



Mataram city towards smart city: a literature review

Bayu Karunia Putra^{1,*}, Kurnia Wati²

¹ Department of Government Science, Faculty of Social and Political Sciences, University of Muhammadiyah Malang, Malang, East Java 65144, Indonesia;

² Islamic Religious Education, Faculty of Tarbiyah and Keguruan, State Islamic University of Mataram, Mataram, West Nusa Tenggara 83125, Indonesia.

*Correspondence: bayukaruniaputra7@gmail.com

Received Date: May 7, 2023

Revised Date: July 1, 2024

Accepted Date: August 30, 2024

ABSTRACT

Background: The concept of a smart city in urban planning is integral to achieving sustainable development by enhancing community services through information and communication technology (ICT). This concept is particularly relevant for the city of Mataram, where smart city initiatives can assist diverse layers of society in their activities and improve urban life quality. **Methods:** This study employs a literature review methodology, gathering sources from databases like Publish or Perish, SINTA, and Google Scholar. A descriptive qualitative approach is used to analyze qualitative data descriptively. Data collection is conducted through literature review techniques to gather comprehensive, valid, and relevant information on the research topic. **Findings:** The research indicates that successful implementation of a smart city in Mataram requires strong collaboration between the government and the community. Active community participation is crucial for creating an effective smart city that aligns with public needs. Additionally, the smart city concept in Mataram empowers the community to recognize existing challenges and anticipate future ones. **Conclusion:** The smart city approach in Mataram City is designed to address the community's increasingly complex and varied needs. However, without adequately understanding these needs, government efforts may fail to deliver targeted smart city services effectively. **Novelty/Originality of This Study:** This study provides unique insights into the collaborative aspects of smart city implementation in Mataram. It highlights the necessity of community involvement in ensuring that smart city initiatives meet real community needs, promoting sustainable urban development tailored to local challenges and potentials.

KEYWORDS: bureaucracy; concept; digitalization; public service; smart city.

1. Introduction

Globalization is the current development of information and communication technology that requires every layer of humanity to be required to issue all forms of new innovations by utilizing internet media as a form of digital information that must be applied in various aspects of life, especially urban development plans (Alkaf & Sutrisno, 2019). Thus, the smart city concept is one of the concepts of the implementation of urban governance that relies on information and communication technology as the main tool in welcoming interaction between the government and society optimally (Rahmadanita et al., 2018). Smart city sustainability is currently an optimal development process, be it structure planning, programs, and evaluation (Ferraris et al., 2020). In addition, the presence of information and communication technology has a great influence on every element forming the structure of urban space (Masucci et al., 2020). Not only that, information and

Cite This Article:

Putra, B. K., & Wati, K. (2024). Mataram city towards smart city: a literature review. *Strengthening Dynamic System e-Government and Public Services*, 1(2), 50-62. <https://doi.org/.....>

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communication technology has a role in transforming the city structure for the future (Sari et al., 2020).

Smart city is an urban development concept that utilizes information and communication technology to improve the quality and effectiveness of services available in urban areas (Yousefi & Dadashpoor, 2020). The use of this concept in urban planning aims to support sustainable development by optimizing public services through the integration of various elements in cities (Gao et al., 2020). These elements include aspects of governance, quality of life, economy, environment, transportation, and human resources. Along with the advancement of information and communication technology, the digitalization era changes the meaning of modern society into a digital society. The digital era or 4.0 encourages innovation in various sectors of life around the world (Nugraha, 2018).

Information and communication technology has a significant influence on the social changes taking place in today's society (Jiang et al., 2020). To successfully implement the smart city concept, solid cooperation between the government and the community is required, as active participation from the community is an important element in achieving more effective smart city goals in the future (Yin & Liu, 2020). Smart city is seen as a concept that gives people a great opportunity to understand the problems around them and prepare for the challenges ahead (Liu et al., 2020). In addition, people can play an active role in the policy-making process, solving urban problems, finding innovative solutions, and improving public services in the city (Bratuškins et al., 2020). The implementation of smart cities is basically designed to answer the increasingly complex and diverse needs of society. However, if the government does not consider the needs of the community appropriately, the implementation of smart cities is at risk of not running on target (Mao et al., 2020).

Smart city development includes comprehensive readiness from the aspects of human resources, regulations, and supporting facilities and infrastructure (Guimarães et al., 2020). However, with the increasing rate of urbanization, there is the possibility of new problems arising in urban areas (Neves et al., 2020). Rapid population growth every year, coupled with limited natural resources, makes urban management increasingly complex. In addition, the high growth rate of society also complicates the problems that arise, including issues of transportation, economy, health, education, and others. A modern and prosperous society certainly has high expectations for the quality of the living environment, adequate public facilities, and ease of access to various public services (Nesti, 2020).

Therefore, the smart city concept is one of the approaches currently being adopted and developed by various cities in the world, including in Indonesia (Korachi & Bounabat, 2020). Smart city is a smart city concept designed to assist people in carrying out their activities by utilizing information and communication technology in an integrated manner (Yuan et al., 2020). In Mataram City, local government policies support smart internal infrastructure, such as providing public wifi networks or wireless internet access (Ghasemi & Saberi, 2020). In addition, as the center of education and tourism in West Nusa Tenggara, Mataram City is a destination for tourists and students from outside the region (Wu et al., 2020). In this context, Mataram City is developing the smart city concept to accelerate sustainable regional development (Zhang et al., 2020).

As an illustration, Jakarta is the first city in Indonesia to implement the smart city concept (Mora, 2020). One of the programs being launched in Jakarta is the MPDT (Multi Purpose Deep Tunnel), an underground tunnel similar to those that have been built in various other countries. The MPDT program is expected to help overcome the flooding problem that often plagues Jakarta. In addition, another smart city concept implemented in Jakarta is the development of rapid transportation such as MRT (Mass Rapid Transit) which operates underground and elevated, and LRT (Light Rail Transit) which operates on elevated lines (W. Li et al., 2020). Surabaya City also adopts the smart city concept with a focus on smart living, which aims to create a decent residential environment, including in former localization areas, as well as a smart environment that is realized through the development of green open spaces (Noori et al., 2020). One of the innovations implemented

is a waste transportation management system called Solid Waste Transportation (SWAT), which serves to identify the volume of waste entering the landfill (Fernandez & Stawasz, 2016).

Furthermore, Bandung City, located in West Java province and known for its mild climate, is also implementing the smart city concept (Helmi et al., 2016). The Governor of West Java, Ridwan Kamil, has designed various smart city initiatives in the province (Nurdin, 2019). This concept mainly focuses on smart government, with the hope that public services can be synchronized with information and communication technology, so that the people of Bandung can access various public services, such as making E-KTP, monitoring projects through CCTV, and channeling citizens' aspirations through digital platforms. In addition, Bandung City is also preparing for the construction of a fast train connecting Jakarta and Bandung, which is expected to boost economic growth in both cities. Finally, in the plan to build a new national capital, President Joko Widodo plans to implement the smart city concept. The President has also established cooperation with countries such as the United Arab Emirates (UAE), South Korea, and Japan to support the development of IKN with a smart city approach (Rukayat, 2017).

The new design for the country's capital city has been announced by the President through a competition (Andhika, 2017). The President's hope is that the development of the new capital city can become a smart city model for other regions, and the application of the smart city concept can expand from the provincial to the national level (Yusriadi & Misnawati, 2017). Thus, realizing a smart city-based city remains a priority in sustainable development in Mataram City to date (Nuril, 2018). It is expected that the implementation of the smart city concept in Mataram City can advance various sectors, especially since Mataram City currently serves as the center of trends in Indonesia, especially in West Nusa Tenggara Province (Cahyono, 2017). Therefore, the Mataram City Government continues to strive to achieve progress by paying attention to all existing aspects (Taufan, 2017).

The Mataram City government also has an important role in supporting and educating the community to build a smart city management system (S. Li et al., 2017). Therefore, it is important to utilize the initiative of the Mataram City government in building a smart city, which can improve the city and further support the community to provide information and communication technology-based services. This strategy aims to strengthen the position of the Mataram City government in developing the city by implementing the smart city concept (Septiyani & Idris, 2019). The implementation of technology systems also aims to increase efficiency for people in Mataram City who are increasingly aware of information and communication technology. The smart city concept is adopted as a method by the Mataram City government to deliver programs that appeal to the community and allow them to contribute synergistically in the development of human resources, which can be referred to as "smart people" (Zamroni et al., 2019).

Not only smart in using information and communication technology, but must be able to use it wisely (Wiratno, 2020). At least Mataram City is the first step in becoming intellectual citizens or "smart people" (Khilmiah et al., 2020). Moreover, what can be learned from "smart people" is what kind of management skills are used by citizens to deliver real actions that are realized in the form of smart people (Ardiansah et al., 2019). Then, to build an idea that is environmentally sound, then to create a big commitment to better maintain and care for a sustainable environment, it requires real cooperation between the central government, local government, various related stakeholders, as well as from the local community (Saputro et al., 2015). Therefore, the purpose of this article is to find out the concept of smart city in urban planning which aims to realize sustainable development by improving community services by applying several elements in Mataram City.

2. Methods

This research utilizes a descriptive qualitative approach to gather and analyze qualitative data comprehensively, providing an in-depth explanation of the phenomena under investigation. The method was chosen to enable a detailed exploration of the research topic, facilitating a nuanced understanding of the various facets involved. Data sources were carefully selected from trusted databases such as Publish or Perish, SINTA, and Google Scholar, ensuring both the accuracy and relevance of the information. By leveraging these reputable sources, the research aims to collect valid and comprehensive information to support its findings and conclusions. Through this descriptive approach, researchers can address the complexity of the topic, generating insights that would be challenging to capture through quantitative means alone.

Data collection was conducted using a literature review technique, which involved systematically gathering, exploring, and organizing relevant information. The researcher followed a structured process, which included selecting pertinent materials from existing literature, organizing study materials in line with the research focus, and extracting important quotations and concepts. Key points were carefully documented and summarized to support the arguments presented in the study. During the data analysis phase, the researcher read and interpreted the information collected, enabling accurate conclusions to be drawn. Through these systematic steps, the research aims to make a meaningful contribution to the field, offering findings that not only deepen understanding but also potentially serve as a foundation for future studies. This descriptive qualitative approach ultimately offers a comprehensive perspective on the topic, aiming to deliver both depth and clarity to the issues under discussion.

3. Results and Discussion

The smart city concept is the concept of implementing urban governance that relies on information and communication technology as the main tool in welcoming the interaction between the government and society to the fullest (Putra et al., 2021). The sustainability of smart cities is currently an optimal development process, be it structure planning, programs, and evaluation (Putra & Dhanuarta, 2021). Thus, smart city is defined as an approach in the development of urban areas that utilizes information and communication technology to improve the quality and efficiency of services in urban areas (Aini et al., 2023). The implementation of the smart city concept in urban planning aims to achieve sustainable development through improving community services by integrating various elements in the urban environment (Wahidah et al., 2023). Currently, smart city has become one of the paradigms applied and developed by various cities around the world, including in Indonesia (Sa'adawisna & Putra, 2023).

The smart city concept serves as a solution to help people accomplish their tasks more effectively, using information and communication technology systematically (Putra & Hijri, 2022). This approach aims to create an environment that is more responsive to the needs of citizens, by integrating various systems that can improve quality of life and facilitate access to public services. By adopting the smart city model, Indonesian cities are trying to keep up with global trends in urban development, where technology is a key factor in improving services and quality of life. This concept not only helps in operational efficiency, but also in empowering the community to be involved in the decision-making process related to their neighborhood.

3.1 Smart city concept that will be applied in Mataram City

Smart City Governance is the basic foundation of the smart/digital city model. This model plays an active role as an engine to drive all elements of the smart/digital city (Putra & Hadi, 2022). Thus, the implementation of smart city governance needs to be done through

three main functions, namely public policy, bureaucratic management, and public services. To improve services to the community, the use of applications must be optimized with an integrated information system in population administration, so that people can find it easy to access services. The application of information and communication technology in government services is not just an application of the smart city concept, but also serves as a tool for implementing Presidential Regulation Number 95 of 2018 which regulates the Electronic-Based Government System (SPBE). SPBE is an important element in the framework of "smart city governance." In addition, the Mataram City Government is expected to strengthen and improve this service system in order to provide maximum benefits to the community. Therefore, in order to realize smart city governance, the government must focus on improving the principles of transparency and accountability, as well as ensuring that corruption, collusion and nepotism (KKN) practices are avoided. With these measures, it is expected that public services can run more efficiently and effectively, have a positive impact on society and encourage better urban development.

Smart City Branding serves as a means to educate the public, tourists, and businesses about the values of a city or region. This concept can be applied through three main elements, namely the tourism sector, business, and regional image. Innovation in promoting the region is an important challenge in development, so to improve competitiveness, it is necessary to develop these three elements: tourism, business sector, and city appearance. The purpose of Smart City Branding is to increase the competitiveness of a region through improving the appearance of the city and utilizing local potential, both at the national and international levels. Furthermore, Smart City Branding acts as a city marketing strategy that aims to create a strong position in the global market. This approach will provide a clear identity for the city, helping to promote various activities within it, especially in the context of regional development, tourism, culture, local products, and city icons. On the other hand, Smart City Branding also improves the competitiveness of the region at local, national and international levels. For example, one of the steps of the Smart City Branding strategy in Mataram City is to increase the number of tourist visits through image marketing that highlights the identity of Mataram City as a metropolitan city. This approach aims to attract visitors and strengthen the positive image of the region in the eyes of the wider community.

Smart City Economy refers to a city concept that focuses on developing a smart economic system through the establishment of a suitable industrial ecosystem, with the aim of improving the welfare of the community and providing infrastructure that facilitates transactions. With the availability of broad access to information, people can increase their economic activities with more efficient operational costs. The implementation of Smart City Economy in Mataram City has received recognition, including an award in the City category at the 2019 Indonesia Digital Economy Award. This award shows that economic activities in Mataram City have shown innovation and have high competitiveness. Smart City Living reflects the concept of a decent residential environment for its citizens, where harmony in community life is one of the main parameters. This harmony should be reflected in various aspects, including the residential environment, commercial facilities, and recreational areas available to the community (Sa'adawisna & Putra, 2022). In the context of Smart City Living, Mataram City stands out with a variety of educational facilities and other important services, such as online registration of new students, tourism portals, traffic surveillance systems with CCTV, traffic management centers, free wifi access in public locations, and online school programs.

Smart City Society creates ideal conditions for interactions between individuals that integrate social and digital elements (Putra, 2022). In this context, every individual is expected to have access to education supported by digital learning facilities. The government has the responsibility to ensure the protection of life safety, property, and disaster risk mitigation for the community. To achieve the goal of Smart City Society, it is necessary to develop an efficient education ecosystem, which includes support between formal and non-formal education, providing opportunities for all levels of society, including people with disabilities, to gain access to education. In addition, the development of educational platforms such as smart schools, smart campuses, smart pesantren, and smart

training programs is also very important. One example is the implementation of an independent campus that supports the Smart City Society initiative in Mataram City.

Smart City Environment is a city's commitment to preserve the environment, manage waste, and utilize energy efficiently. All these initiatives aim to support the sustainability of the existing ecosystem. Under the Smart City Environment category, Mataram City has implemented an early warning system for disasters, an information technology-based waste treatment system, and an information technology-based water quality monitoring system (Farhaini et al., 2022). Since the implementation of these initiatives, Mataram City has continued to improve its services using the Smart City approach and has won various awards, both at the national and international levels, recognizing its efforts in developing the Smart City concept.

3.2 Constraints in the implementation of the smart city concept towards sustainable development in Mataram City

The implementation of the smart city concept in Mataram City encounters several significant challenges that impact the progress toward sustainable urban development. One of the primary obstacles lies in the lack of optimal coordination between regional institutions, which hinders the synergy needed for cohesive smart city initiatives. Effective collaboration among government agencies is crucial, as the complexity of a smart city requires integrated efforts across various sectors. Another challenge is the limited availability of human resources with the necessary expertise in information technology, which is essential to drive technological advancements and support digital infrastructure. Additionally, issues related to the maintenance of public service applications within local agencies have a direct impact on the quality of services delivered to the public, further complicating the smart city implementation process.

Moreover, insufficient socialization and awareness among the public regarding local government innovations reduce the effectiveness of smart city initiatives. When residents are not adequately informed or involved in these technological changes, it becomes challenging to foster a community that actively participates in and supports the smart city transition. Community engagement and understanding are fundamental to the success of smart cities, as they enable the adoption of innovations aimed at improving the quality of life in urban areas. Addressing these obstacles could facilitate stronger synergy between the local government and residents, enhancing both the functionality and sustainability of smart city projects. With increased cooperation, Mataram City can work toward a future that incorporates smart, integrated solutions for urban management and sustainable development.

3.3 Implementation of smart city concept towards sustainable development in Mataram City

Smart City is a concept used to develop and manage cities by utilizing information and communication technology. The goal is to connect, monitor, and manage various city resources in a more effective and efficient way, so as to improve services to the community and support sustainable development (Nurfitriyana et al., 2014). Through this technology-based public service system, Mataram City can monitor the condition of its city in real-time and solve various public problems more efficiently. For example, the Mataram City Government has encouraged the use of digital signatures in all regional apparatus organizations (OPD) and regions to speed up the process of signing administrative documents.

The use of applications must also be optimized through the Integrated Population Administration Service Information System (Sipaku) to facilitate services to the community. This optimization is not only an application of the Smart City concept, but also related to the implementation of Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE). SPBE is one of the dimensions of smart government, so the Mataram City government needs to strengthen this service system (Mirnasari, 2013). In

realizing smart government, it is important to increase transparency, accountability, and avoid corruption, collusion, and nepotism (KKN) practices. In addition, active community participation is needed to support the sustainability of existing programs, with RT/RW playing an important role in gathering participation and strengthening community collaboration for sustainable development in Mataram City. It is expected that RT/RW capacity building can also improve their knowledge and ability to explore the potential of community self-help for the implementation of information and communication technology-based development.

Greater access to information has opened up opportunities for communities to improve their economic activities by reducing operational costs (Havianto, 2014). This shows that economic activities in Mataram City have shown innovation and have a high level of competitiveness. In the implementation of smart city living, various steps have been taken, including spatial harmonization through the implementation of the Gerakan Pungut Sampah (GPS) to create a clean, attractive and comfortable environment. In addition, to support smart city mobility, several initiatives have been implemented in daily transportation, such as Area Traffic Control System (ATCS), bicycle sharing program (Boseh), and e-parking system.

To create a smart city environment, the Mataram City Government has implemented a series of initiatives and infrastructure aimed at improving sustainability and public health. This includes enforcing local regulations on occupational health and safety (Perda K3) and establishing key infrastructure such as biopores, biodigesters, integrated waste management facilities, and deploying street sweeping vehicles alongside cleaning teams (known as GOBER) to maintain cleanliness across the city (Mouw, 2013). The city's long-term plans focus on environmental protection, pollution control, and comprehensive systems for energy and waste management to support these goals. Smart systems for monitoring and managing water and air quality have already been established, helping to maintain environmental standards and respond proactively to pollution. Looking ahead, Mataram envisions developments in green building practices with the introduction of green offices, environmentally friendly public transportation, sustainability-centered educational institutions, and the formation of eco-friendly villages, collectively fostering a city that prioritizes environmental sustainability and quality of life for its residents.

3.4 Obstacles in the implementation of the smart city concept towards sustainable development in Mataram City

The implementation of smart city policies in Mataram City encounters significant challenges across various areas, including communication, resources, disposition, and bureaucratic structure (Aritonang, 2017). From a communication perspective, the lack of widespread socialization efforts results in limited awareness and understanding among both the community and stakeholders regarding the objectives and benefits of smart city policies. Additionally, insufficient publication and promotion of existing smart city systems and applications mean that many residents remain unaware of available services, limiting their potential impact and utilization. To foster broader public engagement and acceptance, more consistent and accessible communication strategies are essential. This includes not only publicizing the benefits of smart city programs but also ensuring that key stakeholders are well-informed and supportive of these initiatives.

In terms of resources, the Mataram City Communication and Information Office is hindered by a shortage of information technology staff, particularly those with specialized skills required for smart city projects. Merely increasing the number of staff is insufficient; targeted expertise is necessary to ensure that the implementation of smart city policies aligns with planned goals and technological needs. Another critical aspect is the infrastructure, where challenges such as inadequate internet coverage and irregularly arranged communication cables persist, impacting both service quality and accessibility. Furthermore, a lack of comprehensive training for officers on their roles within smart city programs weakens operational effectiveness and delays program milestones (Sukmasetya

et al., 2018). Addressing these resource and infrastructure issues is crucial for Mataram City to build a resilient and well-connected smart city environment that serves all residents efficiently.

Adequate infrastructure is fundamental because it can increase the effectiveness and efficiency of development (Walton & Rahemtulla, 2020). The limited internet network hinders the implementation of the smart city program, because currently the Mataram City Government still relies on bandwidth leasing from third parties and does not have its own internet infrastructure. The Communication and Informatics Office also does not have clear standards for this need. Since the beginning of the smart city implementation, the readiness of supporting infrastructure, especially the internet network, has not been adequate. In addition, the aspect of bureaucratic structure is also an obstacle, where operational procedures are not fully understood by employees, especially in the Communication and Information Office.

3.5 Implementation strategy of smart city concept towards sustainable development in Mataram City

The smart city implementation strategy should prioritize collaboration between all relevant parties through effective and efficient communication (Putra, Farhaini, Aini, Nurjannah, Noviana, Ningrum, et al., 2023). The focus is not only on infrastructure development, but also on community empowerment as one of the efforts (Putra, Farhaini, Aini, Nurjannah, Noviana, Padila, et al., 2023). The active role of the government in encouraging community participation is very important in the smart city implementation process (Putra, Farhaini, Aini, Nurjannah, Noviana, Sasmita, et al., 2023). Every city's progress and development should be felt by its citizens. Conversely, existing facilities and technologies in the city will not function optimally without the active involvement of the community in development, utilization, and maintenance.

Citizen participation has a significant role in realizing smart cities (Putra, Farhaini, Aini, Nurjannah, Noviana, & Ismi, 2023). For example, with two-way communication, people can actively convey their aspirations for city improvement. Currently, applications that accommodate community aspirations are starting to develop, enabling the optimization of their resources. This includes the expansion of individual and group economies of scale in communities and villages, which can be done through increased investment in the village economy. This includes procurement and development of production tools, capital, and capacity building through training and apprenticeships.

Support for economic activities through Village-Owned Enterprises (BUMDes) and community economic groups is crucial in enhancing village development and self-sufficiency. Assistance in capacity building for these enterprises, especially in areas like food security programs, empowers villages to manage resources effectively and boost local economic resilience. Programs aimed at organizing communities and offering paralegal training, along with legal aid services, help to equip village residents with the necessary tools to navigate legal challenges. Establishing Village Community Empowerment Cadres (KPMDe) and enhancing Village Community Learning Spaces are essential initiatives that enable knowledge-sharing and skill development. Together, these programs not only promote self-reliance but also foster a culture of learning and empowerment within village communities.

Public health initiatives play a fundamental role in this effort by ensuring accessible healthcare and promoting healthy living in rural areas. Expanding the availability of medical personnel and health promotion campaigns contributes to better health outcomes and an improved quality of life for village residents. In parallel, environmental management programs, such as sustainable village forest and beach conservation efforts, and training in renewable energy use, serve to protect the local ecosystem. Strengthening community capacity for environmental conservation encourages responsible resource management and supports long-term sustainability. Prioritizing these aspects of community welfare,

alongside poverty reduction efforts, lays a strong foundation for a thriving and resilient village ecosystem.

To support the broader smart city agenda, the recruitment of outsourced personnel through the Communication and Informatics Office is essential for advancing Mataram City's digital infrastructure. These recruits would contribute significantly to the management and development of systems within the Mataram Command Center (MCC), which serves as a hub for smart city operations (Putra, Farhaini, Aini, Nurjannah, Noviana, Ussarwan, et al., 2023). This responsibility aligns closely with the mission of the Communication and Informatics Office and requires that personnel have a clear understanding of Mataram City's smart city roadmap. By integrating their efforts with city goals, these employees can drive the smart city concept forward, ultimately supporting village-level development initiatives as well.

Collaboration between leaders and subordinates within the bureaucratic structure is essential to ensure effective implementation of smart city policies in Mataram City. Each Regional Work Unit (SKPD) must be able to connect seamlessly to the Mataram Command Center (MCC) at the Communication and Informatics Office, allowing for coordinated operations across departments. This requires a solid understanding of operational procedures by the Communication and Informatics Office staff, who serve as primary implementers of these policies. Regular training and educational programs are necessary for these employees to build their knowledge and capabilities in smart city operations. Such initiatives help equip the staff with the skills to apply smart city concepts effectively, thereby optimizing MCC functions and enhancing service delivery to the community.

4. Conclusions

The sustainability of smart cities has become a critical component of efficient urban development, incorporating structured program planning and ongoing evaluations to adapt to community needs. The smart city concept focuses on enhancing urban areas through the integration of information and communication technology, aiming to elevate the quality and efficiency of public services. By embedding this approach into urban planning, cities can pursue sustainable development that supports better living standards and service quality for residents. Across the globe, and increasingly in Indonesia, cities are embracing smart city initiatives to simplify daily activities and improve quality of life through digital solutions. This integration not only modernizes public services but also strengthens community engagement in urban governance.

In Mataram City, the smart city framework seeks to blend various elements—such as governance, quality of life, economy, environment, transportation, and human resources—into a cohesive model for modern urban management. The digital era, marked by the rise of Industry 4.0, demands innovative approaches to almost every aspect of daily life, making the adoption of smart technologies vital. The impact of information and communication technology in Mataram is evident in the social shifts taking place, and strong collaboration between the government and residents is essential for success. This model allows the people of Mataram to be active participants in urban decision-making, addressing local issues and contributing to innovative public service solutions. Ultimately, a smart city in Mataram aims to meet the evolving needs of its community, fostering a responsive, sustainable urban environment that aligns with residents' realities and aspirations.

Author Contribution

The author contributed fully to the research.

Funding

This research did not receive funding from anywhere.

Ethical Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Not applicable.

Conflicts of Interest

The authors declare no conflict of interest.

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Biographies of Author(s)

Bayu Karunia Putra, Department of Government Science, Faculty of Social and Political Sciences, University of Muhammadiyah Malang.

- Email: bayukaruniaputra7@gmail.com
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A

Kurnia Wati, Islamic Religious Education, Faculty of Tarbiyah and Keguruan, State Islamic University of Mataram.

- Email: kurniawati040222@gmail.com
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A