CHAPTER I

INTRODUCTION

1.1 Background

As the population increases, problems in an area become more complex. The behavior patterns and habits of the community will change over time, causing regional development activities to increase rapidly. People certainly want a better quality of life and a sustainable economy. Thus, regional development needs to be carried out by maximizing its potential without ignoring the problems in the area. The form of regional development that the government can do to the community is by providing facilities in the form of public services. Good public services are transparent, easily accessible without being limited in location and time, cost-effective, have good governance, and make it easier for the public to get information quickly and accurately. Of course, this can increase the satisfaction of public services, and increase public trust in the government, and the government is responsive in responding to the aspirations of its people. Therefore, the government needs to provide public services based on information communication technology (ICT) so that public services can run more optimally.

The utilization of information technology in the scope of local government will improve the function and local governance with the concept of E-Government (Ramadhani, Purnomo, & Kasiwi, 2020). The government implements e-Government to improve public services to be efficient, effective, and accountable. However, cooperation from all parties is needed to create a safe and comfortable area for the community and a strong economy. In this case, there is a need for cooperation

between the government, the private sector, and the community. Thus, the Smart City concept emerged to support regional development. The public views Smart City from how much an area develops applications for gadgets that the public can access. Nevertheless, the implementation of Smart City requires much interaction from the community and the relevant local government.

The Smart City concept can be said to be a city that can manage and utilize existing resources optimally, efficiently, and community-based (Ramadhani et al., 2020). It aims for sustainable economic growth, improving people's quality of life, and providing information and solutions to the community quickly and accurately (Saputro & Darminto, 2019). Smart City in Indonesia was originally initiated as a form of innovation by the government, especially for areas with high population problems, this was initiated by Suhono S. Supangat, an expert from ITB (Fauzi & Rostyaningsih, 2018; Saputro & Darminto, 2019).

Starting in 2017, the smart city movement emerged in Indonesia, which aims to direct districts and cities in Indonesia to prepare smart city master plans to optimize the benefits of information technology in accelerating public services and increasing the potential of each region. This is a joint program with the Ministry of Communication and Informatics (Kominfo), Ministry of Internal Affairs (Kemendagri), Minister for Public Works and Human Settlements (Kemen PUPR), National Development Planning Agency (Bappenas), and the Presidential Staff Office. In 2020 there are 150 regencies/cities selected in the smart city movement, with 50 regencies/cities relating to the theme of Super Priority Tourism Areas (KPSP) (Metrotimes.news, 2021). The smart city with the KPSP theme aims to make priority

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tourist areas become areas that can become cities that support national and global class tourism activities. One of the districts included in the KPSP is Purworejo Regency because it is located in the National Tourism Strategic Area (KSPN) Borobudur (Purworejo.sorot.co, 2021).

Purworejo Regency started planning to adopt the smart city concept in 2017 and has conducted comparative studies in several regions regarding the smart city concept. From the comparative study, Purworejo Regency was interested and officially adopted the Tangerang City Smart City development because it was considered very suitable for the development in Purworejo Regency (Murhadi & Jumasa, 2019). Therefore, with the smart city initiation, the strategy undertaken by Purworejo Regency from e-government to smart city is a system approach, namely the elaboration of policy directions in the vision and mission with the service domain on the Garuda Smart City Model, which is associated with the smart economy, smart society or smart environment (Murhadi & Jumasa, 2019).

Regional development based on the Smart City concept ensures the accommodation of development targets in the National Mid-Term Development Plan (RPJMN) in the Smart City planning document in the regions to encourage an effective, efficient, inclusive and participatory Smart City development process (Dinkominfo.purworejokab.go.id, 2020). To achieve this, the Purworejo Regency Government carried out a Smart City mentoring program that aims to create integration, synchronization, and synergy between Smart City development planning at the central and regional levels by providing a material basis and practical implementation (Dinkominfo.purworejokab.go.id, 2020).

As a follow-up to the program, Technical Guidance for preparing a Smart City Master Plan (Smart City) was carried out. The intended target is the preparation of a guidance document in the preparation of a comprehensive and applicable Smart City master plan in the short term (1 year), in the medium term (5 years), and the long term (10 years) (Dinkominfo.purworejokab.go.id, 2020). There is a quick win in developing information technology-based programs to accelerate Purworejo district towards a smart city (Murhadi & Jumasa, 2019). The implementation of regional Smart City development following the master plan and Quick Win program in the next year will assist local governments in governance and management in developing Smart City so that it can take place systematically and sustainably (Dinkominfo.purworejokab.go.id, 2020).

The smart city master plan needs to be prepared according to the framework or reference from the central government for a smart city, including 6 (six) dimensions or supporting components, namely smart people, smart governance, smart economy, smart mobility, smart environment, and smart living (Saputro & Darminto, 2019). The Purworejo Regency smart city master plan has discussed developing the six dimensions of a smart city, but it is not sustainable. One of the dimensions developed in Purworejo is smart governance, which has been running since 2012 and followed up with an e-government roadmap in 2017.

In Purworejo, the implementation of smart cities has not been maximized and has not been standardized. Purworejo Regency is still far behind when compared to other regions. For example, in Bandung, there are 600 CCTV installed points, while in Purworejo, only about a hundred. The procurement is not routine every year.

Purworejo Regency has made various efforts to provide cyber connectivity, provide information systems, and prepare the necessary internet infrastructure. Purworejo has used a backbone network for fiber optics. It is recorded that there are 15 kilometers of fiber optic owned by the Regency Governments, and about 200 kilometers are still using the rental system (Radarjogja.jawapos.com, 2020).

To realize that Purworejo Regency has a government apparatus that can carry out good, clean, and participatory governance, it is necessary to optimize public services (Murhadi & Jumasa, 2019). The optimization of public services is included in the dimensions of smart governance to realize Smart City. Smart governance is part of Smart City's objectives related to public services: better efficiency, community leadership, working mobility, and continuous improvement through innovation (Rahmatullah, 2021). Smart City-based public services are used by the Purworejo District Communication and Information Agency (Dinkominfo) to provide information space to the public. Based on the Communication Forum for Public Aspiration (CVP) held by the Purworejo District Communication and Information Agency in 2020, Purworejo Regency is planned to go to Smart City in 2021 (Jatengprov.go.id, 2020).

An innovation from the Office of Communication and Information (Dinkominfo) of Purworejo Regency is developing the PORJO Application (Purworejo People's Online Complaints), which aims to of online-based aspirations and complaints about the people of Purworejo. The presence of the PORJO application as a liaison to facilitate the public in terms of public services and information. One agency that has utilized the PORJO application is Health Social

Security Administering Agency (BPJS Kesehatan). BPJS Kesehatan synergizes with the Department of Communication and Information (Dinkominfo) in providing information and handling complaints of participants of the National Health Insurance-Healthy Indonesia Card (JKN-KIS) through the PORJO Application. The PORJO application has been developed into the PORJO-Purworejo Smart City Application and launched on February 27, 2020. This development was carried out with the aim of the PORJO-Purworejo Smart City application being a public service facility for the community with application content containing all public services and information, compared to the previous application, which is only used for public online complaints (Jamkesnews.com, 2020).

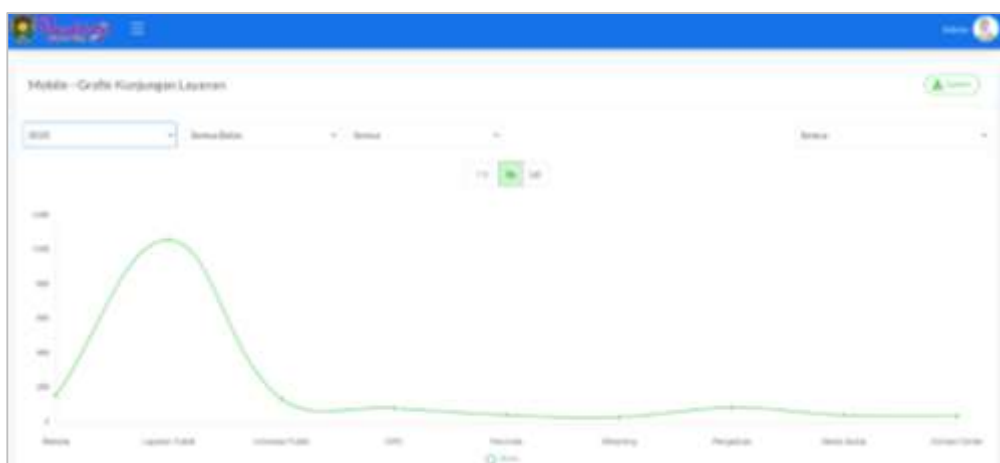**Figure 1.1 Main Menu PORJO-Purworejo Smart City Application**

Source: PORJO-Purworejo Smart City Application screenshotted by author

This application synergy collaboration is expected to bring fresh air to the people of Purworejo Regency in obtaining public information. Considering that in this era of openness, the public has the right to know various information that has been and will be carried out by the district government. This smart city application is expected to serve the community efficiently so that people no longer need to go to the official office in droves. Everything can be accomplished through the Purworejo Smart City application, including registration of family cards (KK)/ID cards (KTP), reporting of lost ID cards (KTP)/Driver's licenses (SIM), driver's license renewal, and death certificates (Jatengprov.go.id, 2020).

The community has widely used the PORJO-Purworejo Smart City application, especially the people of Purworejo Regency itself. The visits from the public or users of the PORJO-Purworejo Smart City application from the initial launch, namely from 2020 to 2021, are as follows:

Figure 1.2 PORJO-Purworejo Smart City Application Service Visit Graph in 2020

Source: (Purworejo Smart City, 2022)

The picture shows that there are 9 main menus in the PORJO-Purworejo Smart City application, including the Website menu, Public Services, Public Information,

OPD, Perumda, Streaming, Complaints, Social Media, and Contact Center. The graph shows that the number of service visits on the PORJO-Purworejo Smart City application in 2020 is the highest in the Public Service menu, which is 1059.

Figure 1.3 PORJO-Purworejo Smart City Application Service Visit Graph in 2021

Source: (Purworejo Smart City, 2022)

The graph shows that the highest number of service visits on the PORJO-Purworejo Smart City application in 2021 is in the Public Services menu. This is the same as the previous year regarding the most searched menu. In 2021, the number of visits to the Public Service menu was 901. Thus, it can be concluded that the Public Service menu in the PORJO-Purworejo Smart City application experienced a decrease in the number of visits by users from 2020 to 2021.

From a brief observation, service features in the PORJO-Purworejo Smart City application still have problems such as errors when opening. In addition, the application does not provide complete service information the community needs. This needs to be studied regarding the PORJO-Purworejo Smart City application. With the hope that there will be easy access to public service information for the people of Purworejo Regency to this application, it is necessary to know how readiness the

PORJO-Purworejo Smart City application is. This research was conducted because of the need for an e-government analysis of the PORJO-Purworejo Smart City application to determine the maturity and readiness of the application so that people can access public services easily and quickly through their mobile phones. Based on the description stated above, the researchers chose the research title: Analysis of E-Government Based on PORJO-Purworejo Smart City Application.

1.2 Problem Formulation

Public service innovations in the PORJO-Purworejo Smart City application have decreased the number of visits or access to public services from 2020 to 2021. In addition, the application does not yet provide complete public service information. This allows the public to not fully use the PORJO-Purworejo Smart City application to gain access to services. Thus, it is necessary to examine the readiness of the PORJO-Purworejo Smart City application as a public service facility in Purworejo Regency using an e-government assessment. So, the questions from the problem formulation are: How to result the e-government assessment analysis of the PORJO-Purworejo Smart City application in supporting smart governance?

1.3 Objectives and Benefits

1.3.1 Research Objectives

This research aims to analyze the PORJO-Purworejo Smart City application using e-government assessment to support smart governance.

1.3.2 Research Benefits

a. Theoretical benefits

As a medium for implementing the theory used, as well as reference material for further research related to the application of government public services.

b. Practical benefits

- For the Government

    This research is expected to provide input and be considered to improve the quality of public services in Purworejo Regency through the PORJO-Purworejo Smart City application.

- For the University

    This research is expected to add insight and as a reference and contribution of ideas that students in research can use.

- For the Community

    This research is expected to increase public interest in using the PORJO-Purworejo Smart City application to obtain public services quickly and easily.

1.4 Literature Review

Several previous studies related to the implementation of e-government to support smart cities in the areas used by the authors in this research. Previous research used as a literature review is as follows:

Table 1.1 Previous Research

No	Author, Journal, Year, and Title	Research Purpose	Theory and Research Methods used	Discussion Results and Conclusions	Similarities and Differences with the research conducted
1.	Wahju Tjahjo Saputro and Bambang Priyo Darminto, Jurnal INTEK Vol. 2 No. 1 Mei 2019, Kajian tentang Smart City: Paradigma, Kesempatan, Permasalahan yang ada di Kabupaten Purworejo	Provide a comprehensive picture of the smart city concept related to geographical, environmental, economic, and social constraints in the Purworejo Regency.	According to Giffinger R., et al. (2007), the Smart City paradigm theory covers six dimensions of a smart city with aspects of smart living, smart mobility, smart people, smart economy, smart environment, and smart government. This research studies literature related to the smart city in Purworejo Regency, where the district government's leadership is. Purworejo proclaimed the year 2019 Purworejo Regency is	This study concludes that Purworejo Regency is ready for a minor-scale smart city. This is indicated by the availability of a fiber-optic network covering 16 sub-districts. In addition, 7 (seven) of the 9 (nine) ICT infrastructures have been built. The productive age community of Purworejo Regency is sufficient to support smart cities. The graphic data shows the highest percentage of agriculture, forestry, hunting, and fisheries sectors. Until Purworejo Regency can focus on the smart economy	The similarity with the research to be carried out is the research location in Purworejo Regency. However, the object under study is different, namely analyzing the PORJO-Purworejo Smart City application using the e-government assessment framework.

			towards a smart city. The method used collects various literature materials related to smart cities and their scope. Then, the data is obtained based on the results of the literature and assessment.	and smart mobility. Of the 40 fields in Purworejo Regency, 13 have not utilized information technology.	
2.	Murhadi and Hamid M. Jumasa, Jurnal Sistem Cerdas Vol. 02 No. 03 2019, Strategi Transisi Kabupaten Purworejo dari E-Government menuju Smart City	This research aims to examine the readiness of Purworejo City towards Smart City or Smart City Readiness.	The method used in this research is descriptive qualitative. This smart city readiness study uses the Garuda Smart City Model (GSCM) framework. Data were collected by interview, focus group discussion, a document study, and direct observation.	The strategy undertaken by Purworejo district from e-government to smart city is a system approach between the elaboration of policy directions associated with a smart economy, smart society, or smart environment. In addition, there is a quick win in developing information technology-based programs that will support the acceleration of the Purworejo	The similarity with the research to be carried out is the research location in Purworejo Regency. However, this research has a different discussion: analyzing the PORJO-Purworejo Smart City application as a public service innovation.

				district towards a smart city.	
3.	Muhammad Gilang Gumilar, Jurnal Gama Societa Vol. 3 No. 1 2019, Inovasi Pemerintah Daerah Jogja Smart Service dalam Menciptakan Smart and Liveable City di Kota Yogyakarta	This research aims to identify the provision of integrated public service information, in local government innovations in the form of website and smartphone applications and analyze how to optimize the utilization of the Jogja Smart Service application.	The research method used is qualitative. Secondary data is obtained through agency reports and application features via smartphones. The analytical technique used is descriptive qualitative.	The research results show that the JSS application consists of integrated information by presenting information in visuals, descriptions that are integrated with space and location in the form of maps, and augmented reality. The utilization of JSS Applications through system monitoring shows good utilization. In addition, it is necessary to optimize the use of applications by the wider community.	The similarity with the research that will be carried out is reviewing applications to support smart cities in the region. The difference with this research is that the research object is the PORJO-Purworejo Smart City application.
4.	Ramadhani, Eko Priyo Purnomo, and Aulia Nur Kasiwi, Jurnal Pemerintahan dan Politik Vol. 5 No. 2 Januari 2020, E-	This research aims to assess how well the Jogja Smart Service (JSS) application as a public service	E-Government Assessment is used to assess the Jogja Smart Service (JSS) application in this research. The analysis method uses the method	From the studies and calculations, the Jogja Smart Service (JSS) application can be very good for being a cheap, easy, and fast public service facility.	The similarity with the research to be carried out is to examine the application of public services and use the theory of e-government

	Governmen t Assessment pada Kualitias Aplikasi Jogja Smart Service (JSS) di Kota Yogyakarta	facility implements the smart city concept in Yogyakarta .	of observation and direct observation of the Jogja Smart Service (JSS) application.		assessment. The difference with this research is that the research object is the PORJO-Purworejo Smart City application.
5.	Yohanes Payong, Jurnal Inovasi Kebijakan Vol. 4 No. 1 2019, Kesiapan Implementa si E-Government Menuju Penguatan Sistem Inovasi Daerah (SIDa) Kota Kupang	This research aims to evaluate the readiness to implement e-Government in various agencies in the Kupang City Governme nt.	This research uses descriptive quantitative. The variables of e-Government implementati on readiness measured consist of ICT connectivity, ICT use and integration, training, HR capacity, regional policies and regulations, infrastructure , security, access, and application services.	The research results show that 52.94% of applications are used offline, and 47.05% are used online. However, 15 OPD (50%) stated that they did not fully utilize the online system based on the survey data. Meanwhile, the updating of data and information on the website (26%) was not updated, and (30%) stated that they were frequently updated. Regarding the ease with which the public can access data and information, 11 OPD (36.6%) states that it is	The similarity with the research to be carried out is to analyze e-government on regional innovation. However, the difference with this research is to analyze the e-government of the PORJO-Purworejo Smart City application.

				difficult to access information.	
6.	Audy Saphira, FISIP UIN Jakarta 2019, Kebijakan Tangsel Smart City Melalui Penggunaan Aplikasi Siaran di Kota Tangerang Selatan	This research aims to find out how the Tangsel Smart City policy is implemented in South Tangerang City, how the SIARAN application is the application of Tangsel Smart City, and the obstacles that exist in the Tangsel Smart City policy and the SIARAN application.	Using descriptive qualitative methods, analyzing findings based on archives, documents, and articles. The data analysis theories are Good Governance, Public Policy, E-Government, and Smart City.	This study concludes that the Tangsel Smart City policy that gave birth to the SIARAN application has run effectively and efficiently by the Good Governance criteria. Still, there are several shortcomings, such as the lack of open socialization with the public regarding the SIARAN application. So, many people in South Tangerang still do not know about the SIARAN application, and the application users are still relatively few.	The similarity with the research to be carried out is to examine applications to support smart cities in the region. The difference with this research is that it takes a case study in Purworejo Regency using the PORJO-Purworejo Smart City application.
7.	Bahrul Azis Pratama Putra, Eko Priyo Purnomo, and Aulia Nur Kasiwi, Jurnal Pemerintah	This research aims to discuss web management and the Jogja City Governme	This research uses the descriptive qualitative method. The data source uses secondary data taken	The research results show that the Yogyakarta Regional Government, through its website, has tried to uphold	The similarity with the research to be carried out is to analyze e-government on information and

	an Dan Politik Vol. 5 No. 1 2020, Transforma si E-Governmen t Berbasis Teknologi Komunikas i dan Informasi Website Sebagai Perwujudan Smart Governance Kota Jogja	nt Web developme nt to realize the concept of Smart Governanc e.	from the Jogja City Government Website.	the values contained in the Smart Governance concept, namely ICT-based public services (Information, Communicatio n, and Technology). However, several aspects need to be considered and strategies that must be reviewed by the Regional Government of Jogja, namely the obstacles and challenges in the data formation process, the continuity of the use of the website, and the sustainability of information and communication .	communicati on technology in the regions. However, the difference with this research is that it takes a case study in Purworejo Regency with the object of research in the form of the PORJO-Purworejo Smart City application.
8.	Asri B., VISIONER : Jurnal Pemerintah an Daerah di Indonesia Vol. 12 No. 4 2020, Implementa si	This research examines the implement ation of the Applicatio n-Based Public Service	This research uses the descriptive qualitative method. Sources of data using primary data and secondary	The research results show that application-based public services using smart city technology developed in Cimahi City	The similarity with the research to be carried out is to analyze the application of public services in the regions. However,

			data. Informants were taken based on the purposive sampling technique.	can run well, people get services as they should, and they are very useful. Moreover, this service is effective, efficient, fast and precisely applied to adapting new habits during the COVID-19 pandemic, which has not been completely completed.	this research's difference is analysing the PORJO-Purworejo Smart City application in Purworejo Regency.
	Kebijakan Pelayanan Publik Berbasis Aplikasi Pada Era Covid-19 Di Kota Cimahi Provinsi Jawa Barat	Policy in the Covid-19 era in Cimahi City.			
9.	Ahmad Rizka Ziadi, Bambang Supriyono, and Andy Fefta Wijaya, International Journal of Management and Administrative Sciences Vol. 3 No. 9 2016, The Effectiveness of Information System in Public Complaint Service: An Implementation of E-	This research aims to analyze the process and role of the government in handling public complaint services by using two smart city applications, namely Qlue and CROP. Furthermore, it attempts to determine how effective the informatio	This research uses descriptive qualitative research methods. In addition, this research uses the DeLone & McLean model to measure the effectiveness of information systems in public complaint services.	Two smart city applications provided by the DKI Jakarta Provincial Government have proven effective because Regional Work Units (SKPD) can respond quickly and easily to report their complaints. But, unfortunately, community participation in using Qlue is still very low from the total population. This is evidenced by	The similarity with the research to be carried out is to analyze e-government on smart city applications in the regions. The difference with this research is that it focuses on the PORJO-Purworejo Smart City application.

	Government Based on Jakarta Smart City Applications	n system provides public complaints services based on the Jakarta Smart City application.		the data obtained from the JSC unit. For residents who use Qlue, only 3% of the total population in Jakarta.	
10.	Restu Ramadhan, Ria Arifianti, and Riswanda, Responsive: Jurnal Pemikiran Dan Penelitian Administrasi, Sosial, Humaniora Dan Kebijakan Publik Vol. 2 No. 4 2019, Implementasi E-Government di Kota Tangerang Menjadi Smart City (Studi Kasus Aplikasi Tangerang Live)	This research aims to determine whether the implementation of E-government in Tangerang City towards Smart City (a case study of Tangerang live application), has been running well.	The method used in this research is literature study through books, scientific journals, newspapers, magazines, and sources of information from web pages/websites via the internet.	The implementation of the smart city program has not gone well due to several problems such as socialization that has not been maximized, incompetent human resources, slow service handling, and the absence of a legal basis that regulates the Tangerang Live application.	The similarity with the research to be carried out is to analyze e-government applications in the regions. The difference with this research is that it focuses on the PORJO-Purworejo Smart City application.

From some of the research described above, it can be concluded that this research

has similarities and differences from previous research. For the most part, this research

has similarities with previous research, namely analyzing e-government on public

service innovations in applications to support smart cities in the region. However, in this research, we will discuss the application of PORJO-Purworejo Smart City using the e-government assessment framework.

1.5 Theoretical Framework

1.5.1 E-Government

a. Definition of E-Government

It is an essence and responsibility for employees or bureaucrats to become public servants with results-oriented processes that facilitate services for the community. This is attempted by creating a public service process with several internet-based technologies to make providing public services for the community easier. In simple words, the main goal of e-government is to improve ideal and quality public services (Kurniawan & Atmojo, 2020).

E-government is an electronic-based government administration that efficiently, effectively, and interactively improves public service quality (Yusuf & Jumhur, 2018). E-Government is one of the major developments in public administration, which utilizes information and communication technology (ICT) as a new instrument in providing public services (Ramadhan et al., 2019). E-government can improve relations between the government and other parties with information technology. The implementation of E-government aims to improve the internal performance of the government. Still, the ultimate goal is to provide better, cheaper, or faster public services to meet the community's various needs and improve human life quality.

b. E-Government Benefits

E-government has benefits, including:

1) improve the quality of government services to its stakeholders (community, business, and industry), especially in terms of effectiveness and efficiency in various fields of state life;

2) improve transparency, control, and accountability in governance;

3) significantly reduce the total administrative, relation, and interaction costs incurred by the government and its stakeholders for their daily activities;

4) provide opportunities for the government to obtain new sources of income through its interactions with interested parties;

5) create a new community environment that can quickly and accurately respond to various problems faced in line with various global changes and existing trends; and

6) empowering the community and other parties as government partners in making various public policies equitably and democratically (Indrajit & Eko in Ramadhan et al., 2019).

c. Types of E-Government Relations

According to Yusuf & Jumhur (2018), there are four types of e-government relations, including:

1) Government to Citizens (G2C)

This type of relationship is the most common application of e-government. The government seeks to improve interaction with the

community by building and implementing various information technology portfolios.

2) Government to Business (G2B)

The government must establish a conducive business environment so that the wheels of a country's economy can run as they should. In carrying out their daily activities, business stakeholders such as private companies need a lot of data and information owned by the government.

3) Government to Government (G2G)

The need for countries to communicate intensely is increasingly evident in the current era of globalization. The need to communicate between one government and another aims to facilitate cooperation between countries and between state entities (society, industry, companies, etc.) in doing things related to trading administration, political processes, social and cultural relations, etc.

4) Government to Employees (G2E)

The e-government application aims to improve the performance and welfare of civil servants and government employees who work in several agencies as public servants.

d. E-Government Generations

Technological developments have driven the evolution of the application of information technology in government organizations. As a result, there are four generations of e-government, namely e-Government 1.0, e-Government 2.0, e-Government 3.0, and e-Government 4.0.

1) E-Government 1.0

   In the first generation, e-government 1.0, the government provided all public services to the community where the public acted as passive service recipients. In this first-generation, communication channels were formed that were one-way, and simple, and the government focused on publishing information widely to all citizens (Nam in Mukhlisa & Kasim, 2021). In addition, e-government 1.0 refers to the use of ICT and web-based technologies to increase the efficiency and effectiveness of the production and delivery of public services to the community (Loukis, Alexopoulos, Lachana, & Charalabidis, 2019).

   The implementation of this first phase of e-government focuses on the needs of government organizations themselves that aim to achieve operational efficiency. An example of the software used is the Regional Financial Information System. The characteristics of e-government 1.0 are the use of applications or software that assist administration or help prepare financial reports. The nature of the application or software used is one-way and as a work tool so that users can work faster according to specified standards. Thus, work results can be achieved more quickly with easier control. Users who will use technology must come to the place where the technology is placed so that it is less flexible (Hariwibowo, 2019).

2) E-Government 2.0

   The implementation of the second phase of e-government has begun to be oriented to the community's needs. At this stage, the goal is to increase

the interaction between the government and the community and between governments themselves. Therefore, the application of information technology is two-way and has been more widely and intensely applied. With this, it is hoped that the government can implement the democratic process effectively and efficiently. Thus, public participation and control in the governance process can be increased. However, public participation is still limited at this stage because the target of implementing information technology is still oriented to the wider community. Examples of the application of e-government 2.0 are the use of the internet to publish the results of government performance, use the internet for licensing matters, download forms, and others (Hariwibowo, 2019).

E-Government 2.0 refers to the use of collaborative Web 2.0 tools and approaches, as well as disclosure of public information to achieve a more open, accountable, and responsive government, and promote government transparency, and citizen participation (Loukis et al., 2019). E-government 2.0 can be expressed as participatory e-government, namely the application of Web 2.0 tools as a catalyst for change in government administration. The characteristic of e-government 2.0 is a two-way communication channel to match the quality of public services with people's expectations. The government hopes that the wider community can use the use of public services online, the costs of the burden of public services can be controlled and can reduce the frequency of delays in public services (Mukhlisa & Kasim, 2021).

3) E-Government 3.0

E-Government 3.0 refers to the use of new ICTs such as big data, IoT, analytics, machine learning, and AI. In e-government 3.0, sensors and smart devices generate big data, combined with advanced analytics and modeling that leverage AI techniques that enable services to be ubiquitous (cloud), and enable evidence-based decision and policy making (Loukis et al., 2019). E-government 3.0 is a government based on the Semantic web, which is a personalization of government services to the community according to the conditions and choices of each individual. E-government 3.0 provides high-quality information and services, tailored to serve the unique needs of each individual in various fields such as job vacancies, weather, traffic, education, welfare, and finance (Nam in Mukhlisa & Kasim, 2021).

The implementation of the third stage of e-government is the development of e-government 2.0 which is aimed at achieving broader democratic values or practices. The target of achievement at this stage is more than just community involvement; but is more focused on the involvement of each community at large in the government process. Thus, the application of technology is more oriented to the individual or personal. As a result, the public can be more actively involved in government control, and the government can absorb people's aspirations more in real-time. The government can announce its activities or agenda and the community responds to these activities. With this, the process of

governance and public control becomes more transparent. At this stage, mobile internet technology is a very important infrastructure for the implementation of e-government 3.0 supported by smartphone technology. With this technology, everyone can be connected and interact with the government intensely. The development of social media is an example of an application that can be adopted for this stage (Hariwibowo, 2019). The PORJO-Purworejo Smart City mobile application is included in this generation of e-government 3.0.

4) E-Government 4.0

The conceptualization of E-Gov 4.0 will be assisted by Web 4.0. The characteristics of this e-government application are ubiquitous internet technology, fully mobile, ultra-fast, supports 3D, and virtual will be fully integrated into the real world. Information processing will reach the same level as the human brain, as well as increase accuracy and avoid common human errors. Supported by nanotechnology and superconducting materials, mobile devices will be smaller than watches and affordable. E-Gov will then be smart and make government interactions with users more efficient and effective, facilitate and improve the experience in obtaining services, and increase citizen participation in public decision-making policies (Valle-Cruz & Sandoval-Almazán, 2014).

e. E-Government Assessment Framework

The e-government assessment framework for the assessment of government applications based on Ramadhani, Purnomo, & Kasiwi (2020), namely:

1) Institutional Identity

The institutional identity variable describes the regional government (name of the institution, symbol, address, contact information, and website).

2) Content

The content variable describes the existence of the local government concerned (profile, vision, mission, main tasks, organizational structure, regulations and official information policies, news column, article column, related institutions, local wisdom content, number of hosts, number of error links, number of links in other applications.

3) Features

The feature variable on the local government application site contains facilities that can be used by the public (banks, data, search data, language choices, multimedia services, visitor statistics data).

4) Community Participation

The community participation variable describes a place to receive input from users (contact us, discussion forums, chat facility complaint forms).

5) Usability

This variable describes the appearance of the application (sitemap, text and fonts, color design, menu arrangement, scroll bar usage, position, and various browsers)

6) Service

This variable describes the direct relationship between the system and the user

7) Social Media Activities

This variable explains the local government's social media activity because almost all levels of society have social media.

8) Security

This variable describes the security system in the application.

1.5.2 Smart Governance

a. Definition of Smart Governance

Smart governance is a picture of governance that can change traditional bureaucracy patterns, realize effective, efficient, communicative local governance, and improve bureaucratic performance through innovation and adoption of integrated technology (Nurdiassa, Zulfikar, Rasyid, & Wulandari, 2021). Smart governance is one of the basic elements that must be met to realize a smart city (Latuheru, 2021). According to Pramuningrum (2017) (in Rahmatullah, 2021), as a part or dimension of a smart city, smart governance focuses on governance through collaboration between the government and the community, which aims to realize clean, honest, fair governance and

democratic, as well as better quality and quantity of public services. Smart governance can be defined as part of a smart city related to the future of public services, namely better efficiency, community leadership, working in mobility, and continuous improvement through innovation (Sumardin & Gatot, 2018). Thus, smart governance means the implementation of ICT in public services in the government sector.

b. **Scope of Smart Governance**

A city seeks to realize smart governance based on information technology by integrating information technology, community, policy, service, resource, and social norms to support clean and smart local government activities. Therefore, smart governance covers all aspects of politics, administration, and public services by involving the participation of various stakeholders (Saputro & Darminto, 2019). Smart governance must be implemented into three governance elements: services, bureaucracy, and policies (Nurdiassa et al., 2021). The main challenge of Smart Governance is integration across various technologies, domains, planning insights, and responsibilities (Latuheru, 2021).

Smart governance planning is the spearhead of smart city planning because smart cities start with smart governance. It is impossible to realize a smart city (Scytl in Rahmatullah, 2021). Thus, smart governance planning must refer to the smart city concept and governance planning concept widely developed using existing frameworks (Annisah in Rahmatullah, 2021). The smart governance dimension consists of the sub-dimensions of decision-making,

public and social services, transparent governance, and political and strategic perfectives.

c. **Component of Smart Governance**

In realizing smart governance, there are three important indicators or components based on Boyd Cohen (2013) (in Rahmatullah, 2021), namely:

1) Enabling Supply & Demand Side Policy: the presence of a policy that covers the role of the government, the private sector, and the city community in realizing a smart city,

2) Transparency & Open Data: the existence of information disclosure and ease of accessing/obtaining data,

3) Information Communication Technology (ICT) & E-Gov: Implementation of IT-based government and public services.

d. **Application Functions based on Smart Governance**

The application and website innovations diversity can be grouped based on the smart city dimension. In the smart governance dimension, the function of the application/website is to allow interaction and participation between stakeholders, increase the capacity of public services, and public transparency on activities and budgeting (Hutama & Djunaedi, 2019).

1.6 Conceptual Definition

The conceptual definition is a brief and clear understanding of the author's thoughts. The following are the conceptual definitions in this research:

1.6.1 E-Government

E-government uses internet-based information and communication technology by the government to improve the government's internal performance to be more effective and efficient. Also, it makes it easier to provide public services for the community so that services become better, cheaper, faster, and of high quality to meet the community's various needs.

1.6.2 Smart Governance

Smart governance is a dimension of a smart city that focuses on effective, efficient, communicative governance, improving bureaucratic performance on an ongoing basis through innovation, and improving the quality of better public services by implementing ICT.

1.7 Operational Definition

1.7.1 E-Government Assessment Framework

The e-government assessment framework based on Ramadhani, Purnomo, & Kasiwi (2020), namely:

Table 1.2 E-Government Assessment Framework

No	Variable	Indicators	Parameters
1.	Institutional Identity	Institution name	• Not good, if only have 1-2 indicators.
		Institution symbol	• Good, if have 3-5 indicators.
		Institution office address	
		Institution contact information	
		Institution website information	
2.	Content	Institution profile	• Not good, if only have 1-4 indicators.
		Institution's Vision-Mission	• Quite good, if have 5-6 indicators.
		Institution's Duties	
		The organizational structure of the institution	
		Agency official information	
		Regulations/policies	

|		Statistical data of the institution's main functions	• Good, if have 7-8 indicators.
		News column	
3.	Features	File download facility	• Not good, if only have 1-2 indicators.
		Data search facility	
		Language choice	• Good, if have 3-5 indicators.
		Have multimedia services	
		Visitor statistics facility	
4.	Community Participation	Institution contact menu	• Not good, if only have 1-2 indicators.
		Discussion forum	
		Have a menu of complaints/questions	• Good, if have 3-4 indicators.
		Chat facility	
5.	Usability	Sitemap	• Not good, if only have 1 indicator.
		Website display	• Good, if have 2 indicators.
6.	Service	Announcement/information	• Not good, if only have 1 indicator.
		Web-based service	• Good, if have 2 indicators.
7.	Social Media Activities	Have a social network account	• Not good, if do not have indicator.
			• Good, if have 1 indicator.
8.	Security	Use of usernames and passwords	• Not good, if do not have indicator.
			• Good, if have 1 indicator.

1.7.2 Application Functions in the Smart Governance Dimension

The function of the application/website on the smart governance dimension,

according to Hutama & Djunaedi (2019), namely:

1) The occurrence of interaction and participation between stakeholders,

2) Increase the capacity of public services, and

3) Increase public transparency of activities and budgeting.

1.8 Research Framework

Figure 1.4 Research Framework
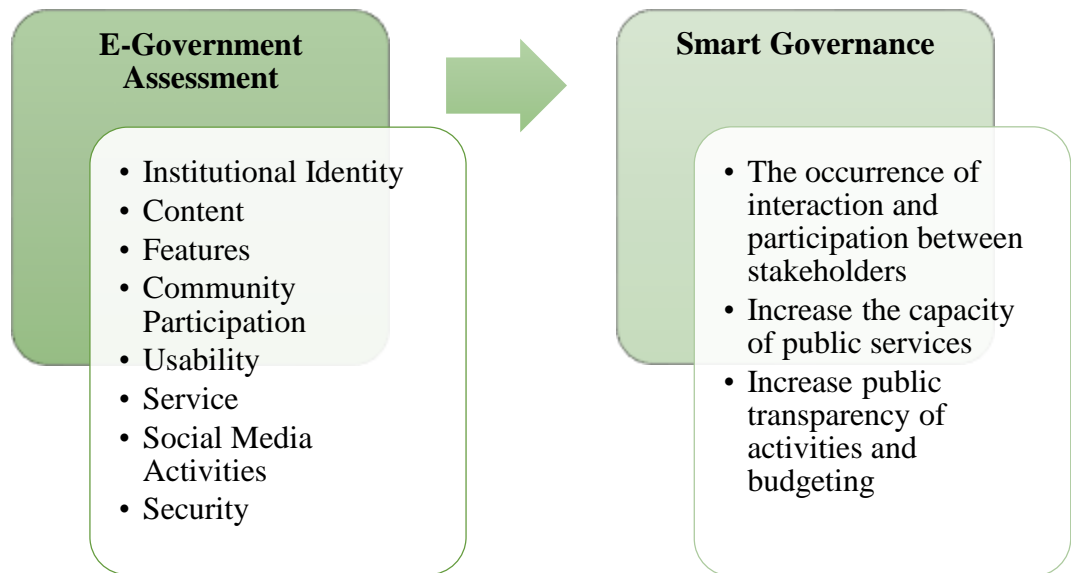
1.9 Research Method

1.9.1 Research Types and Approach

This research uses descriptive qualitative research methods. According to Denzin & Lincoln (2011) in Al-Hamdi, Sakir, Suswanta, Atmojo, & Efendi (2020), qualitative research is an attempt to rationalize and interpret the reality of life by involving several empirical evidence that describes natural and problematic events and the meaning of each individual's life. Furthermore, this research uses a single instrumental case type case study approach. A case study approach is research that examines one or more cases for a specific purpose through in-depth data collection and a single instrumental case that focuses on one case only to dismantle and investigate the case (Al-Hamdi et al., 2020). In

this case, the approach is relevant to the research to be carried out because it discusses one case, namely the PORJO-Purworejo Smart City application.

1.9.2 Research Location

The location of this research is in Purworejo Regency, Central Java, where there is the PORJO-Purworejo Smart City application as the unit of analysis in this research.

1.9.3 Data Source

This research uses two data sources namely primary data and secondary data. Primary data is data obtained directly from the source. For example, primary data sources can be in the form of interviews with informants. While secondary data is data obtained from library sources, such as journals, news articles, social media, books, regulations, and other documents related to the research focus. The primary and secondary data needed in this research are:

Table 1.3 Data Sources

No	Data Type	Data Sources
1.	Primary	Sources/informants include: 1. Head of Development and Management of Smart City Services Sector, Department of Communication, Information, Statistics, and Encryption (DINKOMINFOSTASANDI) Purworejo Regency 2. Staff of Development and Management of Smart City Services Sector, Department of Communication, Information, Statistics, and Encryption (DINKOMINFOSTASANDI) Purworejo Regency 3. 10 residents domiciled in Purworejo Regency
2.	Secondary	1. PORJO-Purworejo Smart City Application 2. Journal articles related to e-government, smart governance, and smart cities

| | | 3. News articles related to smart cities in Purworejo Regency |
| | | 4. Books and other official regulations related to the research focus |

1.9.4 Data-Gathering Technique

Data collection techniques are techniques to obtain the necessary information from related parties, sources, and documents/archives (Al-Hamdi et al., 2020). In this research, the data collection technique used by the author to obtain the required data is through observation, interviews, and documentation studies. According to Angrosino in Al-Hamdi et al. (2020), the observation technique focuses on phenomena such as the physical environment, activities, participants, interactions, and conversations, often with instruments or devices, recording them for scientific purposes. With this observation technique, later, you can find out the features of public services provided through the PORJO-Purworejo Smart City application.

Then, the interview technique is a data collection technique through interaction between the interviewer and the interviewee or resource person through face-to-face or online communication (Al-Hamdi et al., 2020). The type of interview used is guided, in which the researcher asks informants about previously prepared things (Yunus in Al-Hamdi et al., 2020). Furthermore, a documentation study collects data by recording existing data to store important information and facts that can be used as additional data in qualitative research (Al-Hamdi et al., 2020). Data collection through documentation studies was obtained through journals, articles, regulations, online mass media, social media,

and other documents related to the implementation of Smart City in Purworejo Regency.

1.9.5 Data Analysis Technique

Data analysis categorizes data to be more specific and detailed (Al-Hamdi et al., 2020). The data analysis technique in this research uses the theory of Al-Hamdi et al., (2020) which suggests four important steps in the data analysis process, namely as follows:

1) Data collection and management

After collecting data from observations, interviews, and documentation studies, the first step in data analysis is to manage the data according to research needs. Next, there is a process of transcribing interview recordings into transcripts. Then, the data that has been collected is grouped according to predetermined categories.

2) Data selection

This second step is selecting and sorting useful and relevant data to be used in the analysis process and setting aside data that are considered less relevant to the research topic.

3) Inter-variable analysis and data verification

This step attempts to connect the relationship between one variable or indicator with another variable or indicator. Then, if data discrepancies are found, it is necessary to verify the data by confirming with the relevant parties so that the validity of the analysis can be accounted for.

4) Interpretation and drawing conclusions

Interpretation is an attempt to answer the problem formulation that has been proposed based on inter-variable analysis and data verification. Then, the interpretation results become the basis for concluding, becoming the final chapter of the overall research series.

The data analysis technique used to measure the e-government assessment of the PORJO-Purworejo Smart City application is using the following parameters:

Table 1.4 Parameters of E-government Assessment

No	Variable	Available Indicators	Criteria
1.	Institutional Identity	1-2	Not good
		3-5	Good
2.	Content	1-4	Not good
		5-6	Quite good
		7-8	Good
3.	Features	1-2	Not good
		3-5	Good
4.	Community Participation	1-2	Not good
		3-4	Good
5.	Usability	1	Not good
		2	Good
6.	Service	1	Not good
		2	Good
7.	Social Media Activities	None	Not good
		1	Good
8.	Security	None	Not good
		1	Good