



Implementation of Smart Governance in Smart Villages

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Abstract. *This study aims to describe and analyze: how to implement smart governance in smart villages. The type of research used is qualitative research. The data analysis technique in the study uses techniques developed by McNabb (2002), namely Grouping the data according to key constructs, Identifying bases for interpretation, Developing generalizations from the data, Testing Alternative interpretations and Forming and/or refining generalizable theory from case study. The results of the study show that the implementation of smart governance in the Three Villages Government as a Smart Village in Sidoarjo Regency is measured based on 3 aspects, namely: public service aspects, village information system aspects, and village fund management aspects. Information technology is indispensable in the implementation of all aspects of smart governance, both public services, village information systems, and village fund management. The first aspect is that public services can be faster and more optimal with the implementation of smart governance. Previously, village people who wanted to take care of village administration needs had to travel a considerable distance from their village to the sub-district center and even the district center, so it took extra time and energy to take care of it. After the online service, all village administration needs can be done quickly and easily because they can be directly verified by sub-district and district officers without having to visit the sub-district or district office. The second aspect is that village information can be obtained by the community at large easily and quickly. Previously, village people who wanted to know information about their village had to visit the village office. However, currently, village communities in Tiga Desa as Smart Villages in Sidoarjo Regency can access their village information through the village website. Through the website, the community can find out the potential, problems and needs of village planning. The last aspect, the management of village funds can also be known easily and quickly. Previously, the village government only kept its village financial reports at the village office. However, currently, the financial statements of village funds can be widely viewed through the village website. Thus, transparency of village funds is created that allows people to know in detail the use of their village funds. The public can also submit reports directly if there are irregularities in the field.*

Keywords: *Digital Governance, E-Government, Rural Development, Smart Governance, Smart Village.*

1. INTRODUCTION

Villages are one of the priority development programs in Indonesia. Based on the results of the 2023 Ministry of Rural Development and Rural Development, the number of independent villages is 11,456 villages, or only 15.39% of 75,261 villages throughout Indonesia (Directorate General of Village and Rural Development, 2023). For this reason, the government is trying to increase village independence. One of them is through the Smart Village program, the Smart Village program is an integral part of the P3PD (*Program Penguatan Pemerintahan dan Pembangunan Desa: Program for Strengthening Government and Village Development*) from 2021 to 2024, and is contained in the 2020-2024 RPJMN target.

The development of rural areas through the application of the smart village concept is inseparable from the support of information and communication technology. According to Supangkat et al., (2015), a smart village is a village that is able to understand problems and

manage its resources to solve existing problems and optimize its potential so that its residents feel comfortable, safe, and sustainable. The smart village concept adopts the principles of smart city, namely: culture, ethics, and norms; Environmentally friendly; Sustainable; Partnership; economical, efficient, and effective; service sharing; public interest; adaptive; and citizen centric (Djunaedi et al., 2018). Along with its development, the concept of smart city was adopted into a smaller scope, namely smart villages. However, in its implementation, the concept of this smart village is understood differently. As a result, each region uses different indicators in its application (Herdiana, 2019).

The term smart village translates as a "smart" village. The term "smart" is used in order to fight the stigma of the village that has been attached to the village for a long time. Such as: villages are considered uneducated, backward, poor, outdated, and so on. Currently, the village is considered capable of developing its community intelligently. Smart Village is a community-based initiative initiated to utilize information technology for rural communities. This initiative is an effort to enlighten and educate local communities by mobilizing the collective strength of communities from various ethnicities and professions to encourage the implementation of quality public service programs that are integrated with information and communication technology (ICT/TIK: *Tegnologi Informasi dan Komunikasi*) in order to provide maximum benefits for village communities.

The presence of Smart Villages is needed as an effort to accelerate village development by increasing the intelligence, welfare, and harmony of the local community. This Smart Village initiative is important not only in terms of the law to build villages to become independent, but also considering the current development of digitalization which has a great influence on village development, especially on community behavior patterns. One way to anticipate this influence is to create and increase community capacity and capabilities through the formation of Smart Villages

Smart Village in Indonesia is evidenced by the existence of villages such as smart villages, Ranji village in South Tangerang as the first smart village in Indonesia by the Ministry of Villages with the success of developing non-traditional education in the pursuit of packages A, B, and C. Cibuntu Village in Cirebon City was declared a smart village because it succeeded in encouraging the creation of bolic faces to strengthen cellular signals for easy internet access. Geluran Taman Village, Sidoarjo Regency was declared a smart village because of efforts to encourage the formal use of foreign languages for its people. Pacing Village, Klaten Regency, was declared a smart village because it succeeded in building a mosque with the concept of ecoarchitecture. These villages are proof of efforts to develop the potential and uniqueness of

each village. However, seen in the context of Smart Villages, there is no understanding such as ideally the concept of "smart" if placed with villages. A Smart Village concept not only applies information technology, but is also able to develop the potential of the village, improving the socio-economic quality based on the use of technology. (Herdiana 2019).

The concept of smart village is constructed into its constituent components, namely smart community, smart environment, and smart governance (Santoso et al., 2019; Herdiana, 2019). Smart governance is a prerequisite that must be prepared before implementing other smart village components. Smart governance is defined as the government's ability to make good decisions through the support of information technology and collaborative governance (Pereira et al., 2018). Smart Government is a concept or follow-up step of e-government that utilizes technology and information used by the government for better performance. The purpose of implementing smart government is as an effort to increase service capacity and government performance effectively, efficiently, accountably, and transparently.

Smart government is synonymous with the implementation of e-government or electronic-based government management by utilizing technology in its government system to realize transparency in village government, electronic-based village services and the use of social media in conveying information to the public and accommodating people's aspirations. The smart governance component consists of several aspects that must exist, namely: public services, village information systems, and village fund management (Santoso et al., 2019; Herdiana, 2019; Subekti & Damayanti, 2019; and Rachmawati, 2018).

The first aspect is that public services are a series of activities in fulfilling the service needs for every resident for goods, services, and administrative services provided by public service providers (Law Number 25 of 2009 concerning Public Services). The second aspect is that the Village Information System (SID: *Sistem Informasi Desa*) is part of the implementation of e-government which is a tool for villages to manage village data such as village administration, correspondence management, and village population data management (Fitri et al., 2017). The last aspect is that village funds are budget allocations from the government to carry out government functions, development, and community activities at the village level (Santoso et al., 2019). These three aspects are a benchmark to determine the implementation of smart governance in the smart village concept.

Through the implementation of the smart governance dimension, it is hoped that villages can overcome various problems such as development inequality between cities and villages, poverty, to problems in the government such as public services and poor transparency through improvements in a more innovative, effective, efficient, and communicative

government system. Based on this, this study aims to more broadly describe and analyze: how to apply smart governance in smart villages.

2. THEORETICAL STUDIES

From Smart City to Smart Village

Smart village is an adopted concept or a derivative concept of smart city. The difference lies only in the location of its application. If smart cities are implemented at the city level, then smart villages are implemented at the village level. Smart City is the development of concepts, implementation, and implementation of technology applied to an area (especially urban) as a complex interaction between various systems in it (Pratama, 2014). Smart City is a broad, integrated approach to improving the operational efficiency of a city, improving the quality of life of its residents, and growing the local economy. Cohen (2013) further defines Smart City by weighting environmental aspects to: Smart City uses ICT smartly and efficiently in using various resources, resulting in cost and energy savings, improving services and quality of life, and reducing environmental footprint, all of which support innovation and an environmentally friendly economy.

A smart village is defined as a smart village that is able to provide services to the community effectively and efficiently through a participatory approach to the community. Services to the community include clean water services, basic education, housing, communication and transportation, employment, and sales of agricultural products (ETR90, 2015). The following is also explained the framework of the smart village by looking at the implementation of the smart village in one of the villages in India:

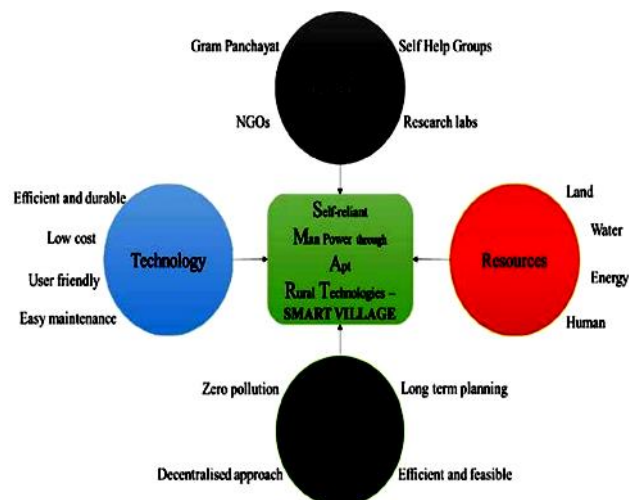


Figure 1: Smart Village Framework

Brian Heap (2015) emphasized the need to increase the awareness of village communities about their rights and demand community involvement in the government process and government responsibility to the community. The rights covered here are the same as those explained by other academics which include basic rights related to health, education, food security, and other basic needs.

Smart village is a service that utilizes information technology in carrying out village activities managed by village communities effectively and efficiently (Wiswanadham and Vedula, 2010). Smart village or smart village is the development of a concept where the village community is in a community that overcomes regional problems by utilizing the potential resources they have intelligently, wisely, and efficiently and upholding local customs and culture, as well as applicable norms (Baru, et al, 2019).

The concept of smart village development does not only focus on applying technological sophistication to a village, but refers to changing the state of the village for the better and more prosperous by maximizing the management of its resources effectively, efficiently and sustainably. The concept of a smart village is a unit that cannot be separated from the development of the smart city concept. The lowest government unit in the government structure is in the village area, which also requires an update to the development of information and communication technology so that it can accelerate the development of smart cities (Aditama, 2018).

Smart Governance

Referring to Law Number 6 of 2014 concerning Villages where the implementation of government affairs cannot be separated from the elements of the community that are the basis for the orientation of village government policies (Herdiana, 2019). The implementation of government duties and functions is a form of government administration and in this case the village government is in the lowest position in the government organizational structure which has the authority to administer the government independently and in this includes public services to the community and village development (Sulismadi, Wahyudi, & Muslimin, 2016).

Indicators included in smart government are community participation in decision-making, availability of public and social services, and transparency in governance. Community participation in the implementation of government is understood as the government's ability to manage and coordinate with the community, including community involvement activities in decision-making forums. The availability of public and social services is defined as the availability of public services and public complaint managers provided by the government online. Governance transparency describes the types of media provided to the public to access

information and mechanisms for the disclosure of planning programs (Eniyati, Candra, Retnowati, Mulyani, & A.P, 2017).

Smart Government is a concept or follow-up step of e-government that utilizes technology and information used by the government for better performance. The purpose of implementing smart government is as an effort to increase service capacity and government performance effectively, efficiently, accountably, and transparently.

Smart government is synonymous with the implementation of e-government or electronic-based government management by utilizing technology in its government system to realize transparency of village government, electronic-based village services and the use of social media in conveying information to the public and accommodating people's aspirations (Subekti and Damayanti, 2019)

Based on Law Number 6 of 2014 concerning Villages, article 86 paragraph (1) states, that Villages have the right to access information through the Village information system developed by the Regency/City Regional Government. This means that the Village Government is expected to provide a Village Information System (SID). SID is one part of smart governance.

According to Hius, (2013) stated that there are points of smart governance, namely: (1) public information disclosure; (2) maximizing the resources owned for the welfare of the community; (3) smart culture; (4) be able to express ideas, ideas, and desires directly; and (5) providing job security for its citizens; (6) Provide a reliable and cheap transportation system.

The implementation of smart governance is indeed not easy, if it is implemented in the Village Government. According to Annisah, A. (2018), stating that implementing smart governance includes: (a) making a governance plan; (b) organizational governance; (c) ICT governance; (d) and architectural governance. These stages are intended so that the implementation of smart governance can be implemented properly. Because in its implementation, smart governance is inseparable from organizational resources, places and information technology

3. RESEARCH METHODS

This study uses a qualitative approach with a multiple case study design. This approach was chosen because it allows researchers to analyze the implementation of smart governance in smart villages in two villages, namely Sugihwaras Village, Candi District, Buncitan Village, Sedati District, and Geluran Village, Taman District as Smart Villages in Sidoarjo Regency. Data were collected through three main techniques: In-depth Interviews, Participatory Observation and Document Studies. The research participants were selected purposively

including: Village Head, Village Apparatus and Village Community. The data analysis technique in the study uses techniques developed by McNabb (2002), namely Grouping the data according to key constructs, Identifying bases for interpretation, Developing generalizations from the data, Testing Alternative interpretations and Forming and/ or refining generalizable theory from case study

4. RESULTS AND DISCUSSION

Public services in Smart Village

Public services are basically an important part of governance, so the government has the responsibility to meet various needs of the community through excellent public services. According to law and regulation Number 25 of 2009, public service is an action to meet the service needs of every citizen and resident for goods and services, administrative services that have been provided by government service providers in accordance with laws and regulations. According to the Decree of the Minister of State Apparatus Empowerment Number 63/KEP/M.PAN/7/2023, related to good public service standards consists of: service procedures, completion time, suggestions and facilities, and competence of service officers.

Public services are currently undergoing governance changes. The use of information technology is prioritized because it is considered a digital solution that facilitates community services. In the past, public services were still carried out manually by going directly to the village/sub-district office, then to the sub-district and district. This method takes quite a long time, especially if the location of the village/sub-district is far from the sub-district center or district center. However, with online administrative services, the public can take care of them quickly so that public services are considered faster and optimal because of information technology.

The Three Villages Government as a Smart Village in Sidoarjo Regency also tries to provide better public services to the community as an effort to improve service performance. One of the indicators of smart governance is the availability of ICT infrastructure to support the various operations of the Three Villages Government as a Smart Village in Sidoarjo Regency, especially in providing excellent public services to the community and providing convenience for the community to obtain various information about the village and other general information that can be accessed through the internet.

The positive impact of the procurement of ICT infrastructure that continues to be carried out by the Three Villages Government as a Smart Village in Sidoarjo Regency until now is the improvement in the performance and work spirit of the Dlingo Village Apparatus in carrying out excellent public services.

The procurement of ICT infrastructure, especially in the procurement of internet and wifi, also makes it easier for the Three Villages Government as a Smart Village in Sidoarjo Regency to carry out village financial reporting activities through the Village Financial Information System (Siskeudes: *Sistem Informasi Keuangan Desa*). The impact of ICT infrastructure development in the Three Villages Government as a Smart Village in Sidoarjo Regency is also felt directly by the people of Dlingo Village, where it becomes easier for the community to obtain various information about the village and general information through free internet facilities available in the Three Villages Government as a Smart Village in Sidoarjo Regency. The community also becomes technologically literate which will then also increase digital literacy to develop their potential in various fields such as the economic field.

One of the indicators in smart governance is the availability of ICT-based complaint services that can be easily accessed by village communities. Through the ICT-based complaint service, the people of Dlingo Village can more easily provide mutual relations on the policies issued by the Three Villages Government as Smart Villages in Sidoarjo Regency in the form of providing criticism and suggestions. Previously, information and communication between the village government and the community were only carried out through information boards at the village hall, but after the internet tower and wifi were provided, the community could easily provide criticism and suggestions. The community can utilize various media for communication and participation in village governance. One such medium is the WhatsApp group created by the Village Government, which facilitates coordination between the village head, carik, hamlets, BPD, community groups, and residents, especially in matters related to village financial management. Additionally, Facebook serves as a platform where people can express their opinions, provide criticism, or offer suggestions through the comment section. Furthermore, the SID application via the village website feature functions as an ICT-based complaint service, enabling the public to submit feedback and suggestions in the available comment column.

With the existence of various media that can be used by the community, it shows that the Three Villages Government as a Smart Village in Sidoarjo Regency is open to criticism and suggestions given by the community. The implementation of various ICT-based complaint services brings several positive impacts to village governance. First, it enhances effectiveness

in problem-solving, as issues can be directly addressed by the Village Government. Second, it helps prevent centralized governance, promoting a more participatory and decentralized approach. Additionally, these services serve as evaluation tools to optimize the government's performance in delivering services to the community. Lastly, they encourage the community to be more critical and aware of their role in village governance, fostering active civic engagement.

Associated with the existing village context, Village Government must be a public institution that is adaptive and tolerant of all changes. This means that there is a formal and urgent thing in the realization of smart governance. The involvement of the village community in this case determines the existence of participatory development in rural areas.

Public institutions or institutions are attached to the authority given in compiling smart village development policy instruments as the first step towards smart governance. Integration and synergy between components in the Village Government and the community, as well as stakeholders will certainly have an impact on the achievement of smart governance. Although smart governance is part of a smart city, it can also be an indicator in the implementation of smart villages. According to Safitry, et al. (2020) stated, that Smart Governance is a transparent public service that has been integrated with information and communication technology as well as a high level of community participation in making city policies. This means that one of the characteristics of smart governance is transparency and community involvement.

The dimension of resources cannot be narrowly understood in the form of human resources alone, because resources in the context of villages in Indonesia consist of human resources in the form of rural communities and village government apparatus/institutions and other resources, namely: (a) natural capital; (b) social capital; and (c) scultural capital. Associated with the regulation of the village, the community is a legal unit that is placed as the subject as well as the object of village development (Silahuddin. M, 2015). On this basis, the community is a separate unit from the village government, in the context of smart village development, the community becomes an independent and progressive dimension.

Village Information System

Judging from the development of information technology, the concept of smart governance cannot be separated from the development of society and the need for more effective and efficient public services. This is based on the reason that the village as the lowest government unit in the government structure also needs renewal and adoption of information technology development, so that applying information technology will encourage the acceleration of village development that is being implemented (Aditama, 2018).

Villages in adopting information technology require time and mutual understanding, namely technology is only a tool that helps in all activities organized by the Village Government. So that the governance of the Village Government can run as it should, and the community can mobile and easily get services.

The Village Information System (SID) is a computer-based data and information processing system program designed by the Combine Resource Institution (CRI) that can be managed by the village government. The functions of the Village Information System (SID) are, first, information transparency media; second, Media to improve public services and village governance; third, Media interconnection between the village and the village supra; Fourth, the village's flagship promotional media.

The village information system developed is a village information system through the village website. The village information system contains village profiles, financial reports, legal foundations, and local potential of the village. This village information system is the first step in the development of smart villages. The data in the Village Information System (SID) is connected to the database of the Population and Civil Registration Office so that the data in each village has been updated and easily verified.

The implementation of the SID application in the Three Villages Government as a Smart Village in Sidoarjo Regency has provided various conveniences in village administration and public services. It facilitates village database management through statistical features that help collect, organize, and display population data efficiently. Additionally, district data updates can now be made more quickly and accurately. The application also enables better mapping and accommodation of village data, identifying potentials, weaknesses, and advantages that can be further developed. Moreover, it helps improve public service systems, allowing services to be delivered more efficiently. Lastly, it simplifies information dissemination by making administrative requirements more accessible to the community, ensuring smoother service processes.

In managing SID for public services, the Three Villages Government as a Smart Village in Sidoarjo Regency pays great attention to the quality and competence of Village Apparatus who are responsible as SID operators, for example by recruiting employees through computer proficiency tests and placing village apparatus responsible as SID operators according to their competencies. In providing public services to the community, the Three Villages Government as a Smart Village in Sidoarjo Regency also pays attention to community satisfaction to get excellent public services.

Before the existence of the Village Information System (SID), the people in the Three Villages Government as Smart Villages in Sidoarjo Regency always had difficulty getting fast administrative services. This is because previously the administrative service system was still conventional which made the data collection process take a longer time, so often people had to wait for hours until the next day for their needs to be processed by the village apparatus.

Village information, especially related to the village profile (potential and problems), must involve community elements in it, although in its implementation it is sometimes still difficult to do due to the lack of community concern for the environment. According to Law Number 6 of 2014 concerning Villages, the community needs to be involved in every stage of village development, both planning, implementation, and supervision. The village information system, which is prepared by directly involving the community, can produce more accurate data and in accordance with the needs of the village community. Thus, all relevant stakeholders (government, private and community) can find out the development needs of a village according to the actual conditions needed by the community.

In accordance with the concept presented by Rachmawati (2018), village information systems and the preparation of village databases are a fundamental need to update village data and make it easier for government officials to use the data to prepare village planning. Therefore, the needs of village development require direct community involvement to match the actual needs of the village community.

Management of village funds

Funding is an important part of the implementation of smart governance. With proper fund management based on the analysis of community needs, it will prevent the waste of funds, especially in terms of ICT infrastructure development activities which will require a lot of financing.

In the Three Villages Government as a Smart Village in Sidoarjo Regency, funding for the initial activities of implementing smart governance is sourced from PAD (*Pendapatan Asli Daerah* / Regional Original Revenue) and ADD (*Alokasi Dana Desa* / Village Fund Allocation) which are used in various ICT infrastructure procurement activities and incentives for ICT staff. After the existence of Law Number 6 of 2014 concerning Villages, then the Village Fund Program issued by the Central Government emerged to help villages overcome their lagging behind. Village funds are then used for various forms of human resource empowerment, as well as community human resources in various fields. So that in use, namely 60 percent for non-physical development and 40 percent for physical development.

The allocation of village funds in Sidoarjo Regency is adjusted to the potential and problems that exist in each village. Villages located in strategic locations or passed by highways allocate more village funds for environmental activities (such as road repairs, drainage improvements, water management, and so on). The villages that have superior potential, such as tourism potential and economic potential, allocate more village funds for community socio-economic empowerment activities (such as socialization and skills training).

As stated by Santoso et al., (2019), village funds are needed to improve public services in villages, alleviate poverty, advance the village economy, overcome development gaps between villages, and strengthen village communities as development subjects. These goals can be achieved by developing smart villages. Village funds that can be allocated properly can overcome all problems in the village and at the same time develop the potential of the village. The main goal is to improve the welfare of the village community itself.

The submission of village financial reports online is carried out through website media, while the offline delivery of village information is carried out by print media such as banners, pamphlets, and posters. The submission of village financial reports at smart village locations through this website includes detailed information on the use of village funds, village original income, provincial financial assistance, district financial assistance, as well as tax revenue sharing funds and regional levies.

5. CONCLUSION

The implementation of smart governance in the Three Villages Government as a Smart Village in Sidoarjo Regency is measured based on 3 aspects, namely: public service aspects, village information system aspects, and village fund management aspects. Information technology is indispensable in the implementation of all aspects of smart governance, both public services, village information systems, and village fund management. The first aspect is that public services can be faster and more optimal with the implementation of smart governance. Previously, village people who wanted to take care of village administration needs had to travel a considerable distance from their village to the sub-district center and even the district center, so it took extra time and energy to take care of it. After the online service, all village administration needs can be done quickly and easily because they can be directly verified by sub-district and district officers without having to visit the sub-district or district office. The second aspect is that village information can be obtained by the community at large easily and quickly. Previously, village people who wanted to know information about their village had to visit the village office. However, currently, village communities in Tiga Desa as Smart Villages in Sidoarjo Regency can access their village information through the village

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