SMART CITY DEVELOPMENT PLANNING: A STUDY OF STRUCTURED LIBRARY
(Systematic Literature Review)

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ABSTRACT

Smart city planning is a smart city concept that can help people in an area to be able to manage existing resources more efficiently. This concept also utilizes advances in information technology to run the wheel of life more efficiently, so that it can help improve the quality of better urban planning. The purpose of this research is to find out about the planning of sustainable smart city development by looking at the application in various regions. This research was conducted using the literature review method, which is done by rereading and reviewing the main ideas on the same topic. The focus of this research is to use literature studies of previous researchers with the same topic. Sources of data used are documents related to research obtained from the SCOPUS database and processed using the VOSViewer application. Data analysis techniques used are data collection, data condensation, data presentation and drawing conclusions. The results obtained from the study show that development planning through smart cities has been widely applied in almost all regions of the world. However, there are several obstacles in the implementation process, such as there are still many people who do not understand the use of technology. However, seeing the many benefits that can be obtained from development planning through smart cities, its implementation should continue to be optimized.

Keywords: *Urbanization, development planning, smart city, technology information*

A. INTRODUCTION

The city is one element of the division of state administration which is also an important component of the local government of a country. For this reason, the local government continues to make efforts to develop a city development strategy that aims to improve the welfare of its people. All decisions and policies taken by the city government certainly have a significant influence on the level and way of life of the urban population. A long-term development strategy needs to be carried out, by making the right decisions that are closely related to its implementation

(Noori, Jong, & al, 2021). Where development planning is an important point for the success of implementing local government policies in advancing their regions, especially urban areas. This urban area becomes an area in the arrangement of functions where government services, social services, and economic activities involve the entire order of human life. Over time, the increasing population will bring its own challenges in urban settings. Village communities who are dissatisfied with the services or facilities available in the village will decide to move to a more developed area, in this case the movement from villages to cities, which can be known as urbanization.

The process of urbanization that continues to increase significantly is increasingly providing new challenges for urban development, especially local government. Several urban problems that affect population, resources, transportation, and the environment are currently quite an obstacle in urban development, and pose a dilemma in city management. Smart city construction which is currently used by many developed countries is one of the important strategies in urban development planning efforts, while maintaining a long-term competitive advantage (Zhao & Zhang, 2020). At the same time as an effort to face new challenges by taking advantage of advances in digital technology that is growing rapidly at this time. The contemporary 'digital age' calls for a reassessment of urban planning principles and practices. Against the backdrop of today's data-rich urban planning, this study seeks to answer the question of whether an appropriate methodological foundation can be provided for smart city governance from a data-driven planning perspective. It suggests that the current era of digital technology has a drastic impact on city strategy and requires a multi-faceted perspective on future urban developments.

In recent years, smart city studies have attracted increasing attention. Both from academia and industry because of the combination of urbanization, informatization, and globalization. The smart city concept is a new form of city that builds smart concepts and smart environments to support the development of urban areas. By utilizing the latest information technology methods such as the internet, cloud computing, optical networks, and mobile internet to integrate separate information dissemination to become an organic whole with synergy and directed regulation (Yin & Liu, 2020). However, keep in mind that based on the perspective of smart city development in developed countries, this smart development strategy must be adapted to the conditions of the area. Where the level of problems and needs in each urban area is different, depending on the standard of living and the wishes of the local community.

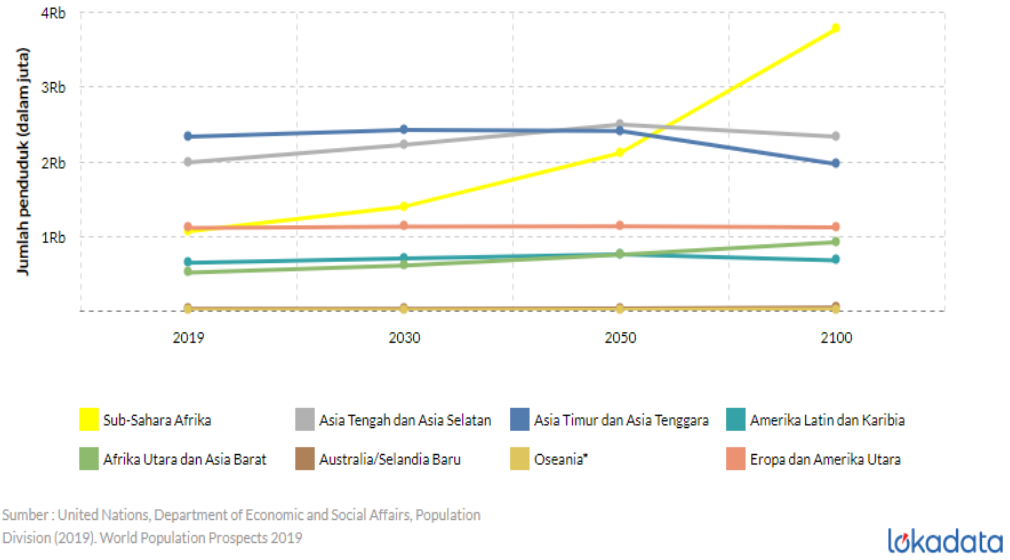

Figure 1. World Population Projection Data in 2019 until end of the 21st century (Source: United Nations Department of Economic and Social Affairs, Population Division in (lokadata.beritagar.id, 2019))

Based on the projected data above, it can be estimated that the world's population in 2019 will continue to increase until the end of the 21st century. Based on the latest global population report, the United Nations estimates that the world's population could reach around 10.9 billion. Where most of this population growth is predicted to come from sub-Saharan Africa, with a decline in population growth expected in Asia, Europe and the Americas by 2100 (lokadata.beritagar.id, 2019). The increase in the number of human population will certainly have a direct effect on the pattern of urbanization and of course on the level of population density. Where the uncontrolled urbanization pattern tends to damage the city's development plan strategy and suck up urban facilities that the government is not able to control as a whole. Some of the negative impacts that are often encountered are an increase in the problem of crime, a decrease in the level of community welfare, the emergence of over-urbanization where the urban population is very large and unbalanced with the country's economic development, and causes under-ruralization, namely the population in rural areas that is minimal and not balanced with the level and level of population. existing production methods.

One of the efforts that can be done to overcome this is by optimizing smart city development planning. Where this concept aims to improve the quality of life through urban information and technology so that services are more effective and able to meet the needs of the community. Advances in Information and Communication Technology allow direct interaction between city officials and the community and city infrastructure, monitoring problems and developments in urban areas, to efforts to improve a better quality of life (Utomo & Hariadi, 2016).

Therefore, this study aims to determine the progress of the implementation of smart city development planning in general.

B. LITERATURE REVIEW

a. Urbanization

The progress of urbanization that increases every year is certainly very influential on urban management in facing new challenges and situations. As we know that urbanization is a movement of people who usually come from outside the city or move from villages to cities. The goal itself is to improve the quality of life, such as looking for work, seeking experience, to finding a new atmosphere in urban areas. This urbanization activity makes the scope of urban scales growing, in line with the dynamic urban management problems, the number of urban residents who are also experiencing rapid growth, as well as various other elements in the management of urban infrastructure (Zhao & Zhang, 2020). A sustainable city, since the early 1990s, has become the main global paradigm in grayscale activities due to the existence of a sustainable urban form model. This is done to develop a new framework for redesigning and restructuring urban places, in order to make life in urban areas more advanced. This sustainable urbanism model is often used in responding to the challenges of sustainable development (Bibri, 2020).

As a result of significant urban growth in an area, it also demands better urban planning and management in order to make cities safer, more inclusive, resilient and sustainable (Heras, Luque-Sendra, & Zamora-Polo, 2020). So, the role of development planning is needed in improving or solving a problem. Urbanization and urban growth have been categorized as one of the main indicators of development in most cities in the world. The rate of urban growth is faster in developing countries than in developed countries. Such as India which is one of the developed countries and the City of Kolkata which is one of the major cities in India. The city of Kolkata has developed very rapidly in the last few decades due to the enormous infrastructure development since the late nineteenth century. The suburban areas of Kolkata are more unplanned than the core areas of the city which is the main obstacle to turning Kolkata city into a smart city. There are several factors that influence the main rate of urban growth in Kolkata City, namely: population density, male workforce, female workforce, secondary workers, waste land, built-up areas, availability of bus and train services. To minimize various problems in Kolkata City, the local government makes policies that will help planning and managing the area in the future (Majumda & Chatterjee, 2020).

b. Development Planning

Urban planning is an interaction that exists between the state and society with the aim of implementing a public policy in the area, facilitating administration in development, and realizing community welfare. However, this interaction becomes complex due to the increasing demands of the community for development and the growing capacity of urban ecosystems that hampers the sustainability of its functions (Lopez & Castro, 2021). Urban planning in various countries is also increasingly related to ambitions in the local climate, investment

in urban attractiveness, to smart city innovation measures. In the midst of this trend, many urban experiments are being developed by actors to test various innovations in collaborative settings (Berglund-Snodgrass & Mukhtar-Landgren, 2020).

Strategic planning can be done by encouraging and implementing all forms of program activities that consider organizational resources, and will have an impact on the development of the organization itself. In addition, technological developments, environmental impacts, and human well-being in urban areas over the years have also received more attention from the government and are increasingly challenging. Seeing the various problems that exist, supported by several qualified aspects, efforts to solve these problems continue to be improved. Currently, the government is also continuing to innovate in development planning in the central, regional, and village areas. One of them is by utilizing technological advances in planning development, the concept of a smart city or known as a smart city can be considered. It is a city concept that seeks to improve people's quality of life by incorporating new technologies and sustainable environmental practices (Castanho, Ferreira, Carayannis, & Ferreira, 2021).

c. Smart City

Smart city is a form of a new city by utilizing advances in Information and Communication Technology (ICT) which is used to analyze, sense, and integrate key information into the city's core operating system (Yin & Liu, 2020). Today's society is also increasingly captivated by the advancement of smart technology, especially the implementation of smart cities which is reflected in the planning of cities, both cities in developed and developing countries (Klusáček, O, Zgodová, & Navrátil, 2020). This concept has become one of the most developed concepts over the last two decades, where the smart city concept has been defined and formulated by many research efforts and organizations. In the implementation of smart cities, most of these definitions and initiatives focus on the operation phase of the city (Marzouk & Othman, 2020).

Technological advances through the smart city concept are almost adopted by governments around the world in connection with development planning studies. These cities aspire to achieve better outcomes for society by improving service quality, delivering information, and creating a sustainable environment. This smart city consists of a network of interconnected devices known as the Internet of Things (IoT) which aims to capture data and send it to a platform for analysis. This generated data includes a variety of information generated in large volumes otherwise known as Big Data. This stage of data retrieval to processing and storage is vulnerable to security and privacy breaches (Naqvi, Rehman, & Islam, 2020).Some of the inclusive frameworks in the implementation of this smart city are to integrate Building Information Modeling (BIM) and Geographic Information Systems (GIS) to plan and estimate utility infrastructure requirements for developing and developing cities to highlight the concept of "intelligence" during the development phase planning.

The city's official website is one of the basic sources of information about the city, which is currently almost implemented by the government. Web technology is a resource to increase the activities of city authorities in the field of

urban planning, as well as an example of implementing smart cities in development planning. These resources enable receiving and processing large amounts of information, interacting with urban communities and creating more effective management systems. Improvements in the management system in urban development activities improve the quality of life of citizens as well as investment attractiveness. According to (Yan, Liu, & Tseng, 2020). In 2017, more than 1000 cities in the world have started smart city development, half of which are in China. However, there is no uniform and clear understanding of the smart city system and it can influence evaluation or planning which makes construction distorted. These smart cities are characterized by complex self-organizing systems, and resulting in their sustainable and healthy development may require an evolutionary pattern of these systems.

All kinds of "smart" devices are the basic unit in smart city development. Meanwhile, Information and Communication Technology (ICT), a development mechanism offers technical support and regulatory mechanisms in the spontaneous operation of smart cities. These three dimensions (smart cell, ICT and development mechanisms) are combined into a scalable and distributed smart city evaluation system. If it is optimized, then the implementation will be maximal and in accordance with what is aspired to. There are various opinions regarding the implementation of smart cities in urban area development planning, both positive and negative. Such as bringing social and economic changes in a positive direction, advanced government, and competent human resources. However, these aspects can be achieved without eliminating current nonconformities in planning (Mozūriūnaitė & Sabaitytė, 2021).

Especially during the current COVID-19 pandemic, which not only affects the health of citizens, but also various factors that shape our society, environment, and ecosystem. This pandemic has shown that future life needs to be agile and flexible to adapt to the changing needs of the population. Digital technology has played an integral role during COVID-19, assisting various sectors of society, and demonstrating that smart cities can provide opportunities to address many of society's challenges in the future. While we need to create future age-friendly smart ecosystems to meet this need, technology is still not included in WHO's eight domains of age-friendly cities. The proposed CASE concept is one of the implementations of a smart city during a pandemic, which provides insight into contemporary multidisciplinary research. Through discussion and bringing together various actors with a positive impact on the planning and development of future age-friendly ecosystems. The strengths and limitations of this framework are outlined, with advantages seen in the opportunities for cities, counties, provinces and states to take an agile and collaborative approach to adopting and implementing improvements in the greater interest of residents and citizens (Marston, Shore, & White, 2020).

Spatial inequality in the provision of basic services is a major challenge in the smart city development strategy, therefore a policy on local public service restructuring is needed that takes into account spatial inequalities in promoting more effective forms of public participation (Du, Zhang, & Mora, 2021). For this reason, it is necessary to analyze the smart city concept that can be considered in

assessing the technological innovation of a city. Some analyzes that can be done are analyzing the theoretical framework based on society and innovation models; analyzing several smart city cases in developed and developing countries; describe, critique and compare several well-known smart city indices; as well as the literature explored to detect the possibility of a proposed change in the smart city index in the future (Alderete, 2020). Keep in mind that, public participation is certainly very important in the success of urban planning and policy makers in taking into account the real needs of the public (Gao, Wang, & Gu, 2020).

Scientific attention to the development of "smart cities" around the world has focused on the nature of these cities and the vision of the future that these developments will provide for individuals, communities, and institutions. Much of the research on these information-intensive projects has focused on the description of these cities in relation to their main socioeconomic goals and on the influential role in their development played by globally active information technology companies. In recent years, the discourse on urban development and planning has shifted towards intelligence. Recent studies may offer ideas about planning objectives regarding regional cohesion and how to meet infrastructure (ICT) demand. However, So far there is almost no literature on smart areas because of the relational and hybrid phenomena that view urban and rural areas as spatially interrelated. From an amalgamation of perspectives, the authors advocate a diversification of meaning and scope underlining the involvement of actors in regional social (re)development. A new analytical perspective on smart regions will be suggested that distinguishes between the three dimensions of discourse, implementation and regulation and draws on concurrent spatial effects and implications for planning practices and procedures. the authors advocate a diversification of meaning and scope underlining the involvement of actors in regional social re-development. A new analytical perspective on smart regions will be suggested that distinguishes between the three dimensions of discourse, implementation and regulation and draws on concurrent spatial effects and implications for planning practices and procedures. the authors advocate a diversification of meaning and scope underlining the involvement of actors in regional social re-development. A new analytical perspective on smart regions will be suggested that distinguishes between the three dimensions of discourse, implementation and regulation and draws on concurrent spatial effects and implications for planning practices and procedures (Matern, Binder, & Noack, 2020).

C. METHOD

Based on the purpose of this research is to know, describe, and analyze the smart city development planning. The source of the data obtained is in the form of a collection of articles sourced from publications of scientific journals of international repute or through previous research literature studies which are processed with the SCOPUS database. The data analysis technique in this study was obtained from several related questions, namely: 1) What is the dominant theme in the discussion of smart city development planning?; 2) What is the relationship between development planning and smart city planning?; 3) What are

the topics related to research on smart city development planning?; 4) What type of mapping is used in discussing smart city development planning?; 5) What concepts are used in the study of smart city development planning. Some of these questions will later be used as references in a study based on the discovery of articles in the SCOPUS database. The article which will be reviewed later is based on two stages, namely: article search and topic mapping.

Table 1. Article Review Process

The articles related to the topic of this discussion were obtained through several stages. First, identify the articles that will be used. This is done by searching for data in the SCOPUS database by entering the keyword "Smart City Development" in the available search column, by providing a year limit, namely from 2020 to 2021. Based on the search results, there are publications in the form of 133 articles that have been published. selected from 219 articles that are very relevant to the topic to be discussed in this study.

D. EXPLANATION

Linkage and Grouping of Themes in Smart City Development Planning

In this section, bibliometric analysis is carried out by making a visualization of the VOSviewer application to form a bibliometric network sourced from articles of previous research. VOSviewer generated clusters will automatically be displayed in various colors on the map. Where this cluster algorithm will operate with a parameter that can be changed to get more or less clusters. The concept explained by this visualization is related to the theme of the research, namely the study of Smart City Development Planning. The purpose of this grouping is to make it easier for researchers to analyze the topics that will be used as reference material.

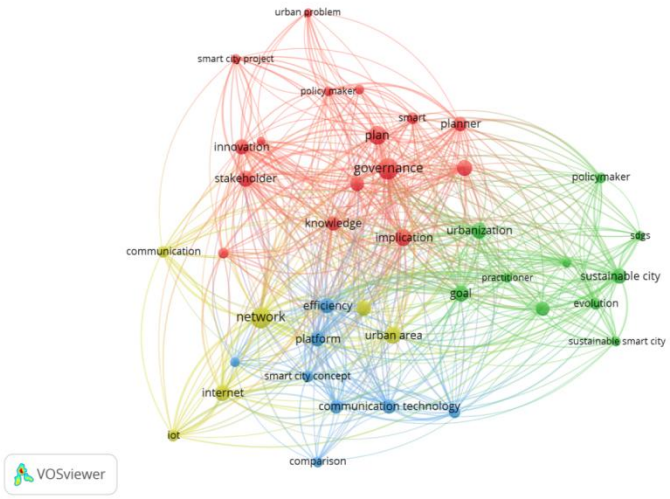

Figure 2. Theme relationship in Smart City Development Planning study (Source: VOSViewer Application)

In the visualization shown in Figure 2. This shows that each network represents a keyword related to the current research theme, which is sourced from the title and abstract of the previous article. From the results of the analysis, 219 articles were obtained and they were identified as 133 articles. Furthermore, the results of the article review with VOSviewer show that there are four groups of concepts (see table 1). In Figure 2 shows the names of the concepts shown in the cluster density view, where the color code of each used shows a list of the dominant concepts of each cluster. It aims to identify as many themes as possible that are often discussed in previous studies and allow them to be used in future research. See Figure 2, visible cluster density which is distinguished by the different colors of each cluster. The cluster 1 is red; cluster 2 is green; cluster 3 is blue; and cluster 4 is yellow.

Identification in the form of mapping Figure 2. can help researchers, especially those who are just starting their research from scratch. Where in making an interesting article requires a lot of references from previous research. In cluster 1, the related concepts are digital technology, smart city planning, urban development, and urban problems. Cluster 2 emphasizes the concepts of goals, urban development, and sustainable development. In the case of cluster 3, it refers to the concept of communication technology and smart city, while cluster 4 discusses the concept of internet network and urban area. For researchers who want to discuss the theme of smart city development planning, this clustering will help in analyzing what concepts are related.

Table 2. Grouping of Themes in the Smart City Development Planning Study

Cluster	Concept Name	Total
Cluster 1	Artificial intelligence, digital technology, governance, implication, innovation, knowledge, plan, planner, policy maker, smart, smart city development, smart city planning, smart project, stakeholder, urban development, urban problem	16
Cluster 2	Evolution, goal, policymaker, practitioner, SDGs, sustainable city, sustainable development, sustainable smart city, sustainable urban development, urbanization.	10
Cluster 3	Communication technology, comparison, effectiveness, efficiency, ICT, platform, smart city concept, smart technology.	8
Cluster 4	Big data, communication, internet, IoT, network, urban area.	6

In cluster 1, the most dominant theme is related to innovation, then the relevant article as a reference, for example, is discussed by (Zandbergen, 2020) in the journal entitled "The Unfinished Lampposts: The (anti-) Politics of the Amsterdam Smart Lighting Project". This journal discusses that these projects of smart city planning around the world are invested with the ideal that smart technology innovations smoothly negotiate the goals, interests, and moral orientations of many different stakeholders. The object used in the journal is the smart city idealism of the Amsterdam project through the application of smart lighting carried out by a consortium of civics, academics, and corporate partners in a square in Amsterdam Southeast. The project envisages "improvement" the lampposts in the square by making them adapt in real-time to local conditions. Since this plan was only partially realized due to the many institutional, cultural, and material, the materiality of the "unfinished smart light pole" is the subject of constant interaction of shifting understandings of their social, political, and technological significance. While the project's formal narrative suggests this meaning-making process to be fully inclusive, it results in learning for all participants.

In cluster 2, according to (Choi, Choi, Kim, & Lee, 2020) the concept of smart city development planning aims to be one of the solutions to global urban problems in urban planning. Regarding sustainable urban development, it has also been explained that one of the countries that is experiencing rapid development is in developing cities through smart city planning to encourage economic growth. Meanwhile, according to (Khan, Malik, Zafar, & al, 2020) through his journal entitled "Challenges for sustainable smart city development: A conceptual framework". Explained that the development of a sustainable smart city faces various challenges, such as regulations and policies, funding, infrastructure, and technological aspects. A number of studies have highlighted the importance of the

concept of sustainability in smart city development. However, there is little research that focuses on the challenges faced for the sustainable development of smart cities. The object used in this article is Pakistan through a case study that resulted in 17 respondents from executive, managerial, and operational levels of private companies and government organizations involved in smart city development.

In addition, there are other discussions regarding the concept of development planning based on articles from (Savchenko & Bordina, 2020) based on his article entitled "Green and Digital Economy for Sustainable Development of Urban Areas". One of the goals of the concept of sustainable development (SDGs) in 2030 is to enable the formulation of methods and criteria for sustainable urban development. According to him, thanks to digitalization, the ten branches of the green economy can have a breakthrough effect in ensuring sustainable development in urban areas. Although the elements of a green economy are historically organic for Russian urbanization, it is impossible to solve the main problem of sustainable development of modern Russian spatial development on the basis of existing technologies: the increasing contradiction between the trend of population and economic hyperconcentration in a small number of large urban environments (Russian standard of measurement) . Based on the previous sentence, it is known that in this study, the author took Russia as the object in mapping the problem. The consistent implementation of technological mode capabilities based on the integration of the digital economy and green economy creates opportunities for significant productivity improvements in the infrastructure and industrial sectors of cities and the development of knowledge and economic experience in them, at the same time improving the quality of the urban environment and urban life and ensuring sustainable development.

Furthermore, cluster 3, the dominant theme discussed is related to the smart city concept based on an article from (Allahar, 2020) with the title "What are the challenges of building a smart city?". It is explained that the recent emergence of the concept of 'smart city' presents a challenge for city administrators to plan, manage and regulate modern cities in the digital age. Then based on this research, the smart city concept tends to focus on city attributes at a more developed stage. Then, the discussion in this article also starts from the trend that discusses the high ideals of small regions in developing countries in implementing smart cities. The purpose of this study is to examine the steps needed to build a smart city against the background of the smart city concept, which is taken in the context of an empirical study of small aspiring smart cities. The main finding is that there is no single path to becoming a smart city, but rather that there are critical steps that can be adopted as part of the development process to achieve this goal. This work provides added value in presenting the elaboration of the smart city concept with empirical work involving the aspirations and achievements of a smart small city. This article partially fills a gap in the smart city literature and has implications for aspiring city administrators, smart city builders, people concerned with applying ICTs to address city challenges, as well as for students of urban planning, development, and management.

The last, in cluster 4, the dominant theme discussed is the concept of an urban area based on the journal of (Mohammadian & Rezaie, 2020). Based on the presentation of the material, it is explained that the sustainability of urban areas is maintained to remain a better urban setting for living through a high quality of life. To achieve this area, sustainable development, Information Technology-based urban planning, Information Communication Technology infrastructure, and innovative management play an important role. Researchers try to find out about urban life related to several indicators, namely: sustainability, innovation, ubiquitous, and intelligence that creates a sustainable and modern world through smart cities.

Dominant Theme in Smart City Planning Development Study

The dominant theme in question is a theme that hasi a high level of relevance, between the subject matter and the theme to be taken before conducting an in-depth study. Through the management of this theme, data will be obtained based on the image below.

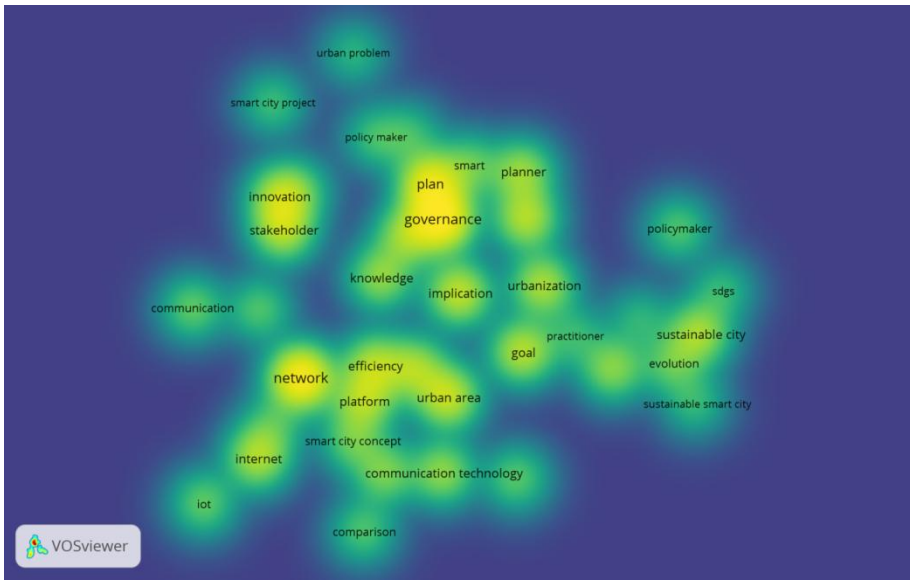

Figure 3. Dominant Concept seen from Density Visualization (Source: VOSViewer Application)

In Figure 3. It is clear that the dominant concept that appears with the color thickness sign indicating that the word with the bold color is the dominant themes discussed by previous research, which is related to the theme of "Smart City Development Planning", is in the concepts of 1) network, 2) plan, 3) governance, 4) stakeholders, 5) innovation, etc. These concepts are certainly quite dominating because many have been discussed by previous researchers and are in accordance with the themes discussed. For other concepts, it is a concept that has a complex and continuous discussion goal, making it possible to support the existing dominant concept. On the other hand, a concept that is rarely discussed in previous research is the concept of smart city development planning.

Author Dominant in Smart City Development Planning Studies

The definitions of author and writer have different meanings, where the author is aimed at someone who has a work that is releasing existing ideas and the nature of his work is more specific, and is more closed from public opinion. Meanwhile, the author himself is aimed at someone who employs himself as a writer who works in more than one specific field. Figure 4. Shows a collection of several authors who wrote articles on the theme of Smart City Development Planning. In the VOSviewer application, the dominant author will appear with a bold color that stands out from the rest. With the aim of showing that the name and color in bold are the appropriate dominant authors, who have articles related to the theme of smart city development planning.

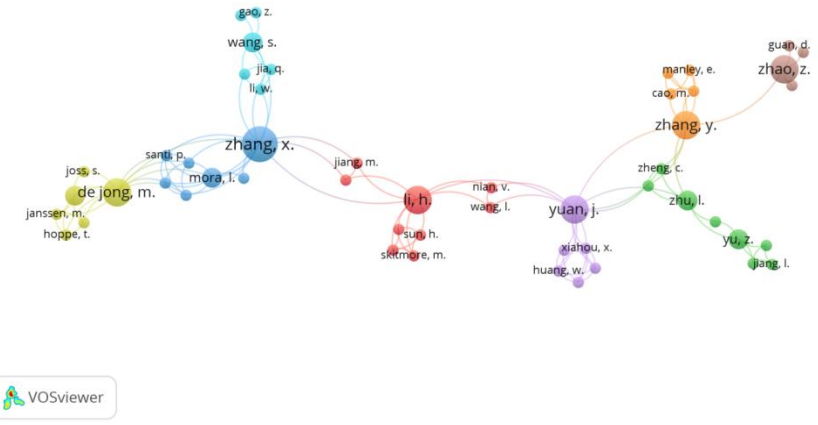

Figure 4. Author Data Mapping with Network Visualization Model (Source: VOSViewer Application)

By looking at Figure 4. So author, de jong, m ; zhang, x ; li, h ; yuan, j ; zhang, y ; and zhao, z seem to dominate in the Data Author mapping, with different topics but having the same discussion related to smart city development planning. The author here explains the relationship between each topic that will be taken by the author, namely smart city development planning and its relationship to urban areas. For this reason, in reviewing some of these articles, it must support the topic that will be used as the title of this article. Some authors, of course, do not only stand alone, but also consist of several other writers on topics that will be discussed in articles related to smart city development planning.

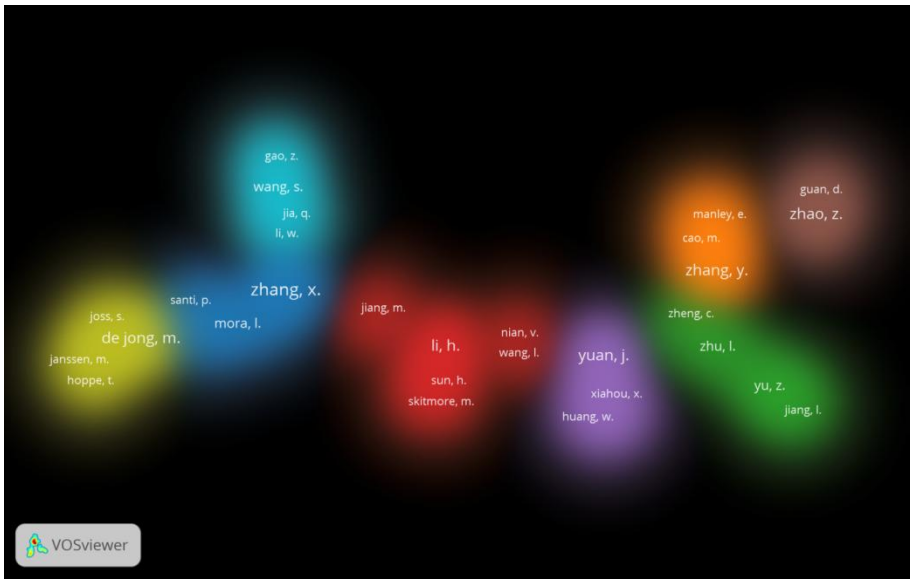

Figure 5. Author Data Mapping with Density Visualization Model (Source: VOSViewer Application)

In mapping the author data with Density Visualization mode, it can be seen that several authors are classified based on several clusters. Seen from the number of colors that appear, the cluster of article authors that match the theme of smart city development planning has as many as 8 clusters. Where the dominant author center lies in author jiang, m which has cluster networks spread and is related to other authors. This indicates that what is written by zhang, x is relevant to other authors regarding the theme of smart city development planning. An explanation of the cluster classification based on the author is in Table 2.

Table 3. Author Grouping in Smart City Development Planning Studies

Cluster	Author Name	Total
Cluster 1	Jiang, m. ; li, h. ; nian, v. ; skitmore, m. ; sun, h. ; wan, x. ; V ; wu, z. ; zhang, q.	9
Cluster 2	Jiang, l. ; khold sharafi, o ; shao, q. ; song, l. ; yu, z. ; zhan, h. ; zheng, c. ; zhu, l.	8
Cluster 3	Appio, fp ; batty, m. ; deakin, m. ; du, m. ; mora, l. ; santi, p. ; zhang, x.	7
Cluster 4	Dejong, m. ; hoppe, t. ; janssen, m. ; joss, s. ; noori, n. ; schraven, d.	6
Cluster 5	Huang, w. ; skibniewski, mj ; xiahou, x. ; xie, h. ; which, d. ; yuan, j.	6
Cluster 6	Gao, z. ; gu, j. ; jia, q. ; li, w. ; tian, y. ; money, s.	6
Cluster 7	Cao, m. ; chen, h. ; manley, e. ; marshall, s. ; zhang, y.	5
Cluster 8	Du, c. ; guan, d. ; xiu, g. ; zhao, z.	4

In Figure 4. It can be seen that de jong, m; zhang,x; li, h; yuan, j; zhang, y; and zhao, z dominate in the author's data mapping according to the study of smart city development planning. This is because the article de jong, m; zhang,x; li, h; yuan, j; zhang, y; and zhao, z are more relevant when it comes to the topic of smart city development planning. In accordance with Figure 5. It can be seen that the dominant author who appears marked with color, which indicates that the author with bold color is the author whose articles are relevant to the study of development planning. Seen from Table 2. In the author's mapping with the theme of smart city development planning, it is divided into 6 clusters. Where the clusters have a number of different authors, such as: cluster 1 as many as 9 authors; cluster 2 as many as 8 authors; cluster 3 as many as 7 authors; cluster 4 as many as 6 authors; cluster 5 as many as 6 authors; cluster 6 as many as 6 authors; cluster 7 as many as 5 authors; and cluster 8 as many as 4 authors.

E. CONCLUSION

The results show that the implementation of smart city development planning in urban areas has been widely developed in urban areas, especially in developed and developing countries. Given that the use of technology in the smart city concept is not a new thing in government arrangements around the world and continues to be developed in each country. The benefits themselves have been proven by many countries that have succeeded in implementing development planning through smart cities. Where all the components involved make it easier to develop more optimal urban areas. The essence of the smart city concept is a smarter effort in changing the order of government, community, and company as well as the interaction of the wider community in the use of technology that is clearer, more effective, efficient, and responsive.

The strategy in smart city development is carried out by adjusting all the potentials, as well as the conditions and conditions in each urban area. So that the implementation efforts are more conducive, directed and focused on the goals to be achieved by the local government. Some of the challenges in implementing a smart city in an area include the process of inputting and receiving data and information, security and privacy, huge investments, social adaptation, information technology infrastructure, and application development. This can be used as a reference in improving urban area development planning through a better smart city in the future.

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