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ANALYSIS OF WEBSITE SERVICE QUALITY FOR THE NATIONAL LIBRARY OF THE REPUBLIC OF INDONESIA USING THE MOBILE SERVICE QUALITY (M-S-QUAL) METHOD AND IMPORTANCE-PERFORMANCE ANALYSIS (IPA)

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Abstract
This study aims to analyze the service quality of the National Library of the Republic of Indonesia (Perpusnas) website based on the perceptions of students from Jenderal Soedirman University, utilizing the Mobile Service Quality (M-S-QUAL) method and Importance-Performance Analysis (IPA). A quantitative approach was employed, using a survey method conducted via an online questionnaire with a four-point Likert scale. Service quality was assessed through 16 attributes across five dimensions: efficiency, fulfillment, privacy, contact, and responsiveness. The analysis involved reliability testing, the calculation of mean importance and performance scores, and the mapping of attributes into IPA quadrants. The results indicate that all dimensions achieved a Cronbach's Alpha value above 0.6. The mean importance score was 3.313, while the mean performance score was 3.136, suggesting that service performance remains below the level of importance perceived by users. The privacy dimension recorded the highest mean performance score (3.250), whereas the efficiency dimension recorded the lowest (3.055). The IPA mapping placed one attribute in Quadrant I, eight in Quadrant II, five in Quadrant III, and two in Quadrant IV. Service assurance stands out as the primary priority for improvement, as it carries a high level of importance yet performs below the overall average. This study highlights the need to enhance service assurance while maintaining the quality of attributes that are both highly valued and high-performing—specifically those related to privacy protection, ease of access, and service availability.

INTRODUCTION

The development of information technology has driven changes in the delivery of public services, including library services. Libraries no longer rely solely on face-to-face interactions; they now leverage websites to provide access to digital collections, catalogs, e-books, journals, databases, and membership services. This transformation requires libraries to shift from conventional service models toward digital services that are more open, flexible, and oriented toward user needs. Digital libraries play a crucial role in supporting the learning process for "digital natives" by providing online collections, information accessible at any time, and services that are highly responsive to user requirements (Ikhsan & Mulyadi, 2025).

As a public institution, the National Library of the Republic of Indonesia (Perpusnas) plays a vital role in expanding access to information and fostering public literacy through digital services. Perpusnas offers a range of information technology-based services, including iPusnas, the Online Public Access Catalog (OPAC), Indonesia OneSearch, e-Resources, online membership, Khastara, as well as various user and visitation services. The existence of these services demonstrates that Perpusnas functions not only as a provider of physical collections but also as a gateway to digital information, accessible to the public across diverse regions (National Library of the Republic of Indonesia, 2025). The development of these digital services is essential, as it ensures that the public can access reading materials, scholarly references, electronic collections, and library information more broadly, without geographical limitations.

However, the mere presence of a website does not necessarily guarantee that the quality of service aligns with user needs. Aspects such as ease of access, system speed, data security, service accuracy, and responsiveness must be evaluated based on the user experience. A library website is expected not only to provide information and collections online but also to ensure that users can easily understand its features, locate the information they require, complete service processes, and obtain assistance whenever they encounter difficulties. Good website quality is linked to user satisfaction, as ease of use, information quality, and the quality of service interactions can influence the user experience when utilizing digital library services (Jauhari & Ganggi, 2025).

Research on the quality of the National Library of Indonesia (Perpusnas) website, utilizing the WebQual 4.0 method and Importance-Performance Analysis (IPA), indicates that evaluating digital service quality is essential for determining the alignment between user

expectations and website performance (Nugraha et al., 2024). These findings suggest that measuring service quality can serve as a foundation for service providers to maintain well-performing aspects while improving those that are not yet optimal. Such evaluations are crucial because users assess service quality not merely by the presence of features, but also by the website's ability to provide ease of use, adequate information, security, and service support tailored to their needs.

Beyond the evaluation of the Perpusnas website, assessments of the iPusnas application also highlight the importance of evaluating digital services based on user experience. A study on the service quality of the iPusnas application using the WebQual 4.0 method revealed that the average service quality, as perceived by users, reached 84.7%, while the user satisfaction level reached 86.1%. These findings demonstrate that digital service quality—specifically regarding ease of use, information quality, and service interaction—plays a significant role in shaping user satisfaction with digital library platforms. Nevertheless, continuous evaluation of service quality remains necessary, as user needs, expectations, and experiences may evolve alongside technological advancements and the diversification of digital services (Sari & Susanti, 2024).

University students represent a particularly relevant user group for such research, given their high demand for e-books, journals, catalogs, and academic information resources. For academic activities—such as coursework, assignment preparation, thesis completion, and research—students require information services that are accessible quickly, easily, and flexibly. Digital libraries play a vital role in providing comprehensive, high-quality, and easily accessible online collections to support the information needs of the "digital native" generation (Ikhsan & Mulyadi, 2025). Therefore, students' experiences in using the National Library of Indonesia (Perpusnas) website can provide insight into the quality of its digital services from the perspective of users who actively utilize academic information resources.

The quality of digital services is linked to user satisfaction, particularly regarding ease of use, reliability, responsiveness, assurance, and the system's capacity to meet information needs (Darmawan et al., 2023). In the context of digital library services, users require a system that enables effective information searching, seamless access to collections, the protection of personal information, and the provision of assistance or responses when obstacles arise during service use. Consequently, service quality must be assessed comprehensively so that administrators can identify which service attributes are truly significant to users.

This study employs the Mobile Service Quality (M-S-QUAL) method to evaluate the service quality of the National Library of Indonesia (Perpusnas) website, focusing on the

dimensions of efficiency, fulfillment, privacy, contact, and responsiveness (Hafidz & Amin, 2024). The M-S-QUAL method is well-suited for measuring user experience in digital services, as it encompasses aspects such as ease and speed of access, the ability to meet user needs, data and privacy protection, the availability of support or contact channels, and the service provider's responsiveness to user issues. Utilizing these dimensions allows the study to assess the Perpusnas website not merely as an information medium, but as a digital public service platform that must deliver an effective, secure, and responsive user experience.

Furthermore, the M-S-QUAL method is integrated with Importance-Performance Analysis (IPA) to compare the level of importance and the actual performance of each service attribute (Nugroho, 2018). IPA is used to establish priorities for improvement based on the gap between user expectations and perceived service performance. Attributes with high importance but low performance are prioritized for improvement, while those with both high importance and high performance should be maintained, as they effectively meet user needs. Applying IPA to the evaluation of digital services enables administrators to allocate resources more precisely toward the aspects that users value most.

Based on the description above, this study aims to analyze the service quality of the National Library of the Republic of Indonesia's website, as perceived by students from Jenderal Soedirman University, using the M-S-QUAL and IPA methods. This research is expected to provide an overview of the National Library's website service quality from the students' perspective and offer recommendations for enhancing efficiency, ease of use, security, availability of assistance, service assurance, and the responsiveness of digital services.

METHODOLOGY

This study employs a quantitative approach using a survey method to measure the service quality of the National Library of the Republic of Indonesia (Perpusnas) website. The measurement integrates the M-S-QUAL (Mobile Service Quality) framework with Importance-Performance Analysis (IPA). M-S-QUAL is utilized to assess service quality based on user perceptions, while IPA is used to compare the importance and performance levels of each service attribute. This methodology draws upon the work of Ramdhani et al. (2025), who employed a survey combining M-S-QUAL and IPA to evaluate service quality. In the present study, this approach is tailored to the specific research subject: the service quality of the Perpusnas website as experienced by its users.

The study utilizes primary data collected through questionnaires distributed to users of the Perpusnas website. The respondents consist of university students who have previously

used the Perpusnas website's services. Data were gathered via an online questionnaire (Google Form), resulting in 110 respondents. A questionnaire is a data collection technique involving a series of written questions or statements presented to respondents to elicit information regarding their attitudes, opinions, expectations, and preferences (Muthahharah et al., 2025). The questionnaire was designed to capture two types of assessments: the performance of the service and the importance attributed to each service attribute—a structure consistent with the referenced study, which also utilized surveys to evaluate both performance and importance levels of service quality attributes.

To measure performance and importance, this study employs a Likert scale to facilitate quantitative analysis. Respondents are asked to indicate their level of agreement with specific statements by selecting one of four available response options (a scale ranging from 1 to 4).

Table.1 Likert Scale

Scale	Statement
1	Strongly Disagree/Unimportant
2	Disagree/Unimportant
3	Agree/Important
4	Strongly Agree/Important

Reliability testing was conducted using the Cronbach's Alpha coefficient for each dimension, covering both performance and expectations. An instrument is considered reliable if its Cronbach's Alpha value is greater than 0.6 (Anggraini et al., 2022).

Furthermore, the mean expectation and performance scores for each item were used to construct an Importance-Performance Analysis (IPA) quadrant diagram. The dividing lines for the four quadrants were determined based on the grand mean of the expectations and performance scores across all items. Quadrant I ("concentrate here") contains attributes with high expectations but low performance, making them the top priority for improvement. Quadrant II ("keep up the good work") includes attributes with high expectations and high performance, which should be maintained. Quadrant III ("low priority") consists of attributes with low expectations and low performance, requiring no immediate improvement. Quadrant IV ("possibly overkill") comprises attributes with low expectations but high performance; resources currently allocated to these attributes could potentially be redirected toward others that are higher priorities for users (Afandi & Arini, 2024; Chen, 2021; Martín et al., 2023).

RESULT AND DISCUSSION

A case study was conducted on one of the national digital library platforms in Indonesia. The subject of this research is the website of the National Library of the Republic of Indonesia (Perpusnas), which provides online access to digital collections, catalogs, and various information resources for the general public (Nugraha et al., 2024). As an official government institution in the field of library services, Perpusnas plays a crucial role in supporting literacy and access to information for the Indonesian public through its digital platform (Aini et al., 2025; Utami, 2022). The utilization of digital technology in library services enables the public to access information and library resources with greater ease and flexibility (Rahmadini et al., 2022). Perpusnas offers services such as the borrowing and reading of e-books, access to journals and databases, catalog searching, and digital membership services (Hajar & Fauziah, 2022). As an official government institution in the field of library services, Perpusnas plays a crucial role in supporting literacy and access to information for the Indonesian public through its digital platform.

A total of 110 respondents participated in this study. Questionnaires were distributed to students from Universitas Jenderal Soedirman (Unsoed) from the 2023, 2024, and 2025 cohorts who had previously used services or features on the Perpusnas website. To participate in this study, respondents were required to have experience accessing the Perpusnas website, ensuring that the data obtained would accurately represent user perceptions regarding the quality of the platform's services. The profile of the respondents is presented in the Table 2.

Tabel 2. Respondent Profile

Variable	Category	Percentage (%)
Cohort (Entry Year)	2023	20,00
	2024	54,55
	2025	24,55
	2026	0,91
Faculty	FISIP	80,91
	FIB	6,36
	Pertanian	1,82
	FIKES	1,82
	FMIPA	1,82
	FK	1,82
	FT	1,82
	FEB	0,91

Variable	Category	Percentage (%)
	RMIP (Industri Pertanian)	0,91
	FH	0,91
	Peternakan dan Pertanian	0,91

Based on class, the majority of respondents came from the class of 2024, namely 54.55 percent, followed by the class of 2025 at 24.55 percent, the class of 2023 at 20.00 percent, and the class of 2026 at 0.91 percent. Based on faculty origin, respondents were dominated by students from the Faculty of Social and Political Sciences (FISIP) at 80.91 percent, followed by the Faculty of Cultural Sciences (FIB) at 6.36 percent, while other faculties such as Agriculture, FIKES, FMIPA, FK, FT, FEB, RMIP, FH, and Animal Husbandry and Agriculture each contributed less than 2 percent. This composition shows that research respondents are dominated by social science students, so research results need to be read taking into account the characteristics of these respondents.

The results of the reliability test with Cronbach's Alpha for each dimension, both in terms of performance and expectations, are presented in Table 2. All dimensions on both sides have a Cronbach's Alpha value above 0.6, so the research instrument is declared reliable and suitable for use to measure the quality of digital services on the National Library website.

Table 3. Cronbach's Alpha Reliability Test Results by Dimension

Dimension	Number of Items	Alpha (Performance)	Alpha (Expectation)
Efficiency	3	0,781	0,781
Fulfillment	3	0,717	0,788
Privacy	2	0,887	0,902
Contact	4	0,794	0,853
Responsiveness	4	0,826	0,882

Tabel 4 Case Study Results

Dimension	Item	Σ Iij / n	Σ Wij / n	Σ Pij / n	*MQj*
	EFF1	3.355	0.785	3.155	2.539
Efficiency	EFF2	3.318	0.773	3.173	2.515
	EFF3	3.182	0.727	2.836	2.158
Fulfillment	FUL1	3.218	0.739	3.064	2.355

Dimension	Item	Σ Iij / n	Σ Wij / n	Σ Pij / n	*MQj*
Privacy	FUL2	3.436	0.812	3.318	2.782
	FUL3	3.209	0.736	2.973	2.300
	PRI1	3.409	0.803	3.273	2.673
	PRI2	3.391	0.797	3.227	2.618
Contact	CON1	3.345	0.782	3.236	2.603
	CON2	3.355	0.785	3.209	2.588
	CON3	3.245	0.748	3.091	2.382
	CON4	3.236	0.745	2.927	2.248
Responsiveness	RES1	3.300	0.767	3.155	2.488
	RES2	3.336	0.779	3.218	2.561
	RES3	3.291	0.764	3.200	2.491
	RES4	3.373	0.791	3.127	2.527
Overall Average		**3.313**	**0.771**	**3.136**	**2.489**

Among the M-S-QUAL dimensions, privacy received the highest average performance score at 3.250. This indicates that the National Library of Indonesia (Perpusnas) website is considered optimal in protecting the personal data and information of its users. The specific items with the highest average performance scores for each dimension are as follows: EFF1 for efficiency, FUL2 for fulfillment, PRI1 for privacy, CON1 for contact, and RES2 for responsiveness. Conversely, the items with the lowest scores for each dimension are EFF3 for efficiency, FUL3 for fulfillment, PRI2 for privacy, CON4 for contact, and RES1 for responsiveness.

Overall, the efficiency dimension recorded the lowest performance score among all dimensions, at 3.055. This suggests that the Perpusnas website still requires improvement in terms of access speed and the speed at which users can complete transactions or conduct searches.

In terms of importance, the privacy dimension received the highest average score at 3.400. This implies that the administrators of the Perpusnas website must ensure the security and privacy of users' data when they access the website's services. This finding aligns with research by Nurdin et al. (2026), which highlights privacy as a critical factor in digital service quality and user satisfaction. The items with the highest average importance scores for each dimension are: EFF1 for efficiency, FUL2 for fulfillment, PRI1 for privacy, CON2 for contact, and RES4 for responsiveness. The dimension with the lowest importance score is fulfillment (3.288). It appears that users do not prioritize the fulfillment aspect—such as the availability of collections or the speed at which requests for library materials are met—as highly as other factors. Nevertheless, the fulfillment aspect still warrants attention, as it relates to the website's capacity to provide the services and information required by its users. Research on the quality of library websites indicates that certain service aspects require improvement, as evidenced by the gap between the level of importance—or user expectations—and actual service performance (Eka Bhanowati et al., 2025). This is supported by a study by Lestari et al. (2022), which suggests that the quality of content and information services on library websites still necessitates enhancement, based on the results of an Importance-Performance Analysis (IPA) (Lestari et al., 2022). The overall performance of the subject under study is considered reasonably good, with an aggregate mean MQj score of 2.489 out of a maximum possible score of 4.00. This suggests that the National Library (Perpusnas) website contains several aspects that could be further refined as part of a process of continuous improvement. The IPA model can be utilized to formulate strategies aimed at achieving user satisfaction, based on the performance scores and the perceived importance of specific attributes from the perspective of students. The IPA diagram for the Perpusnas website is presented in Figure 1.

Importance-Performance Analysis (IPA)

The mean expectation and performance scores for each item in Table 2 are subsequently mapped onto an IPA quadrant diagram, using the overall mean (grand mean)—3.31 for expectations and 3.14 for performance—as the dividing lines. The results of this mapping are presented in Figure 1.

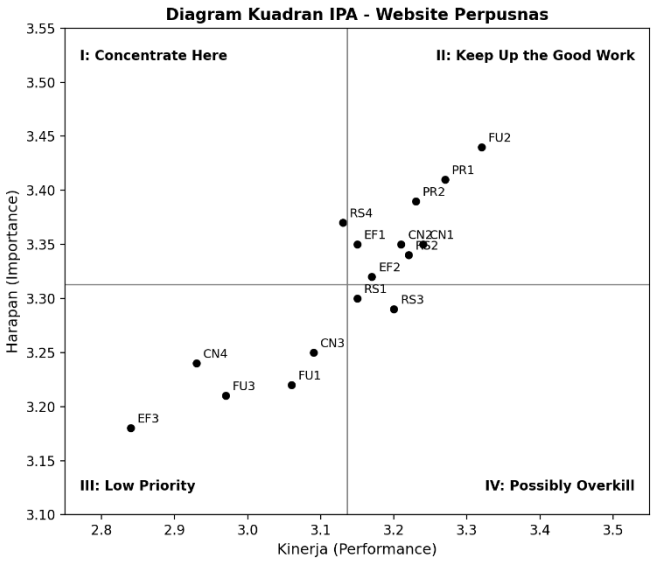


Figure 1. Importance-Performance Analysis Quadrant Diagram for the National Library of Indonesia (Perpusnas) Website

Based on Figure 1, only one attribute falls into quadrant I ("concentrate here"): service assurance/certainty (RS4). This attribute is considered important by users, yet its performance is currently unsatisfactory; therefore, it stands as a top priority for the National Library (Perpusnas) website administrators to address—for instance, by clarifying service policies, complaint procedures, or guarantees regarding service availability. Improvements can be achieved by providing greater clarity on service policies, complaint procedures, and the assurance of service availability for users. Research by Khoirunnisa et al. (2023) indicates that the quality of a library website significantly influences user satisfaction (Khatib Sulaiman et al., 2023). Furthermore, a study by Aditia et al. (2024) found that the user experience on the University of Indonesia Library website still requires improvement, even though some aspects were rated positively (Aditia et al., 2024). These findings underscore the importance of evaluating and enhancing website service quality based on user needs. Eight attributes fall into quadrant II ("keep up the good work"): ease and speed of access (EF1), speed of service access (EF2), 24-hour access availability (FU2), protection of personal data (PR1), protection of user activity (PR2), confidentiality of personal information (CN1), the FAQ or help center (CN2), and ease of returns or cancellations (RS2). These attributes are deemed important by users and are currently performing well; consequently, website administrators should maintain the existing quality of service for these aspects. This finding aligns with research by Palinggi et al. (2023), which suggests that attributes categorized under "keep up the good work" represent service aspects that are performing well and should be sustained (Palinggi et al., 2023). A similar finding is observed in a study by Kim (2021) on library services, which highlights

certain services that users have rated highly, suggesting they should be maintained within the library's service offerings (Kim, 2021). Research by Jauhari et al. (2025) further underscores the importance of website quality in supporting library user satisfaction (Jauhari & Ganggi, 2025).

Five attributes fall into Quadrant III (low priority): page loading speed (EF3), relevance of collections or services (FU1), completeness of journals or articles (FU3), consistency in staff responses (CN3), and the option to speak with a staff member (CN4). Attributes in this quadrant are considered less important by users, and their performance is not yet optimal; therefore, improving these attributes need not be a primary priority, though they should still be monitored periodically. A study by Ramadhan et al. (2024) on library website usability indicates that efficiency, ease of use, and user satisfaction are interconnected aspects in the evaluation of digital services (Ramadhan et al., 2024). Furthermore, research by Aprilia et al. (2024) on user experience with the iPusnas application identified issues such as features perceived as inefficient and relatively long usage times (Aprilia et al., 2024). The findings of Dhiannisa et al. (2024) demonstrate that Importance-Performance Analysis (IPA) can be used to distinguish indicators requiring improvement based on their level of importance and user-perceived performance (Dhiannisa et al., 2024). Consequently, attributes located in Quadrant III can be addressed once those with higher importance and lower performance have been attended to. Two attributes fall into Quadrant IV (possibly overkill): the ease of finding contact information (RS1) and the handling of returns or cancellations (RS3). The performance of these two attributes is quite good; however, their level of importance—as perceived by users—is relatively low. Consequently, the resources currently allocated to these attributes could potentially be redirected toward other attributes that users prioritize more highly, specifically those located in Quadrant I.

CONCLUSION

Based on the M-S-QUAL and IPA analysis, the service quality of the National Library of the Republic of Indonesia's website—as perceived by students from Jenderal Soedirman University—still has room for improvement. The average performance score of 3.136 falls below the average importance score of 3.313. The "privacy" dimension received the highest average performance score (3.250), while the "efficiency" dimension received the lowest (3.055). These findings indicate that personal data protection is rated relatively well by respondents, whereas the efficiency of using the website requires further attention.

The IPA mapping identifies "service assurance" (certainty of service) as the sole attribute in Quadrant I, making it the top priority for improvement. The administrators of the National Library's website should clarify service policies, complaint procedures, and the follow-up process for when users encounter issues. Eight attributes located in Quadrant II should be maintained, as they are rated highly in both importance and performance. Meanwhile, the five attributes in Quadrant III can be improved gradually, and the allocation of resources for the two attributes in Quadrant IV could be re-evaluated, provided that service quality is upheld.

These research findings should be interpreted within the context of the respondent profile, which is dominated by students from the Faculty of Social and Political Sciences; therefore, they may not fully represent the experiences of all users of the National Library's website. Future research could incorporate respondents from a more diverse range of faculties and user groups to obtain a more comprehensive overview of service quality.

REFERENCES

Aditia, A., Rahmi, R., & Buduroh, M. (2024). Evaluation of Universitas Indonesia Library Website Using UX Questionnaire and Usability Testing. *Media Pustakawan*, *31*(1), 1–14. https://doi.org/10.37014/medpus.v31i1.4987

Afandi, D., & Arini, M. (2024). Importance-performance analysis of clinical forensic services quality at Bhayangkara Hospital Pekanbaru, Indonesia. Malaysian Journal of Medical Sciences, 31(1), 103–113. https://doi.org/10.21315/mjms2024.31.1.9

Aini, H. N. Q., Prijana, P., & Rohman, A. S. (2025). Public reading interest through utilization of iPusnas National Library of the Republic of Indonesia. *Jurnal Kajian Informasi & Perpustakaan*, *13*(1), 1–16. https://doi.org/10.24198/jkip.v13i1.52145

Anggraini, F. D. P., Aprianti, A., Setyawati, V. A. V., & Hartanto, A. A. (2022). Pembelajaran Statistika Menggunakan Software SPSS untuk Uji Validitas dan Reliabilitas. *Jurnal Basicedu*, *6*(4), 6491–6504. https://doi.org/10.31004/basicedu.v6i4.3206

Aprilia, N. A., Faroqi, A., & Mukaromah, S. (2024). EVALUASI PENGALAMAN PENGGUNA APLIKASI MOBILE PERPUSTAKAAN DIGITAL IPUSNAS MENGGUNAKAN METODE UX HONEYCOMB. *JSiI (Jurnal Sistem Informasi)*, *11*(2), 97–103. https://doi.org/10.30656/jsii.v11i2.9196

Chen, J.-K. (2021). A new approach for diagonal line model of importance-performance analysis: A case study of tourist satisfaction in China. SAGE Open. https://doi.org/10.1177/2158244021989276

Dhiannisa, F., Firliana, R., & Wardani, A. S. (2024). Analisis Kualitas Website E-Perpus Menggunakan Metode WebQual 4.0 dan Importance Performance Analysis (IPA).

METHOMIKA Jurnal Manajemen Informatika Dan Komputerisasi Akuntansi, *8*(2), 129–137. https://doi.org/10.46880/jmika.Vol8No2.pp129-137

Darmawan, I., Taryono, T., & Iman, T. R. I. (2023). Pengaruh kualitas layanan digital library terhadap kepuasan pengguna perpustakaan Sekolah Tinggi Ilmu Ekonomi (STIE) Bima. JIIP: Jurnal Ilmiah Ilmu Pendidikan, 6(1), 262–267. https://doi.org/10.54371/jiip.v6i1.1369

Eka Bhanowati, D., Hd, M. A., Chandra, C., & Patria, G. (2025). ANALISIS USER EXPERIENCE WEBSITE PERPUSTAKAAN UNIVERSITAS BOROBUDUR MENGGUNAKAN FRAMEWORK HEART METRICS DAN METODE IMPORTANCE PERFORMANCE ANALYSIS. *Jurnal Penerapan Ilmu-Ilmu Komputer (JUPITER)*, *11*(1), 37–47.

Hajar, S. S., & Fauziah, K. (2022). STRATEGI OPTIMALISASI LAYANAN E-RESOURCES PERPUSTAKAAN NASIONAL REPUBLIK INDONESIA DI MASA PANDEMI COVID-19. *BACA: JURNAL DOKUMENTASI DAN INFORMASI*, *43*(1), 1. https://doi.org/10.14203/j.baca.v43i1.819

Hafidz, G. P., & Amin, A. A. N. (2024). Pengaruh mobile service quality dan kepercayaan pelanggan terhadap loyalitas pelanggan melalui kepuasan pelanggan aplikasi m-commerce Shopee. Jurnal Ilmiah Wahana Pendidikan, 10(9), 194–216. https://doi.org/10.5281/zenodo.11177381

Ikhsan, M., & Mulyadi, M. (2025). Peran perpustakaan digital dalam mendukung proses pembelajaran generasi *digital natives*: Kajian literatur. *Media Pustakawan, 32*(1). https://doi.org/10.37014/medpus.v32i1.5349

Jauhari, A. A., & Ganggi, R. I. P. (2025). The Effect of Library Website Quality on User Satisfaction Level in the Library of the University of Muhammadiyah Surakarta. *Tibanndaru : Jurnal Ilmu Perpustakaan Dan Informasi*, *9*(1), 1. https://doi.org/10.30742/tb.v9i1.3958

Khatib Sulaiman, J., Khoirunnisa, N., & Rudi Sanjaya, M. (2023). Analisis Kepuasan Mahasiswa Fasilkom Terhadap Kualitas Website Digital Library Menggunakan Webqual 4.0. *Indonesian Journal of Computer Science Attribution*, *12*(6), 2023–3711. https://doi.org/https://doi.org/10.33022/ijcs.v12i6.3494

Kim, J.-H. (2021). Evaluating Special Library Service Quality using Importance-Performance Analysis 중요도-수행분석을 이용한 전문도서관 서비스 평가. *Journal of Korean Library and Information Science Society Abbr : JKLISS*, *52*(3), 157. https://doi.org/10.16981/kliss.52.3.202109.157

Lestari, D., Ilhamsyah, & Rusi, I. (2022). Coding : Jurnal Komputer dan Aplikasi Pengukuran Kualitas Layanan Sistem Informasi Perpustakaan Universitas Tanjungpura Menggunakan Metode LibQual, WebQual 4.0, dan Importance Performance Analysis (IPA). *Coding : Jurnal Komputer Dan Aplikasi*, *10*(01), 34–45. https://doi.org/https://doi.org/10.26418/coding.v10i01.52134

Martín, F., García-Fernández, J., Valcarce-Torrente, M., Bernal-García, A., Gálvez-Ruiz, P., & Angosto-Sánchez, S. (2023). Importance-performance analysis in fitness apps. A study from the viewpoint of gender and age. Frontiers in Public Health, 11, Article 1226888. https://doi.org/10.3389/fpubh.2023.1226888

Muthahharah, I., Juhari, A., Habibah, S., Asmayani, dan, & Negeri Makassar, U. (2025). Pendampingan Pengisian Kuesioner Penelitian Bagi Guru SDN 30 Panaikang Kabupaten Pangkep. *JHP2M: Jurnal Hasil-Hasil Pengabdian Dan Pemberdayaan Masyarakat*, *4*(1), 118–123. https://doi.org/10.35880/jhp2m.v4i1.8491

Nugraha, I. I., Supendar, H., & Fahlafi, R. (2024). ANALISA KUALITAS LAYANAN WEBSITE PERPUSTAKAAN NASIONAL DENGAN METODE WEBQUAL 4.0 DAN IMPORTANCE PERFORMANCE ANALYSIS (IPA). *Jurnal Informatika Dan Teknik Elektro Terapan*, *12*(1). https://doi.org/10.23960/jitet.v12i1.3615

Nurdin, A. A., Nugraheni, D. M. K., & Waspada, I. (2026). Contact, Fulfillment, and Privacy as Key Drivers of Mobile Commerce Success: A SOR-Extended M-S-QUAL Analysis. *Scientific Journal of Informatics*, *13*(1), 27–40. https://doi.org/10.15294/sji.v13i1.34382

Nugroho, A. F. S. (2018). Pengembangan teknologi informasi dan komunikasi dalam mendukung perpustakaan umum bertransformasi. Media Pustakawan, 25(4). https://doi.org/10.37014/medpus.v25i4.194

Palinggi, Y., Sabran, & Hamji. (2023). ANALISIS KEPUASAN PELANGGAN DENGAN IMPORTANCE PERFORMANCE ANALYSIS (IPA). *Jurnal Ekonomi Dan Manajemen Manusia*, *23*(1). https://doi.org/https://doi.org/10.53640/jemi.v23i1.1342

Perpustakaan Nasional Republik Indonesia. (2025). *Layanan*. https://www.perpusnas.go.id/pusdatin

Rahmadini, M. H., Faroqi, A., & Wulansari, A. (2022). Analisis Kualitas Website Perpustakaan Menggunakan Metode Webqual 4.0. *Jurnal Ilmiah Teknik Informatika Dan Sistem Informasi*, *11*. https://doi.org/https://doi.org/10.35889/jutisi.v11i2.870

Ramadhan, F., Sutrisno, Hasibuan, C. F., & Fajri Hasibuan, C. (2024). Usability Evaluation of Library Website Design Using Nielsen Attributtes of Usability Questionnaire at University of Medan Area. *Jurnal Ilmiah Teknik Mesin Dan Industri (JITMI)*, *3*(2), 78–86. https://doi.org/10.31289/jitmi.v3i2.5385

Ramdhani Arif Miming, M., Emelda Isharyani, M., & Ode Ahmad Safar Tosungku, L. (2025). Analisis Kualitas Layanan Menggunakan Metode Service Quality (SERVQUAL) Dan Importance Performance Analysis (IPA). *Jurnal Teknologi Dan Manajemen Industri Terapan (JTMIT)*, *4*(4), 2249–2260. https://doi.org/10.55826/jtmit.v4i4.928

Sari, D. P., & Susanti, N. (2024). Pengukuran kualitas layanan aplikasi iPusnas terhadap kepuasan pengguna dengan menggunakan metode WebQual 4.0. Visi Pustaka: Buletin Jaringan Informasi Antar Perpustakaan, 25(1). https://doi.org/10.37014/visipustaka.v25i1.3179

Utami, D. (2022). OPTIMALISASI LAYANAN ONLINE PERPUSTAKAAN NASIONAL DI MASA PANDEMI COVID-19. *VISI PUSTAKA: Buletin Jaringan Informasi Antar Perpustakaan*, *24*(3), 205–214. https://doi.org/10.37014/visipustaka.v24i3.2855