



CHALLENGES AND STRATEGIES FOR SMART CITY DEVELOPMENT WITHIN THE FRAMEWORK OF URBAN DEVELOPMENT POLICY IN INDONESIA

Nur Fadilah Guntur^{1*}, Muhammad Iqbal¹, Andi Mahdiana Mardatillah¹, Andi Asyifah Rizky Nasta¹

¹Institut Teknologi dan Bisnis Maritim Balik Diwa, Indonesia

E-mail: nurfadilahguntur94@gmail.com

ABSTRACT

ARTICLEINFO

Article History

Received June, 2026

Accepted July, 2026

Keywords:

Digital Governance;

Infrastructure;

Public

Participation;

Smart City; Urban

Policy

The development of smart cities in Indonesia has become an important policy response to rapid urbanization, increasing demands for public services, and the need for sustainable urban development. However, the implementation of smart-city policies continues to face challenges related to institutional capacity, digital infrastructure, citizen participation, spatial planning, and the preservation of local cultural identity. This study aims to examine the challenges and strategies of smart-city development within the framework of urban development policy in Indonesia. The study employed a narrative thematic literature review, synthesizing 17 sources consisting of national policy documents, conference papers, international journal articles, and conceptual literature. Data were analyzed through source identification, data extraction, thematic categorization, and narrative synthesis. The findings indicate that smart-city development in Indonesia extends beyond information and communication technology and requires the integration of four key dimensions: national spatial and urban policy, institutional capacity and leadership, meaningful citizen participation, and inclusive physical and digital infrastructure. The review also identifies persistent gaps in cross-sectoral coordination, data interoperability, digital inclusion, and collaborative decision-making. Evidence from several Indonesian cities demonstrates that smart-city initiatives are more sustainable when digital innovation is integrated with local cultural identity, environmental considerations, and community participation. The study concludes that Indonesia requires a context-sensitive governance approach that transforms fragmented technology-based initiatives into integrated, participatory, inclusive, and sustainable urban development.



This is an open access article uses Open Journal Systems 3.5.0.0

Published by <https://ojs.ucp.ac.id>

INTRODUCTION

Urban population growth in Indonesia has accelerated significantly in recent decades, placing increasing pressure on cities to provide adequate, inclusive, and sustainable public services. Approximately 56% of Indonesia's population currently lives in urban areas, and this proportion is projected to reach 72.9% by 2045 (Bappenas, 2025). However, the economic productivity generated by urbanization has not increased proportionally. Bappenas (2025) reports that a 1% increase in the urban population is associated with only a 1.6% increase in GDP per capita, considerably below the East Asia and Pacific average of 2.8%. This gap indicates that Indonesian cities have not yet fully transformed urbanization into an engine of

productivity and inclusive economic development. Rapid population growth, increasing demand for infrastructure, environmental pressures, traffic congestion, unequal access to services, and growing demands for effective governance require cities to adopt new approaches to urban management. Within this context, the smart city concept has emerged as an important policy approach for addressing contemporary urban challenges. Nevertheless, a smart city should not be understood merely as the application of information and communication technology (ICT), but as an integrated approach encompassing governance, citizen participation, spatial planning, innovation, environmental sustainability, and local cultural identity (Caragliu et al., 2011; Nam & Pardo, 2011; Hollands, 2008).

The development of smart cities in Indonesia has increasingly been incorporated into national urban development policy. The Ministry of National Development Planning/Bappenas introduced the National Urban Policy 2045 as a strategic framework for developing cities that are balanced, inclusive, green, resilient, and smart (Bappenas, 2025). This policy direction builds upon earlier national initiatives, including the *100 Smart Cities Movement*, which was designed to encourage local governments to develop smart city master plans based on their respective characteristics and development priorities. In its initial implementation, 25 regencies and municipalities signed memoranda of understanding, with an eventual national target of 100 participating cities (Kemendagri, 2023). The initiative involved collaboration among the Ministry of Communication and Information Technology, the Ministry of Home Affairs, the Ministry of Public Works and Housing, and Bappenas, together with academic and private-sector partners such as Universitas Gadjah Mada and Microsoft Indonesia in supporting local smart city road maps (Kemendagri, 2023). This policy trajectory demonstrates that smart city development in Indonesia has evolved from a technology-oriented initiative toward a broader urban governance agenda.

The policy foundation for smart city development can also be traced to the National Medium-Term Development Plan (RPJMN) 2015–2019, which explicitly promoted accelerated urban development to create cities that are safe, comfortable, green, resilient to climate change and disasters, smart, and competitive (Kementerian PPN/Bappenas, 2015). Subsequent policy frameworks have continued to emphasize integrated urban development, digital transformation, infrastructure modernization, and improved public services. At the local level, these national directions have been translated into various smart city master plans, including those developed by Mataram, Malang, and Makassar. The decentralization of smart city planning provides opportunities for local governments to adapt digital and governance innovations to local needs; however, it also produces differences in institutional capacity, financial resources, infrastructure readiness, and leadership commitment across cities.

Despite nearly a decade of policy intervention, the global performance of Indonesian cities indicates that significant implementation challenges remain. The IMD Smart City Index 2025 placed Jakarta at 103rd, unchanged from the previous year, while Medan ranked 113th and Makassar 114th (Fokal, 2025). These rankings suggest a persistent gap between the ambition of national smart city policies and their outcomes at the city level. More importantly, global rankings should not be interpreted merely as measures of technological advancement. Smart city performance depends on whether digital innovation is translated into better public services, greater citizen participation, more responsive institutions, sustainable infrastructure, and improved quality of urban life (Giffinger et al., 2007; Albino et al., 2015). Thus, the central challenge for Indonesia is not simply to increase the number of cities adopting smart city

master plans but to ensure that these plans generate measurable improvements in urban governance and community welfare.

Several structural problems contribute to this implementation gap. Mahayani (2024), in evaluating smart city implementation in Indonesia, identified inadequate technological infrastructure, weak inter-institutional system integration, and persistent digital literacy disparities as major challenges. The study further emphasized that inter-agency coordination remains a critical obstacle, indicating that smart city development requires sustained collaboration among government, industry, academia, and citizens. This finding is consistent with the broader smart city literature, which emphasizes that technological infrastructure alone cannot produce smart urban development without institutional capacity, governance innovation, and social inclusion (Meijer & Bolívar, 2016; Mora et al., 2017).

The national digital divide further illustrates this challenge. The Indonesian Internet Service Providers Association (APJII, 2025) reported national internet penetration of 80.66%, equivalent to approximately 229.4 million users out of 284.4 million people. However, access remains geographically uneven. Internet penetration reached 84.69% in Java, compared with 69.26% in Maluku and Papua and 71.64% in Sulawesi. A substantial urban-rural disparity also remains, with penetration reaching 85.53% in urban areas compared with 76.96% in rural areas, representing an 8.57-percentage-point gap (APJII, 2025). These disparities demonstrate that digital transformation cannot be implemented uniformly across Indonesia without considering differences in infrastructure, geography, socioeconomic conditions, and digital capabilities.

Smart city development therefore requires a shift from a technology-centered approach toward a place-based, inclusive, and governance-oriented strategy. The availability of digital infrastructure must be accompanied by institutional integration, interoperable data systems, competent public-sector human resources, digital literacy, citizen participation, and sustainable financing. Moreover, Indonesian cities possess diverse cultural identities and spatial characteristics that cannot be addressed through a standardized smart city model. As Nam and Pardo (2011) argue, smart city development involves the interaction of technology, institutions, and human capital, while Hollands (2008) cautions against reducing the smart city to a purely technological project. Consequently, local governments need strategies that combine technological innovation with social, institutional, spatial, environmental, and cultural dimensions.

Based on these conditions, the existing policy framework—from the *100 Smart Cities Movement* to the National Urban Policy 2045—requires continued examination of its relevance and implementation capacity in addressing the actual challenges faced by Indonesian cities. This study therefore seeks to systematically examine the challenges and strategies of smart city development within Indonesia's urban development policy framework. The review has three main objectives: first, to map the conceptual development of the smart city from national and international literature; second, to examine its relationship with national spatial and urban policy frameworks as well as institutional and participatory practices in Indonesian cities; and third, to analyze the spatial, cultural, infrastructural, and governance dimensions that shape smart city implementation. By integrating these dimensions, the study aims to formulate a more context-sensitive strategy for smart city development that strengthens urban resilience, institutional capacity, digital inclusion, public participation, and sustainable urban development in Indonesia.

METHOD

This study employed a literature review using a narrative thematic approach, drawing on the literature review framework proposed by Snyder (2019), thematic analysis by Braun and Clarke (2006), and narrative synthesis principles developed by Popay et al. (2006). The literature review was used to identify, evaluate, and synthesize relevant scholarly studies, policy documents, empirical evidence, and statistical information concerning smart city development in Indonesia. Thematic analysis was applied to identify recurring patterns, relationships, key themes, and research gaps across the selected sources. This approach was considered appropriate because the study sought to synthesize findings from diverse policy documents, empirical studies, and evaluations of smart city implementation rather than test hypotheses through primary data collection. The analysis focused on understanding how smart city policies have been formulated and implemented, the challenges encountered by Indonesian cities, and the strategies proposed to strengthen smart city development within the broader framework of urban development policy.

The analysis was conducted through four sequential stages. First, source identification and selection involved searching for and selecting relevant academic articles, government policy documents, official reports, and statistical data related to smart cities, urban development, digital transformation, and governance in Indonesia. Second, data extraction involved recording key information from each source, including publication year, source type, policy substance, research focus, and major findings. Third, thematic categorization involved organizing the extracted information into major analytical themes, including national policy frameworks, implementation outcomes, digital infrastructure and readiness, institutional capacity, digital inequality, stakeholder participation, and challenges in smart city development. Fourth, narrative synthesis integrated and interpreted findings across the identified themes to reveal recurring patterns, gaps between policy objectives and implementation, and relationships among technological, institutional, social, and spatial factors. Following Popay et al. (2006), the synthesis emphasized comparison and interpretation across heterogeneous sources, while the thematic procedure of Braun and Clarke (2006) provided a systematic basis for organizing the evidence. This process ultimately supported the formulation of context-sensitive strategies for smart city development aligned with Indonesia's urban development policies and the diverse characteristics of its cities.

Table 1. Summary of Reviewed Literature

No.	Main Theme	Key References	Synthesized Findings
1	Smart City Concept and Dimensions	Giffinger et al. (2007); Caragliu et al. (2011); Albino et al. (2015)	Smart city development extends beyond technology and encompasses smart economy, people, governance, mobility, environment, and living. Human and social capital, digital infrastructure, quality of life, and participatory governance are essential components.
2	National Urban Policy and Governance	Kementerian PPN/Bappenas (2015); Lestari (2020);	Indonesian urban policies increasingly promote smart, competitive, resilient, and inclusive cities. However, institutional capacity, cross-agency

		Windari & Arimbawa (2020)	coordination, leadership, and local-level implementation remain major challenges.
3	Spatial Planning and Urban Infrastructure	Pramana (2020); Faza & Andani (2020); Hirsan et al. (2020); Surur (2020); Kurniawan (2020)	Smart-city development requires integrated spatial planning, adequate infrastructure, efficient mobility, environmental carrying capacity, and innovative urban-space management. Uneven urban growth and infrastructure limitations remain significant concerns.
4	Culture and Local Identity	Putra (2020); Reza et al. (2020); Laksana et al. (2020)	Smart-city planning needs to integrate local culture, heritage, traditional values, and spatial identity. Technological modernization should not undermine the social and cultural meaning of urban spaces.
5	Participation and Collaborative Governance	Arnstein (1969); Afdhal et al. (2022); Khaerah et al. (2026)	Meaningful citizen participation, collaborative decision-making, data-based governance, and co-creation are important for smart-city development. Existing practices, however, often remain limited to consultation or partial participation.
6	Overall Strategic Implication	Synthesis of all reviewed sources	Smart-city development in Indonesia requires an integrated approach combining digital infrastructure, institutional capacity, spatial planning, environmental sustainability, cultural preservation, and meaningful public participation. The major challenge is transforming fragmented sectoral initiatives into coordinated, inclusive, and context-sensitive urban governance.

RESULTS AND DISCUSSION

Smart City Concepts and Definitions

The concept of a smart city has evolved from a predominantly technology-oriented perspective toward a multidimensional approach encompassing governance, human capital, infrastructure, mobility, environmental sustainability, and quality of life. Giffinger et al. (2007) identified six core characteristics of smart cities: smart economy, smart people, smart governance, smart mobility, smart environment, and smart living. Caragliu et al. (2011) further conceptualized smart cities as urban environments that invest in human and social capital and modern communication infrastructure to promote sustainable economic growth, quality of life, and participatory governance. Meanwhile, Albino et al. (2015), through a

systematic review, demonstrated that no universally accepted definition of a smart city exists because its meaning and implementation vary according to local social, economic, technological, and institutional contexts.

The Indonesian literature reflects this broader understanding. Hirsan et al. (2020), drawing on Schaffers (2011) and Kourtit (2012), emphasize that smart cities require the integration of human resources, infrastructure, and participatory governance. Cohen and Boyd (2013), as cited by Hirsan et al. (2020), further emphasize the role of information and communication technology in improving urban operational efficiency and energy use. The convergence between international and Indonesian literature indicates that the conceptual foundation of smart-city development in Indonesia is broadly consistent with global discourse. However, implementation cannot simply replicate international models because technological readiness, institutional capacity, spatial structure, and social conditions differ substantially among Indonesian cities.

National Spatial Policy as the Foundation of Smart City Development

The National Medium-Term Development Plan (RPJMN) 2015–2019 established an important policy foundation for smart-city development in Indonesia. As the third stage of the National Long-Term Development Plan (RPJPN) 2005–2025, the RPJMN directed urban development toward cities that are livable, safe, comfortable, green, climate- and disaster-resilient, smart, and competitive (Kementerian PPN/Bappenas, 2015). The inclusion of the concept of “smart” within the national development agenda demonstrates that smart-city development is not merely a voluntary technological initiative undertaken by individual municipalities but is connected to national spatial and development planning.

The RPJMN also emphasizes the importance of geospatial information as a foundation for spatial planning, including the provision of basic geospatial information at appropriate scales to support detailed spatial planning (Kementerian PPN/Bappenas, 2015). This policy direction is particularly relevant to the development of data-driven smart cities because effective urban governance requires accurate, integrated, and interoperable data. The importance of data integration is also reflected in Khaerah et al. (2026), who identify interoperability and coordination challenges in digital government systems in Makassar. Thus, smart-city development should be positioned within an integrated planning system linking spatial data, development planning, environmental management, and public participation rather than being treated as a stand-alone digitalization program.

Governance and Institutional Capacity

Institutional capacity consistently emerges as one of the most important determinants of smart-city implementation. Lestari (2020) found that governmental and institutional factors were more influential than tourism-related components in determining the success of smart tourism in Jakarta. Effective institutional arrangements include leadership, legal certainty, interdepartmental coordination, stakeholder collaboration, and continuity of priority programs. Frequent changes in leadership can disrupt the continuity of smart-city initiatives, particularly when programs depend heavily on individual political or administrative leadership rather than institutionalized mechanisms (Lestari, 2020).

The experience of Makassar provides further evidence of the institutional dimension of smart-city governance. Khaerah et al. (2026) found that digital budgeting reform had established relatively strong procedural mechanisms through standardized workflows, non-

cash payment systems, and integrated audit trails, thereby strengthening transparency and accountability. However, a gap remained between strategic partnerships at the policy level and operational practices of joint monitoring and problem-solving. This condition, referred to as a synergy gap, demonstrates that digital systems alone do not automatically generate collaborative governance. The effectiveness of smart-city initiatives depends on whether technological systems are accompanied by institutional coordination, shared responsibility, and continuous problem-solving among stakeholders (Khaerah et al., 2026).

Citizen Participation and Co-Creation

Citizen participation represents another fundamental dimension of smart-city governance. Arnstein's (1969) participation ladder provides an important analytical framework for assessing the depth of citizen involvement, ranging from manipulation and tokenistic participation to partnership and citizen control. Within smart-city development, digital platforms can expand opportunities for participation, but the existence of digital participation mechanisms does not necessarily guarantee meaningful influence over decision-making.

Khaerah et al. (2026) demonstrate this limitation through the implementation of Musrenbang and e-Musrenbang in Makassar. Citizen involvement remains concentrated largely at the stage of submitting proposals, while substantive control over system design and policy evaluation remains primarily in government hands. This condition can be characterized as co-design lite, where citizen aspirations are incorporated into planning processes without granting citizens a meaningful role in designing the digital architecture or jointly evaluating policy outcomes. The finding indicates that digital participation may reproduce conventional forms of consultation if institutional arrangements do not provide mechanisms for shared decision-making.

A deeper participatory approach is demonstrated by Afdhal et al. (2022) through the Building Healthy Cities initiative in Makassar, which involved 240 stakeholders in participatory systems mapping between 2019 and 2021. The study identified an Innovation Stagnation structure, in which technological innovation could place additional pressure on existing infrastructure and human-resource capacities. Three leverage points were subsequently identified: improving data quality for decision-making, strengthening policy equity and transparency, and expanding community participation (Afdhal et al., 2022). These findings indicate that meaningful participation can contribute not only to democratic legitimacy but also to identifying systemic constraints that may be overlooked through technology-centered approaches.

Smart City, Cultural Space, and Urban Inclusivity

Smart-city development also needs to incorporate social inclusion and cultural identity. Windari and Arimbawa (2020) found that Indonesia has a relatively comprehensive regulatory foundation for inclusive urban development, including constitutional provisions and legislation concerning the rights of persons with disabilities. Nevertheless, implementation remains constrained because local regulations and urban practices have not fully operationalized accessibility in physical environments, information systems, employment, and civic participation.

The cultural dimension is particularly important in Indonesian cities with strong historical and traditional identities. Reza et al. (2020), through their study of Klojen District in

Malang, identified four colonial cultural clusters and formulated development strategies using municipal cultural planning and SWOT analysis. Putra (2020) similarly argues that urban development is inseparable from civilization and cultural development, meaning that traditional rituals and cosmological values can play an important role in maintaining social order and spatial identity. Laksana et al. (2020) further demonstrate that cultural heritage in Kampung Baru, Singaraja, can be transformed into a tourism asset while simultaneously strengthening urban identity. Collectively, these studies indicate that smart-city development should not impose a uniform technological model but should integrate existing cultural landscapes, historical heritage, and local identity.

Infrastructure and the Built Environment

The reviewed literature also demonstrates that technological transformation must be supported by adequate physical and environmental infrastructure. Hirsan et al. (2020) identify limited parking capacity as an urban problem in Mataram and propose smart-parking systems based on information technology and the city's Smart City Masterplan 2019–2024. Meanwhile, Faza and Andani (2020) found substantial differences between the urban core and peripheral areas of Semarang, with high building density concentrated in the center and greater land-use diversity in peripheral areas resulting from less controlled urban growth. These findings indicate that smart-city interventions should consider spatial differences rather than applying uniform solutions across urban areas.

Environmental carrying capacity is another critical dimension. Kurniawan (2020) highlights the importance of water carrying capacity as a foundation for sustainable urban planning, while Surur (2020) identifies potential blue open spaces in Makassar that can support urban farming and environmental sustainability. Pramana (2020) adds a smart-living perspective by demonstrating that housing preferences among students are influenced by geographical distance and housing characteristics. Taken together, these studies demonstrate that smart environment and smart living require evidence-based planning that incorporates environmental capacity, spatial structure, housing preferences, mobility, and residents' needs.

Cross-Thematic Synthesis and Research Gaps

The synthesis of the 17 reviewed sources demonstrates that smart-city development in Indonesia rests on four interconnected foundations: (1) alignment with national spatial and urban development policies; (2) strong institutional capacity and leadership; (3) meaningful citizen participation and co-creation; and (4) adequate, inclusive, and culturally sensitive physical and digital infrastructure. The comparison between the *co-design lite* model identified by Khaerah et al. (2026) and the more intensive participatory systems-mapping approach of Afdhal et al. (2022) further indicates that the depth of citizen participation depends not merely on the availability of digital platforms but on how participation is institutionally designed. In this regard, Arnstein's (1969) framework remains relevant for distinguishing symbolic participation from genuine power-sharing.

Several research gaps can also be identified. First, many existing studies remain limited to single-city case studies, making cross-city comparison and broader generalization difficult. Second, the *synergy gap* and *co-design lite* concepts identified in Makassar (Khaerah et al., 2026) require comparative testing in cities with different institutional capacities, geographical characteristics, and governance arrangements. Third, longitudinal evidence concerning the effects of smart-city initiatives on citizens' welfare, service quality, and urban resilience

remains limited because many studies provide cross-sectional assessments. Fourth, the integration of smart-city development with cultural-space preservation remains fragmented across local case studies. Future research should therefore develop comparative and longitudinal frameworks that connect digital transformation, institutional governance, citizen participation, spatial planning, cultural preservation, and measurable improvements in urban quality of life.

CONCLUSION

This literature review demonstrates that smart-city development in Indonesia should be understood as a governance transformation rather than merely a technological modernization project. The synthesis of 17 sources shows that successful smart-city development depends on the integration of four interrelated dimensions: national spatial and urban policy, institutional capacity and leadership, meaningful citizen participation, and adequate physical and digital infrastructure that respects local cultural identity. Although Indonesia has established a strong policy foundation for smart-city development, implementation remains constrained by fragmented institutional coordination, uneven infrastructure, limited digital capacity, and participation that often remains consultative rather than collaborative. The reviewed evidence also indicates that technology alone cannot resolve these challenges without institutional readiness, data integration, cross-sector collaboration, and community involvement.

The review further demonstrates that smart-city strategies need to be context-sensitive and locally grounded. Experiences from Makassar, Malang, Mataram, Semarang, and Singaraja indicate that urban characteristics, institutional capacity, environmental conditions, and cultural identity significantly influence the effectiveness of smart-city initiatives. Therefore, the development of smart cities in Indonesia requires a shift from fragmented technology-based projects toward integrated governance that connects digital innovation with spatial planning, public participation, environmental sustainability, cultural preservation, and improvements in citizens' quality of life.

REFERENCES

- Afdhal, M., Alam, A., Grattan, K., Goldman, B., Isa, A., Pomeroy-Stevens, A., & Bachani, D. (2022). Designing for a healthier Makassar, Indonesia: Participatory systems mapping. *Journal of Urban Health*, 99(4), 770-782. <https://doi.org/10.1007/s11524-022-00651-5>
- Albino, V., Berardi, U., & Dangelico, R. M. (2015). Smart cities: Definitions, dimensions, performance, and initiatives. *Journal of Urban Technology*, 22(1), 3-21. <https://doi.org/10.1080/10630732.2014.942092>
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216-224. <https://doi.org/10.1080/01944366908977225>
- Caragliu, A., Del Bo, C., & Nijkamp, P. (2011). Smart cities in Europe. *Journal of Urban Technology*, 18(2), 65-82. <https://doi.org/10.1080/10630732.2011.601117>
- Faza, A., & Andani, I. G. A. (2020). *Identifikasi lingkungan binaan di kawasan pinggiran dan pusat Kota Semarang*. Proceedings paper.

- Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanovic, N., & Meijers, E. (2007). *Smart cities: Ranking of European medium-sized cities*. Centre of Regional Science, Vienna University of Technology.
- Hirsan, H., Rahmawati, R., & Yuniarman, A. (2020). *Pengembangan konsep smart parking di Kota Mataram berdasarkan persepsi pengguna kendaraan*. Proceedings paper.
- Kementerian PPN/Bappenas. (2015). *Rencana pembangunan jangka menengah nasional (RPJMN) 2015-2019: Buku I agenda pembangunan nasional*. Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional.
- Khaerah, N., Fatmawati, F., Hawing, H., & Hardi, R. (2026). Strategic co-creation and synergistic partnerships in digital budgeting reform: Strengthening public governance for sustainable cities in Makassar, Indonesia. *Frontiers in Sustainable Cities*, 7, 1716088. <https://doi.org/10.3389/frsc.2025.1716088>
- Kurniawan, A. (2020). *Status daya dukung air di Kota Mataram*. Proceedings paper.
- Laksana, I. P. A. A., Kardinal, A. A. G. B. A., & Wirawan, I. M. A. (2020). *Pusaka budaya di Kelurahan Kampung Baru sebagai daya tarik wisata Kota Singaraja*. Proceedings paper.
- Lestari, D. (2020). *Pemerintahan cerdas menuju kota cerdas pasca pandemi*. Proceedings paper.
- Pramana, A. (2020). *Preferensi karakteristik hunian mahasiswa di Kabupaten Sleman, Daerah Istimewa Yogyakarta*. Proceedings paper.
- Putra, I. B. G. (2020). *Memaknai penataan ruang menuju kota cerdas*. Proceedings paper.
- Reza, M., Arani, V., Samosir, R., & Qonita, N. (2020). *Strategi pengembangan smart city dalam ruang budaya Kecamatan Klojen, Kota Malang berbasis municipal cultural planning*. Proceedings paper.
- Surur, F. (2020). *Potensi pemanfaatan ruang terbuka biru sebagai alternatif pengembangan urban farming di Kota Makassar*. Proceedings paper.
- Windari, R. A., & Arimbawa, I. G. (2020). *Kota inklusif dalam bingkai regulasi di Indonesia*. Proceedings paper.