INFORMATION
Volume 21, Number 6, pp.1705-1716

ISSN 1343-4500 eISSN 1344-8994

The Transformation of Smart Village Development through Independent and Integrated City Program in Indonesia

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Abstract

This paper aimed to study the model of smart village development through independent and integrated city program. The studies were on Mulya Sari Village, Tanjung Lago, the District of Banyuasin and Sungai Rambutan village, the District of Ogan Illir, South Sumatera Province. This paper focused on the aspects of communication network, human resource capability, institutional capacity, and instrastructure development. The method used was qualitative-quantitative combination. The techniques of data collection were in depth interview, Focus Group Discussion (FGD), and questionnaire spreading. Technique of analysis was descriptive with various displays, such as tables, graphs, scheme and narration. The findings showed a) Mulyasari Village was the center of Telang Independent and Integrated City Program implementation. Historically, this region was built through transmigration program since the 1980s during New Order era. While Sungai Rambutan as the local village and the center of Independent and Integrated City Program implementation for Ogan Ilir District. This village has historically existed since colonial era. Then, the transmigration program has been developed since 2006 during reformation era; b) The communication and technology network in Mulya sari village was more comprehensive if compared to that of Sungai Rambutan. The growth of information technology in Mulya sari was supported by the availability of proper communication network, while in Sungai Rambutan, it was still limited c) The availability of infrastructures in both locations was almost similar because most of them was built nearly at the same time. It was because both villages were selected as Integrated and Independent Cities (IIC). However, from the aspects of functionality and utilization, Mulya sari was more developed and fast-growing compared to Sungai Rambutan; d) In terms of human resource capability, the two villages had a significant difference, Mulya Sari was relatively more developed; e) The capability of village institution in both locations was almost similar. The institutional commitment from village apparatus was low. Neverthless, the the commitment of Mulya Sari apparatus a little higher compared to that of Sungai Rambutan.

Key Words: Development, Smart Village, Integrated and Independent City {IIC}

1. Introduction

According to Law No.6/2014, village or indigenous village is the union of law society that has an area boundary which conceives the authority to regulate and manage the governmental business; local community interest in accordance with community initiative; the origin rights and/or traditional rights that being acknowledged and respected in governmental system of The Unitary State of The Republic of Indonesia. The village developments include establishment, development and maintenance of economic infrastructure as well as the provision of production facilities and infrastructure and

For several decades, village always identical with the development in agricultural sector, this condition occurs because Indonesia is known as agrarian country. The development of village infrastructure is conducted to improve the service for the community which is not in the economic sector alone but in culture and democracy establishment as well through the enhancement of community participation in development process. Through the time period of many governments era, various intervention programs had been conducted by them with the aim of village development. However, until the present, the developments which deliver the independence of a village and also aimed to achieve the smart village category have not been massively realized, especially in Indonesia. Therefore, it is interesting to be studied in this paper of is how the development of the smart village in Indonesia through the implementation of Integrated and Independent City program since 2007 has been going on.

This study was conducted to measure the improvement or transformation towards smart village development by using four indicators such as the availability of communication network, supporting infrastructures, the capability of human resources and village institution. In particular, this research was conducted in two locations including the Integrated and Independent City Program in Mulya sari Village, the District of Banyuasin and the Integrated and Independent City Program in Sungai Rambutan of Ogan Illir District of South Sumatra.

2. Theory of Social Transformation

The development of information and communication technology makes people enter the world full of information. However, not all societies are ready to enter this information world. Richards (2004) in his study of rural areas in Europe stated that the information revolution as a result of technological developments is expected to be able to advance rural areas. As a result, rural development in Europe through technological developments was unsuccessful, resulting in a decline in funding allocations for decades.

The transformation of the rural region has become a study in social sciences in various regions of the country. The rural transformation itself is defined as a comprehensive process of community change that results in the diversification of rural economies by reducing the dependence of rural communities on agriculture, increasing reliance on distant places to trade goods, facilitating access to community services, urban migration, and the occurrence of cultural assimilation into urban agglomeration (Reddy et al., 2016: 144). The speed and shape of rural transformation depend on the local and global conditions of the rural area itself.

Government policies have a significant influence on the process of rural transformation for the better and have a socially and economically enhanced society. Technological developments and

globalization have an influence on local rural levels, particularly in terms of housing in society (Reddy et al, 2016: 145).

Village development is a much-conducted study in rural India. A research conducted by Kumar et al (2013) shows that the development of rural areas also shows the development of the State itself, in this case is India. Not only the big cities are growing, but also the rural areas do.

Smart growth is a concept that defines growth by emphasizing the importance of developing a sense of community and promoting livability. Thus, smarth growth itself is defined as the preservation of society by widening the development of community areas so that the more advanced (Ye, Mandpe, & Meyer, 2005: 303).

3. Research Method

This research design was the approach of quantitative and qualitative collaboration. The consideration was that this approach would provide more detail, comprehensive, and objective analysis instrument. The data were acquired by disseminating the questionnaire towards 50 respondents in each village through random sampling, in depth interview, focus group discussion, and observation. The primary and secondary data were analyzed and interpreted according to the main aim of this research. In the analysis, some displays were presented in the forms of table, graph, scheme, and narration.

4. Result and Discussion

4.1 The Description of Research Location

4.1.1 Mulya Sari Village, Telang, The Distric of Banyuasin

Mulya Sari village was one of the transmigration areas that was established in 1980s in Banyuasin Regency. Before the decentralization era, it was a part of Musi Banyuasin Regency. Historically, most of the population came from East Java, Central Java, West Java, Yogyakarta, and some areas of Bali. Since the beginning of its development as transmigration area, Mulya Sari village was prepared as the agricultural location for food commodity, such as rice, nuts and vegetables.

At present, Mulya Sari is an icon of transmigration development progress in Banyuasin Regency. Since it was declared and established as one of the areas of Telang Integrated and Independent City (IIC} in 2007, it continues to develop through the development of infrastructure, human resource capability through education, health sector, and information technology among the community.

The improvement of the economic sector has already seen. This village, even, has become one of the biggest suppliers of corn and paddy for Banyuasin Regency. The distribution network of agriculture yield is not only available at district or regency level but also at cross-province level. This

condition plays role for the community development towards more proper and equal life standard.

4.1.2 Sungai Rambutan Village, The District of Ogan Ilir as an ICC

Sungai Rambutan Village is a local village which has existed long before the transmigration program is implemented. The condition has totally been different from Mulya Sari village which was established due to the transmigration program. The characteristics of local community, such as, culture, as well as livelihood as the fisherman, are very different from those of Mulya Sari, although they got influenced by transmigrants during the implementation of transmigration program in this area. Land management for rubber and palm cultivation has been the progress in the agriculture sector.

Sungai Rambutan is one of local villages established as one of transmigration locations in the post era of new order, initiated in 2005. The transmigration program which was conducted with an equal composition between local people and transmigrants from Java and Bali. The village was established as an integrated and independent city because the area was considered as a strategic location and closer to province's municipality. In the beginning, this location was predicted to be a fully developed and fast-growing transmigration location. However, until today, the entire development to become a smart village has not been running decently. Therefore, various further supervisions are needed in order to realize the sustainable developmen

4.2 The Transformation of Mulya Sari Village Towards a Smart Village

Mulya Sari as one of the IIC areas shows various signs of progress from various life aspects. These conditions have ensured that the area of this village has transformed into a smart village, although the phases keep on running. The findings show as follows.

4.2.1 Communication Network Indicator

Communication network is one of the indicators serving as a parameter of smart village development. The finding can be seen in the following diagram.

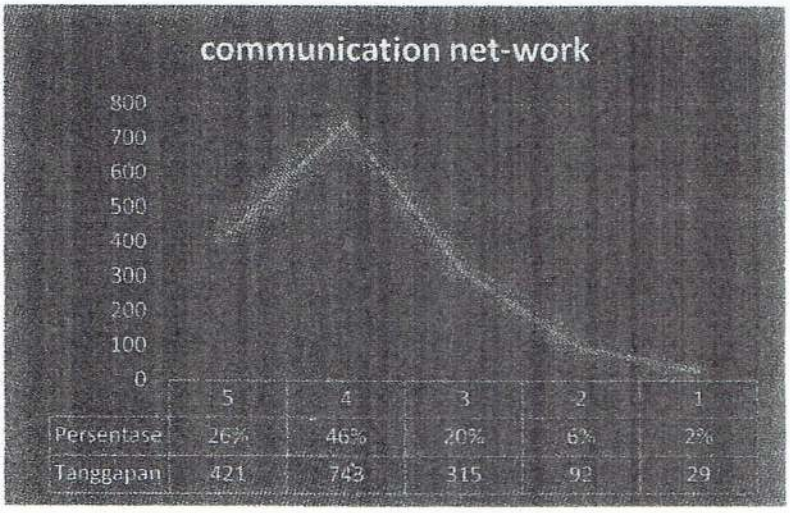

Diagram 1. The Communication Network Indicator of Mulya Sari Village

The perception of respondents on communication network availability in the village of Mulya Sari has been positive. 46% of them said so.

Communication network is highly attached to the community life, especially in using communication tools, such as handphone; an android based smartphone. The information technology has become one of the primary needs of community presently. Although the utilization and application of that communication tool are still more dominant to put an ease towards personal communication rather than for business utilization, such as for marketing the agricultural products, craft, and other products manufactured by the village.

Young people use communication tool for various purposes, like for social network, information browsing, and etc. While among senior people; the communication tool is used to ease their personal communication in social life and with working partners. This tool is rarely used for business matter. In addition, there are some people who used the advanced technology in information technology, like youtube, as a learning media, especially regarding agricultural technical method. Although the number is small.

4.2.2 Infrastructure Indicator

The development of smart village depends not only on the utilization of information technology network, but also on the availability of supporting infrastructure. Regarding the infrastructure condition in Mulya Sari Village, it is in the category as good. See diagram 2 below:

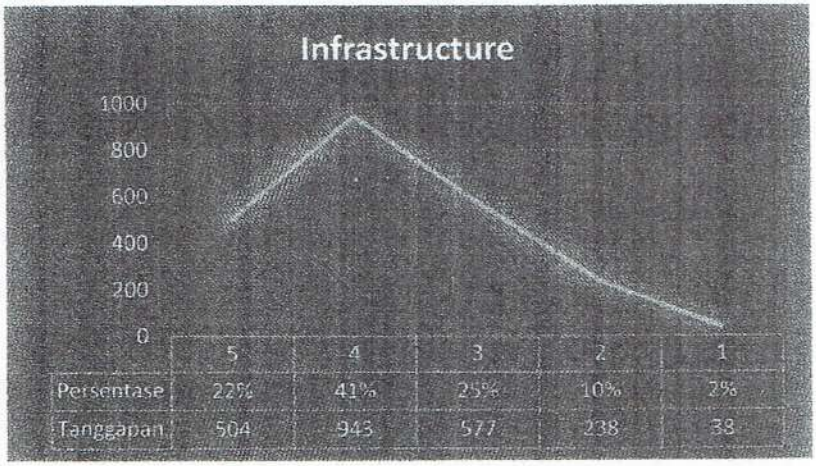

Diagram 2. Infrastructure Indicator

It is indicated in diagram 2 that 41% of respondents or 943 responses say that the development of infrastructure in Mulya Sari village give much benefit to people.

According to the picture 1 above, the facilities and infrastructures in Mulyasari Village are very complete; from business center that actively running as one of the people economic engines through

cooperation which at present own billions of turnover. This village also supported by the banking facility such as banks of BRI, Mandiri and Bank Sumsel Babel which served for saving and cash or non-cash transactions. Telecommunication network providers, such as Telkomsel and XL network in which the towers provided an open access for the information flow to reach the people. The availability of market as the trading place for the farmers, service, and others have grown pretty fast. The availability of facility such as smart house as the playing facility for children was also one of the supporting infrastructures in enhancing the community capacity towards the future era.

Aside from the supporting facilities in economic and telecommunication network sectors, Mulyasari Village also own the education facilities from the early childhood education (ECE), elementary school, Junior High School, and Senior High School. Formal educational facilities in the religion sector also available, including the Moslem Boarding Schools. Health facility was also available in this location, like Community Health Center (Puskesmas) and Center for Pre and Postnatal Health Care and Information (Posyandu). According to the informant, the availability of these services provided positive impact for the local community and the community around the area to make use the sufficient and proper basic services. This condition also supported by the government program through free medication and education service. Therefore, the availability of the infrastructures and government commitment provided a contribution for the community development towards sustainable prosperity.

4.2.3 The Indicator of Human Resource Capability

The capability of human resource became one of the indicators which was not less important compared to the other indicators. The reason was the importance of actors that conceived the capacity and capability to manage and use the available supporting facilities and infrastructures in order to provide a continuous benefit for the development of the smart village. The description of human resources capability was available in diagram 3.

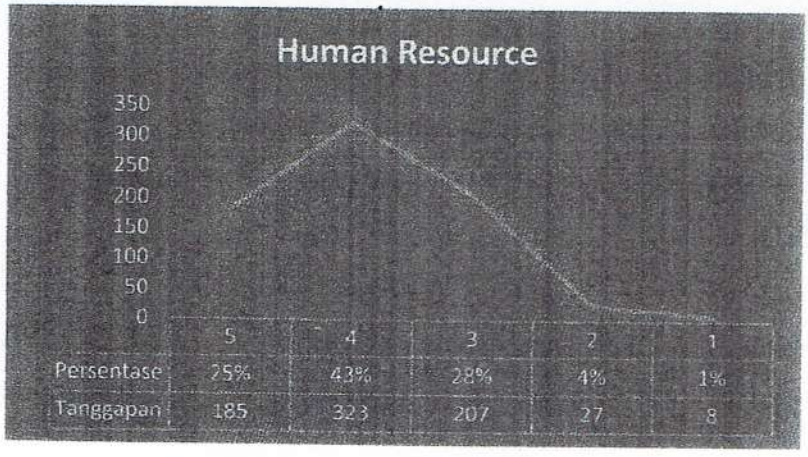

Diagram 3. Human Resource Capability

Data above say that 43% of respondents agree that human resource in Mulya Sari village have been professionally capable.

This findings were also supported by qualitative data from informant:

> "children here have good acess to school because the educational facilities have been available from the elementary to senior high school levels. While for higher education, most of the them go to Palembang City due to its close distance to the village. However, there are some move to Java for their studies. After finishing their studies, many of them are coming back home to become teachers, facilitators, midwifes, nurses, cooperative staffs, and workers in village government office. From education, community is relatively developed (Interview with Suwarno (65), Wednesday, 20 September, 2017)"

Further, Suprianto (40), another informant, claimed that in the village, Open University had some classes for the residents to study of their interests. Education had become more important for local community. Thus, the community capability had grown better compared to the past years. Aside from that, through the developed information technology, the entire community especially young generations had utilized the android-based telecommunication tool as their needs and used it for various benefits.

4.2.3 The Institutional Capability Indicator

The capability of village institution becomes one of the important indicators in the development towards a smart village. The capacity and capability of institution provide a contribution for the village towards the progress of a smart village. The analysis result of institutional capability of Mulya Sari Village is explained below.

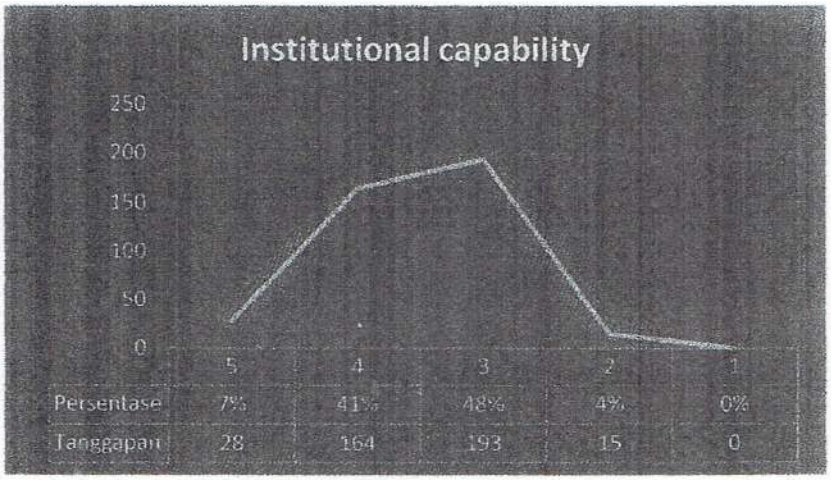

Diagram 4. Institutional Capability

Diagram 4 informs us that 41% of respondents think that institutions in the village of Mulya Sari have capability.

The institutions consist of Head Village, Regional Development Bank (BPD), Community Financial Institution (CFI), and Village-Owned Enterprise (BUMDes). All these institutions are running and in the same page with the vision and mission of integrated city which intended to build the independent and sustainable community.

4.3 Challenges for Sungai Rambutan Village towards Becoming the A Smart Village

The development progress in Sungai Rambutan Village is not as fast as that of Mulya Sari. Before the establishment of Sungai Rambutan as one of the modern transmigration areas in 2006, it was an isolated area. Although geographically was located in the a strategic due to its close position to province and regency municipality, like Inderalaya city. In the beginning, access for people to go out of the area was only by using river transportation such as, boat, motor-boat, and speedboat through Rambutan river to Ogan river which led to Kertapati Sub District of Palembang City. It took four hours ride. Land access was not yet available.

After it was established as one of the transmigration areas and being prepared for Integrated and Independent City program, the development in this village, Sungai Rambutan, started to improve. Although, in general, Sungai Rambutan village was not more developed than Mulya Sari Village. The availability of infrastructures had not transformed the development in this area to become sustainable. Therefore, several infrastructures for community economic activities are not able to be maintained.

4.3.1 The Communication Network Indicator

Communication network is another indicator of a smart village development. Concerning Sungai Rambutan villagr, The finding is presented in diagram 5.

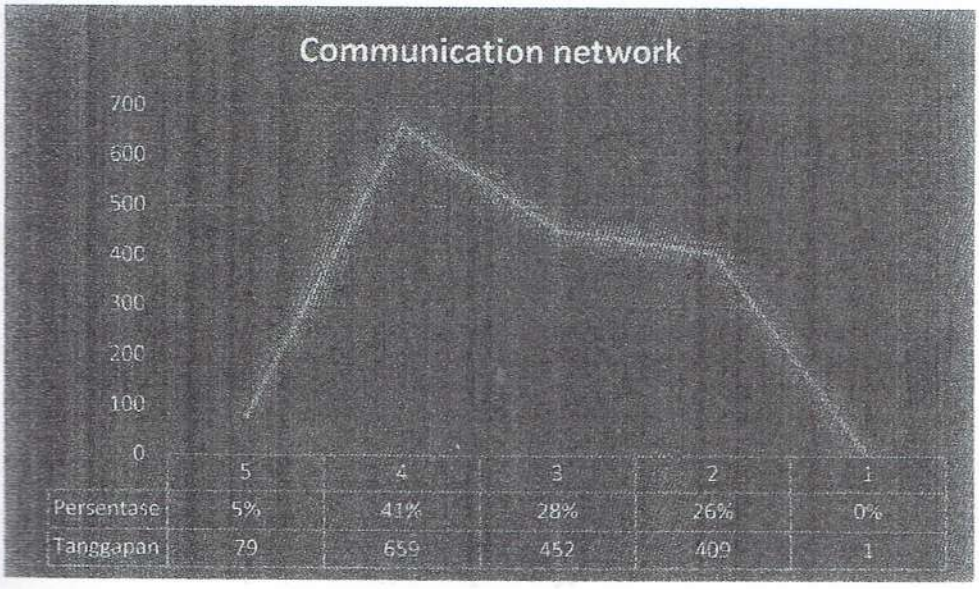

Diagram 5. Communication Network

Diagram 5 above says 41% of respondent has positive perception on communication network of Sungai Rambutan Village. The availability of communication network supports the daily activity and community dependency.

4.3.2 The indicator of Infrastructure Availability

The development of a smart village depends not only on the utilization of information technology network, but also on the availability of supporting infrastructure. The condition and utilization of infrastructure of Sungai Rambutan village are described in the following diagram 6.

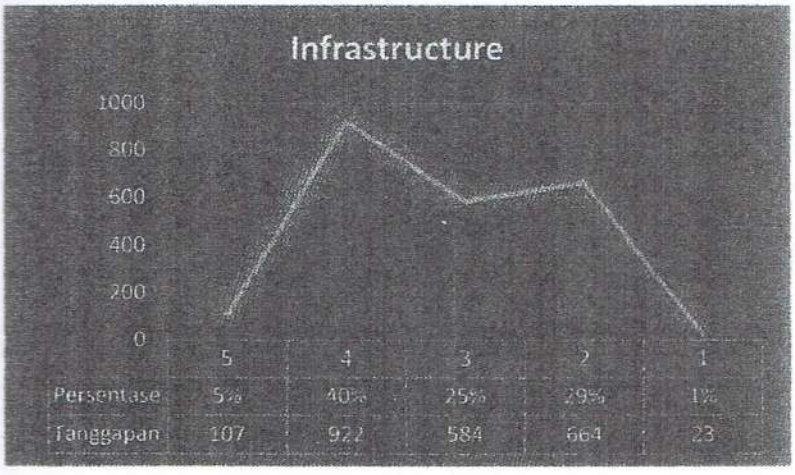

Diagram 6. Infrastructure Indicator

According to Diagram 6, 40% of respondents have positive impression on the infrastructure development in Sungai Rambutan villag. The infrastructure includes road and bridge facilities; market and banking facilities; and electricity and water facilities.

4.3.3 Human Resources Capability Indicator

The capability of human resource is also important for an integrated and independent city. It is related to capability to manage and use the available supporting facilities and infrastructures in order to provide a continuous benefit for the development of the smart village.

4.3.4 The Institutional Capability Indicator

The capability of village institution becomes one of the important indicators in the development towards a smart village. The capacity and capability of institution provide a contribution for the village towards the progress of a smart village. The institutional capability of Sungai Rambutan Village is presented below. It seems that 48% respondents thinks that institutions in Sungai Rambutan village are incapable doing their jobs professionally. They do the works only by formality.

The institutions in Sungai Rambutan Village consist of Head Village, Regional Development Bank (BPD), Community Financial Institution (CFI), and Village-Owned Enterprise (BUMDes),

4.4 The Comparison of Smart Village Development

Regarding the development progress of smart village in Mulya Sari and Sungai Rambutan Villages, the comparison in progress is presented in matrix below.

Matrix.1 The Comparison of Mulya Sari and Sungai Rambutan Development

No	Smart Village Indicator	Mulyasari	Sungai Rambutan
1	Communication Network	1. XL and Telkomsel Providers are available 2. Located at the center of the village 3. Strong network of internet access and communication 4. The utilization for social media, productive business network. 5. 124.70 average score 6. Significance Comparative T-Test is 0.00	1. Provider Telkomsel 2. Less optimal network access(personal communication only) 3. Utilized for personal communication 4. Has not been optimally used for supporting the productive business network 5. 104.212 average score 7. Significance Comparative T-Test is 0.00
2	Infrastructures	1. Decent/proper public facilities (road, bridge, market, education, health, masjid, water and electricity) 2. Institutional Facilities (IIC management office, Village government office, Village Hall, Village-Owned Enterprise (BUMDes), Cooperation, Smart House, IIC business unit) 3. All facilities are functioning properly and being used by the community. 4. 170.74 average value 5. Significance Comparative T-Test is $0,00 \leq 0,05$	1. Decent/proper public facilities (road, bridge, market, education, health, masjid, water and electricity) 2. Institutional Facilities (IIC management office, Village government office, Village Hall, Village-Owned Enterprise (BUMDes)) 3. Several facilities and infrastructures are not running, i.e business center, insufficient road 4. 146.52 average value 5. Significance Comparative T-Test is $0,00 \leq 0,05$
3	Human Resources	1. The farmers community has been using and utilizing the banking and financial transaction networks. 2. The network is used for productive activities. 3. 58,00 average score value 4. Significance Comparative T-Test is $0,00 \leq 0,05$	1. The conventional farmers have not been using the modern technology 2. The communication network is only for personal communication 3. 46.12 average score value 4. Significance Comparative T-Test is $0,00 \leq 0,05$
4	Institutional Capability	1. 28,22 average score value 2. Significance Comparative T-Test is $0,00 \leq 0,05$	1. 21,64 average score value 2. Significance Comparative T-Test is $0,00 \leq 0,05$

According to the matrix above, by indicator, there are significant differences between Development

progress in Mulya Sari and Sungai Rambutan Villages. It seems that Mulya Sari village gets better progress in development than that in Sungai Rambutan. In detail, it can be seen in above matrix.

5. Conclusion

The important findings in this research as the conclusion are First: Mulya Sari and Sungai Rambutan Villages as one of the locations of integrated and independent City program in Indonesia have been experienced various progress in the development of communication network, infrastructures, human resources capability, and Institutional Capability, however, when being compared; both of them have significant differences; the Second is: the significant differences between Mulya Sari and Sungai Rambutan Village are found, including 1) Communication network indicator; "There is a significant difference regarding the communication network of Mulya Sari and Sungai Rambutan Villages". 2) Infrastructure indicator; "There is a significant difference regarding the infrastructures of Mulya Sari and Sungai Rambutan Villages". 3) Human resources capability; "There is a significant difference regarding the human resources capability of Mulya Sari and Sungai Rambutan Villages". 4) Institutional Capability; "There is a significant difference regarding the institutional capability of Mulya Sari and Sungai Rambutan Villages". The Third is: both of these villages are still focusing on the development in infrastructure and economic sectors, while the utilization of information technology innovation still categorized as a minimum for the productive activities. Therefore, both of these villages have not entered the phase of smart village development, but in fact, is still approaching towards smart village direction which will take a long period of time; they also require the support and commitment from the government during the development towards a smart village.

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