

## Implementation of E-Government Jogja Smart Service in Building Jogja Smart City

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### ABSTRACT

This research discusses the implementation of the Jogja Smart Service (JSS) application as part of the E-Government concept to realize Yogyakarta as a smart city. The background of this study lies in the need for efficient and integrated public services in the digital era. The primary objective of this research is to evaluate the effectiveness of the JSS application in improving the quality of public services in Yogyakarta, focusing on its implementation, challenges, and impacts. The study employs a descriptive qualitative approach, utilizing data collection techniques such as literature review, application observation, and secondary data analysis. The findings indicate that JSS provides various services, including population administration, health, education, and tourism, which are easily accessible through a digital platform. Since its launch in 2018, the application has recorded over 82,949 users, with 49,816 from Yogyakarta and 33,132 from outside the region. However, the research also identifies several challenges, such as limited public awareness of the application, digital divides, and a less appealing user interface design. In conclusion, although the JSS application has made significant contributions to supporting smart city development, further efforts are needed to improve public awareness, digital infrastructure, and feature innovation to ensure optimal usage by all citizens. With these steps, JSS holds great potential to support Yogyakarta in becoming a smart and livable city.

**Keyword:** E-Government, Implementation, Jogja Smart Service (JSS), Smart City Development



### INTRODUCTION

Currently, e-Government in Indonesia has been gradually developing. In 2022, Indonesia ranked 77th globally. Several implementations of e-Government can be observed in Indonesia, such as the Dukcapil Online application for population data services. Additionally, in Jakarta, there is the Jaki application, which facilitates direct interaction between Jakarta residents and the government. This study focuses on one of Indonesia's e-Government initiatives, specifically in the city of Yogyakarta, known as the Jogja Smart Service (JSS) application. This application was developed by the Yogyakarta city government to streamline public service delivery to Yogyakarta residents.

The JSS application is easily accessible to Yogyakarta residents through downloads from the Google Play Store and can be used directly on their smartphones. The application

allows residents to file complaints or direct inquiries to the government while providing easy access to public service units such as ambulances and fire departments. As researchers, we are interested in exploring the potential of the Jogja Smart Service application as an example of e-Government advancement in Indonesia. The Jogja Smart Service application offers various conveniences for users; however, it still faces several challenges that need to be addressed. The Yogyakarta city government has not conducted extensive public outreach to increase awareness of the features and benefits of the application. Although the Jogja Smart Service application can be downloaded on smartphones and Windows, its development is hindered by several issues.

These include the lack of collaboration between the city and regional governments, which often leads to difficulties in addressing complaints that originate from areas bordering Yogyakarta city, as these fall outside the city's jurisdiction. Approximately 7.6% of Yogyakarta's population, or about 55,000 residents, live below the poverty line, contributing to limited internet literacy among some groups. Without comprehensive outreach to these populations, the application's effectiveness and efficiency may remain limited. Furthermore, outreach is not only necessary for the general public but also for the staff managing the Jogja Smart Service.

Public complaints often highlight the slow responses and delayed handling of issues. Additionally, some features of the Jogja Smart Service have not been updated, leading to inaccurate information and limited access to certain functionalities. The Yogyakarta city government continues to optimize its efforts to address these challenges, aiming to ensure that the Jogja Smart Service application can fully support the smart city concept in Yogyakarta. Previous studies have provided valuable insights into the Jogja Smart Service application. For instance, Alfi Novriando, Eko Priyo, and Lubna Salsabila (2020) examined the effectiveness of public service delivery through Jogja Smart Service in Yogyakarta, finding that only about 6.5% of Yogyakarta residents utilized the application. However, they noted that the number of reports addressed each month exceeded the number of pending reports, indicating effective public service delivery.

Their study highlighted clear rules and goals outlined in Yogyakarta's Regulation No. 15 of 2015, which serves as a roadmap for e-Government development in Yogyakarta. Similarly, Muhammad Gilang Gumilar (2019) explored the provision and integration of information within the Jogja Smart Service application, emphasizing its usefulness and growing adoption among residents. However, the study underscored the need for broader public outreach. Another study by Nanda Bhayu Pratama (2018) analyzed the smart city concept implementation through the Jogja Smart Service application. It suggested that the application must compete with informal forums like the "Info Cegat Jogja" group on Facebook, which has over 1.2 million members. Pratama recommended intensified government efforts to promote the Jogja Smart Service application to ensure it reaches a broader audience.

However, these studies have certain limitations. The research by Alfi Novriando et al. (2020), for example, did not provide detailed user data, making it difficult to evaluate the application's effectiveness in improving public services in Yogyakarta. Their study primarily focused on the number of complaints processed or pending without delving into the application's various features, such as fire department services, ambulances, and other public service units. Similarly, Nanda Bhayu's (2018) study discussed the concept of a smart city but did not detail the features available to Yogyakarta residents or the number of application users, which limits the ability to assess its effectiveness. Furthermore, research by Novia et al. (2022) on the accessibility and utilization of Jogja Smart Service for achieving good governance echoed similar gaps, lacking detailed data on user percentages, complaint frequencies, and the extent to which the application addressed public needs.

To address these research gaps, this study adopts a new approach by expanding the data collection process. It includes surveys of Jogja Smart Service users to gather insights into their experiences, focusing on user satisfaction, ease of use, and whether the application

meets their needs in filing complaints or accessing public services. Additionally, this study will analyze user feedback from the Google Play Store to understand common issues raised, the application's role in resolving these issues, and the government's responsiveness. Furthermore, a comparative analysis will be conducted with similar applications in other regions or public service applications to identify the relative strengths and weaknesses of Jogja Smart Service. By integrating these approaches, this study aims to contribute new insights to the field of political science, particularly regarding the role of information technology in enhancing public service delivery at the local level, as demonstrated in Yogyakarta through the Jogja Smart Service application.

## RESEARCH METHODS

This study adopts a qualitative approach with a descriptive-comparative method. Qualitative research focuses on opinions, perceptions, and ideas that cannot be quantified. Data collection techniques in this study rely on literature review, drawing from books, previous research journals, government websites, and other relevant media related to the research object. The research setting is centered on one form of e-Government implementation aimed at realizing a smart city: the Jogja Smart Service application. The study is conducted in the year 2024, providing a contemporary analysis of the implementation and challenges associated with the application.

The issues addressed in this study are dynamic, necessitating qualitative analysis through a descriptive method. This approach utilizes non-numeric data rather than measurable population or sample metrics. The purpose of the study is to accurately describe the phenomena and relationships between the research object and related social dynamics. Following Surachmad's perspective (as cited in Novriando, Purnomo & Salsabila, 2020), the study seeks to explore the characteristics of Jogja Smart Service and its connection to broader societal trends. Specifically, the research aims to assess the implementation and efficiency of the Jogja Smart Service application in advancing Yogyakarta as a smart city, examining its applications, challenges, and its role in fostering urban development.

The study employs secondary data, which are gathered through various methods, including observation, literature review, and documentation. Observation involves analyzing the functionalities and performance of the Jogja Smart Service application. The literature review encompasses official documents, academic studies, theses, and journals relevant to the research topic. These sources provide insights into the current state and historical development of the application. Documentation is also a critical method, involving the systematic recording of findings from various documents and records that reflect the research object's condition and challenges.

This research seeks to provide a comprehensive analysis of the Jogja Smart Service application, focusing on its implementation, challenges, and contribution to building a smart city in Yogyakarta. By utilizing a qualitative approach, the study aims to present nuanced insights into how the application addresses public needs and supports urban development. The findings will contribute to understanding the role of technology in governance and urban management, offering recommendations for enhancing the efficiency and effectiveness of e-Government initiatives like Jogja Smart Service. This study also aims to fill the gaps in previous research by providing detailed observations, identifying specific challenges, and offering a roadmap for future improvements.

## RESULTS AND DISCUSSION

### 1. The Implementation of the Jogja Smart Service Application Concept

The implementation of the Jogja Smart Service (JSS) application, which has provided integrated information services since 2018, serves as a key indicator tool that benefits the community by offering various conveniences accessible quickly through smartphones with a

user-friendly interface tailored to current technological advancements. Some of the notable advantages of the JSS application include delivering information through the concepts of Single ID, Single Sign-on, and Single Window. Additionally, the JSS application provides information on tourism and other attractions, which can increase the number of tourist visits to the Yogyakarta area. Moreover, the use of JSS indirectly contributes to reducing paper waste. Previously, information was disseminated through paper-based means; with JSS, paper usage has been significantly minimized.



Figure 1. JSS Application Dashboard Display  
Source: [jss.jogjakota.go.id](https://jss.jogjakota.go.id) (2024)

The Jogja Smart Service (JSS) application is designed to facilitate interaction between the community and the government through a single integrated platform. It provides a wide range of services categorized into various sectors. Emergency services include medical emergencies, fire response, and rescue operations. There are also complaint services, such as UPIK, to enable the public to report grievances. In the field of population administration and civil registration, JSS offers online services such as birth and death certificates, family card data updates, marriage data updates, and applications for child identity cards (KIA) and national ID cards (KTP), as well as subdistrict and village office services. Population control services include family planning programs.

In the transportation sector, the application provides motor vehicle inspection queue information (KIR) and online KIR services through SIREGOL. Healthcare services include queue management for health centers and hospitals, hospital room availability information, doctor schedules, vaccination registration, health certification, and business certification in the health sector. The PISA (Child-Friendly Information Center) services cover library catalogs, student consultation, public WiFi locations, PUSPAGA, and Taman Pintar. In procurement, the application features an e-catalog, LPSE, and online stores. Tourism and cultural services include event listings, MONALISA for cycling routes, KAMELIA for tourism villages, as well as event registration and cultural activity numbers.

General services comprise home industry certification applications, free internet information, inter-regional cooperation, legal consultations, BPUM registration, and senior official selection. The Public Service Mall (MPP) offers 3D service maps, service information, and digital population administration. Tax and retribution services include BPHTB payment, PBB information, E-SPTPD, and QRISNA and WASPADA services. In employment, the application features job fairs, job seeker cards, job vacancies, and training registration. Social services include funeral car reservations, while commerce services encompass the Dodolan marketplace, e-rentals, Nglarisi, and the SIM Pasar Kota Jogja. A news portal provides updates on topics such as COVID-19, clippings, public information services (PPID), and city news. In education, services include student consultation, student monitoring, and school enrollment

(PPDB). Environmental services cover environmental management, water quality testing, and environmental quality information.

Public information services include disaster maps, CCTV, food price information, and legal products and research. E-government services feature waste bank management, social assistance, asset management, population mutation, and JSS account verification. Services related to BUMD and BLUD, such as Bank Jogja and PDAM billing information, are also available. Government partners, including BAZNAS and PMI blood stock information, can be accessed through the application. Ministry of Religious Affairs services include MAN 1 school enrollment, KUA services, and PTSP services. The district court provides case registration, case tracking, and court certification services. Lastly, KPU (General Election Commission) services include election information, voter data, regulations, and voter education. With these comprehensive features, JSS stands as an integrated platform to meet the diverse needs of Yogyakarta's community effectively.

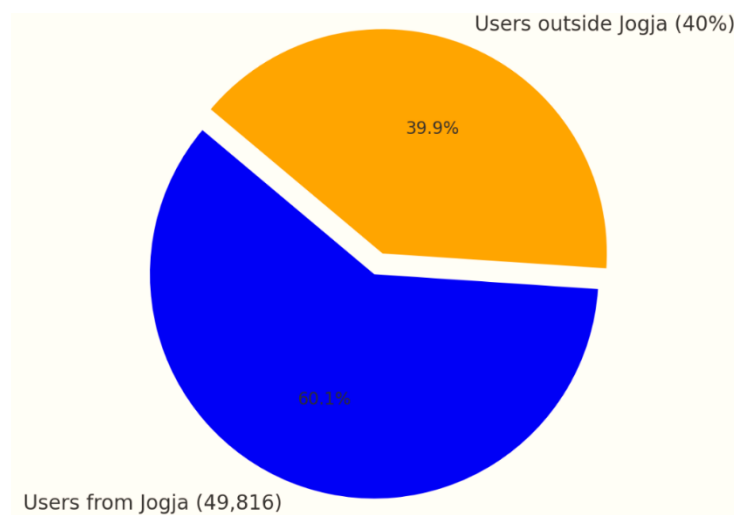


Figure 2: Jogja Smart Service Users  
Source: [jss.jogjakota.go.id](http://jss.jogjakota.go.id)

The Jogja Smart Service (JSS) application is not only accessible to residents of Yogyakarta but also to non-residents who wish to utilize government services when visiting the city. The implementation of the JSS application has brought positive impacts on administrative efficiency within the government, enabling faster and more efficient service processes. By leveraging centralized and digitalized information, the application reduces excessive bureaucracy. The integration of information and communication technology has significantly improved the quality of public services, allowing residents to receive more responsive and integrated services. This is supported by enhanced systems that include monitoring and evaluation of available services.

As shown in the data above, JSS has 49,816 users from Yogyakarta (60%, indicated in blue) and 33,132 users from outside Yogyakarta (40%, indicated in orange). Since its release in 2018, JSS has recorded over 82,949 users, a number that is expected to grow in the coming years. Currently, the application is in its third version, offering more diverse services. In its first version in 2018, JSS provided 28 services, which expanded to 132 services in the second version. By 2020–2021, the third version focused on the tourism sector to revitalize and promote Yogyakarta's tourism following the decline caused by the COVID-19 pandemic.

It is evident that the community has begun to utilize JSS to access information efficiently through their smartphones. However, there is still a need to enhance the



socialization and introduction of JSS through various strategies to ensure broader public awareness and adoption. Encouraging the public to adapt to technological advancements will further drive Yogyakarta toward its vision of becoming a smart and livable city.

Since its launch in 2018, the JSS application has shown significant progress. Based on the available data, JSS has 49,816 users from the Yogyakarta region (60%) and 33,132 users from outside the region (40%), totaling over 82,949 users. This figure demonstrates that JSS benefits not only local residents but also attracts users from other areas. The continuous increase in users aligns with the growing features and services offered by JSS. In its initial version in 2018, JSS provided only 28 services. However, by its second version, the number of services had risen significantly to 132. In its third version (2020–2021), JSS development focused on the tourism sector as an economic recovery initiative following the COVID-19 pandemic. This strategy highlights JSS's adaptability to both local and global challenges and its responsiveness to societal needs and strategic economic sectors.

Despite its success in attracting a significant number of users, JSS still faces challenges in terms of socializing and promoting the application to a broader audience. Raising public awareness and encouraging optimal use of this application remain crucial to maximizing the potential of technology in everyday life. The government should intensify socialization campaigns through various strategies, such as collaborations with local communities, digital promotions, and application training at the community level. These efforts should be accompanied by the development of adequate digital infrastructure to ensure easy access to JSS for all societal layers. By doing so, Yogyakarta can continue to progress toward its vision as a smart and livable city, leveraging technology to support development and improve the quality of life for its citizens.

## 2. Challenges Faced by the Yogyakarta City Government in Developing Jogja Smart Service to Achieve Yogyakarta Smart City

Jogja Smart Service, developed in response to the era's demands for an integrated and more efficient system for all its residents, offers various features to simplify the daily lives of its users. This application is beneficial for both the community and the government, as it operates in a two-way manner, allowing the government to improve and enhance its services. Despite the relatively good management of the Jogja Smart Service application, several challenges remain that could hinder its development. The public perceives that the government has not done enough to socialize the application, resulting in most residents of Yogyakarta only having a superficial understanding of Jogja Smart Service through the internet or other communication portals without fully grasping its actual uses or being able to apply it in daily life. In addition to the lack of socialization, one of the biggest challenges faced by the Yogyakarta City government is poverty.

As of March 2023, the poverty line per capita in Yogyakarta Province, based on data from the Central Statistics Agency (BPS), is only IDR 573,022, with a total of 448.47 thousand impoverished individuals—a high number despite the low poverty line. The government should also pay attention to the equitable distribution of infrastructure, particularly electricity and internet access, across all regions in Yogyakarta so that everyone can access Jogja Smart Service. This application can be downloaded by anyone by registering their NIK (Indonesian ID number) and phone number and continues to be developed and improved. However, because it is still in the development stage, access is limited, and the system is prone to downtime. Moreover, the user interface of Jogja Smart Service appears unattractive, and the lack of humor in its posts makes users quickly lose interest. On the other hand, there is a non-formal platform on Facebook called Info Cegatan Jogja, which has been around longer and has over 1.2 million members—far more than the users of Jogja Smart Service.

Most people prefer to share information in the Info Cegatan Jogja forum because it is accessible to everyone at any time, offers more up-to-date information, and, being non-formal, is more appealing due to the variety of entertainment available. This presents a

significant challenge for the Yogyakarta City Government to further improve Jogja Smart Service so that more residents of Yogyakarta download and use the application, ensuring that its primary objectives are achieved.

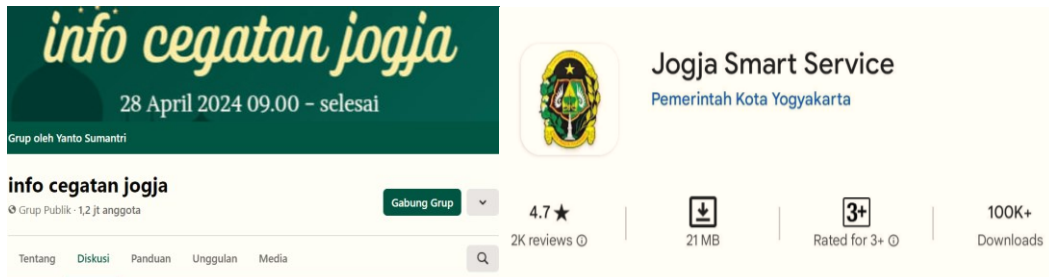


Figure 3. Website of the Info Cegatan Jogja Forum and the Jogja Smart Service Application  
Source: Facebook Info Cegatan Jogja and Play Store (2024).

### 3. Implementation of Jogja Smart Service for the People of Yogyakarta

The Jogja Smart Service application facilitates public access to bureaucratic services, particularly in obtaining business or enterprise permits. This significantly eases the process for individuals to establish MSMEs (Micro, Small, and Medium Enterprises), thereby creating employment opportunities as a result of simplified bureaucracy in setting up businesses. Additionally, the application features Jogja Event, which provides information on events in Yogyakarta and allows users to register events to be held in the city. This feature offers opportunities for the public to participate in events that contribute to Yogyakarta's economic development. By displaying event information within the Jogja Smart Service application, the platform effectively increases community engagement in ongoing events, fostering greater economic and social activity in the region.



Image 5. Display of the Job Vacancy Feature in JSS  
Source: tenagakerja.jogjakota.go.id (2024)

Jogja Smart Service also includes a feature that provides information on available job vacancies in Yogyakarta. Through this feature, users can search for job opportunities that align with their specific criteria, such as educational background and work experience. The features provided by Jogja Smart Service positively impact the economic development of Yogyakarta by offering easy access to economic resources. This includes streamlined bureaucratic processes and accessible information related to Yogyakarta's economic activities. These efforts by the government facilitate greater economic engagement and opportunities for the community, fostering overall growth in the region.



Figure 6. Public Complaint Feature in the JSS Application  
Source: Jogja Smart Service Application (2024)

The Jogja Smart Service (JSS) application includes several features, one of which is UPIK. This feature leverages community participation by allowing users to submit various types of complaints or grievances directly to relevant institutions based on the community's needs. Additionally, the application offers a Statistics feature that presents data on community participation within the city of Yogyakarta and the total number of JSS users. Another key feature is the Whistleblowing System, which encourages public involvement in reporting irregularities or subpar services provided by government civil servants (ASN) in Yogyakarta, or services perceived as unsatisfactory by the community. The smart city concept envisioned by the Yogyakarta Government through the development of the Jogja Smart Service application has positively impacted the local community. As previously discussed, JSS provides several conveniences, such as a feature to search for job vacancies that align with the competencies of the workforce. This significantly facilitates access to relevant job information for the community. Furthermore, the application streamlines the process for Yogyakarta residents to report various issues directly to government authorities, ensuring optimal services from the Yogyakarta Government.

## CONCLUSION

The Jogja Smart Service (JSS) application has made a significant contribution to improving public service quality in Yogyakarta City since its launch in 2018. With the concepts of Single ID, Single Sign-On, and Single Window, this application provides easy access to various administrative services and information through a user-friendly digital platform. Features such as emergency services, civil registration, healthcare, education, and tourism not only benefit local residents but also attract visitors from outside the city. The implementation of JSS also enhances government administrative efficiency by minimizing bureaucracy and reducing paper usage, thereby contributing to more sustainable resource management.

However, the main challenge lies in the lack of adequate socialization to introduce this application to the wider community. Many residents do not fully understand the benefits of JSS or are not accustomed to actively using it. Additionally, digital disparities such as limited access to electricity and the internet in certain areas of Yogyakarta hinder the equitable adoption of this technology. Compared to informal platforms like "Info Cegatan Jogja" on Facebook, which is more popular due to its interactive and entertaining nature, JSS still needs



improvements in terms of interface, accessibility, and a more engaging approach to gain broader acceptance among the public.

Overall, JSS has proven its potential as a platform supporting Yogyakarta's development into a smart and liveable city. With features such as job vacancy information, public complaint services, and streamlined bureaucracy to support micro, small, and medium enterprises (MSMEs), JSS positively impacts the economy and the quality of life of Yogyakarta's residents. To achieve optimal results, the Yogyakarta City Government must intensify socialization campaigns, enhance digital infrastructure, and innovate in application design and user experience. These steps will make JSS a more effective tool in supporting urban development and meeting the community's needs sustainably.

To improve the utilization and effectiveness of the Jogja Smart Service (JSS) application, the Yogyakarta City Government must implement more intensive and strategic socialization efforts. Massive campaigns can be conducted through various social media platforms, local television advertisements, and community activities to introduce the benefits and usage of this application. Direct training sessions for residents at the village and district levels, as well as workshops in schools, universities, and MSME communities, can help raise awareness and improve skills in utilizing JSS features. Furthermore, the government can collaborate with local communities and digital influencers to engage younger demographics and tech-savvy individuals. This approach will broaden JSS's user base and optimize its application in daily life.

Improving digital infrastructure should also be prioritized to ensure that all Yogyakarta residents can easily access JSS. The government needs to ensure the availability of internet and electricity networks in remote areas by partnering with telecommunications service providers to offer affordable access. Additionally, the application's user interface should be updated to make it more modern, interactive, and user-friendly, attracting users to engage with it regularly. Adding more engaging features, such as interactive educational content, discussion forums, or quizzes based on local information, could enhance user engagement. Collaboration with popular platforms like "Info Cegatan Jogja" could also be an innovative solution to expand the application's exposure.

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