# Exploring the Community Involvement in Smart City through a Co-creation Approach in Indonesia

**Imam Yudhi Prastya, Hardi Warsono and Augustin Rina Herwati**
Faculty of Social and Political Sciences
Universitas Diponegoro
Tembalang, Semarang, Jawa Tengah 50275, Indonesia
yudhimam.students@undip.ac.id , hardiwarsono@lecturer.undip.ac.id,
rinahera1508@gmail.com

**Jumadil Saputra**
Faculty of Business, Economics and Social Development
Universiti Malaysia Terengganu
21030 Kuala Nerus, Terengganu, Malaysia
jumadil.saputra@umt.edu.my

**Abdul Talib Bon**
Department of Production and Operations
Universiti Tun Hussein Onn Malaysia
86400 Parit Raja, Johor Malaysia
talibon@gmail.com

## Abstract

Smart City is a model for developing a city to create a better quality of life through the use of Information and Communication Technology in increasing awareness, intelligence, welfare, and citizen participation. Currently, many cities declare themselves as smart cities. Therefore, they invest a lot in information technology infrastructure to provide website and application-based services. However, this has not been balanced with community development by fostering participation in public life processes and outputs. This study aims to explore community involvement in the context of a smart city through a co-creation approach. This study uses a qualitative approach with library research techniques sourced from journals, proceedings, books, and official government websites that provide information relevant to the research focus. This study reveals that community participation is not difficult to find because Indonesia has social capital and is practiced until now in the public life of urban communities, for example, social awareness, deliberation, and mutual-cooperation. However, community participation is still limited to input, not yet reaching the process and output, where Information Technology is still limited to replacing the offline system with online. Based on the results and discussion, this study suggests the need to expand and increase community involvement in resolving public affairs and combining forms of community involvement in both online and offline systems.

## Keywords
Community Involvement, Co-Creation, Society participation, Smart City.

## 1. Introduction
The change of the centralized to decentralized regime in Indonesia in the early 2000s marked the beginning of changes not only in the political system but in the central-regional government system. The economy that was previously only dominated in Java then spread to other areas outside the island of Java. The autonomy policy has channeled some development funds directly from the center to districts/cities. This is where this autonomy fund sows the seeds of new growth (Islahuddin, 2020). With the flow of funds from the central government to the regions as well as relatively large authority, a previously stagnant region has grown into a new economic center and a magnet for urbanization.

With the increase in the number of urban populations, countries in the world will face a number of challenges in providing the needs of their population, including the need for housing, infrastructure, transportation, energy, health and education services, and employment. To answer these challenges, smart cities are relevant in reducing and even solving these problems. The concept of a smart city based on sophisticated information and communication technology (ICT) emerged to reduce the impact of rapid urbanization (Jim & Chen, 2019).

In Indonesia, the 100 Smart City Movement started in 2017 with 50 districts/cities, 2018 with 25 districts/cities and 2019 with 25 districts/cities, although previously big cities such as Jakarta, Bandung, Semarang and Surabaya have started implementing it. Furthermore, 100 regencies and cities were given guidance in the preparation of a smart city development master plan for the next 5-10 years by practitioners and academics from various universities in Indonesia. The movement was initiated by the Ministry of Communication and Information with the Ministry of Home Affairs, the Ministry of National Development Planning (Bappenas), Minister for Public Works and Human Settlements (PUPR), the Presidential Staff Office, the Ministry of Finance, the Coordinating Ministry for the Economy, and the Ministry of State Apparatus Empowerment and Bureaucratic Reform (PANRB).

The development of smart cities is indeed synonymous with the development of information technology infrastructure, this can be assessed from more than two thousand publications on smart cities based on Scopus data, more than 50 percent of the discussions are in the field of computer science and technology, while the rest discuss smart cities from various other fields of science. , such as social, environmental, and so on (Colding & Barthel, 2017). Development in the social context as soft infrastructure is still neglected compared to hard infrastructure. This also happened in Indonesia, it was revealed that publications related to smart cities were still dominated by academics with backgrounds in electrical engineering, communication science, information technology and regional planning, while social sciences such as public administration were still very rare (Sanjaya et al., 2018). So not many have explored how to involve the community in building a smart and sustainable city. While the latest phase is the implementation of smart cities not only focusing on information technology but also how to involve the community in creating the smart city itself, which is called smart city 3.0, namely citizen co-creation (Boyd Cohen, 2015).

Public value is one of the main focuses in the study of public administration, which previously focused on the government as the sole provider of public services. Public values, governance models and co-creation/co-production in smart cities are relevant concepts in improving the quality of life of citizens, as well as the need to introduce a public value perspective in smart city management (Bolivar, 2019). While in Indonesia, the implementation of smart cities in Indonesia is placed more as a user and community involvement becomes a challenge in the future (Jogaswara, 2020). In this study, the city of Bandung was chosen because it was considered mature in implementing smart cities, it was proven that Bandung was included in the ranks of 50 smart city governments in the world. The assessment is based on the results of a study from the Eden Strategy Institute (Putra, 2021). In addition, the application of smart cities in Indonesia, the research locus between 2014 and 2017 was the most chosen city of Bandung (Sanjaya et al., 2018).

## 1.1 Objectives
This study tries to explore how community involvement in the implementation of smart cities in Indonesia, especially in the city of Bandung. Bandung is one of the cities in Indonesia that implements smart cities in city management in addition to other big cities such as Jakarta, Semarang, Jogjakarta and Surabaya.

## 2. Literature Review
### 2.1. Smart city
Smart city was originally created by the IBM company in the 1990s after previously another term was coined with the name digital city. IBM provides an initial understanding that a smart city is a city where every instrument is interconnected and functions intelligently through information and communication technology. In addition, smart city can also be interpreted as an approach that applies to certain areas, which has achieved integrated information and city management. Through digital network management of urban geography, resources, environment, economy, social and other systems, as well as digital (Su et al., 2011). Furthermore, the idea of a smart city can be interpreted as the development of an information technology-based city which then encourages more efficient resources, sustainable economic development and a better quality of life (Caragliu et al., 2011).

Furthermore, smart cities have 6 (six) criteria or dimensions of smart cities, namely smart economy, smart people, smart government, smart mobility, smart environment and smart living (Giffinger et al., 2007). Since 2011 Boyd Cohen has been conducting research on smart cities and he concluded that there are 3 important phases of a smart city; Smart City 1.0: Technology Driven, where technology providers push technology as the right advice in improving people's quality of life. Smart City 2.0: Technology Enabled-City-Led, marked by the government utilizing technology to encourage innovation in public sector services. Smart City 3.0: Citizen co-creation is a smart city concept that not only focuses on the development of information technology but also involves citizens and the private sector in dealing with and solving public problems (Boyd Cohen, 2015). Citizens are not only objects of technology but citizens are also subjecting in the development of smart cities.

In Smart City 3.0 above, smart cities are not only about digitization but also smart social systems (Jucevičius et al., 2014). Regarding community involvement, participation is also needed as an effort to create a smart city that is in accordance with the character and needs of the residents, serving urban problems through participation or citizen complaints, and fulfilling community rights (Bosch, 2017). The concept of smart cities in practice varies from city to city and country to country, but one thing that remains common in all definitions and characteristics of smart cities is citizen involvement (Shristi gupta, Syed Ziaul Mustafa, 2019). In terms of smart city development, it is highly recommended that the authorities prioritize the cultivation of citizens who are aware and have a civic perspective in readiness to encourage cutting-edge technology. Doing so is clearly better than just prioritizing the provision of basic Information and Communication Technology infrastructure (Lim et al., 2019).

## 2.2. Community Participation

Smart Cities aim to facilitate interaction with city governments: make it easier for citizens and businesses to communicate priorities and needs to city governments; it reduces the need for time consuming face-to-face interactions with city administrations and eliminates the need for bureaucracy (Nyseth et al., 2019). As problems related to bureaucracy which are known to be wasteful, inefficient and unproductive (David Osborn, 2014). By using a touch of information technology, the problem of slow and non-transparent bureaucracy can be resolved. Along with the development of public administration, such a bureaucracy has been abandoned, the dominant bureaucracy in service delivery has shifted to involving other actors outside the state to be involved in public services based on the principles of public value.

Public values, governance models and co-creation/co-production in smart cities are relevant concepts in improving the quality of life of citizens, as well as the need to introduce a public value perspective in smart city management (Bolivar, 2019). The concept of co-production can be started from Ostrom's opinion which defines co-production as "a process in which the inputs used to produce goods or services are contributed by individuals who are not 'in' the same organization" (Ostrom, 1996). There are 4 types of co-production. –production (Voorberg et al., 2014);
1. Citizens or other actors act as initiator (co-initiate)
2. Citizens or other actors are invited to co-design (co-design).
3. Citizens or other actors are "jusvalue t" invited to implement public services (instead of public organizations) (co-implement).
4. Citizens or other actors directly share the cost of services or service development with the state (co-finance).

In the study of public administration, co-production is theoretically rooted in the theory of public management and service management (Osborne et al., 2016). In the area of public services, services are no longer only delivered by professionals and managerial staff in public institutions but are produced jointly by users and their communities (Bovaird, 2007). Co-production does not challenge the basic premises of theories about public service delivery, because it can only occur at the behest of, and controlled by, service professionals (Brandsen & Pestoff, 2006). Community participation in the context of a smart city is a voluntary contribution from the community to the government in the development process, service improvement, disaster preparedness, and administration. This participation can be delivered through facilities provided by the government, either through the ICT system or not (Arafah & Winarso, 2020). Mature democracy is when people's participation is not only on inputs, but also on the process to the output of a policy. One of the efforts that can be made to encourage public participation is to significantly open and expand the accessibility of public services. Legitimacy is the will of the citizens, if a policy or program is based on the will of the citizens then the policy or program is legitimized by itself (Rousseau, 2007).

## 3. Methods

The research method used is a qualitative method with a descriptive type. Qualitative methods produce descriptive data, both in the form of words, which are expressed in writing or verbally from the observed behavior (Norman K. Denzin, 2015) and explore and understand the meaning in a number of individuals or groups of people originating from social problems (Creswell, 2018). Secondary data is used in data collection through literature review from journals, government documents, and sources from relevant websites. While the data analysis technique used in this study is the data that has been collected and then processed and analyzed qualitatively.

## 4. Data Collection

The secondary data used are journals that discuss smart cities in the city of Bandung, which are published between 2016 and 2021, from the many journals obtained, they are then adjusted to the research objective, namely to assess community participation in the city of Bandung within the framework of a smart city. Finally arrived at 17 relevant journal publications to describe how the practice of co-production in the implementation of smart cities in the city of Bandung.

## 5. Results and Discussion

Bandung is recognized as a smart city and becomes a reference for other cities in Indonesia in developing smart cities. Internationally, in 2021 Bandung will be among the top 50 smart governments and even outperform cities such as Adelaide, Australia, Boston, United States and other major world cities (Eden Strategy Institute, 2021). To achieve this, of course, requires a lot of effort and time, here are the dimensions and goals of Bandung Smart City which are tabulated in below Table 1

Table 1. Services and Goals of Bandung Smart City

| No | Services | Goals | No | Services | Goals |
|----|----------|-------|----|----------|-------|
| 1 | Smart Government | Improve the performance of the government that is effective, efficient, accountable and transparent in an effort to increase the capacity of services metropolitan city. | 6 | Smart Surveillance | Observation and environment resources the city to raise awareness of security and the handling of the citizens. |
| 2 | Smart Education | Develop human resources to be health, smart, moral, professional and competitive. | 7 | Smart Environment | Management of Bandung city toward an integrated metropolitan environment. |
| 3 | Smart Transportation | Provides a secure transportation system, efficient, comfortable, affordable and environmentally friendly. | 8 | Smart Social | Increase the sensitivity and concern of the public toward the social environment. |
| 4 | Smart Health | Help make Bandung healthy. | 9 | Smart Payment & Identity | Realizing the financial system and the identity of themselves in the city which is transparent, accountable and effective. |
| 5 | Smart Energy | Realize Bandung as a city that is energy efficient and independent. | 10 | Smart Commerce | Develop the economic city competitiveness in supporting the creation of jobs and public services and enhance the role of the private sector in the economic development of the city. |

Source: Roadmap of Bandung victory in Akbar & Sutrisno 2017

We start with the Bandung Command Center (BCC), which is one of the efforts to make Bandung a smart city based on information and communication technology, a center for collecting complaints from the public online. Bandung Command Center has two main functions, namely to improve public services to the outside, and to facilitate internal services, namely in terms of decision-making management. Bandung Command Center functions as a data center and is directly related to community services managed by the Department of Communication and Information. In addition, there is also a Mini Command Center (MCC) which is located at the sub-district level and is connected to the BCC as its center. There are three BCC applications that have been implemented, namely first, the Panic Button (an emergency situation, for example when a city resident experiences violence or becomes a victim of a crime). Second, Lapor!

(aspirations for online complaint services from the community). Complaints about infrastructure problems, new student admissions, and others). Third, Call Center 112 (This service is almost similar to Panic Button and Lapor!, does not use internet network, this service is toll free).

The assessment information system (SIP) Bandung Champion website is a forum for aspirations for citizens to provide an assessment of the performance of sub-districts and urban villages in Bandung. In addition to providing an assessment, the community can also provide criticism, suggestions, input in the form of ideas and ideas about what the sub-district government should do in carrying out government tasks and implementing better public services. In addition, every agency in the city of Bandung has a website and has a Twitter social media account, the existence of e-Planning and e-Budgeting, the creation of a full wifi city park;), online birth certificate registration, smartphone Gampil application (integrated licensing), electronic community Health centers (ePuskesmas) application, Melati credit (Against Moneylenders), information on the price of basic necessities through online.

In the development of Bandung Smart City, many efforts have been made by the Bandung City Government, including through the following programs which are shown in below Table 2:

Table 2. Program of Bandung Smart City

| No | Working Program | No | Working Program |
|---|---|---|---|
| 1 | Bandung Command Center | 14 | The implementation of knowledge management & system information in government city of Bandung |
| 2 | Wi-Fi in Church and Mosque | 15 | E-Proc 2.0 |
| 3 | Wi-Fi in the government office | 16 | One chair one tablet |
| 4 | Wi-Fi in tourism center | 17 | ICT industry development cluster |
| 5 | Wi-Fi in industrial centers | 18 | Bandung Best Apps |
| 6 | Wi-Fi in park | 19 | Sabilulungan.Net (Social assist & grant Online) |
| 7 | Lapor (Citizen Reporting) | 20 | ICT technology using training for Bandung city official |
| 8 | Bandung smart card (Angkot, bicycle, etc.) | 21 | ICT technology using training for society |
| 9 | E-Parking prepaid card | 23 | Ducting together |
| 10 | One agency one social media account | 24 | Redesign Website Government city of Bandung |
| 11 | Digitalizing the documentation, letters, disposition, and agency's notes. | 25 | Enerbike for electricity |
| 12 | Taxes Online | 26 | Media campaign Bandung Smart City |
| 13 | Bandung Technopolis Gedebage | 27 | Urban Farming |

Source: Roadmap of Bandung victory in Akbar & Sutrisno 2017

Smart city concept in city development in Bandung, there are many positive things that can be learned, especially related to community participation. based on research (Sutrisno & Akbar, 2018), shows that the implementation of smart cities in the city of Bandung has been quite successful, especially in smart government indicators if it is associated with citizen participation in decision making, a government system that is transparent, effective, efficient, and accountable. Through websites, applications and social media owned by government agencies, they are able to provide space for citizens to be involved in providing information to the public, receiving input, and together with the community conducting monitoring in running the program. Smart City in Bandung is changing the old model of participation which is now through ICT applications to be faster and the community can play an active role in it (Akbar & Sutrisno, 2017). In addition, through Facebook the mayor at that time, Ridwan Kamil, became an alternative media for two-way interaction between the public and government spheres (Arwanto, 2018).

As in the LAPOR application, the dominant factor driving participation in using LAPOR is because of the ease of use of the application, not because of its benefits, and respondents also consider the performance of LAPOR operators to be quite good (Nur Atnan, 2018). Similarly, research findings show that service accessibility is significantly important in encouraging participation (Jang & Gim, 2022). Changes in participation will in turn increase the participation of the people of Bandung as an asset for democratic governance in Bandung (Budiana et al., 2016). articipation is an

important value in the relationship between government and citizens, the higher the participation, the higher the level of government legitimacy in the presence of the government. Politically, democratic legitimacy now depends to a much greater degree on output, than on input legitimacy (Lund, 2018). However, not all conveniences of information technology are accompanied by high participation, such as SIP Bandung Champion, Bandung City community participation in assessing the performance of the sub-districts in the area where they live is still minimal compared to the total population in each sub-district (Sagita, 2016). In terms of smart government, Bandung has provided access to the community to participate. Smart City aims to facilitate interaction with the city government, facilitate business, express opinions and reduce time in face-to-face interactions with the government (Nyseth et al., 2019). By examining the results above, it can be said that in the implementation of smart government in the city of Bandung, residents are included in the co-implementer dimension, such as Voorberg's opinion. In the co-implementer-implementor dimension, where citizens have an important role in making services function and also provide feedback on services from the government. The government will be able to address public problems effectively and efficiently when the problems are well defined, which allows for shared understanding and commonalities among stakeholders (Rădulescu et al., 2020).

Regarding smart living, the development of parks in the city is a manifestation of the Bandung city government's efforts to make its citizens happy, such as the Centrum music park, Singles Park, Elderly Park, Film Park, and many more. With the existence of parks in the city, Bandung residents are expected not to be stressed living in the city, they can be happy and relaxed even though they live with the city crowds, because basically parks other than green open spaces are to increase the happiness of citizens (Alim et al., 2019). In addition to the development of technology infrastructure and public spaces, there is also strengthening in the form of citizen participation in public affairs through communities, including;

Table 3. Community in Bandung

| No | Community | Goal |
|----|-----------|------|
| 1 | Bandung Creative City Forum | foster, develop the potential and creativity of local communities towards the development of the city of Bandung |
| 2 | Gemericik (Cikapundung Lovers Community) | Building physical facilities, including building a waste bank and general waste management |
| 3 | Sakola Cikapundung (Cikapundung School) | expand the carrying capacity of rivers and encourage creativity in the transformation of local resources for commercial purposes. this community is also involved in teaching children English |
| 4 | Cikapundung Community | develop initiatives that can turn the Cikapundung river into significant tourism |
| 5 | Urban Farming | Food independence for urban residents |

Source: Windarti, 2016, Ramadhan, 2020.

Local people in Bandung are very active in exploring the potential of the city of Bandung. The initiative to establish the Bandung Creative City Forum (BCCF) which accommodates various sub-sectors of the creative industry is a testament to the strong participation of local communities in urban development. BCCF and other local community initiatives, such as the Cikapundung community, Sakola Cikapundung, Creative Village, Saung Udjo learning center and Selasar Sunaryo Art have proven to produce a city identity, which is able to unite Bandung's creative stakeholders to become a Creative City (Bastaman, 2018). BCCF, Cikapundung Community, Sakola Cikapundung, and Gemericik provide examples of how the government embraces and develops citizens through social activities and provides them with skills and training (Windarti, 2016). Citizen participation can also be seen in the urban farming program, the program is supported by local government budgets that can be carried out by residents of the City of Bandung with the aim that the people of Bandung City become vegetable producers, not only consumers from outside the City of Bandung. In this program the community is active or can be categorized as high starting from planning, implementation, monitoring and evaluation, utilization of results (Bayu Ramadhan, Sugihardjo, 2020). In addition, citizen participation can also be seen from involvement in competitions (Ramdani & Habibi, 2017), in the form of logo designs, waste processing facilities, green open space designs and design ideas organized by various Bandung city government agencies which will then be used by the government itself.

Still according to Voorberg, the co-initiator dimension can be pinned on the involvement of communities as described before. These communities play an active role, they organize themselves and take initiatives to overcome perceived problems such as environmental, tourism, economic problems. Citizens organize themselves to solve social problems in urban areas and create shared solutions in their interactions with (or struggle against) public institutions and semi-public networks of powerful urban actors (Lund, 2018). While Co design is appropriate to be used in viewing urban farming programs, the program is initiated by public actors, the city government in this case. Then it is the residents through their communities who develop how the farming program achieves the goal, namely food independence for urban residents. participation becomes co-creation, where public institutions enable citizens to be actively involved in social policy making and service provision, and it becomes about leveraging resources and empowering those in need (Papa et al., 2013).

## 6. Conclusion

The implementation of a smart city in the city of Bandung encourages residents to participate in city development. Using Voorberg's concept of co-creation, three dimensions (co implementer, co design and co initiative) can be found in Bandung residents. With an approach to website-based digitization, applications and social media make it easier for citizens to interact with the government such as submitting complaints, providing information related to public issues, making it easier for the government to identify evidence-based issues so that they can be used in policy making. Bandung residents are active in responding to public problems and do not always depend on the government, even lighten the burden on the government in answering public problems and in branding the city of Bandung as a creative city through communities engaged in activities related to creativity, art, empowerment, environment and economy. The weakness of this research is that it only uses literature so that it is necessary to explore the conditions and processes for co-creation, the characteristics of the residents and the encouragement of the participation of the citizens of Bandung to explore through field research.

## References

Akbar, I., & Sutrisno, B. (2017). The Implementation of Bandung Smart City to Improving the Welfare of its Citizens. *Unhas International Conference on Social and Political Science*, *143*(Advances in Social Science, Education and Humanities Research), 34–37.

Alim, S., Nisa, A. K., & Hair, A. (2019). New Public Service Kota Bandung Melalui Konsep Smart City. *Journal of Politic and Policy*, *2*(1), 95–108.

Arafah, Y., & Winarso, H. (2020). Peningkatan dan Penguatan Partisipasi Masyarakat dalam Konteks Smart City. *Tataloka*, *22*(1), 27–40. https://doi.org/10.14710/tataloka.22.1.27-40

Arwanto, W. A. (2018). Public Participation , Transparency – The Utilisation of Social Media : Bandung City. *Jurnal Studi Pemerintahan*, *9*(1).

Bastaman, A. (2018). Bandung City Branding : Exploring The Role Of Lo- Cal Community Involvement To Gain City Competitive Value. *Journal of Entrepreneurship, Business and Economics*, *6*(1), 144–165.

Bayu Ramadhan, Sugihardjo, S. (2020). Public Participation In The Implementation Of The Urban Farming Program In Bandung City. *International Conference Labma Scientific Fair 2020, Yogyakarta*.

Bolivar, M. P. R. (2019). *Setting Foundations for the Creation of Public Value in Smart Cities* (M. P. R. Bolivar (red)). Springer International Publishing.

Bosch, H. van den. (2017). *Smart Cities 1.0, 2.0, 3.0. What's next?*

Bovaird, T. (2007). Beyond engagement and participation: User and community coproduction of public services. *Public Administration Review*, *67*(5), 846–860. https://doi.org/10.1111/j.1540-6210.2007.00773.x

Boyd Cohen. (2015). *The 3 Generations Of Smart Cities*.

Brandsen, T., & Pestoff, V. (2006). Co-production, the third sector and the delivery of public services. An introduction. *Public Management Review*, *8*(4), 493–501. https://doi.org/10.1080/14719030601022874

Budiana, H. R., Sjoraida, D. F., Mariana, D., & Priyatna, C. C. (2016). The Use of Social Media by Bandung City Government in Increasing Public Participation. *Proceeding of The 3rd Conference on Communication, Culture and Media Studies*, *August*, 63–70.

Caragliu, A., Bo, C. Del, Nijkamp, P., Caragliu, A., Bo, C. Del, & Nijkamp, P. (2011). Smart Cities in Europe Smart Cities in Europe. *Journal of Urban Technology*, *18*(2), 65–82. https://doi.org/10.1080/10630732.2011.601117

Colding, J., & Barthel, S. (2017). An urban ecology critique on the "Smart City" model. *Journal of Cleaner Production*, *164*(October), 95–101. https://doi.org/10.1016/j.jclepro.2017.06.191

Creswell, W. J. (2018). *Research Design, Qualitative,Quantitative, and Mixed Methods Approaches* (Fourth Edi). SAGE Publications.

David Osborn, T. G. (2014). *Mewirausahakan Birokrasi, Reinventing Government-Mentransformasikan Semangat Wirausaha Kedalam Sektor Publik*. PPM Manajemen.

Eden Strategy Institute. (2021). *Eden Strategy Institute Announces The Top 50 Smart City Governments in 2021*.

Giffinger, R., Fertner, C., Kramar, H., & Meijers, E. (2007). City-ranking of European medium-sized cities. *Centre of Regional Science, Vienna UT*, *October*.

Islahuddin, D. S. I. (2020). *Sembilan kota pilihan - daerah yang tumbuh pesat, stabil dan didorong sektor jasa*.

Jang, S. gil, & Gim, T. H. T. (2022). Considerations for Encouraging Citizen Participation by Information-Disadvantaged Groups in Smart Cities. *Sustainable Cities and Society*, *76*(May 2021), 103437. https://doi.org/10.1016/j.scs.2021.103437

Jim, Y., & Chen, J. (2019). A structured method for smart city project selection. *International Journal of Information Management*, *March*, 1–9. https://doi.org/10.1016/j.ijinfomgt.2019.07.007

Jogaswara, H. (2020). *Transformasi Kota, Pergeseran Tren Urbanisasi di Indonesia*.

Jucevičius, R., Patašienė, I., & Patašius, M. (2014). Digital Dimension of Smart City: Critical Analysis. *Procedia - Social and Behavioral Sciences*, *156*(April), 146–150. https://doi.org/10.1016/j.sbspro.2014.11.137

Lim, S., Malek, J. A., Hussain, M. Y., & Tahir, Z. (2019). The behaviours and job positions of citizens in smart cities' development. *Planning Malaysia*, *17*(2), 133–145. https://doi.org/10.21837/pmjournal.v17.i10.635

Lund, D. H. (2018). Co-Creation in Urban Governance: From Inclusion to Innovation. *Scandinavian Journal of Public Administration*, *22*(2), 3–17.

Norman K. Denzin, Y. S. L. (2015). *The Sage Handbook Of Qualitatif Research* (Y. S. L. Norman K. Denzin (red); Fifth Edit). SAGE Publications.

Nur Atnan, A. I. I. (2018). Tingkat Partisipasi Publik Melalui Pemanfaatan Media Lapor Di Kota Bandung. *Jurnal Wacana Politik -*, *3*(2).

Nyseth, T., Ringholm, T., & Agger, A. (2019). Innovative forms of citizen participation at the fringe of the formal planning system. *Urban Planning*, *4*(1TheTransformativePowerofUrbanPlanning), 7–8. https://doi.org/10.17645/up.v4i1.1680

Osborne, S. P., Radnor, Z., & Strokosch, K. (2016). Co-Production and the Co-Creation of Value in Public Services: A suitable case for treatment? *Public Management Review*, *18*(5), 639–653. https://doi.org/10.1080/14719037.2015.1111927

Ostrom, E. (1996). Crossing the great divide: Coproduction, synergy, and development. *World Development*, *24*(6), 1073–1087. https://doi.org/10.1016/0305-750X(96)00023-X

Papa, R., Gargiulo, C., & Galderisi, A. (2013). Towards an Urban Planners' Perspective on Smart City. *Journal of Land Use, Mobility and Environment*, *6*(1), 6–17. https://doi.org/10.6092/1970-9870/1536

Putra, W. (2021). *Bandung Peringkat 28 Smart City Dunia, Ungguli Dubai-Los Angeles*.

Rădulescu, M. A., Leendertse, W., & Arts, J. (2020). Conditions for co-creation in infrastructure projects: Experiences from the overdiepse polder project (The Netherlands). *Sustainability (Switzerland)*, *12*(18), 1–21. https://doi.org/10.3390/su12187736

Ramdani, D. F., & Habibi, F. (2017). Penguatan Partisipasi Masyarakat Dalam Mendorong Program Smart City di Kota Bandung. *Prosiding Seminar Nasional Riset Terapan | SENASSET*, *0*(0), 125–129.

Rousseau, J. J. (2007). *Du contract social* (Edisi Terj). Visimedia.

Sagita, N. I. (2016). Partisipasi Warga Masyarakat Dalam Penilaian Kinerja Kecamatan Di Kota Bandung. *Jurnal Ilmu Pemerintahan*, *2*(2), 308–329.

Sanjaya, A., Krisna, S. A., & Mursito, T. B. (2018). *Research Trends of Smart City in Indonesia: Where Do We Go from Here?* https://doi.org/10.31227/osf.io/ge359

Shristi gupta, Syed Ziaul Mustafa, H. K. (2019). *Advances in Smart Cities, smarter people, governance, and solutions* ( and Y. K. D. Arpan Kumar Kar, Manmohan Prasad Gupta, P. Vigneswara Ilavaras (red)). CRC Press.

Su, K., Li, J., & Fu, H. (2011). Smart city and the applications. *2011 International Conference on Electronics, Communications and Control, ICECC 2011 - Proceedings*, 1028–1031. https://doi.org/10.1109/ICECC.2011.6066743

Sutrisno, B., & Akbar, I. (2018). E-partisipasi dalam pembangunan lokal (studi implementasi. *Jurnal Sosioteknologi*, *17*(2), 8–12.

Voorberg, W. H., Bekkers, V. J. J. M., & Tummers, L. G. (2014). A Systematic Review of Co-Creation and Co-Production: Embarking on the social innovation journey. *Public Management Review*, *17*(9), 1333–1357. https://doi.org/10.1080/14719037.2014.930505

Windarti, Y. (2016). Communities Inclusion of Urban Tourism Development : The Case of Bandung City , Indonesia. *International Journal of Culture and History*, *2*(4). https://doi.org/10.18178/ijch.2016.2.4.062

## Acknowledgments

## Biographies

**Imam Yudhi Prastya** is a postgraduate student at the Faculty of Social and Political Sciences, Universitas Diponegoro, Tembalang, Semarang, Jawa Tengah 50275, Indonesia.

**Hardi Warsono** is a lecturer at the Faculty of Social and Political Sciences, Universitas Diponegoro, Tembalang, Semarang, Jawa Tengah 50275, Indonesia.

**Augustin Rina Herwati** is a lecturer at the Faculty of Social and Political Sciences, Universitas Diponegoro, Tembalang, Semarang, Jawa Tengah 50275, Indonesia.

**Jumadil Saputra** is a PhD holder and works as a senior lecturer in the Department of Economics, Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, Malaysia. He has published 125 articles Scopus/ WoS indexed. As a lecturer, he has invited as a speaker in numerous universities, the examiner (internal and external), the reviewer for article journal and proceeding, the conference committee, journal editorial board, and others. He is a professional member of the International Business Information Management Association (IBIMA), Ocean Expert: A Directory of Marine and Freshwater Professional, and Academy for Global Business Advancement (AGBA). His research areas are Quantitative Economics (Microeconomics, Macroeconomics, and Economic Development), Econometrics (Theory, Analysis, and Applied), Islamic Banking and Finance, Risk and Insurance, Takaful, i.e., financial economics (Islamic), mathematics and modelling of finance (Actuarial). His full profile can be accessed from https://jumadilsaputra.wordpress.com/home-2/.

**Abdul Talib Bon** is a professor of Production and Operations Management in the Faculty of Technology Management and Business at the Universiti Tun Hussein Onn Malaysia since 1999. He has a PhD in Computer Science, which he obtained from the Universite de La Rochelle, France in the year 2008. His doctoral thesis was on topic Process Quality Improvement on Beltline Moulding Manufacturing. He studied Business Administration in the Universiti Kebangsaan Malaysia for which he was awarded the MBA in the year 1998. He's Bachelor degree and diploma in Mechanical Engineering which his obtained from the Universiti Teknologi Malaysia. He received his postgraduate certificate in Mechatronics and Robotics from Carlisle, United Kingdom in 1997. He had published more 150 International Proceedings and International Journals and 8 books. He is a member of MSORSM, IIF, IEOM, IIE, INFORMS, TAM and MIM.