medium that supports literacy activities in educational settings.



Figure 3. Homepage view of the KubacaPNJ application

3. Availability (Uninterrupted System Availability)

The availability dimension relates to the level of system reliability in providing services that can be accessed at any time without experiencing significant disruptions. As a digital-based application accessible via mobile devices, KubacaPNJ provides users with the flexibility to access digital library services anytime and anywhere as long as they are connected to the internet. Figure 4 shows the news feature page in the KubacaPNJ the PNJ digital library. This feature is designed to consistently provide information that can application, which contains information on literacy activities and information updates from be accessed online by users at any time.

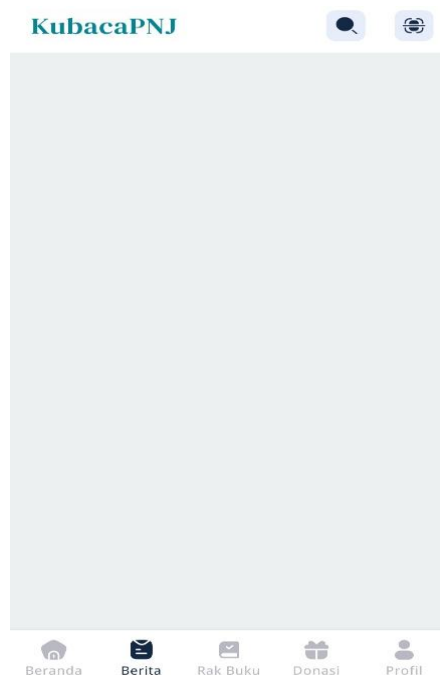


Figure 4. News Display of the KubacaPNJ application

In Figure 5 below, based on user reviews on the Google Play Store, students reported that the KubacaPNJ application sometimes experiences problems such as features in the application not being able to be opened, crashing, or the data loading process taking a very long time.



Figure 5. Display of User Reviews Through Google Play Store

4. Privacy (User Data Security)

The privacy dimension relates to user data security and the protection of personal information stored in the system. Based on the KubacaPNJ application login page displayed in Figure 6 below, the system uses an account authentication mechanism using email and password. This mechanism aims to ensure that only users with student accounts can access services within the KubacaPNJ application.



Figure 6. KubacaPNJ Application Login Menu Display

Additionally, up to the present time, no user reviews on the Google Play Store have been found that significantly report data breaches or misuse of personal information in the KubacaPNJ application. This indicates that, in general, the system has provided a fairly good level of security in protecting user data.

Overall, across the dimensions of efficiency, fulfillment, availability, and privacy, the electronic service quality (e-service quality) of the KubacaPNJ application can be considered fairly good in supporting students' literacy needs. However, improvements are still needed in terms of system stability and access speed in the KubacaPNJ application so that the user experience can become more optimal.

Analysis of PNJ Student Satisfaction with the Use of the PNJ Academic Information System

User satisfaction is one of the important indicators in assessing the success of information system implementation. According to Philip Kotler and Kevin Lane Keller (2016), user satisfaction refers to the level of a person's feeling after comparing the service performance they receive with their expectations. If the system's performance meets or even exceeds user expectations, users will feel satisfied. Conversely, if the system performance falls below expectations, it will lead to dissatisfaction.

In the context of digital-based information systems, user satisfaction is closely related to the electronic service quality (e-service quality) provided by an application. According to A. Parasuraman et al. (2005), electronic service quality refers to the ability of an internet-

based system to facilitate user activities effectively and efficiently, ranging from the process of searching for information to delivering services online. Good electronic service quality will enhance user experience and consequently increase the level of user satisfaction with the system being used.

Based on this concept, the analysis of student satisfaction with the KubacaPNJ application was conducted by examining user experiences reflected in user reviews on the Google Play Store platform. These reviews provide a real overview of students' perceptions regarding the quality of services provided by the digital library application.

1. Analysis of User Review Data

Based on observations of several user reviews on the Google Play Store and the level of user satisfaction obtained from direct interviews related to the KubacaPNJ application, variations in user experiences were found, indicating both satisfaction and dissatisfaction with the application services. These reviews were then analyzed and categorized based on user sentiment.

Table 3 Analysis of KubacaPNJ Application User Review Data

Category Sentiment	Number of Reviews	Percentage	Description
Positive (Satisfied)	9	60%	Users found the app helpful in accessing digital books.
Neutral	2	13%	Users provided comments without rating.
Negative (Dissatisfied)	4	27%	Users complained about bugs, errors, and slow loading times

Based on the results of the analysis, it can be seen that 60% of users provided positive responses to the KubacaPNJ application. Several positive reviews mention that the application provides convenience in reading digital books and offers a variety of reading collections that can be accessed practically through mobile devices.

However, around 27% of users expressed complaints about the application. The most frequently mentioned complaints include:

1. The application crashes or closes unexpectedly
2. Slow loading processes
3. Some features cannot be opened
4. Difficulties when logging into the application

These complaints indicate that there are still several technical aspects that need to be improved by developers so that the user experience can become more optimal.

2. Relationship Between Electronic Service Quality and Student Satisfaction

The results of the analysis also show that student satisfaction is strongly influenced by the quality of electronic service provided by the KubacaPNJ application. The dimensions of electronic service quality analyzed in this study include:

1. Efficiency
2. Fulfillment
3. Availability
4. Privacy

In the efficiency dimension, the KubacaPNJ application provides a simple and user-friendly interface. This makes it easier for students to log in and access the available features.

Next, in the fulfillment dimension, the application provides various features that support user needs, such as digital book collections, book categories, and literacy information that can be accessed directly through the application.

In the availability dimension, the system is designed to be accessible anytime through mobile devices as long as users have an internet connection. This provides flexibility for students to access digital library services without limitations of time and place.

Meanwhile, in the privacy dimension, the application has implemented a user authentication system through email and password to ensure that access to services can only be carried out by registered users.

Nevertheless, several user reviews indicate that technical issues such as system errors, application crashes, and slow loading processes still occur at certain times. These conditions show that electronic service quality that is not yet fully optimal can influence the level of user satisfaction with the application.

Therefore, it can be concluded that the better the electronic service quality provided by the KubacaPNJ application, the higher the level of student satisfaction in using the digital library services.

CONCLUSION

Based on the results of the analysis, the electronic service quality (e-service quality) in relation to PNJ students' satisfaction in using the KubacaPNJ application shows that the application is capable of providing reasonably good services in supporting students' literacy needs, particularly in terms of ease of system access, the availability of digital book features, and the protection of user data through account authentication mechanisms.

This finding is also supported by the analysis of user reviews on the Google Play Store platform and the results of direct interviews with KubacaPNJ users. The results show that approximately 60% of users provided positive responses, around 27% gave negative responses, and the remaining 13% provided neutral responses. Thus, it can be concluded that electronic service quality influences the level of student satisfaction, where the better the electronic service quality provided by the academic information system, the higher the level of student satisfaction in utilizing these digital services.

For application developers, it is recommended to continuously improve the convenience of the application services, particularly by addressing bugs and errors, improving navigation clarity, and increasing the transparency of application information, so that the user experience remains comfortable and optimal.

REFERENCES

- Bungin, B. (2007). *Penelitian Kualitatif: Komunikasi, Ekonomi, Kebijakan Publik, dan Ilmu Sosial Lainnya*. Kencana Prenada Media Group.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
<https://study.sagepub.com/sites/default/files/creswell.pdf>
- Ernawati, M., Hermaliani, E. H., & Sulistyowati, D. N. (2020). Penerapan DeLone and McLean Model untuk Mengukur Kesuksesan Aplikasi Akademik Mahasiswa Berbasis Mobile. *IKRA-ITH Informatika: Jurnal Komputer dan Informatika*, 5(1), 58–67.
<https://journals.upi-yai.ac.id/index.php/ikraith-informatika/article/view/914>
- Handrianto, Y. (2016). Analisis Pengaruh E-Service Quality terhadap Kepuasan Pengguna Website Layanan Akademik (Studi Kasus: www.bsi.ac.id AMIK BSI Jakarta). *Jurnal Teknik Komputer AMIK BSI*, 2(1), 31–46. <https://doi.org/10.31294/jtk.v2i1.361>
- Hidayat, R., Nugroho, L. E., & Wicaksono, E. (2020). E-Service Quality dalam layanan sistem informasi berbasis web. *Jurnal Sistem Informasi dan Teknologi Informasi*, 8(3), 215–224.
- Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15 ed.). Pearson Education.

- Nadhifah, S., Aini, F. N., Kusumawardhani, H. H., & Febrianto, M. Y. (2024). Analisis Sentimen Ulasan Aplikasi Gopay Pada Google Play Store Menggunakan Algoritma Support Vector Machine. *Jurnal Surya Informatika*, 14(1), 1–6. <https://doi.org/10.48144/suryainformatika.v14i1.1787>
- Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service Research*, 7(3), 213–233. <https://doi.org/10.1177/1094670504271156>
- Pibriana, D., & Fitriyani, L. (2022). Penggunaan Metode EUCS Untuk Menganalisis Kepuasan Pengguna E-learning di MTs N 2 Kota Palembang. *Jurnal Teknologi Sistem Informasi*, 3(1), 69–80. <https://sinta.kemdiktisaintek.go.id/journals/google/10335>
- Pusparini, N. N., & Sani, A. (2020). Mengukur keberhasilan penerapan sistem informasi akademik dengan model kesuksesan Delone and McLean. *METHOMIKA: Jurnal Manajemen Informatika & Komputerisasi Akuntansi*, 4(2), 149–155. <https://doi.org/10.46880/jmika.Vol4No2.pp149-155>
- Rahman, N. F. R., & Listyorini, S. (2022). Pengaruh E-Servicescape dan E-Service Quality terhadap E-Satisfaction pada Tokopedia (Studi pada Pengguna Aplikasi Tokopedia di Kota Semarang). *Jurnal Ilmu Administrasi Bisnis*, 10(3), 1344–1354.
- Sidik, A., & Alfah, R. (2019). Analisis Website Sistem Informasi Akademik (SIA) UNISKA MAB dengan Menggunakan Metode Usability Heuristic Evaluation. *Technologia: Jurnal Ilmiah*, 10(3), 110–118. <https://download.garuda.kemdikbud.go.id/article.php?article=1064368>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Utami, A. A., & Pratiwi, N. M. (2021). Pengaruh E-Service Quality terhadap Kepuasan Pengguna pada Aplikasi Digital. *Jurnal Manajemen dan Sistem Informasi*, 7(2), 99–110.
- Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2005). E-SERVQUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213–233.