

JAKARTA SMART CITY GOVERNANCE: POLICY, ACTORS, AND FINANCING

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Article history: received 00 0000000 0000; revised 00 0000000 0000; accepted 00 0000000 0000

Abstract. This study aims to investigate how Jakarta Smart City is managed from a policy, actor and funding perspective. Jakarta, which is currently not the nation's capital, is trying to transform into a business center and global city through the Jakarta Smart City strengthening initiative to realize a smart city 4.0 ecosystem that accommodates synergy between residents and the city government. Jakarta Smart City governance is the key to achieving the ideals of smart city development that contributes to improving the quality of life of its residents. This study is an inductive study using an exploratory descriptive approach. Data collection methods are carried out by literature reflection, analysis of planning and regulatory documents, and in-depth interviews with city officials, practitioners, and academics. The findings show that the development of smart cities in Indonesia cannot be separated from two levels of policy, namely the central government policy level that supports the national smart city program including digital transformation, especially in terms of providing digital infrastructure, and the city government policy level which turns out to be more complex in managing the smart city ecosystem both within the city government and also towards public services. The relationship between actors in the smart city ecosystem is important in shaping the digital space of Jakarta Smart City. In terms of findings, the findings show the need to develop innovative schemes in financing the initiation of smart city projects.

Keywords: smart city; governance; digital leadership; urban policy

I. INTRODUCTION

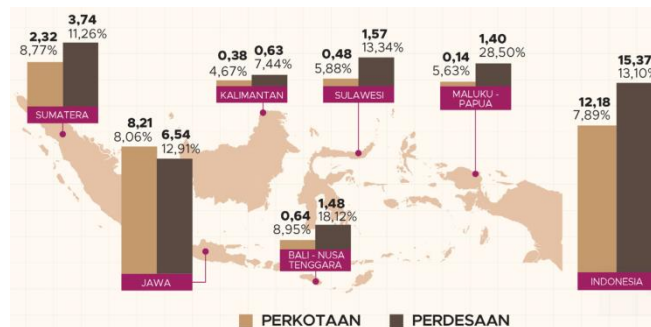
Urban development planning will prioritize efforts to solve the problem of declining quality due to various classic problems of a city, both in terms of supporting infrastructure and the social side of its residents. Urban planning is conceptualized to ease the burden of the city which is generally built based on a reliable functional approach, decent housing, business places, offices, recreation, and green open spaces (RTH), as well as other needs. This functional approach is widely used in the design of modern cities and one of them is the development of the smart city concept (Batty, et. al., 2012; Ammara, et., 2022; Kiritmat, et. al., 2020).

The concept of a smart city is expected to be able to answer current challenges in city problems that often occur. Not only in terms of supporting infrastructure, in line with the continuing decline in the quality of city infrastructure, a city's guarantee to improve conditions will create public distrust of the government which will ultimately trigger social problems. This phenomenon of physical and social problems, in the long term, will make a city increasingly uncomfortable for a career (Wilson, 2012; Sennett, 2021).

The government through the National Urban Development Policy and Strategy (KSPPN) aims to realize the National Urban Vision, namely the Sustainable City 2045 which is Inclusive, Prosperous, Green and Resilient. The national urban vision contains answers to multidimensional and multisectoral urban problems and challenges in the form

of global competitiveness and socio-cultural geographic potential (Friedmann, 2005; Adu-McVie, et, al., 2021).

Gambar 1 Jumlah (juta orang) dan Persentase Penduduk Miskin Menurut Pulau (Maret 2021)



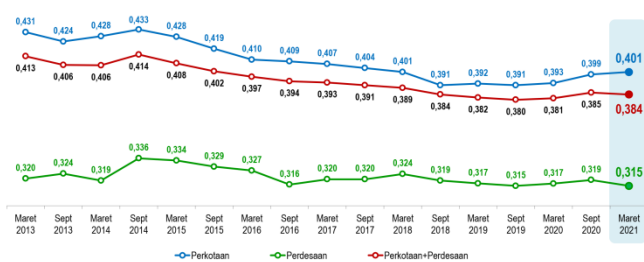
Sumber: Berita Resmi Statistik No. 53/07/Th.XXIV, 15 Juli 2021

The laws and regulations governing urban development, such as Law No. 26 of 2007 concerning Spatial Planning, emphasize the importance of spatial planning that integrates various aspects, including social, economic, and environmental. In the context of developing the smart city concept, this law emphasizes that each spatial plan must consider the principles of infrastructure and inclusiveness, where the management of infrastructure and public spaces

must be designed to improve the quality of life of the community. In addition, the theory from the book "Sustainable Urban Development" by Yigitcanlar (2015) emphasizes that a successful city is a city that is able to adopt technology effectively to support efficient resource management and increase community participation in city development. This is in line with the strategy carried out by KSPPN which aims to create a city that is not only environmentally sustainable, but also resilient to social and economic change (Jati, et, al., 2023; Wahyudi, 2021; Felasari, 2021)

Smart city planning means city planning both from the external side such as connectivity between cities, relations between cities and villages, provision of residents' needs, and the internal side that provides more services to its citizens and related to regional planning. Two important things in city development, namely first; Providing the desired changes to meet the needs of city infrastructure and transportation facilities that are bound along with population growth, second; Covering the vastness of the city, because the development of urban space requires a large space but limited space is an unavoidable obstacle. Urban problems and challenges require intelligent city planning, development, and management. In relation to this, Cohen (2012) has a simpler opinion regarding the concept of a smart city, instead of taking a narrow view of a smart city by seeing it as a place that utilizes information and communication technology (ICT) better, a smart city should be seen more generally which combines increasing the efficiency of city operations, the quality of life of its citizens, and being able to grow the local economy.

Gambar 1 Tren Gini Ratio Perkotaan dan Perdesaan Tahun 2013 - 2021



Sumber: Berita Resmi Statistik No. 53/07/Th.XXIV, 15 Juli 2021

The government and various institutions have identified various components of Smartcity, all of which end in the understanding that the success of smartcity development in Indonesia cannot be separated from intelligent collaboration between stakeholders such as the Government, Regional Government, Private Sector, Universities, Community and Donor Institutions at various stages starting from planning and design, implementation, monitoring and control as well as financing and the application of Smart Integration which involves community participation supported by reliable management and infrastructure (Marimuthu, et, al., 2022).

Muffiz in Kahya and Zenju (1996) stated that policy implementation is an activity carried out to implement a policy effectively. The top-down policy implementation model known for its direct and indirect impacts on implementation introduces four variables that determine the success of implementation in public policy. The four variables are: communication, resources, disposition, and bureaucracy.

Quoted from the book Cities for All, Proposals and Experiences Against the Right to the City published by the Habitat International Coalition (HIC), the right to the city can be realized if society guarantees a full role as citizens in the following 17 points: (1) City democratic management; (2) Equality without discrimination; (3) Special protection for groups of people facing critical problems; (4) Social commitment from the private sector; (5) Stimulants for economic solidarity; (6) Social planning and city management; (7) Social environment that supports productive social life; (8) Equal and sustainable city development; (9) Right to public information; (10) Freedom and Integrity; (11) Right to justice; (12) Right to security, tranquility, support and encouragement for a multicultural life; (13) Right to air, access, and completeness of public and domestic city facilities; (14) Right to public transportation and city mobility; (15) Right to organization; (16) Right to work; and (17) The right to a clean and sustainable environment.

If the seventeen points are associated with Lefebvre's opinion, then ideally, there is no degrading of each individual in the utilization of urban space. Moreover, the community itself should be involved in the procurement of all these components. But in reality, not many cities have been able to realize this. The reason is because the government or stakeholders are distracted by other goals and are greatly influenced by neoliberalism, so that the city is not for the collective interest but for the interests of massive capital owners. This causes other groups whose interests are marginalized and become marginalized (Williams, 2000; Baur, et, al., 2010).

When associated with Henri Lefebvre's thinking, the idea of the right to the city demands that every individual has equal access to urban space without discrimination. Lefebvre emphasized the importance of active community participation in designing and managing the city, so that they not only receive benefits, but are also the main actors in creating an inclusive and sustainable urban environment. However, in practice, this principle is often hampered by the influence of neoliberalism, where city policies and governance tend to prioritize the economic interests of large capital owners over the needs of the general public. As a result, only elite groups get the full benefits of urban development, while other groups, especially marginalized ones, are increasingly excluded from access to urban space and facilities (Sutton, & Kemp, 2011; McGranahan, et, al., 2016; Graham, 2000).

In the Indonesian context, various ministerial regulations and policies should be the basis for realizing an inclusive city in accordance with the principle of the right to the city. For example, the Regulation of the Minister of Public Works and Public Housing (PUPR) No. 02/PRT/M/2016 concerning Sustainable Urban Development, emphasizes the importance

of equitable urban development, taking into account social, economic, and environmental aspects. In addition, Law No. 26 of 2007 concerning Spatial Planning also regulates that spatial planning must accommodate the interests of the wider community. However, even though this legal framework exists, its implementation often does not go as expected due to the strong influence of neoliberalism and large capital interests. Several opinions expressed by the Habitat International Coalition (HIC) in *Cities for All* also show that there are still many challenges in implementing inclusive policies in urban areas. Therefore, greater evaluation and commitment from all stakeholders are needed to ensure that the right to the city can truly be enjoyed by all levels of society.

II. RESEARCH METHODS

This study is designed as an exploratory descriptive study. The descriptive side analyzes the governance of Jakarta Smart City planning and explores exploratively in answering the questions of how/how and why/why smart city in Jakarta seems difficult to realize.

The qualitative research method used in the study is part of an effort to collect, define, and interpret various existing information such as news, planning documents, and in-depth interviews with various related parties. This study uses an inductive approach to produce a complete description of the procedures, determinants, and future policy recommendations.

Primary data collection was conducted purposively through in-depth interviews with 10 key informants consisting of 3 people from the Jakarta Special Region Provincial Government, 4 people from the Central Government, 2 people from academics, 1 person from the information and communication technology industry. The planning documents described are in the form of government regulations, ministerial regulations, Jakarta governor regulations, and other planning documents.

In addition to interviews, this study also utilizes secondary data from various sources such as annual reports, scientific articles, and statistical data relevant to Jakarta Smart City planning. This secondary data is used to enrich by providing historical analysis context and trends that occur, so that it can validate the findings from the primary data. According to Creswell (2020), the use of secondary data in qualitative research provides a broader perspective in understanding complex phenomena.

Data analysis was conducted using the thematic analysis method, which allows researchers to identify key patterns in the data that support the research objectives. Braun and Clarke (2021) explain that thematic analysis is an iterative process that involves systematically coding data and identifying significant themes. This process is carried out carefully to ensure that the themes that emerge truly reflect the existing reality.

The validity and reliability of the study were maintained by conducting data triangulation, which involves comparing data from multiple sources to ensure the consistency and accuracy of the findings. According to Yin (2020), triangulation is an important technique in qualitative research to increase the credibility of research results. In addition, researchers also

conducted member checks to confirm the findings with informants to ensure that the interpretation of the data was in accordance with their experiences and views.

III. RESULTS AND DISCUSSION

In the study entitled *Smart City Governance in Jakarta: Policies, Actors, and Funding*, the discussion focuses on three key aspects that influence the success of Smart City implementation in Jakarta. First, the policies governing the implementation of Smart City show a strong synergy between central and regional policies, where the central government provides a regulatory framework and general direction, while the regional government adjusts these policies to the specific conditions of Jakarta. This coordination is important to ensure that the Smart City program is not only aligned with national priorities but also relevant and effective at the local level. Second, the relationship between internal actors, namely the DKI Jakarta Regional Government, and external actors such as the information technology (IT) industry, is a crucial factor in driving this initiative. Collaboration between the government as policy makers and project managers with the IT industry as providers of advanced technology solutions allows for the creation of innovations that are in accordance with the needs of the people of Jakarta. Third, Smart City financing, which involves funds from various sources such as the government budget, private investment, and international cooperation, is also an important element in ensuring the sustainability of the project. This diversification of funding sources ensures that the Smart City initiative has sufficient financial support to develop the infrastructure and technology needed to improve the quality of public services in Jakarta.

1. Policy: Central and Regional

a) National Policy Framework:

The central government plays a key role in establishing the policy and regulatory framework for the implementation of Smart City in Indonesia, including Jakarta. This framework is important to ensure that each region has clear guidance in developing smart cities in accordance with the national vision. According to Firmanzah (2014), effective public policy must be able to provide clear and specific direction so that it can be implemented properly at the local level. The policy framework provided by the central government covers various aspects, from technology standards, infrastructure, to governance needed to support smart cities.

In the context of public policy theory, Dunn (2012) stated that good policies must be able to accommodate local needs while meeting national goals. In Indonesia, the Smart City policy is designed to provide convenience for local governments in adjusting national standards to local conditions. This is in line with the above view, where the government provides general guidelines that can then be adjusted by local governments, as implemented in downtown Jakarta.

The implementation of this policy is clearly seen in the Jakarta Smart City program, where standards and guidelines set by the central government are adopted and adjusted to the unique characteristics of the capital city.

For example, information and communication technology, the backbone of Smart City, is used to improve the efficiency of public services, such as licensing services and traffic management. The DKI Jakarta regional government has successfully integrated national standards into their system, demonstrating the success of the policy framework provided by the central government.

Data from the National Development Planning Agency (Bappenas) shows that the implementation of Smart City policies in various regions, including Jakarta, has had a positive impact on improving public services and government efficiency. Based on the Bappenas report (2022), the implementation of Smart City in Jakarta has increased the effectiveness of city management by 15% in the last five years, indicating the success of the implementation of central policies.

b) Policy Adjustments at the Regional Level:

Local governments, especially the DKI Jakarta Regional Government, have an important role in adjusting policies set by the central government to unique local conditions. According to Dye's (2002) public policy theory, policies must be flexible so that they can be adjusted according to the needs and characteristics of a particular region. This flexibility allows regions such as DKI Jakarta to adjust national Smart City policies to the challenges and opportunities that exist in the capital city.

One aspect that the DKI Jakarta Regional Government has adapted is in terms of technology and infrastructure. For example, although the policy center provides general guidelines for the implementation of information and communication technology (ICT) in the Smart City program, the DKI Jakarta Regional Government adjusts its implementation to the infrastructure conditions and needs of Jakarta residents. According to Jakarta Smart City data (2024), the implementation of ICT in Jakarta has been adjusted to urban challenges such as traffic congestion and the need for more responsive public services.

From the perspective of policy implementation, Sabatier (1986) stated that adaptation policies at the local level are very important for the success of the policy. This can be seen in how the DKI Jakarta Regional Government implemented the Smart City program. They did not only follow the central guidelines rigidly, but also made modifications and innovations to ensure that the policy was effective in the field. For example, the ICT-based traffic management system developed in Jakarta not only followed national standards but also showed higher traffic density in Jakarta compared to other cities in Indonesia.

Data from the Jakarta Smart City (2024) report shows that this policy adjustment has had a significant impact. The efficiency of city management has increased, and citizen satisfaction with public services has also increased by 20% in the last five years. This emphasizes the importance of adaptation policies by local governments in achieving broader policy goals.

c) Coordination Between Central and Regional Governments:

Effective coordination between central and local governments is a crucial element in ensuring consistent and effective policy implementation. According to Berman's (2001) public management theory, intergovernmental coordination is needed to achieve common goals and address challenges at various levels of government. This coordination involves intensified communication and clear role divisions, allowing each party to understand their responsibilities and contributions to policy implementation.

In Indonesia, the Smart City policy underlines the importance of this coordination. Data from the National Development Planning Agency (Bappenas, 2023) report shows that communication between the central and regional governments is carried out through various forums and mechanisms, such as coordination meetings and joint training. This approach aims to ensure that policies set at the central level can be translated appropriately at the regional level, according to the local context.

The theory of decentralization by Oates (2006) emphasizes that the division of authority and responsibility between the central and regional governments must be carried out clearly to avoid overlap and conflict. The implementation of the Smart City policy in Jakarta shows how this division of roles is applied. For example, the central government sets general standards and guidelines, while the DKI Jakarta Regional Government is responsible for adjusting and implementing them according to the needs of the city. The Jakarta Smart City Report (2024) notes that clear division of roles and intensive communication have contributed to the success of policy implementation, with increased efficiency of public services and citizen satisfaction.

Overall, good coordination between the central and regional governments ensures that policies can be implemented consistently and effectively, which in turn supports the achievement of Smart City policy objectives in various regions.

d) Support and Guidance from the Central Government:

The central government plays a crucial role in enhancing the capacity of local governments through training, funding, and coaching support for Smart City implementation. According to the administrative capacity theory by Peters (2001), such support is essential to ensure that local governments have the resources and skills needed to implement policies effectively. Funding, in the form of budget allocations and grants, helps local governments access the technology and infrastructure needed for Smart City projects, while coaching and mentoring enhances the capacity of human resources at the local level.

Data from the Ministry of Communication and Information report (2022) shows that the central government routinely provides funds and training to local governments to support Smart City projects. For example, training programs organized by the central government include workshops and seminars on information

technology, data management, and smart city planning. This is in line with the capacity building theory by Zobrist and Hock (2006) which emphasizes the importance of training in strengthening local capabilities.

The implementation of this support is reflected in various Smart City projects in Indonesia. In Jakarta, the central government has provided funds for the development of digital infrastructure and training for local government staff in the use of new technologies. The Jakarta Smart City Report (2024) notes that this support has improved the local government's ability to design and manage Smart City projects, which has had a positive impact on the quality of public services and community satisfaction.

Overall, the support provided by the central government helps ensure that local governments can implement Smart City solutions more effectively, address local challenges, and better meet community needs.

2. Actor Relationship: Internal Local Government and External: IT Industry

a) Internal Government

The relationship between internal actors in local government, especially the DKI Jakarta Regional Government, plays an important role in the implementation of the Smart City policy. According to Law of the Republic of Indonesia No. 23 of 2014 concerning Regional Government, the structure of regional government must involve various internal actors, including regional heads, regional secretaries, and various technical agencies. This law establishes the legal basis for the division of tasks and responsibilities among internal actors, ensuring that all parties coordinate in implementing policies.

Regulation of the Ministry of Home Affairs of the Republic of Indonesia No. 70 of 2019 concerning Regional Government Information Systems clarifies the roles and responsibilities of internal actors in using technology to improve public services. This regulation regulates how related agencies must collaborate in data collection, analysis, and communicating information to the public, which is part of the Smart City initiative.

The governance theory by Klijn and Teisman (2003) states that collaboration between internal actors in local government is essential to achieve common goals. They argue that good integration and coordination between various agencies and local officials will increase the efficiency and effectiveness of public policies. This implementation theory is seen in the management of the Smart City project in Jakarta, where coordination between the Communication, Informatics, and Statistics Agency, as well as other agencies such as the Transportation Agency and the Health Agency, play a key role in planning and implementing various technology initiatives.

Data from the Jakarta Smart City report (2024) shows that good internal structures and communication between internal actors have increased the effectiveness of Smart City projects in Jakarta. For example, in developing a

smart transportation system, collaboration between the Transportation Agency and the Communication, Informatics, and Statistics Agency ensures that the system built is in accordance with user needs and can interact with existing technology.

Overall, clear regulation of roles and responsibilities between internal actors of the DKI Jakarta Regional Government, determined by existing regulations and laws, as well as governance theory, is key to the effective implementation of Smart City policies.

b) External: IT Industry

The relationship between local governments (Pemda) and external IT industry is very important in implementing Smart City policies. Law of the Republic of Indonesia No. 11 of 2008 concerning Information and Electronic Transactions, which was later amended by Law No. 19 of 2016, provides a legal framework for the use of information in public services and e-Government. This law regulates the need for private sector involvement, including the IT industry, in providing technological solutions that support government efficiency and transparency.

Regulation of the Ministry of Communication and Informatics of the Republic of Indonesia No. 4 of 2016 concerning the Implementation of Electronic Systems and Transactions also explains how the government and the IT industry must collaborate to ensure the security and quality of the information systems implemented. This regulation sets standards for IT service providers, including security certification and compliance with personal data protection policies.

The theory of public-private collaboration by Osborne and Brown (2005) states that partnerships between the public and private sectors can increase innovation and efficiency in the implementation of public policies. They argue that the involvement of the IT industry in Smart City projects allows the government to leverage the latest technical expertise and innovation, which is difficult to achieve with internal government resources alone. The implementation of this theory is seen in Smart City projects in Jakarta, where collaboration with large technology companies such as IBM and Cisco has contributed to the development of smart infrastructure, such as traffic management systems and digital security solutions.

Data from the Jakarta Smart City (2024) report shows that the involvement of external IT industries has increased technical capacity and innovation in various projects. For example, a traffic management system developed with a global technology company has helped reduce congestion and improve road safety in Jakarta. The partnership also supports the integration of the latest technologies, such as the Internet of Things (IoT) and big data analytics, in improving public services.

Overall, the relationship between local governments and external IT industries plays a key role in the implementation of Smart City policies, with support from

laws, regulations, and public-private collaboration theories.

3. Smart City Funding

Smart City funding in Jakarta is regulated through various regulations and laws that provide a legal basis for the allocation of budget and resources. Law No. 23 of 2014 concerning Regional Government gives authority to regional governments to manage finances related to Smart City initiatives. Through this law, regional governments can allocate the Regional Revenue and Expenditure Budget (APBD) to add technology projects that support digital city transformation.

Minister of Home Affairs Regulation No. 21 of 2011 concerning the Implementation of Regional Financial Administration provides specific guidance on the management of funds used for Smart City projects. This regulation regulates the planning, budgeting, and reporting and auditing processes of funds, so that public funds can be used efficiently and transparently. This ensures that every expenditure related to Smart City can be accounted for in accordance with applicable financial regulations.

From a theoretical perspective, Flyvbjerg et al. (2003) in their theory of large project management emphasize the importance of risk management and strict supervision in large-scale projects such as Smart Cities. This theory is relevant in the context of Jakarta Smart City because of the many challenges in terms of funding, including the risk of cost overruns and long-term funding. Good planning and effective use of funds are the keys to the success of a Smart City project.

In its implementation, Jakarta Smart City funding comes from a combination of APBD, public-private partnerships, and grants from international institutions. For example, several projects such as the integration of intelligent transportation systems and city data development platforms are funded through collaboration with the private sector, which helps reduce pressure on local government budgets and ensures the long-term viability of the projects.

Overall, the funding model for Jakarta Smart City demonstrates the importance of clear regulations, well-implemented project management theory, and cross-sector collaboration. This approach helps ensure that Smart City projects achieve their goals of improving people's lives through technology and innovation, while maintaining accountability and transparency in the use of public funds.

IV. CONCLUSIONS

The study "Jakarta Smart City Governance: Policy, Actor, and Financing" provides an in-depth understanding of the complexity of Smart City governance in Jakarta. First, from a policy perspective, this study emphasizes the importance of close coordination between central and regional government policies in supporting Smart City initiatives. This integrated

policy is important to create a framework that supports the implementation of digital technology across various public sectors. This policy alignment enables the implementation of more effective e-governance systems, which ultimately increases the efficiency of public services and public participation in government.

Second, this study also examines the relationship between the actors involved, namely internal actors in local government and external actors such as the IT industry. It was found that collaboration between the two parties is crucial in the development and implementation of innovative technologies. Local governments need support from the private sector, especially the IT industry, to provide technology solutions that are tailored to the needs of the city. This collaboration not only accelerates the digital transformation process but also ensures that the resulting innovations are relevant and can be operated well in the local context.

Third, this study highlights the importance of sustainable funding strategies in ensuring the long-term success of Smart City programs. Various funding sources, including local government budgets and public-private partnerships, are key in supporting Smart City projects. This approach not only reduces the government's financial burden but also encourages private sector participation in digital infrastructure development. With sufficient funding, Jakarta can continue to develop and adapt the advanced technologies needed to address future urban challenges.

Overall, this study confirms that Jakarta's success as a Smart City is highly dependent on the harmonization of central and regional policies, close relationships between internal and external actors, and innovative and sustainable funding strategies. All of these are solid foundations for Jakarta to continue to develop into a smart and inclusive city.

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