Conference

Using a Systems-Approach for Implementing a Smart Government Policy in Soppeng Regency

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Abstract. The Soppeng Regency Government has implemented a Smart Government Policy by utilizing information and communication technology, the use of which is regulated by the Soppeng Regent regulation number 87 of 2019. This study aimed to examine the implementation of the Smart Government Policy by the Soppeng Regency Government. This was a descriptive study which used a qualitative approach. Data were collected through observation, interviews, and documentation techniques. Triangulation was used to check the validity of the data. An interactive model was used to analyze the data. The results showed that the Smart Government Policy was implemented by paying attention to the MSN-Approach implementation model, and the Systems-Approach focus indicator in particular was implemented effectively. Factors that affected the implementation of the Smart Government Policy included the lack of Human Resources, and the lack of features for registering, uploading and downloading files on websites and applications. Based on the results, we can conclude that there are improvements that need to be made in order to support the implementation of the Smart Government Policy in Soppeng Regency, including updating the website and the application, which currently can only provide information about procedures and service requirements, so that the community has to be served manually at the office or location where the service is held. (9)

Keywords: implementation, policy, smart government

1. Introduction

The transformation of Soppeng Regency into a smart city with the formation of a smart government began at the end of 2016 with the creation of an integrated innovation, namely the Soppeng Command Center, which was established in December 2016 with a working period of 45 days. In Soppeng Regency which aims to streamline services through centralized monitoring of community needs. PT. Docotel Teknologi Celebes which states that Soppeng Regency is one of the regencies in the South Sulawesi
region that has started a smart city through the creation of a command center. Based on the background description of the implementation of Smart government policies in the Soppeng Regency Government, the research problem is formulated, namely: How is the implementation of Smart Government policies in the Soppeng Regency Government in terms of the Systems-Approach indicator and the supporting and inhibiting factors. Policy implementation is an important stage in a policy structure, through this stage the policy can be influenced as a whole from the level of success to the level of achieving goals, for that policy implementation is very necessary in the process of policy stages in accordance with statement Akib (2010) that policy implementation is needed because at the At that stage, it can be seen the “suitability” of various determinants of the success of the implementation of a policy or program. (1)

The policy implementation model used is the MSN Approach policy implementation model in terms of the Systems-Approach focus indicator proposed by Kadji (2015). (5) According to Kadji (2015) a system is basically a unit consisting of a number of components that are interconnected and interact to achieve a goal. This system’s approach can manifest in several indicators. First, the Regulatory System, in this case the government as a regulator and also as the implementor (its apparatus), believes that the regulations that are formed are really for the public interest, inspire civil society and entrepreneurs to be more participatory, as well as regulations to increase the productivity of public services in a transparent and accessible manner. Accounted for. Second, the Cultural Value System which is described in the form of subsystems: a) local wisdom, b) kinship, and c) mutual cooperation. Third, the organizational structure and function system described in the form of subsystems: a) interaction, b) interdependence, c) integrity. The government, as well as entrepreneurs/Private Sector and Civil Society are jointly aware of the importance of organizational structure and function in implementing all community, government and development program policies that are supported by the interrelationships between the government, civil society and entrepreneurs within the framework of achieving the goals of the state and society.

According to Firdaus (2018), a smart city is a city that is able to serve, protect and fulfill all the needs of its citizens in a sustainable manner with the support of technology and infrastructure and is oriented towards realizing happiness and prosperity for its citizens. In realizing a smart city, there are 6 dimensions achieved by a city according to Cohen in PSPPR UGM (2016), namely: smart people, smart mobility, smart economy, smart government, smart living, and smart environment. (3)

The Smart Government concept has a focus on improving public services from the government to the community based on Information and Communication Technology
which is implemented through online services, infrastructure and open government. In the form of implementing smart government, there are e-services. According to Buchari (2016) E-Service is a leading application by utilizing the use of information and communication technology in different areas. According to Scassa (2014) the goals of open government are: Going beyond transparency and accountability, although this is still the main goal besides transparency and accountability, open government seeks to increase citizen participation in governance through various new forms of engagement, some of which may include social media. (2) (11)

2. Methods

The research method used is descriptive qualitative research. In this research Data collection techniques used are interviews, observation, and documentation. The technique of checking the validity of the data used in this study is triangulation. The data analysis technique used in this research is the interactive model.

3. Results and Discussion

3.1. Results

Systems-approach is an analytical and logical approach in the field of public policy implementation which consists of a unity of components that interact and relate to each other to achieve a goal. Regulatory System, the Soppeng Regency Government creates a Smart Government regulation seen through the regulation on Website Management and Local Government Social Media as stated in the Soppeng Regent Regulation Number 87 of 2019, the purpose of making this regulation is to regulate the administration of websites as social media in implementing Smart Government indicators namely Online Service and Open Government. Cultural Values system, Soppeng District Government in implementing the Smart Government implement a form of local wisdom, kinship, and All’s mutual cooperation which is reflected in motto the Soppeng “Dongiri temmatipa, Salipuri temmading, Wesse temmakapa” which is described as follows:

Organizational Structure and Function System, the Soppeng Regency Government in implementing Smart Government has embraced various layers ranging from SKPD, TNI-Polri, and entrepreneurial elements which are manifested in a service integration system called SCC (Soppeng Command Center) or La Mataesso which is a community service center and state apparatus in Soppeng Regency which is connected to every
public service in Soppeng Regency. The implementation of Smart Government policies in Soppeng Regency has inhibiting factors, namely: the lack of Human Resources of the Soppeng Regency Government in the process of implementing Smart Government in Soppeng Regency in this case in terms of the position of the programmer to operate and maintain the application server and the Soppeng Regency Government website and the lack of features to register, upload, download files on websites and applications so that they are only limited to conveying information in the form of procedures, requirements, and file completion times.

Networking-approach is an approach in implementing a public policy that always promotes the spirit of synergy and network of cooperation between policy stakeholders, good public government, the entrepreneurs and civil society synergize and cooperation in promoting development, the economy, and welfare of the public.

The Strategic Partnership carried out by the Soppeng Regency Government with the Private Sector, and Civil Society through a system of cooperation, equality, openness and mutual benefit (providing benefits) in implementing Smart Government policies in Soppeng Regency, the Soppeng Regency Government seeks to invite various groups to be enthusiastic about innovation, especially the people of Soppeng Regency, youth which is embodied in Coworking Space which aims to create a creative and innovative industrial environment so that the community can develop and assist the Soppeng Regency Government in providing solutions for the community through increasing the competitiveness of MSMEs in Soppeng Regency which is manifested in providing space for entrepreneurs and civil society in building cooperation with the spirit of equality and mutual openness. This paper provides empirical insight into how increased civil society participation in local public policy is associated with reduced dependence on state budgets and more local managerial structures. Research limitations/implications-Due to

| No | Motto Soppeng Regency | Description |
|----|-----------------------|-------------|
| 1  | Dongiri Temmatipa     | Guiding government officials at all times to pay attention to the work of the people and where necessary to provide guidance to its perfection so that the work brings profitable results. |
| 2  | Salipuri Temmadinging | Maintain physical and mental health. It is intended that government officials seek to procure clothing, housing and education, so that the people with all their activities can be carried out properly. |
| 3  | Wesse Temmakapa       | Strive for harmony and peace between all groups and community members so that the community is a great energy unit to deal with any development work. |

Source: obtained from primary data
the chosen research approach, the results cannot be generalized. Comparative studies between several countries can bring some interesting insights. Social implications- This paper covers the implications for the economic and social development of new public policies in the context of administrative reform. Originality/value-This paper provides some theoretical and empirical contributions in this field of research in particular on the decision of local public managers to transfer financial resources in an active policy of local sustainable development. This is in line with the results of research conducted by (Curto & Dias, 2014) in Portugal which found that public managers or local governments have the resources to formulate proactive policies for sustainable local development. (4)

Meanwhile, other studies that are also in line with the results of this study show how public policy can effectively increase collaboration. This collaboration is an innovation involving various sectors. This collaboration involves various companies, entrepreneurs, research institutions, and the public sector. (Leckel et al., 2020) in their article recommends Local Open Innovation (LOI), which aims to help shape regional innovation policies by strengthening regional or sectoral networks to efficiently facilitate collaborative innovation. The local approach offers the advantage of facilitating the implementation of open innovation by considering the limited resources and capabilities to implement this open innovation. This article also examines the existence of stakeholders as a collaborative aspect. (6)

The synergy carried out by the Soppeng Regency Government in building and ensuring productive internal cooperative relationships as well as harmonious partnerships with stakeholders in implementing Smart Government policies in Soppeng Regency is manifested in the SCC (Soppeng Command Center) which is often also called La Mataesso. The Soppeng Command Center (SCC) was formed based on the cooperation between the Soppeng Regency Government and PT. Docotel Teknologi Celebes through a contract for the procurement of Soppeng Command Center (SCC) equipment, this SCC is an integrated community service center that has CCTV monitoring rooms connected to every public space, SKPD, Call Center services that are connected to various public services such as PSC (Public Safety Center), Damkar (Firefighters), and Police Services to make it easier for civil society to obtain services. In the Soppeng Command Center (SCC) Service Management activity, which is an integrated service center, it is charged to the Soppeng Regency Regional Revenue and Expenditure Budget.

A symbiotic mutualism that needs, benefits, and supports each other between the Soppeng Regency Government, the Private Sector, and Civil Society in the perspective
of the successful implementation of Smart Government policies in Soppeng Regency, it can be seen that through various services provided by the Soppeng Regency Government to the community such as online services through various applications that can be accessed by the public in receiving services, besides that the Soppeng Regency Government provides assistance to the underprivileged community with an integrated card method called the macca card, through this a mutual relationship is realized for mutual need, mutual benefit and mutual support between the government and the community in the perspective of the successful implementation of Smart Government policies.

One of the indicators of Smart Government, namely online service or online service is an internet network-based service carried out by the Soppeng Regency Government to the community that can facilitate the creation of easy, fast, effective and efficient services. The results of the study indicate that related to Online Service indicators consisting of Online Procedures and e-payments, the Soppeng Regency Government in providing services to the community has used internet media which is manifested in various service applications, websites and social media, making it easier for the public to receive and obtain services. Especially in the current condition of the covid-19 pandemic, online-based services are urgently needed to the community so as to reduce physical contact and crowding. Seeing this, the Soppeng Regency Government can be declared a Smart Government by implementing Online Services in every public service so that all forms of administrative services needed by the community can be easily accessed through applications, websites, and social media. The forms of Online Service provided by the Soppeng Regency Government are, SCC (Soppeng Command Center), La SIDE, PADDARE KAB. SOPPENG, and Macca Card.

The progress of information systems during the Industrial Revolution 4.0 will make all public services accessible to the public whenever and wherever they are, the public is no longer limited by space and time in obtaining public services, but what must be remembered is that the progress of information systems during the Industrial Revolution 4.0 must also be balanced with the ability of adequate Human Resources (HR) so that public services can actually run according to applicable regulations (Roman Hadi Saputro & Safriansyah, 2021). (8)

Based on the research results obtained through observations related to Online Service indicators consisting of Online Procedures and e-payments, the Soppeng Regency Government in providing services to the community has used internet media which is manifested in various service applications, websites and social media so that it makes it easier for the public to receive services. and getting services, especially in the
current COVID-19 pandemic conditions, online-based services are urgently needed to the community so as to reduce physical contact and crowding. Seeing this, the Soppeng Regency Government can be declared a Smart Government with the application of Online Service in every public service so that all forms of administrative services needed by the community can be easily accessed through applications, websites, and social media. The forms of Online Service provided by the Soppeng Regency Government are as follows:

a. SCC (Soppeng Command Center) is a community service center to create fast and appropriate services and improve the quality of life of the Soppeng community. The form of SCC implementation consists of CCTV for monitoring rooms, community communication centers with firefighters, hospitals, PSC (Public Safety Center), TNI-Polri, and public spaces from the City to the Districts, so as to create a centralized service and quickly in an emergency.

b. La SIDE is an application owned by the Soppeng Regency Government in this case managed by the Soppeng Regency Investment and One Stop Service (DPM-PTSP) which provides convenience to the public, especially applicants who want to get information directly online via smartphone. This application provides information regarding the permit requirements, duration of the permit, the status of the applicant’s file. In addition, this application also simulates the calculation of permits that are subject to retribution and accommodates complaints from the public regarding the services provided by the Soppeng Regency DPM-PTSP office.

c. PADDARE KAB. SOPPENG is a smartphone-based application managed by the Regional Financial Management Agency, where this application provides information to the public, especially in Soppeng Regency about the requirements for managing PBB, PBB Payment History, PBB SPPT Information, reports on receipt of taxes and levies as well as a complaint module, so that the public can provide suggestions and criticisms to the Regional Government, especially the Soppeng Regency BPKD.

d. The Macca card is an integrated card that has features that can be accessed through the website www.kartumacca.id, where the use of this macca card is to provide assistance to the underprivileged. card holder.

Open Government is a form of public information disclosure that provides information related to government transparency and various information needed by the community. The results of the study indicate that related to Open Government indicators consisting of Open Data, Open App, and Privacy, the Soppeng Regency Government has provided services through Open Government which is reflected in the provision of websites and social media that can be accessed easily and widely by the public so that any information
provided by the Government and needed by the community can be conveyed through the website and various social media provided by the Government. The information presented by the Soppeng Regency Government can be in the form of information on agency profiles, information on data on financial transparency reporting, population data, information on data on law, information on the use and empowerment of human resources, material resources, natural resources, as well as data information on activities and agency performance. All of these data can be accessed easily and quickly through the website, blog, and application of the Soppeng Regency Government. Websites related to Open Data are presented by the Soppeng Regency Government, namely https://soppengkab.go.id and various websites spread across all levels of agencies in Soppeng Regency.

Various websites related to Open Data are presented by the Soppeng Regency Government and each SKPD, namely as follows:

a. The official website of the Soppeng Regency Government, namely, https://soppengkab.go.id which is managed by the Soppeng Regency Communication and Information Office with various information and data service features that can be accessed by the entire community;

b. PPID (Regional Information and Documentation Management Officer) website for Soppeng Regency, namely, https://ppid.soppengkab.go.id which provides public information services;

c. The website of the Soppeng Regency Communication and Information Office, namely, https://diskominfo.soppengkab.go.id which is managed by the Soppeng Regency Communication and Information Office as the organizer of the Government in the IT Sector;

d. The website of the Soppeng Regency Population and Civil Registration Service, namely, https://disdukcapil.soppengkab.go.id which provides information about population administration services both related to requirements, service procedures, and others can be accessed through the Disdukcapil website.

e. The official website of the Soppeng Regency Education Office, namely, https://disdik.soppengkab.go.id and https://soppeng.siap.web.id This website is a website developed by Telkom Indonesia which includes all data on the Education Office that are available throughout Indonesia so that they can access information about education that is connected to existing data at the Education Office throughout Indonesia. This website contains features related to education.

f. The official website of the Soppeng Regency Agriculture Service, namely, https://distan.soppengkab.go.id;
The various applications related to the Open App provided by the Soppeng Regency Government are as follows:
a. The SIMPEG (Employment Information System) application is an application that provides information about personnel data in Soppeng Regency, where the application is managed by the Regional Personnel Agency.

b. The SIA (Attendance Information System) application is an application that provides information about employee attendance reports throughout the Soppeng Regency SKPD (Regional Work Unit).

c. The La SIDE application is an application owned by the Soppeng Regency Government in this case managed by the Soppeng Regency Investment and One Stop Service (DPM-PTSP) which provides convenience to the public, especially applicants who want to get information directly online via smartphone.

d. PADDARE KAB application. SOPPENG is a smartphone-based application managed by the Regional Financial Management Agency, where this application provides information to the public, especially in Soppeng Regency about the requirements for managing PBB, PBB Payment History, PBB SPPT Information, reports on receipt of taxes and levies as well as a complaint module, so that the public can provide suggestions and criticisms to the Regional Government, especially the Soppeng Regency BPKD.

e. The LPSE (Electronic Procurement Service) application specifically for e-tendering services, TEPIRA e-monev (Evaluation and Monitoring Team of Budget Realization) specifically regarding regional financial transparency, and the SIRUP application (General Procurement Plan System), where all these applications are managed by LKPP (Government Goods and Services Procurement Policy Institute).

f. In addition to the application, the Soppeng Regency Government in conveying information to the public uses official social media accounts belonging to the Soppeng Regency Government, including Facebook, Instagram, Twitter, Youtube, and Google Plus.

The implementation of the Smart Government policy in Soppeng Regency has limitations, namely the lack of human resources of the Soppeng Regency government in implementing Smart Government in Soppeng Regency, in this case the lack of programmers who must manage and maintain the application server and the Soppeng Regency Government website, and there is no registration, upload function and download files on websites and applications, so that they are only limited to providing information in the form of procedures, requirements and file deadlines.

Supporting and inhibiting factors for implementing Smart Government Policies in the Soppeng Regency Government are factors that influence the implementation of Smart Government in Soppeng Regency, both in terms of supporting factors and inhibiting factors.
Based on the research results obtained through observations related to indicators of supporting and inhibiting factors for implementing Smart Government policies, the Soppeng Regency Government in implementing Smart Government policies has supporting factors that support the implementation of Smart Government, namely:

a. The leadership in this case the Regent fully supports all forms of Smart Government both in terms of Online Service, Infrastructure, and Open Government;

b. Availability of a managed website in each SKPD (Regional Work Unit);

c. Every SKPD is aware of the importance of Information and Communication media that leads to Online Service;

d. Availability of SCC (Soppeng Command Center) as an integrated service center which is the first Command Center in South Sulawesi;

e. In the current Covid-19 era, the Soppeng Regency Government is preparing a PCR (Polymerase Chain Reaction) tool to detect and diagnose the Covid-19 disease or virus;

f. The Soppeng Regency Government prepares a special Swab Test Service Car managed by Labkesda equipped with Swab testing equipment and 10 medical personnel so that they can carry out swab tests in every Sub-district in an effort to quickly detect the spread of COVID-19 in Soppeng Regency;

g. There are several smartphone-based applications that people can download on the Play Store to support the form of public services; and

h. The Department of Communication and Information Technology of Soppeng Regency has made a major contribution to ensuring the implementation of Smart Government in Soppeng Regency.

While the inhibiting factors for implementing Smart Government policies in Soppeng Regency are:

a. Lack of Human Resources of the Soppeng Regency Government needed in the process of implementing Smart Government in Soppeng Regency;

b. There is still a lack of features for registering, uploading, downloading files that are managed by the community on websites and applications so that they are only limited to conveying information in the form of procedures, requirements, and file completion times.

c. There are still people who are technologically savvy who tend not to understand the use and procedures for using various Information and Communication devices;

d. Lack of socialization to the public about how to obtain online services and public information needed by the community so that people no longer need to be manual in getting public services.
Some of the findings of research on the application of smart cities in Soppeng district are in line with (Mursalim, 2017) findings which show that: Bureaucratic behavior is very influential in build a Smart City, so that in implementing the Smart City program make cities efficient for the people, decent city to live in, public service happens well, high economic level, and the level of urban infrastructure is organized and neat. The final problem regarding the structure. (7) (11)

Bureaucracy, to implement a policy policy implementers must know and understand what to do in implement a policy. But in not everyone understands the implementation policies made, so that the City Government Bandung held special training for explore the Smart City program for the employees, especially employees who are in the Department of communication and informatics because of this service as implementers.

According to New (2017), A smart city will benefit from analyzing its own data; however smart cities would get far greater value from analyzing larger pools of data generated by all other smart cities. Much as sharing patient data between health-care researchers can lead to the development of new treatments and improvements in patient care, if cities share data, governments can analyze larger pools of data, enabling more accurate and actionable insights. However, cities are not well equipped to develop interoperable systems that span local and even national boundaries. Additionally, while cities benefit from analyzing other cities’ data, an individual city itself has little incentive to share data. Moreover, cities may enact policies that limit data collection and sharing, perhaps due to fears about privacy or cybersecurity risks, counterproductively prioritizing their own immediate interests and not the value that could be created if all cities shared data in a common pool.

4. Discussion

Implementation of the Smart Government policy in the Soppeng Regency Government in terms of the system approach has been quite good. According to Kadji (2015) the systems approach is seen as one of the logical and analytical approaches to various fields, including the field of public policy implementation. (5) This can be seen in the following description: Regulatory system. The Smart Government regulation in Soppeng Regency shows that it is really for the public interest, it can be seen with the regulation on the Management of Websites and Social Media of the Regional Government as stated in the Soppeng Regent Regulation Number 87 of 2019. According to Kadji (2015) the Regulatory System in this case the government as regulators as well as implementers (their apparatus), believe that the regulations that are formed
are truly for the public interest, inspire civil society and entrepreneurs to be more participatory, as well as regulations to increase the productivity of public services in a transparent and accountable manner. The cultural value system reflected by the Soppeng Regency Government still adheres to forms of local wisdom, kinship, and mutual cooperation in implementing the Smart Government Policy which is reflected in the Soppeng Regency motto, namely “Dongiri temmatipa Salipuri temmadinging, Wesse temmakapa”. According to Kadji (2015) the Cultural Value System is described in the form of subsystems: local wisdom, kinship, and mutual cooperation. The government (policy makers/makers and implementers), as well as entrepreneurs and civil society together strengthen and respect the sub-system of local wisdom in the form of: cultural, linguistic, ethnic and sub-ethnic customs, maintain kinship cohesiveness and mutual cooperation as capital. The main driving force for the success and sustainability of development. (5)

Organizational Structure and Function System. In implementing Smart Government, it can be seen from the SKPD within the ranks of the Soppeng Regency Government, PSC, Fire Department, TNI-Polri, and elements of entrepreneurs who support each other and carry out their main tasks and functions which are supported through an integrated service system called La Mataesso or also known as La Mataesso. SCC. According to Kadji (2015) Organizational Structure and Function System described in the form of subsystems: interaction, interdependence, integrity. (5)

Online Services. The implementation of the Smart Government policy in the Soppeng Regency Government in terms of Online Service indicators has been running quite well. However, researchers found shortcomings that need to be improved in ensuring that Smart Government in Soppeng Regency, especially in Online Service is even better, the shortcoming is that the features that function to register, upload and download files are still lacking so that when the COVID-19 pandemic people do not take care of it manually. Open Government has been running well reflected in the provision of websites and social media that can be accessed easily and widely by the public so that any information provided by the Government and needed by the community can be conveyed through the website and various social media provided by the Government.

5. Conclusion

Based on the results of research on the implementation of smart government policies in the government, Soppeng district has been quite good. However, there are still shortcomings, namely in terms of online service still lacks features that can be used
by the community in managing administration online, and there are obstacles for the Soppeng Regency Government to implementing this Smart Government policy, namely, Lack of Resources People from the Soppeng Regency Government needed in the implementation of Smart Government.

Based on the conclusions of research on the Implementation of Smart Government Policies To the Soppeng Regency Government, suggestions can be recommended, namely: With Online Service, it is hoped that it will be further improved in adding website features and applications that can be used by the public to get services from websites and applications without the need to manually go to the relevant public service places.

References

[1] Soppeng regent regulation number 87 of 2019 concerning management of local government websites and social media.
[2] Akib H. Policy implementation: What, why, and how. 2010;1(1):1–11. Jurnal Ilmiah Administrasi Publik. https://ojs.unm.ac.id/index.php/iap/article/view/289 Kadji Y. Formulation and implementation of public policy leadership and bureaucratic behavior in reality. UNG Press Gorontalo; Provinsi Gorontalo; 2015.
[3] Firdaus F. Pekanbaru madani from metropolitan to smart city towards society. Elex Media Komputindo; Jakarta. 2018.
[4] Buchari RA. Implementation of e-service in public organizations in the field of public services in Cibangkong Village, Batununggal District, Bandung City. Sosiohumanities. 2016; 18(3): 225. https://doi.org/10.24198/sosiohumaniora.v18i3.8762
[5] Scassa T. Privacy and open government. Future Internet. 2014; 6(2): 397–413. https://doi.org/10.3390/fi6020397
[6] Curto HS, Dias Á. Administrative reforms and performance of local public policies.
[7] International Journal of Public Sector Management. 2014;27(6): 45-59. https://doi.org/10.1108/IJPSM-07-2012-0091
[8] Leckel A, Veilleux S, Dana LP. Local open innovation: A means for public policy to increase collaboration for innovation in SMEs. Technological Forecasting and Social Change. 2020 (1-20); 153. https://doi.org/10.1016/j.techfore.2019.119891
[9] Saputro RH, Safriansyah SA. Tantangan sistem informasi berbasis pelayanan publik di era revolusi industri 4.0. Sawala: Jurnal Administrasi Negara. 2021;9(1): 89-101. https://doi.org/10.30656/sawala.v9i1.2943
[10] Mursalim SW. Implementasi kebijakan smart city di kota bandung. Jurnal Ilmu
[13] Pusat Studi Perencanaan Pembangunan Regional (PSPPR) Universitas Gajah Mada (UGM). Yogyakarta city road map towards smart city. Gadjah Mada University Online Journal. 2016;1:1–27.