THE IMPLEMENTATION OF SMART VILLAGE IN THE DEVELOPMENT OF DENAI LAMA TOURISM VILLAGE, DELI SERDANG

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ARTICLEINFO	ABSTRACT
Keywords: smart village, Denai Lama Tourism Village, development	A Smart village is the result of adopting a smart city to build a town by implementing innovative and technology-based activities. This study will investigate the implementation of an intelligent town to develop the Denai Lama Tourism Village. This study aims to determine the performance of the smart village program in the Denai Lama Tourism Village and its constraints and supports. The data collection applied in this research was the qualitative research design with observations, interviews, and documentation. Based on the analysis, implementing intelligent villages in the Denai Lama Tourism Village has been unsuccessful. The results also show that what causes smart village implementation not to be successful are the weaknesses of Denai Lama Tourism Village in the application and use of technology.
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1.   INTRODUCTION

Indonesia, with its vast territory, has a considerable number of villages. This is undoubtedly a challenge for Indonesia, especially in the context of village development efforts. Since 2017, the Ministry of Villages has launched a program for villages to reach village development maximally (Ratya, 2018). Facts and phenomena show that development activities and village funds also experience a balance. In line with the village government starting to carry out village development activities independently, the existing village funds have also encouraged increased village development efforts from the lowest level. Villages also carry out tourism development to maximize the management of village funds that have a BUMDes basis, as done by Umbul Ponggo Village, Klaten, Jogjakarta. Some villages create creative economic activities that utilize business networks, such as Tamansari Village, one of the villages in the Banyuwangi area (kabarBwi, 2022).

Various efforts to build villages by implementing innovative activities have initiated the emergence of village development using the basis of the smart village concept. The existing smart village concept is the result of adopting a smart city, which was previously known in Indonesia. The term smart village has been used in several rural areas in Indonesia. An example is the use of the term smart village in the Pondok Ranji Village, Tangerang Selatan (DK, 2017). A similar term, a smart village, is also used in Banyuwangi. The word smart village is a term that comes from the word smart, which means having or showing a quick-witted intelligence, and village, which means a group of houses and associated buildings more significant than a hamlet and smaller than a town, situated in a rural area. This term fights the negative characteristics or stigma attached to the village. The negative stigmas include rural communities considered not to have sufficient or high education, backward villages, poor and outdated rural communities, and so on. However, now the stigma is slowly disappearing. Villages have been considered capable of educating the community and advancing development.

Two things make the discussion of smart villages attractive. The first is because this new study will add to the wealth of references to other studies on villages, especially regarding village innovation. Second, there are still many gaps between the study of conceptual theory regarding smart villages and their

application in Indonesia. By reviewing and observing the implementation of smart villages in the development of the Denai Lama Tourism Village, it will be possible to see how the implementation, challenges, and supports for the implementation of the smart village concept in Indonesia, especially in the context of the development of the Denai Lama Tourism Village. Later, this study can be used as a recommendation to relevant stakeholders.

As a concept adopted from a smart city, a smart village certainly has its differences. The main difference lies in the location of its placement. A smart city is implemented at the city government level, while smart village is applied at the village government level. A smart city is basically a concept of implementing technology in an area, especially urban areas, that is useful for creating complex interactions between the various systems contained in it (Camero & Alba, 2019). The existence of a smart city has succeeded in overcoming various obstacles that exist in urban areas, such as congestion, sanitation, slums, environmental pollution, global warming, and other problems that often occur in urban areas. In this way, a city that has smart mobility, smart living, a smart environment, and a smart government is created (Ismagilova et al., 2020). However, in some instances, a smart city is defined more narrowly as the use of information technology in the city development process. In Indonesia, smart cities have yet to be fully implemented in all cities.

With almost the same goal, the smart city concept was adopted into a smart village. However, the smart village concept offers solutions that are more focused on rural problems. The rural problems in question are problems of poverty, health, lack of information, lagging in technology, and so on that often occur in rural areas. Many academics have tried to define the term smart village. The first definition emerges from the European Network for Rural Development which defines smart villages as rural areas and communities that seek to develop existing power and assets and create new opportunities to develop added value where traditional networks and new networks are improvised through digital communication technology, innovation, and better use of knowledge for the benefit of the population. The main keywords used in the definition are technology, network, and village assets (ENRD Home Page, n.d.).
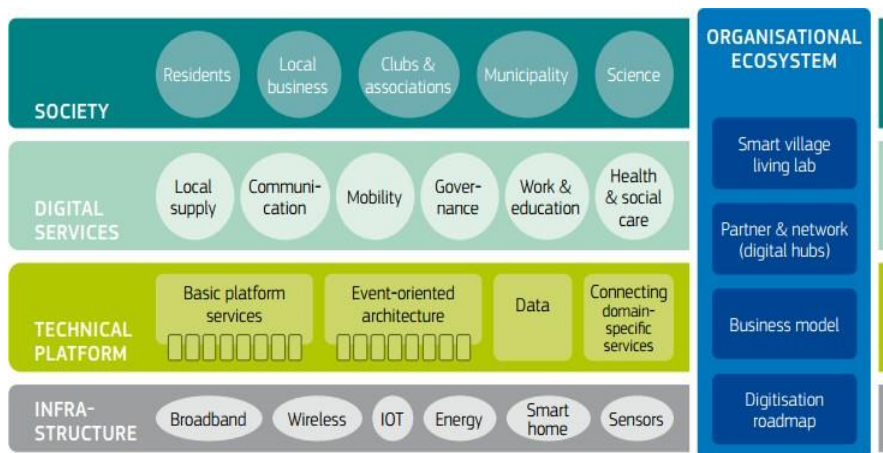

Figure 1. *A Digital Ecosystem*
Source : EU Network For Rural Development No. 26, 2018 (*ENRD Home Page*, n.d.)

Smart village is also defined as a village that can provide effective and efficient services to the community through a participatory approach to the community. The services referred to for the community are as follows: primary education, clean water, transportation, communication, and housing (Rahmadana et al., 2020). The following is an overview of the framework for implementing smart village in one of the villages in India.
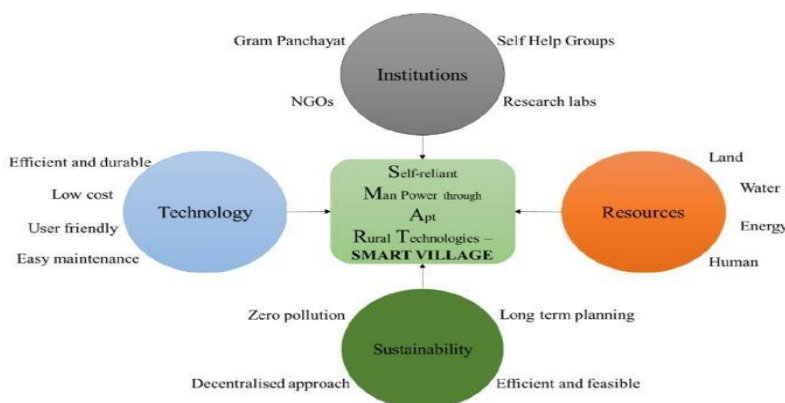
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Figure 2. *Smart Village Framework*
Sumber: ETR 90, Smart Village, Energy & Wetlands Research Group, CES,IISc, 2015 (in Subekti & Damayanti, 2019).

"Smart Villages," 2022 emphasizes the increasing awareness of rural communities about their rights to demand involvement in the field of government in being responsible for the community. These rights can be explained in more detail, covering fundamental rights regarding education, health, food security, and other basic needs. A smart village is expected to encourage the creation of a decent life for rural communities like what is obtained by urban communities but still hold the values of local wisdom. That way, the gap created between urban communities and rural communities is not so big. Smart villages are also expected to be the right solution to overcome the high rate of urbanization from villages to cities (Widiawaty, 2019).

There is a more comprehensive explanation regarding the needs that exist in smart villages, according to Rutujua Somwansi, et al. (in Subekti & Damayanti, 2019). These needs include education facilities, smart security, e-governance, the effectiveness of transportation system, Improved sanitation conditions, Improvement in women's empowerment, Use of renewable energy, Solid and liquid waste management, Rain harvesting/Rain water drainage system, Safe drinking water facilities, Latest & affordable medical facilities, Use of modern technologies for Improvement of locality, Energy conservation, Grievance redressed, Facilities regarding the agriculture, Strengthening CBOs, and Functional bank accounts.

Up to now, there has yet to be a patent definition that defines smart villages with certainty. In the implementation of smart villages, this is interpreted as the application of village planning following the needs of the village community. Its implementation in Indonesia results from adopting of a city government program to solve problems in rural areas of various kinds. However, the implementation of smart villages in Indonesia is currently limited to using IT in the village development process.

This study will investigate the implementation of smart villages to develop the Denai Lama Tourism Village. (Syah, 2017) in his research, he explains what is meant by a tourist village as a form of integration between accommodation and facilities and other attractions that provide support and support in terms of community life that are part of the tradition. In this study, the author tries to explain how smart villages are implemented as a foundation for developing the Denai Lama Tourism Village. The thing that might be a challenge in implementing smart villages is how this modern concept can be applied to village development and development that is closely related to local traditions and potential. Based on the description that has been presented, the researchers found the need to discuss the application of smart villages in the development of the Denai Lama Tourist Village, Deli Serdang Regency.

1.1 Description of the Study Area
Denai Lama Tourism Village is one of several villages in the Pantai Labu sub-district, Deli Serdang Regency, North Sumatra province. Located in Deli Serdang Regency, it means that Denai Lama Village is a part of the east coast of North Sumatra Province which is located between 2° 57 North Latitude and 3° 16 South Latitude and 98° 33 - 99° 27 East Longitude with coordinates with points coordinates 3.640041 (Latitude) and 98.930404 (Longitude). Denai Lama village has an area of 276 hectares, comprising 115 hectares of land and 161 hectares of rice fields.

Figure 3. Map Area of Denai Lama

The area in Denai Lama Village and its surroundings is tropical, where the dry season occurs in January, February, and May to August, while the rainy season occurs in March, April, and September to December. Meanwhile, Labu Beach has a relatively hot climate with a maximum temperature of 34 degrees Celsius (Durlee, 2020). Referring to the conditions and geographical location, the position of Denai Lama Village has a strategic value as access to utilize tourism potential. That way, this village was conceptualized as a tourism god in 2016. Then the Deli Serdang Regency Tourism Office only realized it in 2017, and the Kampoeng Lama Tourism Village has been operating since 2018.

2. METHOD

In this study, the researcher used qualitative descriptive methods to explore the application of smart villages in the Denai Lama Tourism Village. The data used in this study are primary in the form of interviews and secondary data in official documents, scientific journals, books, websites, etc. Data were collected through observation, interviews, and documentation. The method of obtaining informants in this study was carried out by purposive sampling. Overall, data analysis begins with the data collection process. Then proceed with the presentation of the data. Then proceed with data reduction. The last one is concluding

3. RESULT AND DISCUSSION

From the results of observations, interviews, and documentation, the following data were obtained.
3.1 The Potential in Denai Lama Village

Denai Lama Tourism Village has developed and is named Kampoeng Lama Tourism Village as a branding effort. Kampoeng Tourism Village has two spots. The first spot is the center of art and culture, commonly known as the *sanggar lingkaran*. *Sanggar lingkaran* is located in Dusun 2, Denai Lama Village. The *sanggar lingkaran* is a traditional dance studio that was developed and used as a tourist spot on a cultural basis. The primary reason for starting this art studio was to prevent children from harmful things, such as from the stage of erotic performances.

Figure 4. Dance Performance at the *Sanggar Lingkaran* Spot in Kampoeng Lama Tourism Village

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The second spot is the Paloh Naga Traditional Market (PTPN), located in the Paloh Naga tourist area. PTPN is a creative economy concept promoted by *BUMDES* Denai Lama and *kelompok sadar wisata*. The Paloh Naga Traditional Market is a turnover target to promote the Paloh Naga tourist attraction and the economy of the people of Denai Lama Village; PTPN only involves people from Denai Lama Village whose economy is middle to lower. By the vision and mission of *BUMDES* for the community's welfare. The traditional Paloh Naga market is only open on Saturday and Sunday mornings. PTPN is located in Hamlet 4, Denai Lama Village. Visitors will be served breakfast in the middle of the Paloh Naga rice fields every weekend. Moreover, another activity is, holding the opening of the Paloh Naga Traditional Market on the same day every day. Visitors can enjoy breakfast in the middle of the rice fields, accompanied by gamelan music and traditional Javanese and Malay dances.

Figure 5. Paloh Naga Traditional Market

Another interesting thing is the existence of educational tours, namely *Café baca*. *Café baca* is a cafe in the Kampoeng Lama Tourism Village that provides various readings for visitors, of which there are approximately 1800 titles of books. The establishment of this reading cafe is an effort made to support the literacy development program.

Figure 6. *Café baca*, Kampung Denai Lama Tourism Village

Currently, the reading cafe in Kampoeng Lama Tourism Village is managed by 16 volunteers. The benefits achieved by this cafe have had their allocation of funds. 75% of the profits are allocated to volunteers. Then another 25% is earmarked for building maintenance originally given by the Angkasa Pura.

3.2 Development and Empowerment of The Denai Lama Tourism Village Community

Community empowerment in Denai Lama village was first achieved by Omapi (*komunitas anak tani*) in 1998. Currently, there are Pokdarwis (*kelompok Sadar wisata*) that help develop and empower the community. *Kelompok Sadar wisata* (Pokdarwis) in Denai Lama Village is one of the groups formed by the village as an embodiment of the arts community in the fields of agriculture, horticulture, literacy, and others. Many efforts have been made to stimulate the community to be creative in arts and culture, one of

which is by making a circular studio, PKBM, for the surrounding community. For the wives, there are already MSMEs that produce typical food from residents, namely emping. This village tourism opportunity is being intensified, so that rural communities are financially and sectorally independent; the community is guided to change their thinking that they wanted to turn the countryside into a skyscraper area because improving the economy is difficult now. Currently, village officials also carry out routine empowerment of tourism village communities twice a week in Kampoeng Lama. Community empowerment is carried out through activities such as managerial, tour packages, and financial administration managed by BUMDES but for tourism village development programs organized by *pokdarwis*. Once a year, volunteers are also recruited to help manage the Kampoeng Lama Tourism Village. Various efforts were made to develop the Kampoeng Lama Tourism Village.

For community development activities are usually carried out through several coaching programs. As well as character education for the community with its implementation three times a week at a free cost to prevent society from negative influences. Then cashier education (coastal children's area) is carried out two times a week to provide economic and socio-cultural insight. Art education is also conducted three times a week at no charge.

3.3 Application and Utilization of Technology in Denai Lama Tourism Village

Based on the results of interviews and field observations, it was found that the application and use of technology in people's lives in Denai Lama Village are still not close to digitalization and technology. The implementation of technology and the smart village concept is still limited to using the internet network daily for each community member. Internet access is extensive, and any provider can access an internet connection. However, this has yet to fully cover the needs and application of technology in everyday life. This is indicated by the management of village promotion which is still limited to the use of Instagram and Facebook application technology. Although several youtube channels promote the Kampoeng Lama Tourism Village, this has not been managed in a structured and coordinated manner. The YouTube channel is still privately owned.

Kampoeng Lama Tourism Village also does not have an official website officially managed by the device. Most of the information scattered on the internet comes from outsiders. Currently, digital-based packaging is also still the hope for advancing, applying, and utilizing technology in the Kampoeng Lama Tourism Village. Regarding human resources, there is still a lot of need for strengthening technology. With the background of some people who work in the agricultural sector, they are not very familiar and literate in technology, so understanding human resources in the Kampoeng Lama Tourism Village regarding technology is not optimal.

3.4 Implementation of Smart Tourism in Denai Lama Tourism Village

Technology is used to improve the tourism industry's progress, such as artificial intelligence, the internet of things, cloud computing, or big data. With this development, various regions provide the most advanced and innovative offers for visitors, known as smart tourism.

Denai Lama Village is located in Deli Serdang Regency, North Sumatra Province. The village of Denai Lama is rich with the support of natural resources, which can be managed into a destination or tourist destination for the Deli Serdang government. If referring to the concept of smart tourism, where the image emphasizes the use of information and communication technology, Denai Lama Village has not implemented the idea independently. This can be seen from the phenomenon of not having an official website from the Denai Lama Village government to provide information services about the village and its tourism. Information about the Denai Lama Tourism Village in the website presentation still rides on what is presented by *Jadesta*, which is a site managed by the Ministry of Tourism and Creative Economy/ Tourism and Creative Economy Agency of the Republic of Indonesia as a forum for information, as well as directions for preparing a tourism village development plan. In the archipelago.

The use of new media technology, namely the internet as one of the media for tourism promotion, must be carried out properly and optimally. However, there have been several promotion efforts and the presentation of information about the Denai LamaTourism Village through the village's social media, namely, Instagram, called @desawisatakampoenglama. Instagram presents activities around the Paloh Naga agro-tourism area and the Paloh Naga Traditional Market, which are given to expand promotions and

information about the Denai Lama Tourism Village. In addition, there is an official page on Facebook social media called Kampoeng Lama Tourism Village, where the information presented is similar to what was informed on the official Instagram account of Denai Lama Tourism Village.

There are also efforts to develop and utilize information and communication technology by villagers through YouTube social media. However, the available youtube channels are still privately owned and have not been officially managed by the Denai Lama Village government.

The following analysis was obtained from the data from observations, interviews, and documentation.

3.5 Smart Government

Smart government is one aspect of a smart village that prioritizes government regulations. To realize the implementation of government and government efforts that have transparency to the community and are honest, clean and fair, community involvement is needed. Smart governance indicators include political aspects in the form of community contributions and participation in making decisions, public and social services to the community, and government that has transparency (Mellouli et al., 2014).

When based on smart government indicators, it can be seen that Denai Lama Tourism Village has implemented smart government. This can be seen from the efforts of the village apparatus or government in involving the community in public and social services. This is indicated by the action of the village apparatus together with the Deli Serdang Tourism Office, which guides the community to then be empowered in the management and productivity of the Denai Lama Tourism Village. Even for community involvement, village officials directly recruit volunteers to help manage village potential.

3.6 Smart Community

A *smart community* is a concept developed from a field that amalgamates systems and technology infrastructure based on mobile Internet in the modern social era. A *smart community* is defined as a community whose members are groups of people from local government, education, community institutions, and business people, as well as the general public who work together to understand the potential of information technology and form a community that can achieve mutual success in utilizing technology and improving community conditions. They are more positive and significant (Li et al., 2011).

Referring to the definition of a smart community and the results found during observations and interviews, Denai Lama Tourism Village has not fully met the smart community criteria as one of the smart village indicators adopted from the smart city concept (Herdiana, 2019). Although there has been a synergy from the government, the community, and existing community elements to improve the condition of their community in Denai Lama Village, the improvement in maximizing and implementing the use of technology is still very limited. The use and application of technology have yet to be maximized and are still limited to individual internet use in everyday life. Meanwhile, the use of technology for community management and sustainability in a structured and organized manner has yet to be implemented. This is because the understanding of community members as part of the community regarding technology still needs to be higher.

3.7 Smart Environment

A smart environment is a form of intelligent environmental management by paying attention to the environment in the environmental development process, as well as the development of physical infrastructure and the development of facilities and infrastructure for the population. The basic motivation is to achieve sustainable development by using technology as a driving force (Herdiana, 2019).

Denai Lama Village has implemented a smart environment well, although it has not been fully successful. This can be seen in the form of intelligent environmental management by paying attention to the environment in village development and the development of physical infrastructure and village development. However, efforts to create technological elements, such as driving elements, have yet to be carried out optimally.

Overall, when viewed from the aspect of smart government, Denai Lama Tourism Village is worthy of being said to be able to implement smart government well. However, in terms of the smart community, Denai Lama Tourism Village cannot yet fully be said to be able to implement a smart community properly

because it only fulfills the synergy aspect of community improvement without being accompanied by technological aspects. Likewise, with the smart environment aspect, Denai Lama Tourism Village cannot yet fully be said to be able to implement a smart environment because even though it can realize sustainable development, in terms of maximizing technology, it still needs to be improved.

3.8 Constraints in implementing smart village

Based on data and field findings, one thing is the main obstacle to the less-than-optimal implementation of smart villages in the Denai Lama Tourism Village. This is in terms of human resources that still require much strengthening regarding technology. With the background of some people who work in the agricultural sector not so familiar and also less literate in technology, the empowerment of human resources in the Kampoeng Lama Tourism Village regarding the use of technology has not been maximized.

3.9 Support in implementing smart village

The findings indicate that several things support the implementation of smart villages in the village of Denai Lama. These include the following. The first is the great potential of the Denai Lama Tourism Village in terms of natural and cultural potential. That way, the government and the community need to develop and manage. The second is a cooperation between the village government and the Denai Lama Tourism Office. This causes the level of community development and empowerment to be higher. The third is the basic nature and attitude of the easily empowered people because it follows their background.

4. CONLUSION

Implementing smart villages in the Denai Lama Tourism Village has not been successful. This refers to the three smart village indicators which the Denai Lama Tourism Village cannot fully meet. From the aspect of smart government, Denai Lama Tourism Village deserves to be said to be able to implement smart government well. However, in terms of the smart community, Denai Lama Village cannot yet fully be said to be able to implement a smart community properly because it only fulfills the synergy aspect of community improvement without being accompanied by technological aspects. Likewise, with the smart environment aspect, Denai Lama Village cannot yet fully implement a smart environment because even though it can realize sustainable development, it still needs to be improved in terms of maximizing technology. Overall, what causes smart village implementation yet to be successful are weaknesses in the application and use of technology. The Denai Lama Tourism Village Government is advised to first initiate the use and maximization of technology for the operation and management of the Denai Lama Tourism Village as bait to increase the overall optimization of technology. The stakeholders (*pokdarwis*, the Denai Lama Village government, and the Deli Serdang Tourism Office) are suggested to coordinate and collaborate, organizing routine and gradual technology training for the people of Denai Lama Tourism Village.

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