

# Application of the smart government concept in Indonesia

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## Abstract

Smart government is a modern concept that prioritizes efficiency, service innovation, and increased effectiveness by integrating with advances in digital technology. This research aims to determine how the smart government concept is implemented in Indonesia. This research uses descriptive qualitative research methods by utilizing secondary data sources. Based on the results of the study, it can be shown that the application of the smart government concept in Indonesia has been going well, as evidenced by the many innovations in government services. These innovations include applications launched by the government to improve its services to the community. The implementation of smart government in Indonesia has also seen a significant increase in government. However, it still encounters classic problems such as the slow response of government services, the lack of quality human resources, and uneven facilities and infrastructure. The implementation of smart government in Indonesia has also seen a significant increase. However, the Indonesian government still faces classic problems such as the slow response of government services, the lack of quality human resources, and uneven facilities and infrastructure.

**Keywords:** Government, Indonesia, services, smart government.

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## 1. Introduction

Advances in information and communication technology certainly impact efficiency, real-time information dissemination speed, and transparency (Choiriyah, 2020). This is certainly utilized by the government sector of countries in the world to

realize Smart Government (Luthfi & Naufal, 2023; Putra & Sajida, 2023; Susanto et al., 2023). Smart government, namely, utilizes modern information and communication technology (Dewanti et al., 2020). Modern information technology in the government system can be called e-government.

In general, a smart government is a modern government that adapts to the development of increasingly modern times. Smart government is a concept that adopts modern digital media to become an intermediary in carrying out its services to the community (Handayani et al., 2022).

Smart government prioritizes efficiency, information disclosure, accountability, and responsiveness in its services (Sumardi et al., 2021). That matter statement in (Haryanto, 2023), where smart government aims to create quality government implementation innovations. These innovations include public service applications that have sprung up today and the transfer of almost all public administration processes that can be done online via cell phones and computers. The rapid development of digital technology in today's modern era impacts information technology, science, and communication. This change requires an organization or community to change its management system to keep up with the times (Kurniawan, 2022). From this, it can be said that Smart Government has become a necessity if you look at the conditions of the development of the world, which currently uses digital technology. Following Law Number 25 of 2009 concerning Public Services, this law can be used as a reference for the government to apply good principles while applying the principle of effectiveness of government functions (Pangestu & Anggraini, 2022).

To achieve this, the Indonesian government implemented e-Government. E-government can be defined as electronic administration provided by a government by adopting technology and administration using digital media. E-Government is also an essential factor in a government system because the existence of E-Government has a positive impact on services to the community in the health, education, finance, and economic sectors (Risnandar, 2014).

**Table 1.** E-government development index ranking in Southeast Asia

No.	Country	Rank EDGI (2024)
1.	Singapore	3
2.	Thailand	52
3.	Malaysia	57
4.	Indonesia	64
5.	Vietnam	71
6.	Philippines	73
7.	Brunei Darussalam	75
8.	Cambodia	120
9.	Myanmar	138
10.	Timor Leste	159

Source: Survey e-Government Development Index, 2024

Table 1 above shows that in 2024, Indonesia ranks 64th globally and 4th in Southeast Asia. It is below Singapore, Thailand, and Malaysia. This ranking shows that the implementation of smart government in Indonesia must continue to be developed because, in the index, Indonesia is still far below neighboring countries. The implementation of smart government in Indonesia will be more integrated if all stakeholders involved can collaborate well. Implementing the smart government concept means that Indonesia must be ready to improve, enhance, and evaluate the quality of services to the community by integrating modern information and communication technology. In this context, it means that the Indonesian government must be able to compete on a global scale on performance improvement and must be able to reduce problems such as long queues during service, slow response, updates, and inefficient use of paper media (Tobing, 2018).

The implementation of Smart Government in Indonesia has been running since 2019 (Bambang et al., 2019). Until now, there have still been some obstacles. As said in (Sumutcyber.com, n.d.) In regional areas such as the province of North Sumatra, the implementation of competent government is still constrained. For example, there is a lack of quality human resources and services provided to the community because SPBE applications are still not maintained by the local government. This is undoubtedly a particular reference for the Indonesian government to

evaluate the implementation of smart government so that it runs better in the future (Prianto & Suharnoko, 2021; Putra et al., 2023).

Although the implementation of smart government in Indonesia is already running correctly, the problems faced by the government from time to time are arguably still the same. The Indonesian government is famous for its less responsive services. There are still many obstacles to its services, such as the lack of quality human resources and the quality of facilities and infrastructure, that still need to be improved (Aditya Putra et al., 2024; Arifandi et al., 2024; Ngarawula & Rozikin, 2024). This research focuses on analyzing the implementation of smart government in Indonesia, using several indicators to measure its success.

Based on the results of previous studies, research on smart government has been widely carried out over the past few years. However, the lack of research on the concept of smart government, especially research using analysis with big data processing software such as Nvivo 14, especially in the scope of Indonesia, makes new things in this research study on smart government. This research aims to analyze the application of the smart government concept in Indonesia, which certainly has a relationship with the current condition of the Indonesian government. Therefore, this research is expected to provide an accurate picture of how the next government implements smart government by considering the aspects of its support. In addition, this research is expected to be a new reference in the successful implementation of smart government in Indonesia.

## 2. Literature Review

### Smart city

Smart City originated in the 1990s. At its inception, the concept focused on the use of digital technology and modern infrastructure in urban areas, which over time developed into utilization in other sectors (Kusumastuti & Rouli, 2021). The term "Smart City" refers more to the use of digital

technology in managing and operating a city environment. Until now, there are still many debates and arguments that define what a smart city is (Tiwari et al., 2024). In its implementation, Smart City requires the collaboration of various elements of information technology in order to become an innovation (Bastos et al., 2022).

The smart city concept is now considered an expected solution to face the challenges that exist in cities (Szpilko et al., 2023). The development of this concept has led to an increase in the functions and objectives of the smart city itself, ranging from city management, knowledge development, information, and digitalization (Shi & Shi, 2023). The smart city concept innovates in the utilization of resources to improve the quality of life (Costa et al., 2024). A Smart City is illustrated as a city that has modern technology in integrating between elements in the city (Afriani et al., 2022). The characteristic of Smart city itself is digitalization, which includes the Internet of Things (IoT), data management, and online services to improve integration (Poletto et al., 2023).

Smart cities are innovative concepts that aim to improve the quality and sustainability of life for the people there (Wyrwicka et al., 2023). The implementation of this concept combines urban technology innovation, city management, and existing policies (Anam et al., 2023). The Smart City concept uses Information and Communication Technology (ICT) to optimize efficiency for the sustainability of people's lives (Shafiullah et al., 2023). In this utilization, smart cities have 6 core studies, including environmental, human, business, transportation, communication, and energy infrastructure networks (Hernaningsih et al., 2023). This concept aims for sustainable development, environmental management, and increased use of digital technology (Kuzior et al., 2023).

### Smart governance

Aspects of smart cities in Cohen's theory that also have an essential role in its imple-

mentation are smart government (Rachmawati et al., 2023). Smart Government is the cornerstone of Smart City implementation (Putro et al., 2024). Smart government refers to using digital technology to implement public administration services (Gabriel et al., 2024). Smart government is defined as collaboration between various parties and stakeholders and improving public services (Viale Pereira et al., 2017). In smart government, there is a need for active government involvement in efforts to create public services by making decisions based on citizen aspirations and government transparency towards state development innovations (Purnomo et al., 2020). The Smart Government concept is run by the government and assisted by the concerned parties, who manage and implement policies using digital technology and stakeholder collaboration (Arief et al., 2020).

One of the drivers of the success of Smart government is the innovation of government organizations (Ameen et al., 2020). Because one of the main goals of smart government is to increase public satisfaction with the government (Ameen et al., 2021). Smart government is a strategy that prioritizes increasing community involvement in its services (Almansoori & Ahmad, 2023). The concept includes many initiatives that lead to the modernization and improvement of public administration (Bojoviae et al., 2023). Smart Government has collaborative characteristics and refers to the use of modern technology to innovate for the efficiency of services to the community (Li et al., 2017).

Smart government refers to the utilization of Internet technology and mobile technology, which currently have advanced capabilities (Almuraqab et al., 2021). Smart Government is implemented in mobile and electronic form (Kravchenko & Litvinova, 2015). Smart government is currently using modern technology such as AI (Artificial Intelligence) in its innovation improvement strategy, which aims to improve the efficiency of its services (Mettler, 2019). Because AI is beneficial in the implementation of smart government (Ojo, 2019). Smart government also

uses internet media technology, such as social media, to strengthen the relationship between the government and the people (Viale Pereira et al., 2017). In facing the many challenges in implementing smart government, the government implemented several strategies such as implementing laws and policies, improving security, and improving technology infrastructure (Kamalrudin et al., 2019). In smart government, the utilization of technology and digital applications in carrying out their duties is considered to be able to increase the percentage of employee performance more strictly (Febriyanti et al., 2023).

### 3. Methods

The method used in this research is the descriptive qualitative method. Descriptive qualitative research methods are used to describe in depth the data containing literature, previous studies on smart government, and mass media news related to the implementation of smart government in Indonesia (Agus Sholahuddin, 2021). This research also uses tools like Nvivo 14 software, which describes the research results (Bagaskara & Rohmadi, 2024). Based on these tools, the scope of mass media news used in this study is online news from mass media such as *Kompas*, *Tribun*, *Republika*, *Detik*, and *Liputan6* in 2020-2024.

**Table 2.** List of Secondary Data Sources

Mass Media	Amount
Detik	10 News
Liputan 6	10 News
Kompas	10 News
Republika	10 News
Tribun	10 News

The new data from the online mass media was then analyzed using the Ncapture feature in the Nvivo 14 software. The following are the stages of the researcher's analysis using the Nvivo 14 software. The qualitative approach with NVivo software tools is a qualitative data analysis software used in research. NVivo helps researchers



“publik”, “aplikasi”, “smart”. The figure above explains that the bigger a word appears in word clouds, the greater the frequency of occurrence, and it is often discussed in the news, which is the subject of research.

The picture above shows that the electronic-based government system, or SPBE, is often discussed in Indonesia today. SPBE is a government implementation system that uses technology as a bridge to serve the public (Kemenpanrb, 2020) The implementation of SPBE is based on Presidential Regulation No. 95. This regulation states that the purpose of the SPBE is to realize the implementation of modern government using technology so that it can be integrated between the central government, regions, and implementing units.

To realize the concept of smart government, the Indonesian government needs to run a sustainable electronic-based government system. For this reason, the implementation of Smart Government in Indonesia in this research will be analyzed using 3 indicators, including the Quality of Government Human Resources, the Quality of Infrastructure Facilities, and the Quality of Services. The three indicators are based on the theory by Boyd Cohen, which states that a Smart government is a government system that is integrated with ICT (Imam Hidayat, 2022).

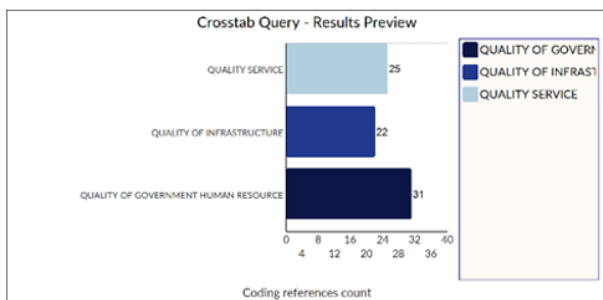


Figure 3. Indicators of smart government implementation in Indonesia

Figure 3 above is the result of processed news using Nvivo regarding indicators of Smart Government. The figure explains that the application of indicators of smart government is dominant regarding the quality of its human

resources, followed by the quality of services, and the last is the quality of facilities and infrastructure. From the picture above, we can take the point that in Indonesia, the quality of human resources and service is better than that of facilities and infrastructure. Regarding human resources quality, this article analyzes accountability parameters and service innovation. From these two parameters, after being analyzed from sources from mass media such as online news and articles, how much talk about the quality of government human resources in Indonesia will be seen. Whether the quality of human resources is good or the quality of human resources is still bad will be seen.

Therefore, the first indicator to be analyzed is the “QUALITY OF HUMAN RESOURCES.” According to (Paul Raymond et al., 2015), the quality of human resources is the ability and characteristics of human resources equipped with education, training, and experience to carry out tasks and responsibilities properly and effectively. The quality of a human resource can be measured by how far the human resource gets supportive components such as education and training and the length of flight hours at work. These aspects will become provisions for human resources’ quality parameters, including accountability and service innovation. Service innovation by the government in Indonesia is abundant, and smart government integration ties all systems to the internet and technology. Indonesian government institutions compete to package services by hand through applications on cell phones. This is a form of innovation that is being loved. Simplifying the form of service eliminates unnecessary mobilization, ensures service certainty, and provides other conveniences. For example, the ‘Si Tampan’ application that functions for online PDAM services in Blora, Central Java (Jamil, 2024), at the national level, there is *BeSign* by *BSrE* (Electronic Certification Center) (Putri, 2024) Then, the *Pedulilindungi* application was transformed into *Satu Sehat* and many other applications.

The number of applications released by the government, especially by the central govern-

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ment, is very high. However, it can also be a trigger for problems. According to the Minister of Finance, Sri Mulyani, the Government has 24,000 (twenty-four thousand) applications that burden the State Budget (APBN). This is because each ministry or agency has its application, and many applications are no longer operational (Mulyana, 2022). Thousands of applications have databases, which siphons off a fairly high budget because maintenance is carried out specifically for each application. This can be improved if the databases of several applications are grouped and then integrated according to their usefulness. However, these innovations have created new problems for human resources in government services. 2022 is the same year that the Ministry of Communication and Information Technology regularly shuts down thousands of government applications that suck up the state budget without any benefit to the public (Mulyana, 2022).

Government applications that are closed are transferred to other applications or permanently closed, considering their existence is not needed and is in a non-operational status. In previous years, many applications were abandoned due to not being used or needing to create a new one instead of strengthening the existing one. This reflects the service innovation side, which tends to be static and follows trends. The innovations implemented are no better than those made by national companies or privates. Unqualified human resources are forced to perform tasks with high standards. Results that do not meet expectations are inevitable. The Government's accountability is inevitably poor. Ministries or agencies easily let go of programs they have started. Furthermore, 24,000 (twenty-four thousand) applications are unreasonable to be managed by less than 100 (one hundred) ministries or agencies in Indonesia. In short, the quality of national human resources tends to be inadequate to achieve smart government.

The second indicator used to analyze the implementation of smart government in Indonesia is "SERVICE QUALITY." The parameters of service quality here are information disclosure

and the use of digital technology. In this case, the quality of public services in Indonesia continues to improve yearly. As evidenced by the results of measuring the quality of public services organized by the Ministry of PANRB in 2023, the IPP, or national public service index, touched a score of 3.78, a good category. The score was slightly adrift from the assessment in 2022, which amounted to 3.88. Both are still in the good predicate (PANRB, 2024).

A clear example of this improvement is *ETLE* or *E-Tilang*. E-tickets are a form of improving the quality of government services to the community. Because this *E-Tilang* serves to capture traffic violations, as well as street crimes, using electronic technology. This service will automatically record all events on the highway through camera captures on the road. The system will then record the data and will be immediately dealt with by the police (OMBUDSMAN, 2021).

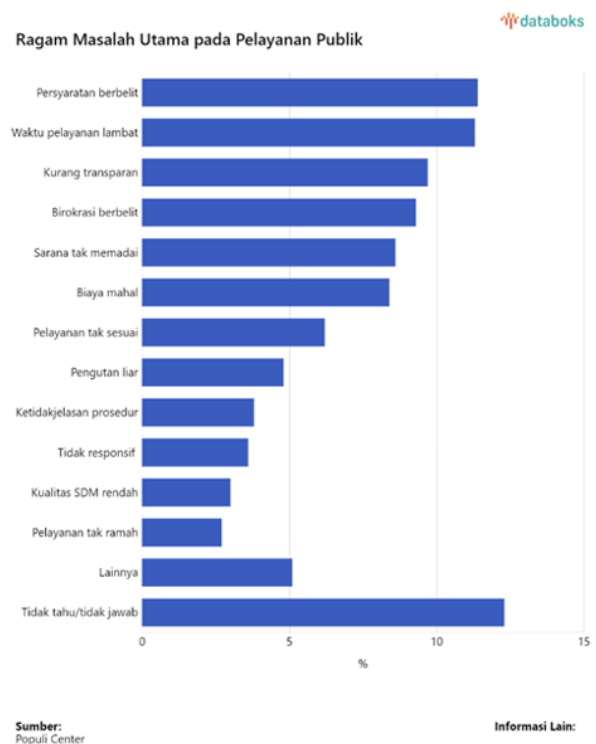


Figure 5. Major problems in public service, 2024.

However, when collecting data for this analysis, the author found that several aspects of

public services in Indonesia still have shortcomings. Data from the facts found from (Ombudsman, 2023), stated that on the *databooks.katadata.co.id* page, the results of a popul center survey conducted on 1,200 respondents aged 17 years and over or who were married stated that the main problem of public services complained about by the public as service users were complicated requirements as much as 11.4%, then 11.3% related to slow service, there were 9.7% of respondents stating that the public services provided were less transparent. Furthermore, as many as 9.3% of respondents stated that the bureaucracy was complicated, 8.6% argued that inadequate facilities and infrastructure, expensive costs 8.4%, inappropriate services 6.2%, illegal levies 4.8%, unclear procedures 3.8%, unresponsive to complaints (3.6%), low quality or competence of human resources (3%), and unfriendly service behavior (2.7%). Meanwhile, 5.1% of respondents said other problems and 12.3% of respondents did not know or did not answer.

From this data, it can be concluded that the majority of the causes of the lack of assessment above are due to the influence of complicated regulations and requirements, slow service, and lack of transparency. It should be noted that the quality of service in the concept of smart government is no longer talking about services to the public that still seem old-fashioned and complicated. Data from the Ombudsman survey also states that government services in Indonesia still have a high index on inadequate service aspects. This reflects that in terms of service quality, the Indonesian government is not fully prepared to carry out smart government values.

In terms of public services, technology affects the quality of services provided. Technology can bring service providers and service recipients closer together when needed. Costs can be reduced because the use of office equipment, such as paper, pens, and shelves, will be reduced. Technology can also be the answer to poor service transparency. Through technology, information related to services can be

uploaded to the internet so that it can be accessed by people who need it. This has been commonly done by the Government, such as the Satu Sehat application, but not all applications can be presented properly. Overall, it can be said that Indonesia's service quality is poor.

Moreover, it aligns with the analysis of the indicators that determine smart government in Indonesia, namely the "QUALITY OF FACILITIES AND INFRASTRUCTURE." The parameters used in this indicator are efficiency and public satisfaction. As can be seen on the page (Tabitha, 2022) Indonesia is currently ranked 54th out of 78 countries in the world education ranking based on data published by the World Population Review in 2021. The lack of facilities and infrastructure in education is based on various factors, such as a lack of government funds or coordination between the central government and local governments.

However, the government's seriousness in improving the efficiency of facilities and infrastructure continues to be carried out today. One of them is creating a public service portal that makes it easier for citizens to access all services, such as registration, taxation, and online filing. An example is the innovation in the health sector by the Ministry of Health, namely *MobileJKN*. This application is a form of administrative transformation, such as online service registration consultation with doctors via chat, which will make it easier for the public to get health facilities in real-time and efficiently (Irwan tahir, 2023).

In terms of the quality of facilities and infrastructure, the Indonesian government continues to evaluate the running of the government so that the public can get good quality of government facilities and infrastructure. In this case, as users of facilities and infrastructure, the community is encouraged to participate in improving the government to improve facilities and infrastructure. One real example is the survey conducted by the Ombudsman in 2023. This survey is based on PANRB Ministerial Regulation No. 14 of 2017 concerning Guidelines for the



Preparation of Community Assessment Surveys of Public Service Organizing Units. This survey data collection is carried out 2 times in one year. The data obtained is derived from community reports sent to the Ombudsman.

This survey encourages the public to assess their satisfaction with the government's performance. The number of respondents who took part in this survey was 251 people. The results of this survey show that the government gets a "B" or a good score of 3.23. However, in one sector, namely the speed of service time, it still gets a score below 3. This is the government's continued priority for performance improvement in the following year (Ombudsman, 2023).

## 5. Conclusion

This study aims to analyze the implementation of the smart government concept in

Indonesia using big data processing software such as Nvivo 14. The analysis of the implementation of smart government in Indonesia in this study uses 3 indicators (Human Resources Quality, Service Quality, and Infrastructure Quality) based on the Smart city theory according to Boyd Cohen. Of the three indicators used, the HR quality indicator has the highest index in visualization in Nvivo 14 software. It has been found that the quality of human resources has a very important influence because all innovations, achievements, and transformations come from the quality of qualified human resources and are up to date with the times. It can be seen that the Nvivo 14 visualization index shows that the topic of Smart government in Indonesia is indeed talked about a lot, especially in terms of the quality of human resources. However, the smart government problem that occurs in Indonesia from year to year is still recurring.

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