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COLLABORATION BETWEEN GOVERNMENT, PRIVATE SECTOR, AND COMMUNITY IN SMART CITY DEVELOPMENT PLANNING

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ABSTRACT: The development of information and communication technology has encouraged various cities in Indonesia to transform towards the concept of *smart cities*. The success of smart city development is not only determined by technological sophistication, but also by the effectiveness of collaboration between the government, the private sector, and the community. This study aims to examine the forms and roles of multi-stakeholder collaboration in smart city development planning in Indonesia. The method used is a literature study with a descriptive qualitative approach. Data were obtained from various national journal articles, books, and policy documents related to *smart cities*. The results show that smart city planning is still dominated by the government, while the involvement of the private sector and the community is not yet optimal. It is necessary to strengthen collaborative mechanisms, expand public participation, and establish long-term partnerships with the private sector. Thus, smart city development can be more effective, inclusive, and sustainable.

Keywords: Smart City, Multi-stakeholder Collaboration, Government, Private Sector, Community.

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INTRODUCTION

The rapid development of information and communication technology has encouraged various cities in Indonesia to transform towards the concept of a smart city. This concept not only emphasizes the use of digital technology in providing public services but also on strengthening efficient, participatory, and sustainable city governance. In its implementation, the success of smart city development is highly dependent on multi-stakeholder collaboration between the government, the private sector, and the community. The government acts as a regulator and policy facilitator, the private sector plays a role in providing technology and funding, while the community acts as an active subject in the planning, implementation, and supervision of city development.

Indonesia is currently experiencing rapid urbanization. More than 56% of Indonesia's population lives in urban areas, and this figure is projected to increase to 60% by 2030. This growth in urbanization poses major challenges for the provision of public services, transportation, the environment, and urban infrastructure. The central government has launched the 100 *Smart Cities* Movement to support the digital transformation of cities in Indonesia. As of 2023, 251 districts/cities have received assistance to implement smart city governance. However, implementation data shows that the level of city readiness for smart city indicators is still uneven. For example, the fulfillment of *smart city* indicators only reached 51.88% in Bandung City, 50.38% in Yogyakarta City, and even only 16.03% in DKI Jakarta. This data indicates a significant gap between national policies and implementation readiness at the regional level. Nevertheless, the challenges of multi-stakeholder collaboration in *smart city* planning in Indonesia are still quite significant. Many local governments face limitations in establishing cross-sector coordination, lack of public participation, and the private sector's role in supporting the smart city agenda in a sustainable manner is not yet optimal. In fact, good collaboration can accelerate innovation, improve the quality of public services, and expand the benefits of development to the wider community. The low level of community participation and private sector involvement is also one of the reasons for the suboptimal achievement of smart city indicators in various regions.

Various national studies have shown the importance of multi-stakeholder collaboration in the planning and implementation of smart cities. Research by Kurniasari, Purnomo, and Salsabila (2020) revealed that collaboration between the Yogyakarta City Government and PT Gas Negara played a significant role in supporting the development of smart city infrastructure, particularly in the use of clean energy technology. Furthermore, research by Nurhayati (2022) found that community participation in the socialization of the *Jakarta Smart City* program is still not optimal, especially in terms of communication and public awareness, so a more inclusive collaborative strategy is needed. Additionally, research by Mulyaningsih, Widiastuti, and Fauzi (2024) emphasizes that the readiness of local governments to adopt *smart cities* greatly depends on their

collaborative capacity in establishing strategic partnerships with various development actors. Research by Pradana and Putra (2025) also emphasizes the importance of synergy between public policy, private technology, and local community wisdom in creating urban development that is adaptive to the local context.

Based on this research and data, it can be concluded that smart city development in Indonesia will not run optimally without a strong, focused, and participatory collaboration mechanism between the government, the private sector, and the community. The disparity in readiness between regions is evidence that the smart city development approach cannot rely solely on government policy or private technology. Therefore, this study will examine multi-stakeholder collaboration in *smart city* development planning through a literature review method, with the aim of providing conceptual and strategic insights that can be used as a basis for formulating inclusive and sustainable smart city development policies.

LITERATURE REVIEW

a. The Concept of Smart Cities

A smart city is a modern urban development concept that integrates information technology, policy innovation, and community participation to create more adaptive, efficient, and sustainable city management. According to Komninos (2011), smart cities do not only rely on digital technology, but also integrate technology with city governance and community social life. The main objectives of smart cities are to improve the quality of life of the community, improve the efficiency of public services, strengthen government transparency, and encourage regional economic development.

In general, the concept of a smart city is built on six main pillars, namely smart governance, smart economy, smart mobility, smart environment, smart society, and smart life. These six pillars are interrelated and serve as a reference in designing targeted urban development strategies. In the Indonesian context, this concept began to be developed systematically through the 100 Smart Cities Movement since 2017, with the aim of encouraging regions to integrate technology and governance. However, its implementation does not only depend on technological infrastructure, but also on the participation and collaboration of various parties, including the community. According to Harrison and Donnelly (2011), smart city development requires open governance and an integrated data system. Thus, city planning can be carried out in a responsive and adaptive manner. Therefore, a smart city is not merely a digital transformation, but a transformation of how the government, community, and private sector collaborate in managing the city.

b. Multi-Stakeholder Collaboration in Development Planning

Multi-stakeholder collaboration is an important approach in realizing inclusive and sustainable smart city development. This collaboration involves the active participation of three main actors, namely the government, the private sector, and the community. In the context of urban development, multi-stakeholder collaboration is not merely technical coordination, but a process of

unifying vision, resources, and responsibilities to achieve common goals. According to Ansell and Gash (2008), effective multi-stakeholder collaboration is characterized by open and communication, mutual trust, and the involvement of all parties in the decision-making process.

This collaboration is important because smart city development is complex and cross-sectoral. The government cannot work alone in providing digital infrastructure, smart transportation systems, environmentally friendly energy, and technology-based public services. Support from the private sector is needed for the provision of technology and financing, as well as community participation to ensure that development truly meets public needs. Multi-stakeholder collaboration also allows for the pooling of different expertise and capacities: the government provides policies and regulations, the private sector contributes innovation and funding, while the community provides input and ensures that programs are transparent and accountable.

In smart city planning, multi-stakeholder collaboration is usually realized through public consultation forums, public-private partnerships (PPPs), memoranda of understanding (MoUs), and the formation of cross-sector teams. Through these mechanisms, all parties can be involved from the planning stage, not just during implementation. Well-established collaboration also helps accelerate the city development process because decisions are made after considering various interests. In addition, multi-stakeholder collaboration can strengthen the legitimacy of public policy. Communities involved from the outset will have a sense of ownership of the programs being implemented, thereby increasing participation and compliance rates. This is particularly important in the Indonesian context, where public participation is often a challenge in policy implementation.

c. The role of government in Smart Cities

The government has a central role in the planning and implementation of smart city development. As the main policy maker and director of development, the government is responsible for formulating the vision, mission, and strategic direction of city development. In this case, the government acts as a regulator that sets rules, guidelines, and legal frameworks to ensure that smart city programs run in accordance with the principles of transparency, accountability, and sustainability. According to Nam and Pardo (2011), the success of a smart city is largely determined by the extent to which the government is able to create open and responsive governance that encourages community participation.

In addition to being a regulator, the government also acts as a facilitator of multi-stakeholder collaboration. The government functions as a bridge between the interests of the private sector and the community, and ensures that the development process runs within the framework of public interest. For example, in smart transportation projects, the government regulates and sets policies, the private sector provides technology and financing, while the community becomes active users and supervisors of the service. Thus, the government is not only the sole decision maker, but also the director of a collaborative process that brings together various development actors.

The government also plays an important role in providing basic infrastructure. For example, the development of internet networks, city data centers, integrated public service systems, and cyber security regulations. This infrastructure is the backbone of successful smart city implementation. Without adequate infrastructure support, multi-stakeholder collaboration will not run optimally because program implementation will be technically hampered.

However, many local governments in Indonesia still face serious obstacles in managing smart city programs. These challenges include limited human resources, low technological capacity, and a lack of coordination between agencies. In addition, complex bureaucratic issues often hinder the process of collaboration with the private sector and the community. Therefore, the government needs to strengthen digital governance, improve coordination mechanisms, and open up wider participation for all parties. The role of the government is also very important in ensuring the sustainability of smart city programs. The government must be able to ensure that smart city development is not just a short-term project, but a long-term program that has a real impact on society. The government must also be able to ensure that the involvement of the private sector is not only oriented towards economic profit, but also provides broad social benefits.

d. The Role of the Private Sector in Smart Cities

The private sector has a strategic role in the development of smart cities, especially in terms of technology provision, financing, and innovation. The government cannot finance all smart city projects independently, so collaboration with the private sector is very important. According to Batty (2013), the private sector is often the main actor in introducing new technological solutions that are more efficient and innovative. This can be seen in various sectors such as smart transportation, digital parking systems, renewable energy, and data-based city management. In addition to providing technology, the private sector can also act as a strategic partner in long-term financing through public-private partnership (PPP) schemes. This scheme allows for faster development of smart city infrastructure due to the sharing of risks and responsibilities between the government and the private sector. Thus, the burden of financing is not entirely borne by the government, while the private sector has the opportunity to contribute to urban development while reaping economic benefits.

The role of the private sector can also be expanded to the planning stage. In many cases in Indonesia, private sector involvement is still limited to the project implementation stage. However, if the private sector is involved from the early planning stages, smart city programs can be designed to be more realistic, innovative, and efficient. This involvement also encourages the creation of solutions that are more suited to local needs. For example, in the development of smart transportation systems in big cities, the private sector not only provides applications, but is also involved in system design and its integration with public policy. However, collaboration with the private sector also has its challenges. One of them is the potential conflict of interest between business orientation and public interest. Therefore, the government must have clear regulations so that

cooperation with the private sector continues to prioritize the interests of the wider community. Transparent and participatory supervision is key to preventing private domination in strategic decision-making.

e. The Role of the Community in Smart Cities

The community is the main actor at the center of the smart city development concept. Without community involvement, the smart city concept will not run optimally. The community is not only the beneficiary of various smart city programs, but also an active partner involved in the planning, implementation, and oversight processes. According to Caragliu, Del Bo, and Nijkamp (2011), successful smart cities always place the community as co-creators of policy, not merely objects of development. Community involvement can be carried out in various ways, such as public consultation forums, development planning meetings (*musrenbang*), digital surveys, complaint platforms, and direct involvement in the monitoring of public policies. Through this active participation, the community can convey their aspirations and input so that smart city programs truly reflect the real needs on the ground.

In addition, the community can also play a role in overseeing policy implementation, thereby encouraging the creation of a more transparent and accountable government. However, community involvement in smart city development in Indonesia still faces various obstacles. One of them is the low level of digital literacy among the community, especially in areas that do not yet have adequate access to technology. In addition, not all local governments provide open and easily accessible spaces for public participation. This situation prevents the community from being fully involved in smart city planning. Therefore, the government needs to expand access to public information, improve the community's digital literacy, and strengthen transparent and inclusive participation mechanisms. The private sector can also play a role in supporting public education on the use of city technology. If the public has good digital literacy and is actively involved, smart city development will be more inclusive, responsive, and sustainable.

The community can also become agents of change through local initiatives, such as technology communities, youth groups, and civil society organizations that contribute to urban monitoring and innovation. Thus, the community is no longer just a spectator but an integral part of the smart city development process.

METHODOLOGY

This study uses a literature review (library research) method with a descriptive qualitative approach. This method was chosen because the study focuses on collecting and analyzing secondary data in the form of theories, research results, and policy documents relevant to the theme of multi-stakeholder collaboration in smart city development planning in Indonesia. A qualitative approach was used to understand the phenomenon in depth and describe the relationship between the government, the private sector, and the community in the context of smart city development. Research data sources were obtained from various secondary literature such as national journal articles, academic books, laws and regulations, and official publications from government agencies (e.g., Kominfo, Bappenas, and the Coordinating Ministry for Economic

Affairs). Data search was conducted systematically through national journal databases such as Garuda Ristekdikti, Sinta, and university publication portals, using the keywords: smart city, multi-stakeholder collaboration, local government, private sector, and community participation.

Data analysis was performed using content analysis in three stages: (1) data reduction, which involved selecting relevant and credible literature; (2) data presentation, which involved grouping the findings based on the theme of collaboration between actors; and (3) drawing conclusions, which involved identifying patterns, challenges, and strategies for multi-stakeholder collaboration that are effective in *smart city* planning. The results of the analysis were then presented descriptively to illustrate the relationship between theory, policy, and practice of collaboration in various regions in Indonesia.

RESEARCH RESULT

The development of smart cities in Indonesia has seen significant growth over the past decade. The 100 Smart Cities Movement program launched by the central government is one of the strategic steps to encourage digital transformation in various regions. According to data from the Ministry of Communication and Information Technology of the Republic of Indonesia (Kominfo), as of 2023, there are 251 districts/cities that have received assistance to develop smart cities through national programs. This number has increased compared to when the program was first launched in 2017, which only covered 25 cities/districts. The increase in the number of program participants shows that the concept of smart cities is increasingly being accepted by local governments in Indonesia, both large and medium-sized cities. However, a high number of cities does not automatically indicate success in its implementation, as success depends heavily on effective multi-stakeholder collaboration, not just the number of cities that join. The high rate of local government participation is also influenced by increasing urbanization pressures. Based on World Bank data, more than 56% of Indonesia's population lives in urban areas, and this figure is predicted to continue to increase to 70% by 2045. This mass urbanization creates major challenges in the provision of public services, transportation, environmental management, and city governance. Therefore, the implementation of smart cities is considered an adaptive strategy for managing cities with a technology-based and cross-sector collaboration approach. However, to address these urbanization challenges, multi-stakeholder collaboration is essential to ensure that policies and technological solutions truly meet the needs of the community. The role of the government in smart city development cannot be separated from its function as the main regulator, facilitator, and coordinator. The government has the authority to formulate policies, determine the direction of urban development, and ensure the harmonious involvement of all parties. In the national context, the government, through the Ministry of Communication and Information Technology of the Republic of Indonesia, has encouraged the implementation of Satu Data Indonesia (One Data Indonesia) to strengthen interoperability and information governance at the regional level. According to the 2023 Kominfo report, around 73% of cities participating in the smart city program have

integrated some of their sectoral data into the Satu Data system, but only around 38% are truly capable of optimally operating cross-OPD data integration.

This gap shows that although the government has a central role, institutional capacity and digital infrastructure vary greatly between regions. Large cities such as Bandung and Yogyakarta recorded smart city readiness indicator fulfillment rates of 51.88% and 50.38%. However, large cities such as DKI Jakarta only achieved 16.03% in certain indicators. These figures show that the scale of a city's economy does not always correlate directly with its readiness to implement smart city initiatives. These differences in readiness are largely influenced by weak cross-sector coordination, limited digital human resources, and the low effectiveness of data use for planning and development. In addition, many local governments still rely on directives from the central government rather than local initiatives based on community needs. In some cases, the planning process is still carried out in a top-down manner, so that collaboration with the community and the private sector is only a formality. In fact, an effective smart city requires the active involvement of various parties from the planning stage, not just the implementation stage. The private sector plays an important role as a driver of innovation in smart city development. Through public-private partnerships, the private sector can contribute to infrastructure financing, the provision of digital technology, and the development of smart systems such as transportation, city security, and energy management. Data from the Ministry of Communication and Information Technology shows that more than 60% of cities participating in the smart city program have established cooperation with at least one private partner, particularly in the fields of information technology, internet networks, and smart transportation. However, most of these collaborations are still operational and vendor-based, rather than long-term strategic partnerships.

The limited involvement of the private sector at the implementation level is a major obstacle. If the private sector is only involved when the project is already underway, the opportunities to align visions, design joint solutions, and build integrated city systems will be drastically reduced. Several cities, such as Surabaya and Bandung, have set positive examples by involving the private sector from the early stages of planning: they have successfully built integrated digital city platforms that connect public services with community needs, such as e-Government and smart mobility systems. This model of collaboration needs to be expanded to other cities to ensure the sustainability of smart city programs. One key element in smart city development that is often overlooked is community participation. In fact, the community is not only a recipient of services, but can also be a co-creator in designing city solutions. According to a digital literacy survey conducted by the Ministry of Communication and Information Technology of the Republic of Indonesia in 2023, Indonesia's national digital literacy rate stands at 3.65 on a scale of 5, which indicates a "moderate" category. In addition, internet penetration in Indonesia has reached 77% of the population (approximately 212 million users), indicating a very large base for digital participation.

However, public participation in the smart city planning process remains limited. Many regions do not yet have digital-based public participation

mechanisms such as transparent and easily accessible e-participation platforms. Internet infrastructure disparities in regions outside Java also exacerbate these participation disparities. This means that despite the great potential of the community, the space for participation remains narrow. Without active community involvement in the planning and evaluation stages, smart city development tends to be elitist and top-down. A fairly successful example is the city of Semarang, which developed the Lapor Hendi and e-Usulan platforms that allow residents to provide direct input on urban development planning. This mechanism increases transparency, speeds up the decision-making process, and strengthens public accountability. Other cities can replicate this model to expand the role of the community as active subjects in smart city development. Based on all the findings, it can be concluded that multi-stakeholder collaboration is the main foundation for the success of smart city development. The government, private sector, and community have complementary roles. The government acts as a guide and regulator, the private sector as a driver of innovation and financing, while the community becomes an active subject that ensures development proceeds in accordance with real needs. When the three elements of work together synergistically, smart cities can become instruments of social, economic, and urban governance transformation.

However, in reality, multi-stakeholder collaboration in Indonesia still faces serious challenges. Many regions do not yet have formal collaboration forums, regulations supporting public-private partnerships are still limited, and community participation is often symbolic. In addition, differences in technological readiness between regions cause disparities in implementation success. Therefore, strengthening collaboration mechanisms must be a national priority, not just the procurement of technology. Strategic steps that can be taken include: (1) expanding collaboration forums that involve all stakeholders from the planning stage; (2) establishing regulations that guarantee the role of the private sector and the community in smart city development; (3) expanding digital literacy and public access to city platforms; and (4) strengthening cross-sector data governance so that collaboration can run efficiently and support public-private partnerships. Therefore, strengthening collaboration mechanisms must be a national priority, not just the procurement of technology. Strategic steps that can be taken include: (1) expanding collaboration forums that involve all stakeholders from the planning stage; (2) establishing regulations that guarantee the role of the private sector and the community in smart city development; (3) expanding digital literacy and community access to city platforms; and (4) strengthening cross-sector data governance so that collaboration can run efficiently and transparently.

DISCUSSION

The results of the study show that *smart city* development in Indonesia is experiencing rapid growth in terms of quantity, but the quality of its implementation is still uneven across regions. The government plays an important role as a strategic director and policy maker, but capacity varies between regions. The private sector is a driving force for innovation and financing, although currently most of their involvement is still at the

implementation stage, not strategic planning. On the other hand, the community has great potential as active subjects in *smart cities*, supported by high internet penetration and a fairly good level of digital literacy. However, not all regions have inclusive and transparent digital public participation mechanisms. Therefore, the effectiveness of smart city development cannot be achieved through technology alone, but requires strong and structured multi-stakeholder collaboration between the government, the private sector, and the community. The study also shows that *smart city* planning still faces several challenges, such as the dominance of the government's role, suboptimal public participation, and limited private sector involvement in certain projects. Therefore, strengthening collaborative mechanisms is key to accelerating the implementation of smart cities in various regions in Indonesia.

CONCLUSION AND RECOMMENDATIONS

The results of the study show that *smart city* development in Indonesia is experiencing rapid growth in terms of quantity, but the quality of its implementation is still uneven across regions. The government plays an important role as a strategic director and policy maker, but capacity varies between regions. The private sector is a driving force for innovation and financing, although currently most of their involvement is still at the implementation stage, not strategic planning. On the other hand, the community has great potential as active subjects in *smart cities*, supported by high internet penetration and a fairly good level of digital literacy. However, not all regions have inclusive and transparent digital public participation mechanisms. Therefore, the effectiveness of smart city development cannot be achieved through technology alone, but requires strong and structured multi-stakeholder collaboration between the government, the private sector, and the community. The study also shows that *smart city* planning still faces several challenges, such as the dominance of the government's role, suboptimal public participation, and limited private sector involvement in certain projects. Therefore, strengthening collaborative mechanisms is key to accelerating the implementation of smart cities in various regions in Indonesia.

The government needs to expand public participation through consultation forums, digital platforms, and the involvement of local communities in the smart city planning process. Second, the private sector should not only be a technology provider but also a strategic partner in innovation and long-term financing. Third, the community must be empowered as co-creators of urban development through education, digital literacy, and direct involvement in public policy oversight. With the formation of balanced and sustainable collaboration, smart city development in Indonesia can run more effectively, efficiently, and in line with the needs of the community.

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BIBLIOGRAPHY

- Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571. <https://doi.org/10.1093/jopart/mum032>
- APEC & National Standardization Agency. (2023). Mapping the Implementation of ISO 37122 for Smart Cities in Indonesia. <https://bsn.go.id>
- Batty, M. (2013). *The New Science of Cities*. MIT Press.
- Caragliu, A., Del Bo, C., & Nijkamp, P. (2011). Smart Cities in Europe. *Journal of Urban Technology*, 18(2), 65–82.
- Coordinating Ministry for Economic Affairs of the Republic of Indonesia. (2024). Digital Transformation and Smart Cities for Sustainable Development. Retrieved from <https://ekon.go.id>
- Fitriadi, Y., & Fahmy, R. (2021). Quadhelix Model Collaboration in Smart City Development: A Theoretical Review. *JESYA (Journal of Economics and Sharia Economics)*, 5(2).
- Harrison, C., & Donnelly, I. A. (2011). The Theory of Smart Cities. *Proceedings of the 55th Annual Meeting of ISSS*.
- Irsyada, N. A., & Oktapatika, S. (2023). The Role of Government in Realizing a Smart City in Tanjungpinang City. *Journal of Sustainable Regions, Cities and Environments*, 2(2), 109-116.
- Khristianto, T., Handoko, W. T., Prasetyo, A., & Budiarmo, Z. (2020). The important role of community involvement in the implementation of Smart City in Semarang City. *IKRA-ITH Informatika: Journal of Computers and Informatics*, 8(1).
- Komninos, N. (2011). Smart Cities: The Geometry of Spatial Intelligence. *Intelligent Buildings International*, 3(3), 172–188.
- Kurniasari, L., Purnomo, E. P., & Salsabila, L. Collaboration Between PT Gas Negara and the Yogyakarta City Government in Realizing a Smart City. *Noken Journal: Social Sciences*, 5(1), 35-45.
- Kurniasari, L., Purnomo, E. P., & Salsabila, L. (2020). Collaboration between PT Gas Negara and the Yogyakarta City Government in realizing Smart City. *Jurnal Noken: Social Sciences*, 5(1).
- Ministry of Communication and Information Technology of the Republic of Indonesia. (2023). *Movement towards 100 smart cities: Development of program implementation*. <https://www.smartnation.or.id>
- Ministry of Communication and Information Technology of the Republic of Indonesia. (2023). *Indonesia Digital Literacy Index*. <https://aptika.kominfo.go.id>
- Ministry of Communication and Information Technology of the Republic of Indonesia. (2023). *Indonesian Internet Penetration Statistics 2023*. <https://kominfo.go.id>
- Mulyaningsih, S., Widiastuti, H., & Fauzi, M. (2024). Local government readiness in adopting Smart City: Analysis of multi-stakeholder collaboration in Indonesia. *Journal of Administrative Transformation*, 14(1), 77–88.
- Nam, T., & Pardo, T. A. (2011). Conceptualization of smart cities with

- technological, human, and institutional dimensions. *Proceedings of the 12th International Digital Government Research Conference*, 282–291.
- Nurhayati, E. (2022). Community participation in the socialization of the Jakarta Smart City program. *UMA Journal of Government and Social Politics*, 10(2), 112–120.
- Nurhayati. (2022). Community participation in the Jakarta Smart City program. *Indonesian Journal of Government Science*, 7(2), 145–158.
- Pradana, R., & Putra, M. (2025). Synergy between public policy and technology in adaptive city development. *Journal of Governance and Administration*, 4(1), 55–67.
- Wahyuni, S., Alwi, A., & Nur Indrayati, N. I. (2021). Smart governance implementation strategies in Makassar City (Case study of the RINDU CAPIL program of the Population and Civil Registry Office). *Collaboration: Journal of Public Administration*, 7(3).
- World Bank. (2023). *Urban population (% of total population)*. Indonesia.