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Bureaucracy of Smart City Development in Bandung City

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Abstract
Smart city is a city management concept based on Information and Communication Technology (ICT) so that the city becomes smarter and more efficient in the utilisation of various existing resources, as well as improving services and the quality of life of urban communities while still promoting environmental sustainability. Bandung is one of the cities in Indonesia that has implemented the Smart City Concept. This research aims to find out how the smart city bureaucracy in Bandung City by looking at aspects of Smart Governance, Smart Environment, Smart Economy, Smart Living, Smart Mobility, Smart Society, and Smart People as the main branding in the implementation of smart cities in the city of Bandung, this research is basically carried out qualitatively where the author collects several documents, files, interviews and literature studies to gain an understanding of the smart city bureaucratic process in Bandung City with the results of the discussion that the smart city that is run still has obstacles in its implementation, these obstacles are based on communication, resources, disposition, and bureaucracy that are not fully ready to run.

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1. INTRODUCTION

Since 1998 the increase in urbanisation has created new problems for urban areas. These include waste, education, transportation, socioeconomics, disasters, and health. On the other hand, an increasingly modern and established society has a myriad of expectations, such as a comfortable living and working environment, adequate public areas, and ease of managing all forms of public services. Urbanisation is the movement from outside the city/village to the city, causing the population of people in urban areas to increase. Not only population problems, but also the increase in waste, the emergence of slums, the increase in crime rates, and others can be preceded by the phenomenon of urbanisation.

Thus, Indonesia has declared a comprehensive, progressive, and sustainable bureaucratic reform in the fields of politics, law, state administration, economy, socio-culture, and defence and security to achieve good governance (Supriatna, 2021). This reform requires government officials to prioritise competence and capability in the administration of government affairs by promoting *good governance* values.

In this case, the establishment of the Smart City concept is the answer to these challenges. Smart City is a city concept that uses information and communication technology (ICT) to improve the quality of life of citizens, increase the efficiency of resource use, and reduce environmental impacts. By using technologies such as Internet of Things (IoT), Big Data, and Artificial Intelligence (AI).

The Ministry of Home Affairs in a presentation defines *Smart City* as an integrated city planning concept with a broad scope of development combined with the development of information and communication technology with the aim of, among others, creating livable, advanced and modern city planning and development, increasing regional productivity and economic competitivenessand building the foundation of Indonesia smart nation.

A Smart City is an urban area that utilises digital technology to increase efficiency, reduce operational costs, and optimise the use of resources. The ultimate goal is to improve the performance of the city, and increase active and effective engagement between the government and its citizens. There are three main factors that influence the Smart City concept: economic, social and environmental aspects. Smart Cities can also be defined as areas that are able to utilise human capital, social capital, and modern telecommunications infrastructure to achieve sustainable economic growth and improve people's quality of life.

The main principles of the Smart City concept include intelligence in daily life, efficient governance, smart economy, sustainable environment, smart mobility, and last but not least, the development of smart community potential. The economic aspect of a city is considered smart if it is supported by strong economic growth, optimal utilisation of resources, and effective human resource management. Meanwhile, the social aspect is measured by the level of security, comfort, and ease of access in interacting both between citizens and the government. One of the problems facing urban areas is increasing urbanisation.

Implementing the Smart City concept in practice is not easy. There are several challenges that can hinder its implementation in a region. One of the main challenges is the tendency of local governments to get stuck in a routine, where they may not have prioritised budget allocations from the APBD for Smart City projects. In addition, there is still a perception that Smart City is only related to Information and Communication Technology (ICT) projects, whereas it should be a project to change the work culture that requires considerable investment. Lack of technical human resource capacity is also a problem, and uneven infrastructure is a challenge in realising Smart City.

To support various urban infrastructure development activities and provide good services to the community, the Local Government needs adequate technology to be able to carry out all its activities. In creating a global, competitive society, as well as a smart and livable city, each Local Government must set the right policy by preparing a quality future city development concept, called *Smart City*. The smart city concept is believed to be a solution to the problem of urban development in the region. Smart Cities are designed to be able to increase the productivity of the people who live in them, so that due to the arrangement and management of cities carried out by utilising information and digital technology optimally in all aspects. Starting from the building management system, environmental quality management, and public services. In short, cities are developed into economic and productivity engines that ultimately make their people healthy, productive and prosperous. Successful government programmes have a variety of strategies and ways to gain recognition and trust from the public that the City does have advantages over existing regions. To create the City as a *Smart City,* the government continues to realise the infrastructure needed by the community.

The Indonesian government targets 100 *smart* cities by 2045 (Dwi, 2019). The Movement towards 100 *Smart Cities* is a joint programme of the Ministry of Communication and Information, Ministry of Home Affairs, Ministry of PUPR, Bappenas and the Presidential Staff Office. It aims to guide the Regency / City in preparing a *Smart City* Master Plan in order to maximise the use of technology, both in improving community services and accelerating the potential that exists in each region. Currently, the *Smart City*

concept has begun to be implemented in several regions in Indonesia, one of which is Bandung. The implementation of the *smart city* concept developed by the Bandung City Government is based on the Bandung Mayor Regulation Number 1470 of 2018 concerning the Bandung Smart City Master Plan 2018-2023. The Bandung City Government began to support the implementation of the *Smart City* concept through the provision of applications that can facilitate the provision of services to the community. However, in its implementation there are still obstacles in several aspects, such as in terms of uneven communication, lack of supporting resources, and hampered by the bureaucratic structure in the Bandung City Government. In addition, on a national scale, the implementation of *smart cities* also encounters similar obstacles, such as local governments stuck in routine (No APBD, No Smart City), the assumption that smart cities are the same as ICT projects not as a change in work culture, low technical human resource capacity, uneven ICT infrastructure, and lack of commitment from local leaders (Bambang Dwi, 2020). Thus, a study is needed to develop strategies that can be used to overcome obstacles in implementing *Smart City*, especially in Bandung City so that the expected goals can be achieved optimally.

2. RESEARCH METHODS

This research uses a descriptive research method with a qualitative approach with a research design, namely a case study. This design is focused on one object that is observed and wants to be understood in depth. Through this research method, the author wants to get answers to the problems that occur more clearly and in-depth about the role of bureaucracy in developing smart cities in Bandung City which are analysed based on data, theories and aspects of the study that are used as parameters by researchers. In this study, data were obtained from various sources, using data collection techniques. the data came from manuscripts, interviews, field notes, personal documents, memo notes, and other documents. the principle of qualitative research is naturalistic or natural. it is called naturalistic because the research field situation is "natural" or natural, as it is without being manipulated, regulated by experiments or tests. this research does not test a hypothesis but only wants to know the state of the variables independently, not connecting between one variable and another systematically, therefore the research method uses a qualitative approach.

3. RESEARCH RESULTS AND DISCUSSION

From the results of research on the role of bureaucracy in the development of smart cities in Bandung City that Smart City is a city whose instruments are interconnected and function intelligently. Smart City is a smart city concept that helps the people who live in it by managing existing resources efficiently and providing the right information to the community / institution in carrying out its activities or anticipating unexpected events. Smart City tends to integrate information into the lives of city dwellers. There are several indicators or supporting factors in realising a smart city, namely:

Smart Economy; is a concept that emphasises the quality of innovation and the ability to face competition. The higher the level of innovation, the more new business opportunities will emerge, as well as increasing competition in the capital market. This concept also refers to smart urban development, with efficient and effective utilisation of resources and natural potential. Economic growth is considered an important indicator in measuring the progress of a region over a period of time, which in turn is expected to increase the income and welfare of the community as a whole.

- Smart mobility

Proficiency in improving transport systems and infrastructure is an important part of strengthening urban infrastructure planning. The management of urban infrastructure to be developed in the future should be an integrated system, with a focus on the public interest.

- Smart Environment
  Resource sustainability and smart neighbourhoods refer to an environment that is able to provide comfort, maintain resource sustainability, and present both physical and non-physical beauty, which can be enjoyed by the community and the public. A clean, orderly environment with stable green open spaces is an example of the implementation of this smart neighbourhood concept.

- Smart People
  Creativity and social capital are important elements in development. The capital needed includes economic capital, business capital, and social capital. Gaining easy access to capital and training for Micro, Small and Medium Enterprises (MSMEs) can improve their skills in developing businesses. Social capital includes aspects such as trust, co-operation, tolerance, respect, exchange, and collaboration, which have a significant impact on economic growth through various means, such as increased responsibility towards the public interest, wider participation in democratic processes, increased social harmony, and reduced crime rates.

- Smart living
  Smart Living or Quality of Life is a concept that indicates that humans have a measurable standard of living, or culture. This quality of life is dynamic, which means it is always striving to improve. The advancement of human culture is directly or indirectly linked to education. Therefore, quality education is a guarantee of quality culture, and conversely, quality culture is the result of good education.

- Smart Governance
  A key factor in successful governance is the concept of Good Governance, which encompasses paradigms, systems, and processes of governance and development management that respect principles such as the rule of law, humanity, justice, democracy, participation, transparency, professionalism, and accountability. It also includes a commitment to implementing the values and principles of decentralisation, efficiency, effectiveness, clean, accountable and competitive government.

4. DISCUSSION

Bandung has a Smart City Development Council, also known as the Smart City Council. This council consists of various elements of the community and the Bandung City government. Realising Bandung as a Smart City is not an easy task, so in implementing the Smart City program, the Bandung City Government still faces various problems, the first problem is related to communication, namely the socialisation carried out by the Bandung City Government has not been evenly distributed in each region and the policy has not been fully implemented by other districts / cities. To support the implementation of Smart City in the regions, Bandung City has donated nine applications to facilitate services in each region. However, in its implementation, the Smart City policy has not been fully implemented in several areas in Bandung due to various obstacles faced. One of the main

obstacles is inadequate infrastructure, such as network connection problems that have not been evenly distributed throughout the city of Bandung.

To overcome this problem, the Bandung City Government is working to improve network infrastructure by building daktin, which is the lowering of electrical cables through pipes into the underground, as well as creating MCF (microcellful) for the spread of mobile phone signals. The construction of daktin aims to maintain the safety and comfort of the community in accessing services, as well as to beautify the aesthetics of the city's spatial layout to make it look neat. In addition, the uneven socialisation in each region is due to the low level of technological literacy in the community. Many residents are not familiar with technology and rarely access the internet or other media, so information is not conveyed properly. In fact, the Bandung City Government has made various socialisation efforts through various media such as print, online, radio, and TV.

The Bandung City Government has tried to make the people of Bandung more internet literate by providing free internet networks throughout Bandung. After the community is internet literate, the government also endeavours to make the community willing to report any complaints through internet services. The government also organised internet training for civil servants. The next problem is related to human resources. Human resources are an important aspect in achieving Smart City, but the fact is that the placement of employees in the government is not in accordance with their expertise.

Currently, the government is still in the stage of placing human resources who are reliable in the field of information technology (IT). To support the Smart City programme, the Bandung City Government is recruiting outsourced IT personnel. This recruitment is very strict, out of a thousand applicants only five people are accepted because they are experts in the IT field. These experts are very important in supporting the implementation of Smart City, as stated by the Head of Telematics Infrastructure and the Head of General Subdivision at the Communication and Informatics Office of the Bandung City Government.

Regarding the disposition or attitude of policy implementers, for a policy to be effective, implementers must know and have the ability to implement it. However, until now there are still some things that are difficult to change, especially related to bureaucratic behaviour. For example, in terms of licensing, there are still many city government officials who work too slowly. Bureaucratic behaviour is very influential in building a Smart city, so the implementation of the Smart City program must produce a city that is efficient for the community, livable, with good public services, high economic levels, and orderly and neat infrastructure. The Bandung City Government is trying to realise this by building Smart People to support Smart City. However, to create Smart People is not easy so the Mayor of Bandung first builds Smart Government because the government is the main implementer in Smart City. The last problem relates to the bureaucratic structure. Policy implementers must know and understand what to do in implementing a policy. However, in its implementation, not all understand the policies made. Therefore, the Bandung City Government held special training to explore the Smart City programme for employees, especially those in the Communication and Informatics Office because this office is the main implementer.

The first step in supporting the creation of Smart Cities is that each Local Government must establish a vision, mission, strategy, and development goals and programmes that reflect the concept of smart cities. This means making the city a Competitive, Comfortable, Caring, and Prosperous Metropolitan City. A Metropolitan City encompasses its role as the centre of government, local political life, economic growth in trade and services, social activities, arts, and culture, and modern settlements with an integrated level of socio-economic activities. The focus is also on creating tranquillity, order, and comfort, as well

as the provision of sophisticated, quality, and integrated infrastructure and facilities, and efficient urban and environmental spatial planning.

The strategy to create a Smart City involves the utilisation of Information and Communication Technology (ICT), which will support the development of Smart Economy, Smart Mobility, Smart Environment, Smart People, Smart Living, and Smart Governance. The critical stage is an important phase that connects the concept and reality. The ideal concept is reflected in policy documents, while the reality is how people face various social, economic, political, and legal problems. The critical stage illustrates the important condition of local government in providing smart public services, with the management of information and communication technology.

This critical phase includes understanding the concept of Smart Cities, the pillars of Smart City development, the development paradigm, and the components of Smart Cities. The Smart City concept is an approach that uses information technology and smart public services to address various city issues, including population growth, ICT infrastructure, economic, political, cultural issues, and a change in governance paradigm.

Until now, the concept of Smart Cities is still not entirely clear. This is because there is no regulation that specifically regulates Smart Cities. Local governments still rely on regulations related to certain aspects of Smart Cities, such as Law 25/2004 on the National Development Planning System, Law 11/2008 on Electronic Information and Transactions, Law 14/2008 on Public Information Disclosure, Law 25/2009 on Public Services, and Law 23/2014 on Local Government.

Barriers To Smart City In Bandung City

The obstacles faced by the smart city policy in Bandung can be seen from various angles, including communication, resources, disposition, and bureaucratic structure. In terms of communication, the problem relates to the lack of evenly distributed socialisation. This causes difficulties in implementing the smart city policy among the community and other stakeholders. In addition, the lack of information about existing systems and applications makes some people unaware of the existence of these facilities. In terms of resources, the Communication and Information Office of Bandung City Government faces a shortage of labour in the field of Information Technology. The presence of competent staff in the field of technology is essential to support the successful implementation of the Smart City policy. However, simply increasing the number of staff is not enough; experts who have special expertise in technology are needed so that the implementation of tasks can be carried out properly in accordance with smart city policies.

In terms of infrastructure-related aspects of internet services, aside from its development, there are still many problems that need to be addressed. One issue that is quite important is the problem of cables, which are the main communication infrastructure for the community, which is currently still a mess. Internet services for the community are also not yet evenly distributed and optimised.

In fact, infrastructure is the most fundamental thing because when infrastructure is adequate, development can be carried out effectively and efficiently. The limited internet network is an obstacle to the implementation of the *Smart City* programme in Bandung City. This is because the Bandung City Government still rents *bandwidth* from third parties and does not have its own infrastructure. Of these needs, Diskominfo does not yet have standards. At the beginning of the implementation of *smart government* in the Bandung City *Government*, it was not followed by the readiness of supporting infrastructure such as the internet network. The aspect of bureaucratic structure is also an obstacle in itself, including *Operating Procedures* that cannot be understood by Bandung

City Government employees, especially by employees who are in the Communication and Information Office.

5. CONCLUSIONS

The implementation of the *Smart City* concept developed by the Bandung City Government is based on Bandung Mayor Regulation Number 1470 of 2018 concerning the Bandung Smart City Master Plan 2018-2023. In implementing the *Smart City* concept, the Bandung City Government has designed several activity programmes to be able to achieve the goals that exist in the implementation of this *Smart City* concept. With many people in Bandung who are technologically literate, it is an opportunity to be able to implement the *Smart City* concept, through several policiesand development programmes by raising aspects of the *Smart City* concept, both in the application of *smart government* to create more transparent and accountable government services that can facilitate the provision of services to the people of Bandung. In this case Smart Governance, Smart Environment, Smart Economy, Smart Living, Smart Mobility, Smart Society, and Smart People, help in the process of developing smart cities, although in its implementation there are various obstacles, both from the aspect ofcommunication, where there is a lack of socialisation related to the application launched. Then, related to the human resources of the policy implementers themselves in implementing the *Smart City* concept. The disposition of the attitude of policy implementers who are still not ready, both infrastructure and human resources themselves, which can affect the achievement of the implementation of the *Smart City* concept and *Operating Procedures* that cannot be understood by Bandung City Government employees, especially by employees at the Communication and Information Service.

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