

# Enhancing Public Service Quality Through Digital Licensing Innovation: A Servqual Analysis Of The Sijarimu Application In The Riau Islands Province

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**Abstract** : Digital transformation in public services has encouraged government institutions to improve the effectiveness and accessibility of licensing services. This study aims to analyze the quality of licensing services through the Sijarimu application at the Investment and One-Stop Integrated Service Office of the Riau Islands Province. A descriptive qualitative approach was employed using the Service Quality (SERVQUAL) framework, which consists of tangibles, reliability, responsiveness, assurance, and empathy. Data were collected through interviews, observations, and documentation and analyzed using the Miles and Huberman interactive model. The findings indicate that the Sijarimu application has improved service accessibility, administrative efficiency, and transparency in licensing processes. The dimensions of tangibles, responsiveness, assurance, and empathy were generally well implemented, while reliability still faced several technical and system integration challenges. In addition, limited digital literacy among some users and internet connectivity issues remain obstacles to service optimization. The study concludes that Sijarimu contributes positively to the improvement of licensing service quality; however, further enhancement of technological infrastructure, human resource capacity, and system integration is necessary to achieve more effective digital public services.

**Keywords** : public service, licensing service, Sijarimu, SERVQUAL, digital transformation.

**Abstrak** : Transformasi digital dalam pelayanan publik mendorong pemerintah untuk menghadirkan layanan perizinan yang lebih efektif dan mudah diakses masyarakat. Penelitian ini bertujuan menganalisis kualitas pelayanan perizinan melalui aplikasi Sijarimu pada Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu (DPMPSTP) Provinsi Kepulauan Riau. Penelitian menggunakan metode kualitatif deskriptif dengan pendekatan teori Service Quality (SERVQUAL) yang meliputi tangibles, reliability, responsiveness, assurance, dan empathy. Data dikumpulkan melalui wawancara, observasi, dan dokumentasi, kemudian dianalisis menggunakan model Miles dan Huberman. Hasil penelitian menunjukkan bahwa aplikasi Sijarimu telah membantu meningkatkan kemudahan akses, efisiensi proses pelayanan, serta transparansi perizinan. Kualitas pelayanan pada dimensi tangibles, responsiveness, assurance, dan empathy dinilai cukup baik, sementara pada dimensi reliability masih ditemukan kendala teknis dan integrasi sistem yang belum optimal. Selain itu, rendahnya literasi digital sebagian masyarakat dan keterbatasan jaringan internet masih menjadi hambatan dalam pemanfaatan layanan. Penelitian menyimpulkan bahwa aplikasi Sijarimu berkontribusi positif terhadap peningkatan kualitas pelayanan perizinan, namun memerlukan penguatan infrastruktur teknologi, peningkatan kompetensi sumber daya manusia, dan optimalisasi integrasi sistem untuk mendukung pelayanan publik yang lebih efektif.

**Kata Kunci**: pelayanan publik, pelayanan perizinan, Sijarimu, SERVQUAL, transformasi digital.

## INTRODUCTION

Digital transformation has become a major agenda in bureaucratic reform and public service delivery in Indonesia. The utilization of information and communication technology in public services aims to enhance the effectiveness, efficiency, transparency, and accountability of government administration. Through Presidential Regulation Number 95 of 2018 concerning the Electronic-Based Government System (SPBE), the Indonesian government encourages all central and regional government institutions to integrate digital public services in order to establish a more modern governance system that is responsive to citizens' needs. The implementation of SPBE has become one of the key indicators for measuring the success of governmental digital transformation. In 2024, the Riau Islands Province achieved an SPBE Index score of 2.74, meeting the target established by the regional government. This achievement reflects the provincial government's commitment to developing electronic-based public services as part of bureaucratic reform and efforts to improve public service quality.

One of the public service sectors that has undergone significant transformation through digitalization is licensing services. Licensing services occupy a strategic position because they are directly related to investment activities, business operations, research permits, and various administrative needs of the community. The quality of licensing services is an important factor influencing public trust in government institutions and determining regional competitiveness in attracting investment. Therefore, the government continues to simplify licensing procedures through the utilization of digital technology to ensure that licensing processes become faster, more accessible, more transparent, and more measurable.

To support the ease of doing business, the Indonesian government has developed the Online Single Submission (OSS) system as a national risk-based electronic licensing platform. The OSS system provides convenience for business actors in obtaining business licenses through a nationally integrated electronic platform. However, the implementation of OSS has not yet fully accommodated all licensing service requirements that are specific to regional governments. Consequently, local governments continue to develop complementary digital applications to support and expand licensing services that are not fully covered by the national system.

The Riau Islands Province is one of Indonesia's regions with a relatively high investment growth rate. Its strategic geographical location, bordering directly with Singapore and Malaysia, has positioned the province as a major investment destination, particularly in the manufacturing, processing industry, trade, and service sectors. According to data from the Provincial Government of the Riau Islands, the realization of investment from both Foreign Direct Investment (FDI) and Domestic Direct Investment (DDI) reached IDR 47 trillion in 2024. This figure exceeded the investment target established by the central government of IDR 35 trillion, achieving 134 percent of the predetermined target. Furthermore, the achievement significantly surpassed the investment target outlined in the Regional Medium-Term Development Plan (RPJMD) of the Riau Islands Province for 2021–2026, which was set at IDR 23 trillion. Most of these investments were concentrated in the industrial sector, particularly in Batam, which serves as the primary industrial and commercial hub of the Riau Islands Province.

The rapid growth of investment activities has increased the demand for efficient, transparent, and accessible licensing services. In response to these challenges, the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province introduced the SIJARIMU application as a digital innovation designed to improve the quality of licensing services. Through this platform, citizens and business actors can submit applications, upload required documents, monitor application progress, and obtain licensing information electronically without the need for direct visits to government offices. The implementation of SIJARIMU reflects the provincial government's commitment to accelerating digital transformation and enhancing public service quality through innovative and citizen-oriented governance practices.

The high level of investment realization indicates that the quality of licensing services plays a crucial role in supporting the regional investment climate. The greater the volume of investment entering a region, the higher the demand for licensing services that are efficient, transparent, accurate, and easily accessible to both the public and business actors. In this context, the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province is required to

provide an effective service system capable of supporting investment sustainability and enhancing regional competitiveness. Therefore, digital service innovation through the SIJARIMU application has become a strategic instrument for accelerating licensing processes while improving user satisfaction.

**Table 1. Investment Realization in the Riau Islands Province in 2024**

Indicator	Value
National Investment Target	IDR 35 Trillion
Riau Islands RPJMD Target 2024	IDR 23 Trillion
Investment Realization in 2024	IDR 47 Trillion
Achievement Percentage of National Target	134%
Dominant Sector	Manufacturing and Processing Industry
Main Contributing Region	Batam City

*Source: Riau Islands Provincial Government and Ministry of Investment/BKPM, 2025.*

Based on Table 1, the investment realization of the Riau Islands Province in 2024 reached IDR 47 trillion. This achievement demonstrates outstanding regional investment performance, as it exceeded the national investment target of IDR 35 trillion. Consequently, the province achieved approximately 134 percent of the target established by the central government. Furthermore, this investment realization significantly surpassed the target outlined in the Regional Medium-Term Development Plan (RPJMD) of the Riau Islands Province for 2021–2026, which was set at IDR 23 trillion.

The Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province is one of the government institutions actively promoting digital-based public service innovations. Through its digital service portal and the SIJARIMU application, citizens can access various licensing services online without the need to visit government offices directly. The introduction of SIJARIMU represents part of the digital transformation strategy implemented by DPMPTSP to improve public service quality while simultaneously supporting the regional investment climate. Currently, SIJARIMU functions as a complementary system to the Online Single Submission (OSS) platform, particularly for research permits and several regional licensing services that have not yet been fully integrated into the national licensing system.

The importance of licensing service quality in the Riau Islands Province cannot be separated from the province's role as one of Indonesia's strategic investment regions. According to data from the Provincial Government of the Riau Islands, regional investment realization reached approximately IDR 47 trillion in 2024, exceeding the development targets established by the regional government. This achievement indicates that the province possesses strong investment attractiveness, thereby requiring a licensing service system that is efficient, responsive, and capable of providing legal certainty and service assurance to both investors and the public. The substantial investment achievement also reflects the strong attractiveness of the Riau Islands Province for both domestic and foreign investors. This success is supported by several factors, including its strategic geographical location, the presence of international industrial and trade zones, and the regional government's efforts to create a conducive investment environment. Batam City contributed the largest share of investment realization due to its well-established industrial estates, international seaports, and relatively advanced infrastructure compared to other regions within the province.

On the other hand, the significant increase in investment activities has led to a growing demand for fast, transparent, and high-quality licensing services. As investment activities expand, the volume of licensing applications handled by DPMPTSP also increases. This situation requires a service system capable of providing timely processing, easy access, and administrative efficiency. Therefore, the implementation of the SIJARIMU application as a digital licensing service innovation

has become increasingly important in supporting smooth licensing processes and enhancing user satisfaction. Previous studies have demonstrated that the implementation of digital-based public services continues to face several challenges. Widyastuti and Pramono (2022) found that digital licensing systems improve service efficiency but still encounter challenges related to user adaptation and technological readiness. Sari, Yunitawati, and Murniati (2023) reported that public services delivered through the SiCantik application enhanced service effectiveness and transparency; however, they remained constrained by low levels of digital literacy among citizens. Similarly, Suhaeman, Haerana, and Riskasari (2022) found that online-based service innovations contributed positively to service quality despite persistent challenges related to infrastructure limitations and human resource capacity.

The findings of previous studies indicate that most existing research has focused on digital service policy implementation, system effectiveness, or public service innovation in general. Studies specifically examining licensing service quality from the perspective of service users remain relatively limited. Furthermore, there is still a lack of research addressing the quality of regional digital applications that function as complementary systems to OSS, particularly in archipelagic regions that face geographical challenges distinct from those of mainland areas.

This study offers novelty in three main aspects. First, it focuses specifically on the SIJARIMU application as a regional complementary system supporting OSS. Second, it evaluates service quality using the Service Quality (SERVQUAL) framework, which consists of five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Third, the study is conducted within the context of the Riau Islands Province, an archipelagic region characterized by unique public service challenges compared to other regions in Indonesia. The Service Quality (SERVQUAL) model developed by Parasuraman, Zeithaml, and Berry serves as the analytical framework of this study because it enables the assessment of service quality based on users' perceptions and experiences. The tangibles dimension evaluates physical facilities and digital service appearance; reliability measures the consistency and dependability of the service system; responsiveness assesses the willingness and ability of service personnel to provide prompt assistance; assurance examines service certainty, competence, and trustworthiness; and empathy evaluates the attention and care provided to users according to their needs. Through this approach, the quality of services delivered through the SIJARIMU application can be analyzed comprehensively based on the direct experiences of service users.

## RESEARCH METHOD

This study employed a qualitative approach with a descriptive research design to analyze the quality of licensing services provided through the SIJARIMU application at the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province. A qualitative approach was selected because it enables an in-depth understanding of the implementation of digital-based licensing services based on the experiences, perceptions, and perspectives of the informants involved in the service process.

The research was conducted at the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province, located in Tanjungpinang City. Research informants were selected using a purposive sampling technique, consisting of the Head of DPMPTSP, the Secretary of DPMPTSP, the Business Licensing Service Activity Manager, the SIJARIMU Application Administrator, and members of the public who had utilized SIJARIMU services. The selection of informants was based on their direct involvement in the implementation and utilization of electronic licensing services.

The study utilized both primary and secondary data sources. Primary data were collected through in-depth interviews and direct observation of the licensing service process conducted through the SIJARIMU application. Secondary data were obtained from official DPMPTSP documents, performance reports, government regulations, policy documents, and relevant literature related to public service delivery and digital transformation.

Data collection techniques included interviews, observation, and documentation. Data analysis was conducted using the interactive model developed by Miles and Huberman, which

consists of three stages: data reduction, data display, and conclusion drawing and verification. The analysis was carried out based on the five dimensions of the Service Quality (SERVQUAL) framework, namely tangibles, reliability, responsiveness, assurance, and empathy.

To ensure the trustworthiness and validity of the findings, the study employed source triangulation and methodological triangulation. These techniques were applied by comparing and cross-checking information obtained from interviews, observations, and documentary evidence throughout the research process. Such triangulation enhanced the credibility of the data and strengthened the accuracy of the research findings regarding the quality of licensing services delivered through the SIJARIMU application.

### **Tangibles (Physical Evidence)**

The tangibles dimension refers to the availability of physical facilities, technological infrastructure, equipment, and the appearance of digital services that support the delivery of licensing services. The findings indicate that the tangibles dimension of the SIJARIMU application can generally be categorized as good. This assessment is based on the availability of adequate supporting facilities, both in the form of physical infrastructure and digital service facilities provided by the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province.

Based on field observations, the SIJARIMU application features a relatively simple, user-friendly, and well-structured interface. Service menus are organized systematically, enabling users to navigate the application efficiently when submitting licensing applications, uploading supporting documents, tracking application status, and accessing relevant information regarding licensing requirements. The accessibility and ease of navigation demonstrate the government's commitment to implementing digital transformation in public service delivery. In addition to the application itself, DPMPTSP has provided supporting facilities such as integrated service counters, consultation rooms, internet access, computer equipment, and service officers who assist users encountering difficulties during the application process. These facilities contribute significantly to improving service accessibility and ensuring that users receive adequate support when utilizing digital licensing services.

The findings further reveal that the availability of these facilities has positively influenced user perceptions of service quality. Several informants stated that the application simplifies the licensing process by reducing the need for repeated visits to government offices. The digital platform enables applicants to complete administrative procedures remotely, resulting in greater convenience, time efficiency, and cost savings. However, despite these positive findings, several challenges remain. The study found that digital infrastructure quality is not evenly distributed across all regions of the Riau Islands Province. Respondents residing in remote island areas reported experiencing unstable internet connectivity, which occasionally disrupted document uploads and access to online services. Such conditions may reduce the effectiveness of digital service delivery, particularly for users located outside urban centers.

These findings suggest that the success of digital public services is not determined solely by the quality of the application itself but also by the readiness of supporting technological infrastructure. This result supports the SERVQUAL perspective proposed by Parasuraman, Zeithaml, and Berry, which emphasizes that tangible aspects significantly influence users' initial perceptions of service quality. In the context of SIJARIMU, the availability of adequate facilities and a user-friendly application interface contributes positively to service quality. Nevertheless, improving digital infrastructure across archipelagic areas remains essential to ensure equitable access and maximize the benefits of digital licensing services throughout the Riau Islands Province.

### **Reliability**

Reliability refers to the ability of the service system and service providers to deliver accurate, consistent, and dependable services in accordance with established procedures and standards. The findings indicate that the SIJARIMU application has significantly improved the efficiency of licensing services compared to conventional administrative procedures. Through the application,

users can submit licensing requests, upload required documents, and monitor the progress of their applications online without the need to visit government offices directly.

The study found that reliability represents one of the most critical dimensions in digital licensing services. The implementation of SIJARIMU has simplified administrative procedures that were previously conducted manually, thereby reducing processing time and increasing service accessibility. This innovation allows citizens and business actors to access licensing services anytime and from any location, which is particularly beneficial in an archipelagic region such as the Riau Islands Province.

Interviews with licensing service administrators revealed that all service processes are implemented in accordance with established Standard Operating Procedures (SOPs), providing greater certainty and consistency in service delivery. The existence of clear procedures has contributed positively to users' perceptions of service reliability and administrative transparency. Despite these positive outcomes, several challenges remain. The findings indicate that the integration between the SIJARIMU application and the Online Single Submission (OSS) system has not yet been fully optimized. Certain licensing services still require additional verification processes, resulting in longer processing times than expected by service users. Furthermore, several respondents reported experiencing occasional system disruptions that required them to re-upload supporting documents. Such technical issues can negatively affect user satisfaction and reduce confidence in the reliability of digital services.

From the perspective of the SERVQUAL framework, reliability is closely associated with an organization's ability to perform promised services dependably and accurately. The findings suggest that SIJARIMU has generally fulfilled this function by providing a structured and accessible licensing service system. However, improvements in system integration, server stability, and technical maintenance are necessary to ensure greater consistency and reliability in service delivery. Strengthening these aspects would further enhance public trust and support the effectiveness of digital public service transformation in the Riau Islands Province.

### **Responsiveness**

Responsiveness refers to the willingness and ability of service providers to assist users promptly and effectively in addressing their needs, inquiries, and concerns. The findings demonstrate that responsiveness is one of the strongest dimensions of licensing services delivered through the SIJARIMU application.

Interviews with service users revealed that DPMPTSP officers consistently demonstrate a high level of commitment in assisting applicants throughout the licensing process. When users encounter difficulties in operating the application, uploading documents, or understanding administrative requirements, service officers promptly provide guidance and technical support. Assistance is delivered through direct consultations, telephone services, and various online communication channels, ensuring that users receive timely information and solutions.

The study further indicates that the promptness of service officers significantly contributes to user satisfaction. Although SIJARIMU is designed as a digital platform, the role of human resources remains essential in ensuring that users can fully benefit from the service. This is particularly important for individuals with limited digital literacy, who often require additional assistance in navigating electronic licensing procedures. Several respondents emphasized that the availability of responsive officers increased their confidence in utilizing the application. Quick responses to questions and complaints reduced uncertainty and minimized delays in the licensing process. These findings support the argument that technological innovation alone is insufficient to guarantee service quality; effective human interaction remains a critical component of successful digital public service delivery.

However, the study also identified certain limitations. During periods of increased application volume, response times tended to become slower due to the limited number of service personnel available. This situation occasionally affected the efficiency of service delivery and highlighted the need for additional staffing and capacity-building initiatives. Consequently, strengthening human resource capacity through training, workload management, and the

recruitment of additional personnel is essential to maintain service responsiveness and ensure sustainable improvements in service quality.

In accordance with the SERVQUAL model, responsiveness reflects the organization's readiness to help customers and provide prompt service. The findings suggest that DPMPTSP has demonstrated a strong commitment to responsive service delivery through SIJARIMU. Nevertheless, continuous improvements in staffing capacity and communication mechanisms are required to maintain high service standards and accommodate the growing demand for digital licensing services.

### **Assurance**

Assurance refers to the ability of service providers to instill trust and confidence through competence, professionalism, transparency, and service certainty. The findings indicate that the assurance dimension of the SIJARIMU application is generally perceived positively by service users. Most respondents expressed confidence in the licensing services provided by DPMPTSP of the Riau Islands Province due to the clarity of procedures, transparent administrative requirements, and the competence of service personnel in delivering accurate information.

The study found that users experienced a high level of certainty regarding licensing procedures and service mechanisms. Through the SIJARIMU application, applicants can access detailed information concerning administrative requirements, processing procedures, and service stages. Such transparency enables users to understand the licensing process more comprehensively and reduces confusion regarding service requirements. Furthermore, the digital platform provides real-time monitoring features that allow users to track the progress of their applications. This feature significantly enhances transparency and accountability, as applicants can independently monitor the status of their requests without repeatedly contacting service officers or visiting government offices. As a result, users experience greater confidence in the service process and perceive the licensing system as more reliable and trustworthy.

Interviews with service users also revealed that the competence of service personnel contributes significantly to the assurance dimension. Officers were considered knowledgeable and capable of explaining licensing procedures, administrative requirements, and technical aspects of the application clearly and accurately. This professional competence strengthens public trust and minimizes uncertainty throughout the licensing process. From the perspective of the SERVQUAL framework, assurance is reflected in employees' knowledge, courtesy, and ability to inspire trust and confidence among customers. The findings suggest that SIJARIMU has successfully enhanced assurance by combining transparent digital procedures with competent human resources. Compared with conventional licensing services, the digital system has reduced information asymmetry and increased procedural certainty, thereby strengthening public confidence in government service delivery.

Nevertheless, continuous improvements remain necessary. Strengthening cybersecurity measures, improving system stability, and providing regular updates regarding service procedures would further enhance public trust and reinforce the credibility of digital licensing services. These efforts are essential to ensure that users continue to perceive SIJARIMU as a secure, transparent, and reliable public service platform.

### **Empathy**

Empathy refers to the ability of service providers to understand users' needs and provide individualized attention and assistance. The findings indicate that empathy is one of the strengths of the licensing services delivered through the SIJARIMU application. Service officers demonstrated a strong commitment to assisting users throughout the licensing process, particularly those who encountered difficulties in operating the application or understanding administrative requirements.

The study revealed that service personnel consistently provided guidance and support to users requiring additional assistance. Such support was delivered through direct consultations, telephone communication, and online service channels. Several respondents acknowledged that the

willingness of officers to provide personalized assistance significantly facilitated their experience in utilizing digital licensing services.

The importance of empathy becomes particularly evident within the context of the Riau Islands Province. As an archipelagic region consisting of numerous islands, the province exhibits varying levels of digital literacy among its population. While some users are familiar with digital platforms, others continue to face challenges in accessing and utilizing electronic services. In this situation, a human-centered service approach plays a crucial role in ensuring that all citizens can benefit equally from digital transformation initiatives.

The findings indicate that service officers do not merely function as administrative personnel but also serve as facilitators who help bridge the gap between technological innovation and community needs. Their willingness to provide assistance, patiently explain procedures, and accommodate users' concerns contributes positively to perceptions of service quality and user satisfaction. However, the study also identified areas requiring improvement. Several respondents emphasized the need for broader socialization and public education programs regarding the use of the SIJARIMU application, particularly for residents living in remote island areas with limited access to information technology. The unequal distribution of digital literacy remains a challenge for the effective implementation of electronic public services.

According to the SERVQUAL framework, empathy reflects the degree of caring and individualized attention provided to service users. The findings demonstrate that DPMPTSP has successfully incorporated empathy into its digital service delivery through personalized assistance and user-oriented support mechanisms. Nevertheless, expanding digital literacy programs and strengthening community outreach activities are essential strategies for ensuring inclusive access to licensing services and maximizing the benefits of digital public service innovation throughout the Riau Islands Province.

## DISCUSSION

### Quality of Licensing Services Through the SIJARIMU Application at DPMPTSP of the Riau Islands Province

Digital transformation in public service delivery is an integral part of bureaucratic reform efforts aimed at improving the quality of services provided to citizens. The implementation of the SIJARIMU application as an electronic licensing service by the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province represents a public service innovation designed to enhance convenience, efficiency, and transparency in the licensing process. Based on the research findings, the quality of services delivered through the SIJARIMU application can be analyzed using the five dimensions of the Service Quality (SERVQUAL) model, namely tangibles, reliability, responsiveness, assurance, and empathy.

#### Tangibles: Infrastructure Support and Accessibility of Services

The findings indicate that the tangibles dimension has been implemented effectively. The SIJARIMU application features a user-friendly interface that is easy to understand and is supported by adequate service facilities. The availability of supporting infrastructure, including internet connectivity, service computers, consultation rooms, and assistance officers, demonstrates the organization's commitment to delivering digital-based public services.

According to A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry (1988), the tangibles dimension refers to the physical aspects of service that can be directly observed by users. In the context of digital public services, tangible evidence extends beyond office facilities and includes system design, application navigation, and the readiness of information technology infrastructure. The findings reveal that users are generally able to access services through the SIJARIMU application with relative ease, thereby reducing their dependence on face-to-face service interactions.

These findings are consistent with the study conducted by Sari *et al.* (2023), which found that system appearance and the availability of supporting facilities are important factors influencing user satisfaction with digital services. Similarly, Akhwany and Monalisa (2025)

reported that the successful implementation of electronic licensing systems is highly dependent on technological infrastructure readiness and the accessibility of service platforms. Nevertheless, the study identified internet infrastructure as a major challenge, particularly for residents living in remote island areas. The geographical characteristics of the Riau Islands Province, which consists of numerous islands scattered across a vast maritime area, have resulted in uneven internet coverage throughout the region. This finding suggests that the success of digital transformation is not determined solely by the quality of the application itself but is also influenced by the availability and reliability of supporting technological infrastructure. Therefore, efforts to improve internet accessibility and strengthen digital infrastructure across the province remain essential to ensuring equitable access to digital licensing services and maximizing the benefits of public sector digitalization.

### **Reliability: System Reliability in Supporting Licensing Services**

The reliability dimension is the most critical aspect in determining the success of electronic-based services, as it relates to the system's ability to deliver services accurately, consistently, and in accordance with established procedures. The findings indicate that the SIJARIMU application has contributed significantly to accelerating the licensing process and facilitating citizens in submitting permit applications online.

These findings support the theory proposed by Parasuraman, Zeithaml, and Berry (1988), which defines reliability as an organization's ability to perform promised services dependably and accurately. In the context of digital public services, system reliability is a key factor influencing public trust in government service delivery. A reliable system ensures that users can access services efficiently while receiving consistent and accurate information throughout the licensing process. Nevertheless, the study identified several challenges affecting the reliability of the SIJARIMU application. The integration between SIJARIMU and the Online Single Submission (OSS) system has not yet been fully optimized. As a result, certain licensing processes still require additional verification procedures, leading to longer processing times than expected. Furthermore, occasional system disruptions have affected the continuity and efficiency of service delivery.

These findings are consistent with the study conducted by Widyastuti and Pramono (2022), which revealed that electronic-based public services frequently encounter technical challenges related to system stability and data integration across platforms. Similarly, Firmansyah (2024) found that the quality of digital services is highly influenced by system reliability and the effectiveness of integration with other service platforms. Therefore, improving the reliability of SIJARIMU requires strengthening information technology infrastructure, enhancing server capacity, and optimizing integration with the OSS platform. Such improvements are essential to ensure faster, more efficient, and more dependable licensing services for citizens and business actors.

### **Responsiveness: Government Officials' Responsiveness in Service Delivery**

The findings indicate that the responsiveness dimension received positive evaluations from service users. Officers at the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province demonstrated the ability to respond promptly to users' inquiries, complaints, and service needs throughout the licensing process. According to the SERVQUAL model, responsiveness refers to the willingness and ability of service providers to assist customers and deliver prompt services. In digital public services, responsiveness remains a crucial factor even though most service processes are conducted electronically.

The study found that service officers not only performed administrative functions but also acted as facilitators who assisted users in understanding and utilizing the SIJARIMU application. This finding highlights that the success of digital transformation cannot entirely replace the role of human resources in public service delivery. Instead, technology and human interaction complement one another in ensuring effective and user-oriented services.

The results support the findings of Suhaeman *et al.* (2022), who argued that the quality of interaction between service providers and citizens remains a major determinant of user satisfaction in digital public services. Although service systems have become increasingly digitalized, citizens

still require guidance and assistance, particularly when facing technical difficulties or when they are unfamiliar with administrative procedures. This condition is especially relevant in regions where levels of digital literacy vary significantly among users. Therefore, enhancing the competence of service personnel through continuous training in digital service management, customer assistance, and communication skills is essential for maintaining high levels of responsiveness. Strengthening human resource capacity will enable DPMPTSP to provide more effective support, respond more efficiently to public needs, and sustain the quality of digital licensing services in the future.

### **Assurance: Building Trust Through Service Certainty**

The findings indicate that the assurance dimension is categorized as good. Service users reported obtaining clear information regarding service procedures, administrative requirements, and licensing application mechanisms. In addition, the transparency of the service process provided through the SIJARIMU application has enhanced users' trust in the services delivered by the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province.

According to Parasuraman, Zeithaml, and Berry (1988), assurance refers to the ability of service providers to inspire trust and confidence among service users. In the context of digital public services, assurance is not only related to the competence and professionalism of service personnel but also encompasses data security, privacy protection, and the reliability of information systems. These elements are essential for ensuring that users feel secure when utilizing electronic government services.

The findings reveal that users have greater confidence in the licensing process because they can directly monitor the progress of their applications through the system. This transparency provides certainty regarding the status of submitted applications and significantly reduces the uncertainty often associated with conventional service delivery. As a result, users perceive the licensing process as more accountable, transparent, and trustworthy.

These findings are consistent with the study conducted by Yunitawati *et al.* (2023), which demonstrated that transparency in public service information systems contributes significantly to increasing public trust in government institutions. Higher levels of service transparency are associated with greater user satisfaction and stronger public confidence. Therefore, enhancing the assurance dimension requires strengthening data security systems, providing automated notification services, and improving real-time application tracking features. Such measures are expected to reinforce public trust and support the sustainability of digital public service innovations.

### **Empathy: Service Orientation Toward Community Needs**

The empathy dimension indicates that DPMPTSP personnel demonstrate a strong commitment to understanding and addressing the needs of service users. The findings show that service officers actively assist individuals who experience difficulties in using the SIJARIMU application and provide support for citizens with limited digital literacy. This personalized assistance reflects the organization's effort to ensure that all users can access and benefit from digital licensing services regardless of their technological capabilities.

According to Parasuraman *et al.* (1988), empathy refers to an organization's ability to provide individualized attention and care to each service user. In public service delivery, empathy is a crucial dimension because citizens possess diverse backgrounds, levels of education, technological competencies, and service needs. Consequently, service providers must adopt a user-centered approach that accommodates these differences and ensures inclusive access to public services. This issue is particularly relevant in the context of the Riau Islands Province, an archipelagic region characterized by geographical dispersion and unequal access to digital infrastructure. Not all residents possess the same opportunities or capabilities to utilize digital technologies effectively. Therefore, a service approach that prioritizes user needs and provides personalized assistance becomes essential for supporting the successful implementation of the SIJARIMU application.

The findings support the study conducted by Haerana and Riskasari (2022), which concluded that the quality of digital public services is determined not only by technological sophistication but also by the ability of service personnel to understand and respond to users' needs. A human-centered and responsive approach can significantly enhance user satisfaction and strengthen public acceptance of digital service innovations. Accordingly, DPMPTSP should continue to promote community outreach programs, digital literacy initiatives, and personalized assistance services to ensure that digital transformation benefits all segments of society.

Overall, the empathy dimension demonstrates that successful digital transformation requires a balance between technological advancement and human interaction. While digital systems improve efficiency and accessibility, the role of service personnel remains indispensable in ensuring that citizens receive adequate support, guidance, and attention throughout the service process.

## CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study on the quality of licensing services delivered through the SIJARIMU application at the Investment and One-Stop Integrated Service Agency (DPMPTSP) of the Riau Islands Province, it can be concluded that the implementation of digital-based licensing services through the SIJARIMU application has generally been successful and has contributed positively to improving the quality of public services. The application has facilitated public access to licensing services, reduced dependence on face-to-face interactions, and enhanced the efficiency and transparency of service delivery processes.

In terms of the tangibles dimension, the SIJARIMU application is supported by adequate service facilities and technological infrastructure, enabling users to access licensing services electronically with relative ease. However, challenges related to internet connectivity remain, particularly in several remote island areas, which may affect the smooth operation and accessibility of the application. Regarding the reliability dimension, the application has effectively supported licensing processes in a more structured and efficient manner in accordance with established procedures. Nevertheless, several technical issues and the incomplete integration between SIJARIMU and the Online Single Submission (OSS) system continue to affect the speed and effectiveness of service completion.

For the responsiveness dimension, service personnel demonstrated a strong capacity to respond promptly to users' needs, inquiries, and complaints. The provision of guidance and assistance throughout the service process has become one of the key factors contributing to user satisfaction and the overall effectiveness of digital service delivery. In relation to the assurance dimension, licensing services provided through the SIJARIMU application have successfully offered procedural certainty, transparency, and a sense of security to service users. The availability of clear information and the competence of service personnel in explaining service procedures have strengthened public trust in the digital licensing system.

Meanwhile, the empathy dimension revealed that service officers demonstrated a high level of concern and attention toward users' needs, particularly for individuals who encountered difficulties in utilizing digital services. The assistance and personalized support provided by service personnel indicate that service delivery is not solely technology-oriented but also focused on addressing the individual needs of users. Overall, the quality of licensing services delivered through the SIJARIMU application at DPMPTSP of the Riau Islands Province has fulfilled most of the service quality indicators proposed in the SERVQUAL framework. However, further improvements are required in several areas, including the enhancement of information technology infrastructure, the optimization of system integration with the OSS platform, and the strengthening of public digital literacy. These efforts are essential to support more effective, efficient, and sustainable licensing services in the future.

## RECOMMENDATIONS

Based on the research findings, several recommendations can be proposed. First, DPMPTSP should continue improving digital infrastructure and server capacity to ensure the stability and

reliability of the SIJARIMU application. Second, efforts should be made to optimize system integration between SIJARIMU and OSS in order to minimize administrative duplication and accelerate service completion. Third, the government should intensify digital literacy programs and public outreach activities, particularly for communities residing in remote island areas, to ensure equitable access to digital services. Finally, continuous capacity-building programs for service personnel should be implemented to maintain high standards of responsiveness, professionalism, and user-oriented service delivery. Through these measures, the SIJARIMU application can be further developed as an effective digital public service instrument that supports licensing facilitation and contributes to the continuous improvement of public service quality in the Riau Islands Province.

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