Comparison of Smart Governance in Response to Handling COVID-19 (Case Study: South Tangerang City, Yogyakarta City, Surabaya City)

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Abstract

This study aims to look and compare how the Implementation of Smart Governance conducted by the Government of South Tangerang City, Yogyakarta City, and Surabaya in handling the impact of COVID-19. In addition, this study also wants to see how smart governance ideas and the readiness of the governments of the three cities in the impact of COVID-19. This research method uses explorative qualitative research method in analyzing more in-depth related to ideas, government readiness both from human resources and technology used, and how it is implemented in handling the impact of COVID-19. The data source in this study uses secondary data derived from articles, journals, official government websites, and online media time series in one week analyzed using Netlytics. The findings obtained in this study show that first, it has similarities in the delivery of information through

a special website for COVID-19 services and information. The third city is actively providing information about COVID-19, social and economic impacts, health protocols, healthy lifestlyes, efforts to prevent, spread, and recover from the effects of COVID-19, which is integrated with ICT. However, the findings by analyzing the Twitter social media found that the Yogyakarta city government was more active and dominant in responding to COVID-19 than the City of Surabaya and South Tangerang.

Keywords

Respons, Smart Governance, COVID-19 Handling.

Introduction

COVID-19 is caused by SARS-Cov-2 (Severe Acute Respiratory Syndrome Coronavirus-2), which is easily transmitted through interaction with the spread of the virus quickly and uncontrollably (Cucinotta & Vanelli, 2020). With the ease of uncontrolled transmission of this virus, COVID-19 has a significant impact on the health sector, which has a domino effect on leading sectors such as social, economic, and others. Thus, the government's response to controlling COVID-19 is essential in this study. This paper aims to analyze the comparison of smart governance in responding to the control of COVID-19 (Coronaviruses Diseases-19). COVID-19 was first discovered in Wuhan, Hubei Province, China. At the end of 2019, this virus developed and spread worldwide, including in Indonesia (Guo et al., 2020). In March 2020, COVID-19 in Indonesia had infected 1500 cases with a mortality rate of 8.6%, which applied to all provinces in Indonesia (Firmansyah, 2020; Setiawana, Nurmandi, Purnomo, & Muhammad, 2021). Confirmed cases of COVID-19 are increasing in Indonesia; in May 2021, there were 1.79 million cases with a death rate of 49,627 patients (Suyadi, 2020).

The focus of this study is to analyze the comparison of smart governance responses in controlling COVID-19 in several cities selected as case studies for this research. The importance of this research was carried out by looking at the spread of COVID-19 in Indonesia; almost 94% of provinces were affected by COVID-19 (A. Dewi et al., 2020; Suryahadi, Al Izzati, & Suryadarma, 2020). So, it is essential to know how the government with smart governance responds to controlling COVID-19 in Indonesia. Moreover, several cities were significantly affected by the spread of COVID-19, which impacted several of Indonesia's leading sectors. The case studies used in this research include South Tangerang City, Yogyakarta City, and Surabaya City. The reason for choosing these three cities as case studies for this research is because these three cities have been well established as pioneers of smart cities with smart governance in Indonesia.

In addition, the three cities in this research case study were significantly affected by confirmed cases of COVID-19, thus paralyzing all the activities of the city's leading sectors. The data on the spread of COVID-19 in the three cities that are the case studies of this research is relatively high compared to other cities or regions in Indonesia.

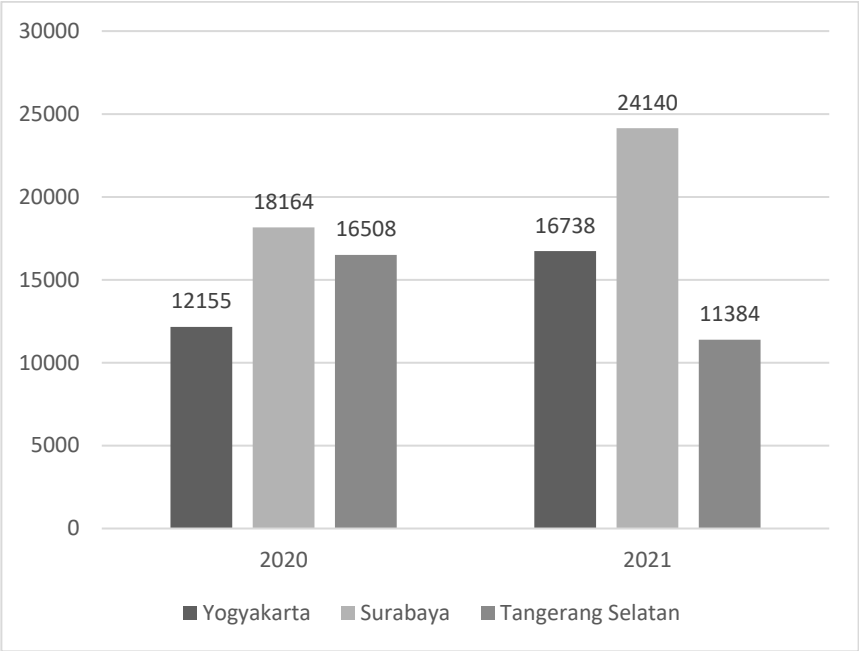

Figure 1 COVID-19 cases in Yogyakarta, Surabaya, and South Tangerang Source:Lawancovid-19.Go.Id [6][8]

Figure 1 shows that the three cities in this study have relatively high cases of COVID-19 spread in Indonesia. Surabaya became the second-highest area exposed to COVID-19 in Indonesia in November 2020, with a total of 18,164 patients (Lawancovid-19.surabaya.go.id, 2021). The highest case in Yogyakarta City was found 500 confirmed cases every week in February 2021; in May 2021, there were 16738 cases (Corona.jogjakota.id.go, 2021). Meanwhile, South Tangerang City became the most significant contributor to positive patients in Banten Regency with 75% of the number of positive confirmed cases of COVID-19 with a total of 11,384 patients in May 2021 (Suryahadi et al., 2020). With the rapid spread of the virus and its impact on various sectors, it is challenging for the government to respond to COVID-19. In addition, the three cities that are case studies in this research are smart cities that are in governance to the social order integrated with technology.

The presence of the COVID-19 pandemic that impacts various sectors of life is a challenge for the government. The concept of a smart city was created to develop and overcome social, economic, and technological problems. It aims to support the city in

terms of social (security), financial (competitiveness), technology, and environmental (comfort) (Purnomo, Anand, & Choi, 2018; Purwanti, 2015). Based on the smart city concept, the government is tested for its readiness to control COVID-19, how to manage crisis management due to COVID-19 in the health, social, economic, and other sectors (Anggraini, 2020; Ramdani, Agustiyara, & Purnomo, 2021). A city is said to have good city governance if it can manage and overcome the problems in a city (A. Dewi et al., 2020), so in this paper, we will see how the government controls COVID-19.

The case studies of this research include the City of Yogyakarta, the City of Surabaya, and the City of South Tangerang, where the three cities have well-built and developed a smart city with smart governance manifested in integrated applications and websites. Smart governance is present in the concept of good governance by creating smart governance with an information system in the form of a government application or website that can connect between government, government to the community, government to the private sector, and vice versa (Satispi, DyasTuti, Fathani, & Kaewhanam, 2021). The government is being tested for its readiness to control COVID-19. Governments dealing with public health crises are often haphazard and mostly have poor planning, inadequate due to confusion, instability, misinformation, leading to severe errors in responding to COVID-19 (Gupta, Abdelsalam, & Mittal, 2020; Prawoto, Purnomo, & Zahra, 2020). Thus, to control COVID-19, it is necessary to have a systematic and integrated integration with technology, information, and communication (Purnomo, Fadhlurrohman, et al., 2021; Vaishya, Javaid, Khan, & Haleem, 2020). Therefore, this paper aims to analyze the comparison of smart governance in responding to COVID-19 control in South Tangerang City, Yogyakarta City, and Surabaya City. The author examines how the government's response in controlling COVID-19 through social media Twitter is analyzed and visualized using Netlytics software to get accurate data.

Research Method

This research case study takes three regions that have implemented the smart governance concept in developing smart cities affected by COVID-19, namely the City of Yogyakarta, Surabaya, and South Tangerang. This paper aims to analyze the comparison of the implementation of smart governance by looking at the government's response to controlling COVID-19. This study uses an exploratory qualitative research method to analyze the comparison of the performance of smart governance carried out by several cities, including the City of Yogyakarta, the City of South Tangerang, and the City of Surabaya. Exploratory qualitative research aims to explore in-depth information about the causes that affect the object of study (Setiawana et al., 2021).

The data sources of this study used secondary data obtained from a collection of scientific journal articles, Twitter social media for one week, and the official websites of the three cities that were used as case studies, namely the City of Yogyakarta, the City of Surabaya, and the City of South Tangerang. The data collected through Twitter social media with a period of one week were then analyzed. The data analysis stage of this research is analyzed and visualized using the Netlytics platform. Through the Netlytics platform, the collected data is then visualized and sorted by categories according to research needs. The results obtained in this study are in the form of a comparative analysis of the three cities that are case studies in implementing smart governance, which can be seen based on the government's response in controlling COVID-19.

Basic Theory

Smart Governance And COVID-19 Handling

The concept of implementing a smart city is built by integrating information and communication technology and various instruments, organizational structures with initiatives created online that aim to solve the main problems of a city(Yong, Xinxin, Su, Yao, & Rui, 2020). This can be achieved by implementing smart governance properly because smart governance is a social management innovation where all resources, society, and technology development can blend into one and influence each other. Smart governance aims to make decisions with good governance results as a form of innovation from the production and delivery of government services through ICT-based applications in the form of e-government (Scholl & Scholl, 2014). E-government functions as an infrastructure for providing basic systems and services to improve the efficiency of government administration. E-government can provide a platform for crisis management, where e-government can manage various crises more quickly, broader participation, and lower costs (Mellouli, Luna-Reyes, & Zhang, 2014). Thus, smart governance plays an essential role in realizing good governance to provide services and efficiency in handling city problems. COVID-19 has resulted in changes to social life in various fields, including changes in the governance process (Sukiman, 2020). The slow handling of COVID-19 is influenced by many factors, one of which is the different characteristics of each region, making it difficult for the government to work in the handling process (Mazhar, Abid, Hussain, & Shahzad, 2020; Purnomo, Loilatu, et al., 2021). Facing a situation like this, we are forced to adapt and change the pattern of life according to the new order of life because it is to help the government's efforts to reduce the number of viruses spread (Sandy et al., 2020).

According to Buchiemer, the virus that causes COVID-19 is similar to SARS; it is officially called SARS-CoV-2 and attaches to the same receptors as SARS-Cov-1 but is more sticky (*Mayo Clinic*, n.d., 2020). This causes the virus to spread more rapidly throughout the body to attack the lower respiratory tract, bronchial tubes, and lungs which can cause pneumonia (Robilotti et al., 2020). This virus triggers an overreaction of cytokines or the immune system when the body tries to fight off the virus (Panepintoa et al., 2020). According to Forthal, mortality increases with age, with the highest mortality rates observed in people over 70 years of age; besides that, a person's chronic conditions also trigger the risk of death, such as high blood pressure, diabetes, heart, lung, and kidney disease (Muniyappa & Gubbi, 2020).Coronavirus disease (COVID-19) has had a significant impact on public health with domino implications for the economic, social, and political sectors. In stopping the spread of COVID-19 infections, several countries have decided to implement Lockdown policies in China and Europe. In contrast, Indonesia has chosen to implement Large-Scale Social Restrictions (PSBB) as implemented by Taiwan (Handayanto & Herlawati, 2020). Indirectly, the COVID-19 pandemic has fundamentally changed people's lives. The policy of social restriction/lockdown by stopping all social activities, businesses, schools, and other public service activities, so that in this case, smart governance has an essential role in controlling COVID-19 (Won Sonn & Lee, 2020).

In controlling COVID-19, you can use artificial intelligence (AI)-based technology system manifested in applications to detect the spread of covid-19 (Srinivasa Rao & Vazquez, 2020). Several countries such as Singapore, China, and the United States have integrated technology-based Internet of Things and Artificial Intelligence managed by the government in controlling COVID-19 (Singh, Javaid, Haleem, & Suman, 2020). This integrated form of preventing the spread of COVID-19 is by identifying infected people. This is implemented to reduce the time needed to identify the spread of COVID-19 to be isolated quickly. This form of control collects various information such as travel history, general signs, and symptoms based on an online survey with a website-based cellphone (Vaishya et al., 2020). These data can be used in initial screening and early identification of possible COVID-19 cases processed through a framework that can evaluate individuals, ratifying them as no risk, medium risk, and high risk (Hu, Ge, Li, Jin, & Xiong, 2020).

Findings and Discussion

This study analyzes one of the Smart City indicators, namely smart governance, which has an essential role in crisis management. Smart governance refers to the use of information and communication technology (ICT) by local and municipal governments to better interact with their citizens, utilizing all available data to solve fundamental problems (Purnomo, Fathani, Setiawan, Fadhlurrohman, & Nugroho, 2021). So that the presence of COVID-19 becomes a challenge for the implementation of smart governance in controlling COVID-19 by integrating Information Communication and Technology (ICT). Coronavirus disease (COVID-19) significantly impacted public health with domino implications for the economic, social, and political sectors (Budastra, 2020). Thus, the government needs to be able to respond and provide good services in controlling COVID-19. Based on confirmed cases of COVID-19 in South Tangerang City, Yogyakarta City, and Surabaya City as case studies in this study, the authors analyze smart governance in controlling COVID-19 by looking at the government's response to COVID-19. Smart governance is present in the concept of good governance by making governance smarter with an information system in the form of a government application or website that can connect the government, government and society, government to the private sector, and vice versa (N. S. Dewi et al., 2021). To control COVID-19, efforts are being made to control COVID-19 by the government by integrating applications, social media, and the government's official website as a means of delivering information and public services.

Table 1 Comparison of Smart Governance in Yogyakarta, Surabaya, South Tangerang

	Yogyakarta	**Surabaya**	**South Tangerang**	**Status**	**Information**
Website	Jogjakota.go.id	Surabaya.go.id	Tangerangselatankota.go.id	Active	-
Application	Jogja Smart Service (one-stop service integrated with website)	(*E-government software is plentiful and not a one-stop service*)	Mobile Siaran (one-stop service integrated with website)	Active	-
COVID-19 Information via Website	corona.jogjakota.go.id	lawancovid-19.surabaya.go.id	corona.tangerangselatankota.go.id	Active	Integrated with government's main website

Table 1 shows that the website and application are integrated into a system that has a role in providing information, communication tools, and improving public services to overcome the problems of a city. So that with the application of the concept of smart governance can realize a livable smart city. Based on the research findings by comparing how smart governance is implemented between the City of Yogyakarta, Surabaya City, and South Tangerang City in controlling COVID-19. First, the City of Yogyakarta has the Jogja Smart Service application integrated with the Yogyakarta city government website (jogjakota.go.id) and corona.jogjakota.go.id related to COVID-19 information. Similarly, Surabaya has a smart application in Surabaya Smart City, which has also been integrated with the Surabaya city government website with the domain *Surabaya.go,id*, and a special COVID-19 website lawancovid-19.surabaya.go.id. Furthermore, South Tangerang has a SIARAN mobile application integrated with the city government website with the domain tangerangselatankota.go.id and the corona.tangerangselatankota.go.id website. In providing information and controlling the spread of COVID-19, the three cities have one thing in common, namely by registering data using an integrated website. The website has a function to provide information and record or detect people infected with COVID-19 and provide instructions for health services and COVID-19 compliant services. The application of the integration of applications and official websites of the three cities' governments has been carried out well and has greatly helped the public regarding information about COVID-19. In addition, the application of smart governance has smart service concept is also applied in several cities in Indonesia, especially in terms of data on the spread and cases of COVID-19. Thus, this research's three case study cities have been good at integrating ICT in smart governance in controlling COVID-19.

Second, to confirm the policy is right on target or not by looking at the smart governance response, which refers to using information and communication technology (ICT) by local and city governments to interact better with the community (Shtait et al., 2018). The author identifies the government's response to controlling COVID-19 through Twitter social media, which was analyzed using Netlytics Software to see these interactions. Where the initial steps in maintaining COVID-19, the City of Yogyakarta, Surabaya City, and South Tangerang City through website platforms, online media, and social media are active in providing related information as an effort to prevent the spread of COVID-19. Prevention includes (1) education related to COVID-19. (2) application of health protocols and healthy living community movement. (3) the spread of COVID-19, and (4) the availability of health services.

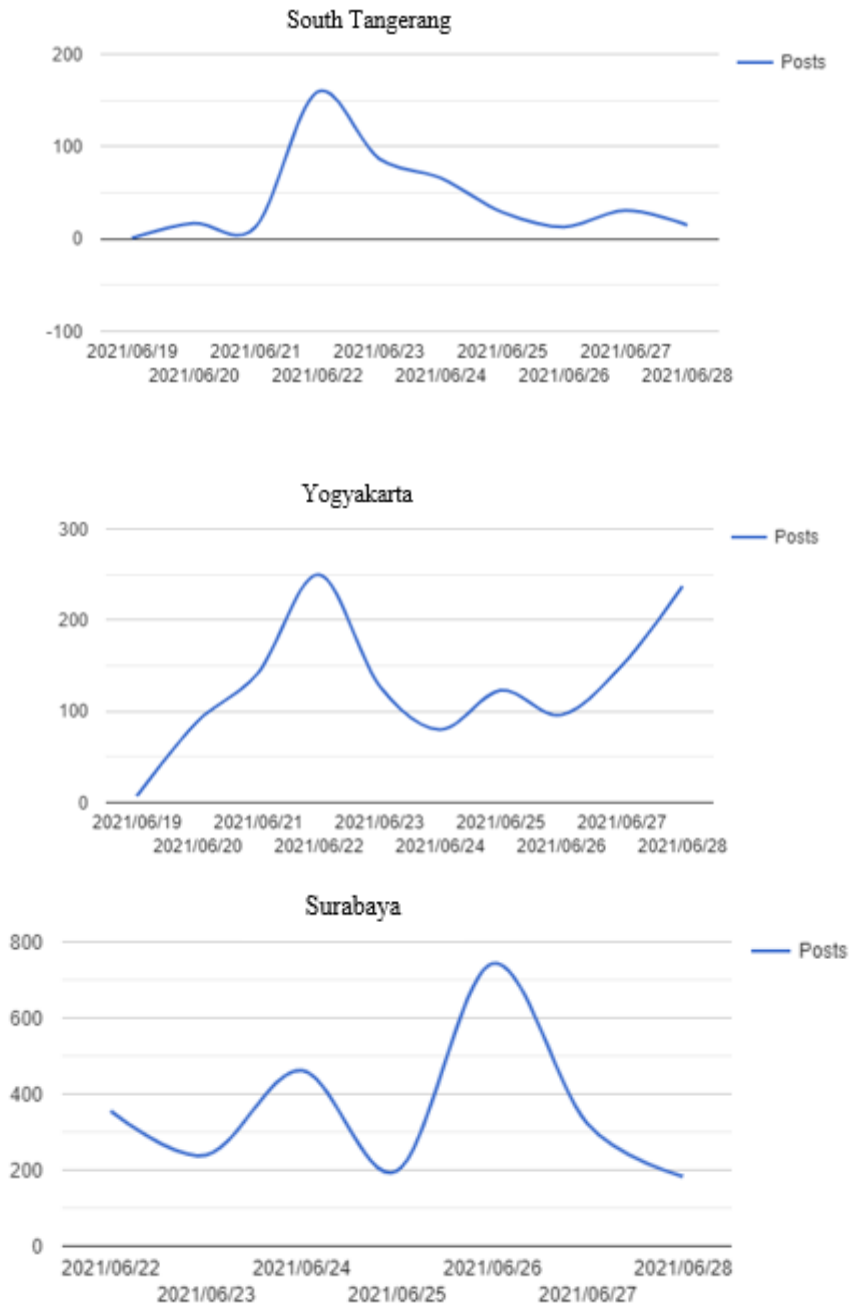

Figure 2 The intensity of twitter activity on the keywords COVID-19 in Yogyakarta City, Surabaya City, and South Tangerang City
Source: Author, 2021

Took the twitter analysis from all respondents, including the community, business, community, and government accounts. Figure 2 shows how the intensity of twitter activity against COVID-19 in Yogyakarta, Surabaya City, and South Tangerang City is volatile. In Surabaya and South Tangerang City, the intensity of twitter on the keywords COVID-19 has decreased, while the city of Yogyakarta has increased. The decrease in

activity in Surabaya and South Tangerang cities is also due to a decrease in public awareness or concern for COVID-19 which is not clear when it will stop. Then also due to the lack of government firmness, lack of sanctions, and public distrust of the government due to corrupt practices. and misappropriation of funds/budgets against COVID-19. This is a matter of concern; significantly, the status of COVID-19 is increasing, and there are many new variants of viruses. In contrast to Yogyakarta, the community has good awareness of online/social media and real awareness in daily activities. It can be seen that compliance awareness and public concern for implementing health procedures strictly due to the increasing status and cases of COVID-19. In addition, there is encouragement from the government to implement a curfew, strict sanctions, and a lockdown policy based on RT-RW, village-district to district-city levels. In addition, educational activities were stopped entirely and required to switch to online and tourism activities, and the government restricted vehicles entering/out of the DIY region. Based on Twitter intensity on the COVID-19 keyword in the case study city of this research, the authors categorize Twitter users who tweet related to the COVID-19 keyword in Yogyakarta City, Surabaya, and South Tangerang City.

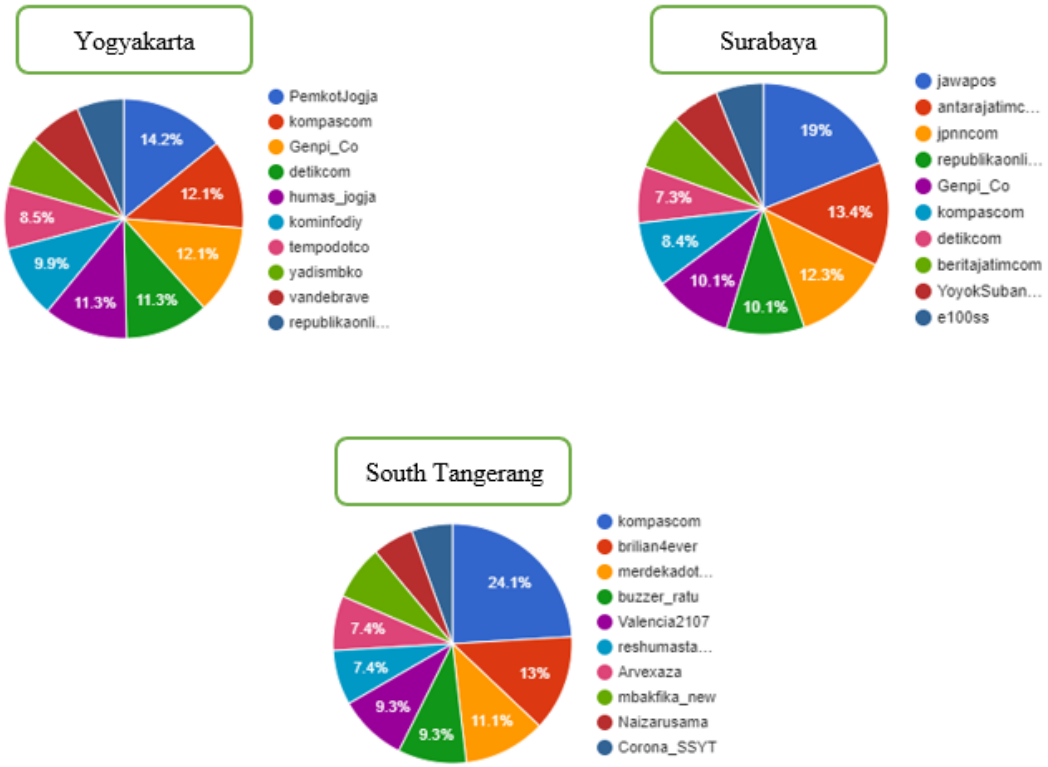

Figure 3 Analysis of Twitter Users for COVID-19 Keywords Yogyakarya City, Surabaya City, and South Tangerang City
Source: Author Analysis Using Netlytics, 2021

Figure 3 shows that Twitter activity on the COVID-19 keyword is based on Twitter account users from the public, business, community, and government. Based on Figure 3, the visualization of Netlytics data shows how the response to COVID-19 was in the City of Yogyakarta, Surabaya City, and South Tangerang City. The government's responses from the three case study cities of this research became the most dominant in responding, namely the City of Yogyakarta, including @pemkotjogja, @humas_jogja, and @kominfodiy, which were more active than other accounts. The government's response in responding to COVID-19 compared to the City of Surabaya and the City of South Tangerang is lower in intensity. In contrast, the City of Surabaya and the City of South Tangerang have the intensity of using Twitter for the COVID-19 keyword, which is more dominantly used by the public and private sectors such as @kompascom, @jawapos, and others. This shows that the Surabaya City and South Tangerang City governments are not more responsive to COVID-19. However, the implementation of Smart Governance that integrates ICT in handling COVID-19 has been well applied to the three case studies of this research. However, to see the success of implementing Smart governance, it can be seen from cities that have succeeded in making Smart Governance. The success of governance when implementing information systems in government applications or websites can connect the government, government, and society, government to private, and vice versa.

Conclusion

Research on the use of information for the government in disseminating programs and policies during the COVID-19 pandemic to the public is helpful in the process of bureaucratic information disclosure and accountability to the public so that public trust in the government continues to increase. Especially in the current COVID-19 condition, the speed of information is very much needed in conveying the latest active cases at the local and national level, the recovery efforts carried out by the government and supported by community assistance, and the accuracy of the purpose of information so that information does not become fake news that is consumed by the public. COVID-19 cases in Indonesia continue to grow significantly, and it is not yet predictable that COVID-19 cases will end. The government and other stakeholders have made various efforts in tackling the spread of COVID-19, despite the low level of awareness, concern, and participation of the community towards the dangers of COVID-19.

In terms of delivering information carried out by the cities of South Tangerang, Surabaya, and Yogyakarta, smart governance in the form of smart services through online media and social media has been implemented with the elements and values of openness and

accuracy. With the help of social media, Twitter benefits the government; This can be seen from the high response and participation to tweets on the Twitter page, even many who forward messages to widely know the information. Such as social media, online media, and local print media are also the government's choices because they can provide information to people who do not have access to Twitter, so that the choice and diversity of information sources is more and remains from one source, namely the government.

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