PUBLIC SERVICE DIGITALIZATION IN BOGOR CITY

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ABSTRACT

Making Bogor City a smart city is one of the missions to be achieved by the Bogor City Government. In each regional organization, various programs are built to make Bogor City a smart city. This study wants to know the implementation of digitizing public services by the city government regarding its status as a smart city. The research method follows a qualitative approach to explore responses to digital technology and to assess the effectiveness of governance processes and governance frameworks in Bogor City in welcoming the fourth industrial revolution. The approach used in this study explores the perspectives of various stakeholders in Bogor City, which was conducted using a semi-structured interview technique. Data was collected by typing or writing down responses and most of the interviews were allowed to be audio-recorded. The responses were reviewed and coded according to the content analysis and the main themes identified for the articles were processed using the NVIVO software. The results show that the city government is not yet fully prepared or has adequate resources to take advantage of digitalization and the fourth industrial revolution. Therefore, a multi-governance approach in conjunction with a governance framework should be explored by city governments in the development of city governance strategies to address the implications of the fourth industrial revolution.

Keywords: digitalization, public service

1. INTRODUCTION

There are a number of factors that influence the phase of the city experience. These factors consist of national development policies, city government activities, entrepreneurship, individual decisions of the population, economic crisis, prosperity, and political stability. In almost all countries in the world, the population is generally concentrated in cities. The economy, culture, and structure of urban society are different from those of villages. This affects the rules of coexistence and public spaces so as to create a modern attitude that is the future of the city. Therefore, the city governance process and its structure must always adapt to the expectations and needs of the citizens. The high level of mobility of the citizens causes the time required to access the service sector and come to and return from work needs attention. Likewise, creativity, entrepreneurship and living standards are important things that must always be considered by the city government.

Cities are centers of world civilization. As a human creation, the city becomes a place of collaboration between humans. In cities, various places of concentration of human activity have sprung up where new ideas that drive the economy grow. This then became a trigger for urbanization which is a sign of modern civilization. Therefore, policy makers and scientists are always interested in questions related to urban development and the impact of the quality of the system of providing goods and services on the quality of life of city residents.

When a city government wants to implement a smart city, the quality of life, a systemic approach to problem solving, and long-term cost-effect considerations must be the main concerns in decision making. Smart city is a modern city management concept using user-friendly information and communication technology while maintaining the efficient use of resources and achieving the desired results (effectiveness). City functionality will increase significantly through the use of information and communication technology in various areas of government activity. Smart cities are always characterized by intelligence. The intelligence in question consists of the ability to think rationally, solve problems, learn, always adapt to dynamic environmental changes, have good relations with interested parties, take advantage of opportunities, prevent threats, process information, act using logic, and anticipate the consequences of decisions. taken. When public organizations apply intelligence, the people in them (authorities, policy makers, and citizens) must also apply the same intelligence.

One of the missions of the Bogor City Government is to make Bogor City a smart city. Various programs have been made to realize this and are implemented in every regional organization in Bogor City. Smart city development in Bogor City is carried out in six dimensions: 1) smart governance, 2) smart branding, 3) smart economy, 4) smart living, 5) smart society, and 6) smart environment (Diskominfostandi, 2017). Smart governance is implemented so that the people of Bogor City can get all the information they need about the city government, regional profiles, budget transparency, citizens' aspirations, to public services. Smart branding is carried out in the form of structuring the face of the city and marketing the potential of the city to increase competitiveness. Smart economy is implemented in the form of wide-open access to information so as to increase the opportunities for citizens to carry out effective and

efficient economic activities by reducing operational costs so that they are more minimal, more productive and able to grow sustainably. Smart society is implemented in the form of realizing a dynamic and humanist socio-technical ecosystem, both physically and virtual, so as to be able to create a communicative, productive, and interactive society with high digital literacy. The smart environment is realized in the form of developing various environmental protection programs, waste and waste management, and accountable energy management. The Mayor of Bogor has issued Mayor's Decree Number 040.45-230 of 2017 concerning the Formation of the Smart City Council and the Bogor City Smart City Implementation Team to realize the six dimensions of a smart city.

The e-government developed by the Bogor City Government is an effort to utilize electronic-based government using information technology, so that the city government can provide more efficient services to its citizens. In Bogor City, e-government that is currently being developed has become an integrated system that connects several different regional government work units. Some examples of e-government that have been developed by the Bogor City Government are e-delivery, e-budgeting, e-control, e-project, e-performance, and e-procurement. There are three categories of websites owned by the Bogor City Government, namely public complaints, public services, and public information. The website page is also connected to social media used by the Bogor City Government. The Bogor City Government has also provided opportunities for the public to access other public services such as electronic complaints, development planning e-deliberations, and e-licensing. Currently, residents of Bogor City can apply for birth certificates online. Bogor City residents now no longer need to queue to fill out forms or commute to the sub-district office because birth certificates can be processed online by simply accessing the website of the Population and Civil Registry Office. Other public services that can be accessed online by residents of Bogor City are the arrangement of Building Permits (IMB), online complaints, Bogor City Enterprise Collaboration System, and Bogor City Single Windows. The complaints that many residents of Bogor City submit online are about public facilities, such as dead street lights or damaged roads. Complaints like this within a maximum of 1x24 hours can usually be handled immediately. The Bogor City Enterprise Collaboration System can simplify the process of public services by using shared data that can be accessed from the respective regional government work unit offices. Bogor City Single Windows is a public service application that is faster, easier and safer that allows for single data and information delivery, synchronous data and information processing, and single and integrated decision making. The rapid progress of providing online public services by the Bogor City Government must also be balanced with the digital skills possessed by the community. One of the methods used by the Bogor City Government to improve citizens' digital skills is by providing Broadband Learning Centers in several easily accessible locations so that people can learn information technology. The Broadband Learning Center in Bogor City is an information technology learning facility from the Bogor City Government that can be enjoyed by the public for free. This information technology literacy is an effort of the Bogor City Government to accelerate Bogor City towards a smart city. Citizens are expected to learn a lot about information technology to reduce the digital divide in society. Another socialization carried out by the Bogor City Government is by using a media center. The media center can be used by the people of Bogor City who want to participate in city development. This form of community participation can be in the form of submitting inputs, suggestions, and even complaints about urban development. Through the media center, it is hoped that Bogor City residents can get accurate information about the stages of development being carried out by the Bogor City Government. Bogor City's media center has now become a preferred place for complaints by the public where there are more people who file complaints through the website than those who come directly to government offices.

There are several obstacles experienced by the Bogor City Government in implementing e-government. Because the website is the only form of information interface for regional government work units, the services provided will depend on each regional government work unit. Information about accidents, traffic jams, vehicle breakdowns, road conditions, and so on is contained in the intelligent transportation system. If the information provided to residents is not updated by the relevant regional government work units, then residents will not get the correct information and this cannot help reduce congestion in Bogor City, and can even make it difficult for residents. The solution taken for problems like this is to wait for the disposition of the leadership of each relevant regional government work unit. This disposition is usually not short and can take a long time. This is actually the next obstacle and the problem cannot be resolved quickly and can give the Bogor City Government a bad image in the eyes of the residents. The next obstacle is related to the digital divide in society. There are still some sections of the people of Bogor City who do not fully understand how to use information technology properly. This obstacle was addressed by the Bogor City Government by implementing an information technology literacy program for residents. The third obstacle relates to investment costs. The implementation of e-government requires a very large investment in information technology so that a large budget for the procurement of goods and services related to information technology is required. The next obstacle is related to the existing human resources in the Bogor City Government itself. Employees who work in the media center and who prepare websites also have limitations both in terms of quantity and quality. There is still a gap between the knowledge and skills needed and the knowledge and skills possessed so employees need to receive training to close the gap.

Currently, digitalization is the main driver of change in the social, economic, and political fields. The digital revolution has dramatically changed the world where traditional business models are no longer valid, consumers are not behaving as usual, and there must be new rules governing the behavior of citizens in the digital age. Development in various countries has led to digitalization which is supported by the development of massive digital infrastructure, increasingly cheap and affordable prices for access facilities, as well as rapid increases in digital literacy.

The term digitization is actually not new. Digitization experienced its first heyday when silicon microchips led to the computer revolution in the 1960s and 1970s. At that time, digitization referred to the transition from analog methods of recording and processing information to digital standards of the computer era. Today, almost all governments in the world claim to be digital governments. Many countries have achieved success in e-government programs and the public sector has even outperformed a number of private industries in the delivery of electronic services. However, when comparing citizens' experiences in dealing with government organizations with customer experiences when dealing with real digital companies, it is realized that there is still a lot of government governance that needs to be improved. This is especially the case when comparing the state of internal digitization—relating to workflows and production processes, data analysis, and resource management—between leading digital companies and government organizations.

To measure the level of digitization of private sector companies in Germany, the Accenture Digitization Index Framework was developed which was first implemented in 2013. This framework was created for three main reasons: 1) to define digitization in a comprehensive but fairly simple way; 2) designing tools that can be applied to various contexts to measure and compare levels of digitization; and 3) to understand how digitization fits into other indicators, such as business performance. Accenture has implemented index methodologies around the world and across a wide range of industries. The Accenture Digitization Index framework assesses a company's digital maturity against three indicators: "1) digital strategy—refers not only to the degree to which a company's strategy recognizes digitalization as a defining trend in their industry, but also the extent to which strategic goals are based on digitization; 2) digital services—assessing the company's products, solutions and services and the functions that companies use to interact with their customers; and (3) digital empowerment—considering the use of digital technology and applications to support internal processes" (Frach, 2017). The framework then divides these three indicators into subcategories and assigns a value to each subcategory. The indicator value is the average value of its sub-category values. Finally, the average of these three indicator values forms the value of the Digitization Index.

In the early stages of implementing e-government, much of the concentration of government organizations was placed on moving their high-volume services to online channels, seeking cost savings and efficiency improvements. Today, government organizations are trying to capture the main benefits of digitization: digitization is now seen as a tremendous opportunity to use new technologies that not only increase efficiency but also connect directly with citizens, companies and non-governmental organizations. Government organizations consider themselves part of the ecosystem and are open to collaboration with private partners and citizens to achieve more. Innovative services are developed in collaboration with citizens and other stakeholders so that they can go beyond the original service portfolio of government organizations. Digitization then extends internally, with a complete redesign of the process landscape to make the organization digital. Government organizations need to transform their strategic planning, services and internal processes to go digital.

2. METHOD

The research method used takes a qualitative approach in exploring the responses of the Bogor City government and respondents to the digitization of public services and to assess the effectiveness of the governance process in Bogor City in welcoming the fourth industrial revolution. Bacon-Shone (2015) suggests that the qualitative approach is more involved with natural circumstances and situations than statistics, thus providing a richer perspective than the quantitative approach. The approach used in exploring the problem can provide a holistic view that is multifaceted using word analysis that details the respondent's understanding in the natural situation they face. Unique information is collected using a qualitative approach and a factual descriptive view of the situation experienced by the respondent (Daniel, 2016). The qualitative approach used in this study explores the perspectives of various stakeholders in the city of Bogor, which was conducted using a semi-structured interview technique. Bryman (2012) states that content analysis allows themes to be easily found in the analyzed document. Content analysis is used in this study to analyze the contents of various legal documents in Bogor City and compare them with national documents. Bogor City was chosen as the research location, because Bogor City is one of the pioneers of smart cities in Indonesia and has provided various digital services to residents.

Data were collected from interviews with the city government, council members, and residents, while a secondary analysis was conducted on the documentation obtained from the city government. Therefore, data sources include interview responses, city legal and regulatory documents, website articles, government data, information from

professional institutions, media articles, and academic literature. Data were collected by typing or writing down responses from interviews that had received permission from the respondents to be recorded. Respondents were given assurances that there were no risks to be borne because they were willing to be interviewed. The interview can also be terminated at any time if the respondent wishes. The recorded interview was then poured into Microsoft Word Each respondent's responses were reviewed and coded according to content analysis and key themes using NVIVO software.

3.   RESULTS AND DISCUSSION

The research results are divided into three themes, namely governance effectiveness, information technology governance framework, and system development efforts

Effectiveness of governance processes

Responses from semi-structured interviews with local government organizations and councils provided sufficient information about whether the Bogor City government has implemented effective governance in implementing smart cities. One of the respondents interviewed about the effectiveness of the governance process in Bogor City said: "I think the governance process has been carried out in Bogor City, but whether the process is effective is another matter. In my opinion, the governance process that we have now is sufficient, and what is really needed now is political will, and we need leaders and staff who are willing to make decisions and take action." Concurring with this view, one respondent stated that: "The existing governance process may have been effective, but sometimes there is political interference that interferes with the process. Officials will have a lot of trouble doing their job properly if there is intervention from politicians who somehow always want to interfere." Respondents also discussed leadership and governance issues. One respondent said: "Smart cities are all about governance. The government system in Bogor City is not yet fully effective; or in my opinion the system of government that is currently being implemented is not yet a system of government based on the interests of the people. The current system of government may have an effect on citizen frustration, unemployment, and poverty. People may do things that are not in line with the wishes of the government. So, it's all about governance behavior." Respondents' attention also turned to political issues: "There are several levels of participation, the participation of council members at the neighborhood level. But the question for me is is this participation just to get more votes or is it really participation to change the current situation?" One public manager said that the smart city challenge lies with the leadership: 'But our own initiatives are lacking, and we need strong leadership and some of these things need to be supported by political parties." This was corroborated by respondents on whether the governance process was effective: "Bogor City has not been fully effective in implementing smart cities in the government process." Analysis of governance in development plan documents and reports published by the Bogor City government shows that there are not many references that support information about technology or digitization. However, the development plan document shows that a system is in place to ensure the accountability, efficiency and effectiveness of the city government. The system includes community and stakeholder participation, community-based planning, government communication programs to reach communities, citizen relations management, risk management and auditing, business continuity management, anti-corruption strategy, environmental committees, and performance monitoring and evaluation. In the governance process, the gap that was identified was the lack of integration of technology into development planning and reports issued by the city government.

Information technology governance framework

Research shows that there are already processes in place for internal control and accountability of information and technology, as well as support by city councils and governments for a technological revolution that is sufficient to implement smart cities as one respondent put it: 'So if we want to get technology, the technology is already there. available and functioning." Technological tools have been used for years to improve the efficiency of local government organizations ranging from word processing applications to financial software. Therefore, the use of technology will definitely improve the performance of local organizations in providing services. One respondent explained about the benefits of using technology: "So if we already have the appropriate technology, why don't we use it? While the initial outlay may be slightly higher than we expected, the long-term benefits will be enormous. If we can get the technology and it is available for use in any field, that means we are now more effective. "Although there is support for technological advances, the Bogor City government has not been fully able to be at the forefront and advance in digitizing public services.

System development efforts

When a city operates in a competitive environment, any attempt by the Bogor City government to develop its own digital platform will result in a loss of economies of scale. This is very risky, because the city government has limited funds. At this time every level of government in Indonesia is embarking on a technological endeavor that will lead the city government towards the fourth industrial revolution. To develop the system, a large amount of money is required

and by working with other government units, substantial savings will be obtained. In this study, the governance framework identified seems to be the ideal response to face the fourth industrial revolution; however, with the large investments required at the city level, concerted efforts are needed to achieve the desired results.

Discussion

The main findings of this study are that, firstly, although there are many regulations that bind the Bogor City government, these regulations are not sufficient to address all components of public governance. Second, the massive investment that has been made to develop the system has created more challenges for the Bogor City government. The national government should include inputs and responses from the city and the city government in the national plan document to deal with the fourth industrial revolution, because the city government is the level of government that is closest to the people. Collaborative efforts must be made among different levels of government to advance to the fourth industrial revolution. City governments are the main responders whose needs must be addressed for the success of the efforts that will advance the country towards the fourth industrial revolution The ideal solution for this would be a multi-government approach, which would ensure the participation of civil society, business, academia and government organizations at all levels, and ensuring the availability of various sources of funds to take advantage of growth and development opportunities. This will give the Bogor City Government the opportunity to succeed in its efforts to harness the potential of the fourth industrial revolution for the benefit of the citizens.

In implementing e-government to realize Bogor City as a smart city, there are several dimensions of e-government that should get more attention from the city government, namely policy, governance, infrastructure, and outreach. This framework can be used to describe and understand the realities that affect the level of digitization of city government services. Policies that protect information infrastructure are very important to establish a conducive e- government environment in order to realize a smart city. Cybersecurity policies—protection of e-government infrastructure against failures and attacks from inside and outside the system—are particularly important when city governments become highly dependent on online services and when sensitive personal or financial data is being transferred electronically. Protecting the privacy of every citizen is also very important to ensure that citizens have a high level of trust in new communication technologies. The successful implementation of e-government is also highly dependent on the establishment of back-office workflows and digitization in administration and on the reengineering of these workflows. Since citizens generally do not know the actual processes that occur in administration, they will judge the performance of the city government based on personal experience and draw conclusions about the quality of city governance, reliability, and consistency of the process based on the time it takes to complete standard procedures, such as moving domicile. The effectiveness of e-government services is also very dependent on the availability of information and communication technology infrastructure owned by the city government. Therefore, the city government must always evaluate the status and development of information technology infrastructure in its area and plan e-government projects according to the needs of citizens who may be different from other city residents. An important outreach aspect that the city government should pay attention to is the provision of information and services by the government. The supply of information to businesses and citizens by city government can vary in intensity. Some city governments only provide static information on their website pages, while others offer services online. Some city governments have even gone so far as to offer electronic consultation and participation. Some services really need integration because to produce these services may involve many processes that are fragmented and require the participation of various stakeholders. Finally, the implementation of e-government is also strongly influenced by the special needs and characteristics of citizens and businesses, such as education, housing, licensing, and other living conditions. Furthermore, living conditions, such as income, social structure, religion, rhythm of life, working hours, habits, customs and individual culture, also influence the demands of citizens and businesses on e- government services provided by city governments.

In 2014, a digital strategy for government was recommended by the Council on Digital Government Strategies for the Organization for Economic Co-operation and Development (OECD, 2016). The strategy states that citizens should be involved in the design and delivery of public services. This needs to be done to maintain public trust and political commitment to the strategy. System development policies must also be transparent, open and inclusive. The Commission on Global Governance further argues that good governance is an ongoing process in which different or diverse interests can be accommodated (Lamb, 1995). Price (2018) states that the main feature of good governance is that it must display participation, consensus, accountability, transparency, and strategic vision. Governance must be responsive, fair, efficient, effective and inclusive and must follow the rule of law. The Bogor City Government needs to implement these recommendations in every effort to digitize public services in the context of implementing smart cities.

For digital initiatives to be successful, support from national and subnational political leadership is needed, and integration and coordination between different levels of government is required (OECD, 2016). This effort will ensure that the digitization strategy developed has a positive impact on different levels of government and entities through

co-financing and commitment and co-ownership. This would work well in the context of Bogor City, as it would bring harmony, efficiency, and effectiveness, in the process.

4. CONCLUSION

The results of the study indicate that regional government work units in the Bogor City have not been able to fully utilize digitalization capabilities and have only introduced technology that is only operational and has less strategic functions. The gap identified in this study is that the Bogor City government is not yet fully prepared or has sufficient resources to take advantage of digitalization and the fourth industrial revolution. Therefore, a multi-governance approach in relation to the governance framework must be considered by the Bogor City government to address the implications of the fourth industrial revolution. The Bogor City Government needs to increase institutional capacity, finance, digital skills, and other resources.

Governance and leadership are very important for regional government work units in Bogor City to use information and communication technology strategically, not only to communicate with residents but also to invite residents to be part of the city government's decision-making process. Multilevel governance collaboration needs to be started immediately, to ensure that there is a joint effort from all regional government work units in Bogor City to implement the digitization of public services.

The Bogor City Government must also integrate process alignment in all activities in each regional government work units. An integrated approach is needed in the fourth industrial revolution to direct energy and momentum for every effort made by city governments to secure rapid access to global economic markets. Without the support of effective and visionary political and administrative leadership, the fourth industrial revolution will be a vision that is difficult, if not impossible, to achieve.

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