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Comparative Study of Social Capital in Self-help Group (Study in Mulyorejo and Karangnongko Village)

Annisa Nurul Hakim
Student, Department of Urban and Regional Planning
Engineering Faculty, Brawijaya University
Malang, Indonesia

Christia Meidiana
Lecturer, Department of Urban and Regional Planning
Engineering Faculty, Brawijaya University
Malang, Indonesia

Gunawan Prayitno
Lecturer, Department of Urban and Regional Planning
Engineering Faculty, Brawijaya University
Malang, Indonesia

Abstract:- Social capital in self-help groups has a crucial role in empowerment and welfare of community. By social capital, community could access networks, information, and external resources for their interests. Self-help groups in Mulyorejo and Karangnongko Village play a role in management and distribution system of methane gas from Supit Urang and Paras landfill. However, under self-help group management, the development and sustainability of methane gas utilization program tend to decline. This research aims to evaluate the differences of social capital in community of methane gas users in Mulyorejo Village and Karangnongko Village by using the Social Network Analysis (SNA). The results demonstrate that the rate of participation, density, and centrality in Karangnongko Village community is better than Mulyorejo Village. Additionally, there are no different significant result in the typology of social capital, both study areas are showing bonding social capital.

Keywords:- *Social Capital, Self-help Group, Methane Gas.*

I. INTRODUCTION

Methane gas is one of the components of landfill gas, beside carbon dioxide, which is produced from the decomposition of organic waste [1,2]. Generally, 70% of waste in developing countries consists of readily biodegradable materials [3]. If the waste is not managed properly, it will produce methane gas and cause an explosion in the pile of waste as a result of the decomposition process [4]. Methane in landfills can be released and increase greenhouse gas emissions and worsening global warming [5]. However, aside from its negative impact, methane gas has benefits as alternative energy of fossil fuels for electricity generation and substitute liquefied petroleum gas (LPG) for cooking [4,6].

Malang City and Malang Regency have its landfill, namely Supit Urang and Paras respectively. Both landfill are equipped with methane gas installation. Management and distribution system of methane gas from both landfill are managed by non-governmental group independently. Cempoko Mulyo is an independent institution which is responsible to manage and to distribute the methane gas from Paras landfill to the community in Karangnongko Village. Therefore, the independent institution that taken care of methane gas known as self-help group. Cempoko Mulyo self-help group established in 2011, under guidance of Sanitary Department of Malang Regency. In the very next year, in 2012, Urban Sanitation and Parks Department of Malang City developed a methane gas distribution program for local community near the Supit Urang landfill. Similar in Karangnongko Village, community in Mulyorejo also formed self-help group which is managed the methane gas distribution, namely Bina Mandiri.

Unfortunately, under the management of Bina Mandiri group, the number of methane gas users in Mulyorejo Village has decreased dramatically. In 2012, the initial number of users was 510 households, but it decreased to 130 households in 2019. It is caused by reducing of methane gas volume which cannot meet the needs of all users. In addition, the lack of financial transparency in the group also causes many users to quit membership. The community continues to pay the methane gas contribution fees, but they do not get gas intake for one year. Until this research was conducted, from 130 households, it is found that not all of them use methane gas. Many members tend to use LPG instead of methane gas. As a result, nowadays local people use methane gas as an alternative energy. This phenomenon happened due to methane gas cannot be used for 24 hours as there are certain times the gas must be turned off for maintenance. However, there are some specific times when the installation did not work for days which forced people to start using LPG instead. Mostly it happened in dry season when the well produced less methane gas. Seasonal could affect the well in producing methane gas, therefore the best season to harvest is in wet season. This problem is a threat to the sustainability of the methane gas utilization program as the number of members is declining due to weak optimization of the program.

The community involvement in management of methane gas is a form of participation in the infrastructure development. Implementation of infrastructure involves the community could increase the effectiveness of development. Hence, participation is part of a social capital that can be triggered and empowered for the sake of community development [7]. Social capital is part of social organizations representing the trust, norms, and networks that can improve the work efficiency of a community to achieve the goals in a facilitated and coordinated manner [8]. Through social capital, infrastructure management becomes more effective, as indicated by the strength of networks, norms, and trust to achieve common goals [9]. Bonding social capital is a type of social capital that can enhance the adaptation capacity of the village community toward the infrastructure management in the forms of cooperation, participation, technology utilization, mutual safeguarding principles, and also supporting the ability to mobilize collective resources [7]. Resources are not just limited in the potential, but also represented in a social structure in a community, both in the form of an organization or neighborhood that facilitate the goals of the organization [10]. Social structure is formed by the relationships between groups of a society [11], thus community participation can create a social network in that structure. The greater the social networking, the greater the access to resources to strengthen social capital, and vice versa [12].

This study aims to evaluate the social capital of methane gas community in Mulyorejo Village of Malang city and Karangnongko Village of Malang Regency. This evaluation is intended to determine the differences in social capital between communities in the Mulyorejo Village and Karangnongko Village related to the management of methane gas utilization. The Social Network Analysis (SNA) is used to investigate the level of community participation, network density, and centrality within the communities in both study sites. The results are expected to provide an overview of the importance of social capital in the management of methane gas utilization program.

II. METHOD

A. Social Network Analysis

The Social Network Analysis (SNA) is used to determine the social capital by measuring and mapping the relationships and information between members and within the community [13]. Relationships between nodes represent connections, while the node itself can be individuals, groups, or other entities. The purpose of social network analysis is not only to map and measure relationships between nodes but also to understand the structure of the network and to illustrate the impact of the relationship on each actor [14]. In this study, measurement of social capital consists of 3 calculations; the level of participation, density and centrality.

1. Rate of Participation

Rate of participation (RoP) is used to determine the level of participation of self-help group members in Mulyorejo and Karangnongko villages. The level of participation is identified based on the active participation of the members in the community/organization or activity/event [15]. This study determines the level of respondents' participation based on their involvement in the community. The formula of RoP as follows [15]:

$$\bar{\alpha}_{i+} = \frac{\Sigma_{i=1}^{g} \Sigma_{j=1}^{h} x_{ij}^{N}}{g} \quad (1)$$

$\bar{\alpha}i+$ = Rate of participation
g = Number of respondent
h = Number of the organization followed by a respondent
i = Number of the actor involved in the programs of the organization
x_{ij}^{N} = The value of main diagonal value in the matrix (the relationship between actors with organization)

2. *Density*

The calculation of density aims to determine the density of the relationship of respondents in a network in the social structure of the community [16] and identify the proportion of respondents who share membership in each institution. The formula of density calculation is [15]:

$$\Delta(N) = \frac{2L}{g\,(g-1)} \quad (2)$$

$\Delta(N)$ = Density
g = Affiliated members
$(g-1)$ = Isolated member

The score of density ranges between 0 and 1. The closer the score to 1, the better the density of the relationship between members. Density is divided into 3 categories; low, medium and high. The score in each category is obtained from the quotient between the maximum value (1) and the number of categories (Table 1).

Range	Categories
0 – 0,333	Low
0,334 – 0,667	Medium
0,668 - 1	High

Table 1:- Categories and range of density

3. *Centrality*

Centrality analysis is used to find out respondents who have a central role in a group [16]. The degree, closeness and betweenness centrality must be calculated first to obtain the value of centrality.

a) Degree of Centrality

Degree centrality represents the number of connections that an actor has. The actor who has the most connections with other actors will have a high degree of value. The formula for measuring degree centrality is [15]:

$$C_d = \Sigma \frac{d1}{g-1} \quad (3)$$

C_d = Degree centrality
d = Number of links

g = Number of respondent

b) Betweenness Centrality

Betweenness centrality is a calculation to identify the actor/node that acts as a liaison between two communities, by adding up all the shortest paths related to the node [15]. The calculation formula for betweenness centrality is [15]:

$$C_B = \frac{\frac{gjk(ni)}{gjk}}{\frac{(g-1)(g-2)}{2}} \quad (4)$$

C_B = Betweenness centrality
g_{jk} *(ni)* = Number of geodesics linking *j* and *k*
[(*g*-1)(*g*-2)] / 2 = Uninvolved pairs of actors

c) Closeness Centrality

Analysis of closeness centrality is used to measure the geodesic distance of an actor to other actors [13]. Geodesic distance is the average distance between one actor and another [17]. The closer the distance, the more connected the actor is with the other actors. The closeness centrality calculation formula is [15]:

$$Cc = \frac{g-1}{\sum_{j=1}^{g} d(ni,nj)} \quad (5)$$

Cc = Closeness centrality
d (ni,nj) = Shortes path between respondent $j \neq i$
g = respondent

Centrality level is divided into 3; high, low and medium. The measure is obtained from the quotient between the maximum value of centrality (1) with the desired number of categories (Table 2).

Range	Categories
0 – 0,333	Low
0,334 – 0,667	Medium
0,668 - 1	High

Table 2:- Categories and range of centrality

B. Data Analysis

Data collection was carried out using interview techniques based on questionnaire guidelines. Each respondent was asked about the participation and type of local communities attended. Density and centrality were calculated using the UCINET 6.528 program. In addition, the RoP was measured from the data on the participation of respondents in local communities in each village. The calculation of RoP was obtained from the division between the sum of the diagonal matrix and the number of respondents. The sum of the diagonal matrix is the value of the total number of communities attended by respondents, while the number of respondents is the number of respondents using methane gas in the study area.

C. Population and Sample

The population in this study were all methane gas users in the Mulyorejo Village of Malang City and Karangnongko Village of Malang regency. The total users in the two villages are 293 households, divided by 163 households in the Mulyorejo Village and 130 households in Karangnongko Village. The sampling technique used was the Proportional random sampling. Proportional random sampling commonly used in sampling that has more than one study area. Sampling was determined in balanced or proportional based on the number of research subjects in each study area. Research was conducted in area with homogenous respondent, therefore sampling technique was using the Slovin formula [18 sugiyono]. The calculation of Slovin formula as follows:

$$n = \frac{N}{N.e^2+1} \quad (6)$$

n = number of samples
N = total population
e = error margin

Based on the sampling calculation, the total sample in both research area obtained 169 respondents. The result of the sample calculation was then proportioned again according to the sample size in each study area so that the sample can represent the population. The final sample size determined was 75 respondents for Mulyorejo Village and 94 respondents for Karangnongko Village. This study used the error margin of 0.05.

III. RESULT AND DISCUSSION

This research was conducted in two study areas that have a self-help community for the management of methane gas utilization, namely Bina Mandiri in Mulyorejo Village and Cempoko Mulyo in Karangnongko Village. The methane gas utilization program was initiated by the Malang City Government to reduce air pollution due to the release of methane gas into the air. It is also to prevent the explosion at Supit Urang landfill due to methane gas trapped in a landfill. Currently, the program is managed by Bina Mandiri as a group responsible for managing the network and distributing gas from the Supit Urang Landfill to the community. The location of methane gas users is centered on RT 5 and RT 10, RW 5, Mulyorejo Village, Malang City (Fig. 1). Both RT and RW are the neighborhood association in Indonesia village or city.

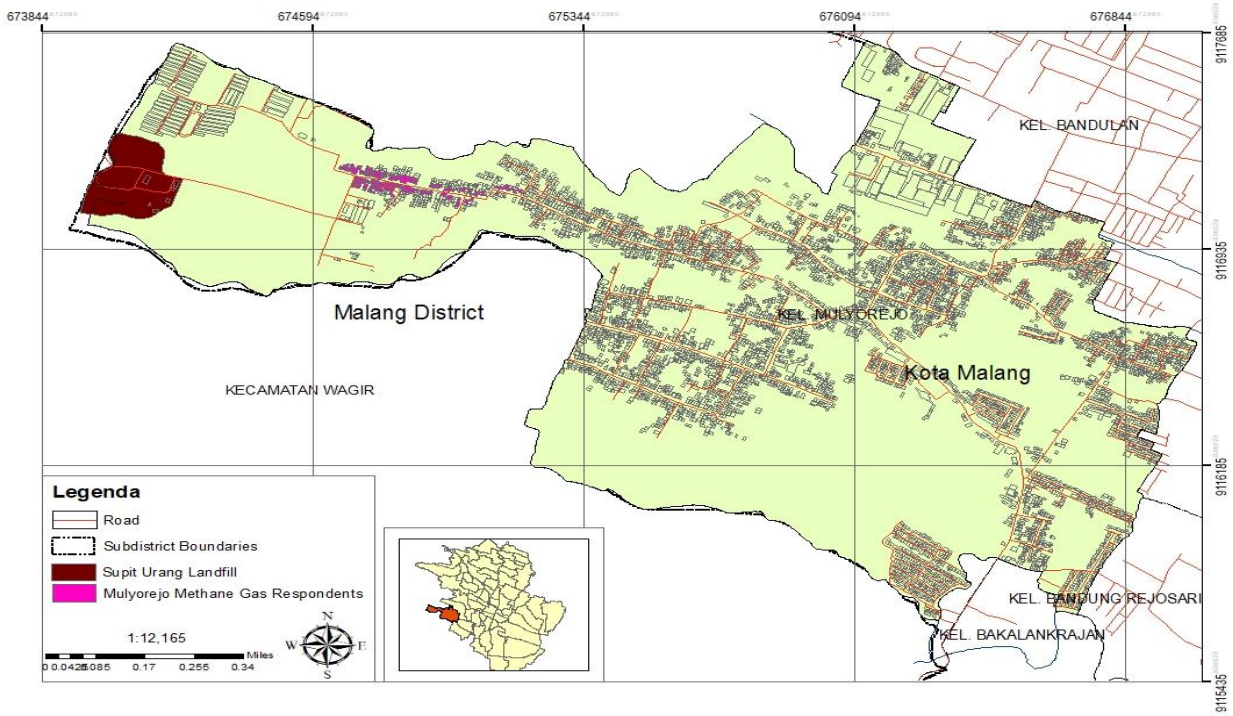

Fig. 1:- Research site of Mulyorejo Village

Karangnongko Village is located in the Poncokusumo District of Malang Regency (Fig. 2). The community of methane gas users in Karangnongko Village is centralized near the Paras Landfill. Only the nearest households have access of methane gas utilization program. It consider due to the nearest household have the biggest impact of landfill, so they must get the benefit of the methane gas utilization program. This program previously was organized by the Government of Malang Regency that intend to reduce the impact of methane gas to the environment. Cempoko Mulyo self-help group is responsible as the management for distributing methane gas from the Paras landfill to the surrounding community.

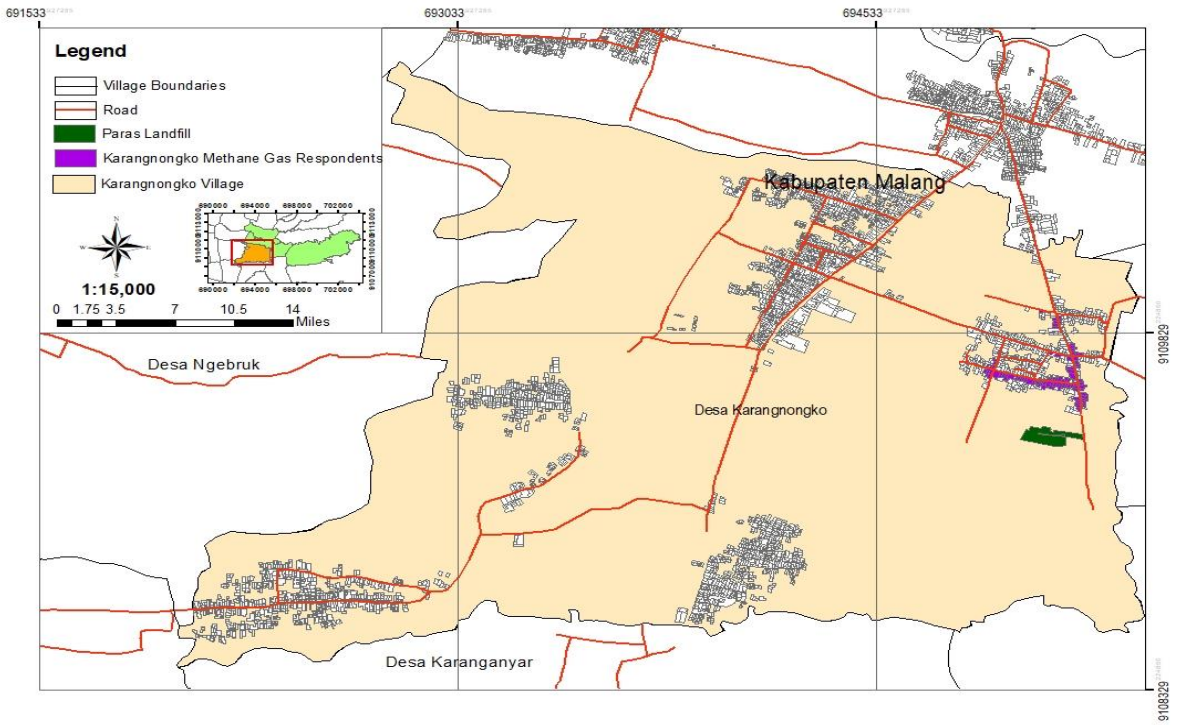

Fig. 2:- Research site of Karangnongko Village

A. Self-help Groups

A self-help group is a group of people who unite and actively participate due to the bonds of vision, interests and the same needs so that they have the same goals to be achieved [19]. Self-help groups have the principle of empowerment, in which community groups are generated by the common needs and awareness of the community itself, managed and developed using the resources owned by the group. The purpose of the formation of self-help groups is to realize self-help groups that are empowered and able to achieve goals through joint action [20].

The initial formation of the Cempoko Mulyo self-help group began with an attempt to capture methane gas at the Paras landfill in 2011 by landfill officials. The idea of using methane gas was made after seeing the success of the Talangagung Landfill in managing and utilizing methane gas. The initial target for pipeline installation is prioritized for 180 households around the Landfill since they are considered to have the greatest impact from the Landfill. Until this research was conducted, the number of Cempoko Mulyo members recorded was 163 households. This reduction has occurred since 2015 due to the reduced volume of methane gas in gas wells. Meanwhile, the construction of new gas wells is also difficult to realize due to limited land area.

The management of self-help group Cempoko Mulyo was formed in 2011, since the beginning of the implementation of the methane gas project in Paras Landfill. The board consists of the chairman, secretary, treasurer and contribution collection division. Withdrawal of dues is tasked with attracting contributions in the community and is responsible for the treasurer. This management is formed under the results of community deliberations regarding anyone willing to voluntarily take care of the methane gas project. The management of methane gas in community is left entirely to Cempoko Mulyo as a self-help group, so that the community can manage and maintain the methane gas project independently.

The following year (2012), Malang City launched a methane capture and distribution program from the Supit Urang Landfill to the surrounding community. This big project was aimed to provide methane gas as the alternative of LPG for more than 500 households around the Supit Urang Landfill. In the same year, the government, together with the local community, formed the management of the methane gas project through deliberations, and the Bina Mandiri group was formed. The organizational structures consists of a chairman, secretary, treasurer, and 2 mechanics. Nowadays, there are 130 members joined Bina Mandiri. The most significant decrease in the number of members occurred in 2014, from 408 households to 130 households [21]. The decrease in the number of users is caused by the volume of gas that cannot meet the needs of all users so that 75% of users stop using methane gas. At present, the location of methane gas users in Mulyorejo Village is only concentrated in RT 10 and RT 5.

B. Management and Distribution System of Methane Gas

In general, both Supit Urang and Paras Landfill implement the same system of methane gas distribution. Methane is collected using the passive gas collection system through pipes planted in gas wells. The Supit Urang Landfill utilizes PVC pipes to collect and distribute the methane gas to the households. However, unlike the Supit Urang landfill, the Paras landfill uses bamboo as a pipe for the collection of methane in the gas wells. The nature of the flexible bamboo is considered to be more resistant to heat, high-volume gas pressure, and machine pressure, compared to PVC pipes. The use of bamboo as a substitute for PVC pipes is a form of Karangnongko Village local wisdom. Bamboo is widely available in the village area, so it is considered an affordable and environmentally friendly resource.

Gas distribution from landfill to the community settlements is carried out using PVC pipes with the size of ¾ dim, complete with the blowers to help to blow the gas from the landfill to the entire households through the PVC pipes. The blower is placed outside the landfill, closer to the settlement so that it can push the gas to the farthest area. Mulyorejo Village only uses one blower, while Karangnongko Village uses three bowers. The maintenance of the installation is carried out by the self-help group by checking the conditions of the blowers and pipes. The maintenance in both landfills is done every morning in the drains from the methane gas wells. The water must be ensured to flow out of the drain pipe and not clog the pipe that runs the gas. If the gas pipe is filled with water, then the gas will not able to produce a gas for cooking.

Based on the observations, one methane gas well in the Supit Urang landfill can produce methane gas for two years to be used by 130 households. While the gas wells at the Paras landfill can produce methane gas for a maximum of one year of use. In the first eight months, the volume of gas produced is good and never goes out. Unfortunately, there are no tools to measure the volume of gas produced, either in the Supit Urang landfill or the Paras landfill, so the methane gas production cannot be measured precisely. When the period of gas well production has been reached, the volume of gas produced will be reduced so that the resulting flame becomes small and does not even ignite at all. Only the closest house to the landfill can still use the gas for cooking. This condition is certainly different for each region, which depends on the number of users, waste conditions, and landfill capacity. The Supit Urang Landfill has a capacity of 381.63 tons/day in 2018 with a total land area of 32 Ha. On the other hand, the Paras Landfill has a smaller capacity, which is 130 to 150 m3/day with an area of 1.8 Ha. This shows that Supit Urang landfill is bigger than Paras landfill. The Supit Urang Landfill has a city-level service scale as it is the only landfill in Malang City, while the Paras Landfill has a service scale at the district level. The Paras landfill collects waste from several villages and districts around Poncokusumo. Therefore, the age of the Supit Urang landfill gas well is much longer than the Paras landfill since the Supit Urang landfill has a much larger volume of waste and vast land area.

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The construction of new gas wells must consider the condition of the garbage piles, whether it has produced methane gas or not. One indicator that the garbage piles have produced methane gas is that is wet. Therefore, the most ideal time to make a new well is in the rainy season. During rainy season, the volume of gas inside the garbage is increases. Gas wells that are not used also produce new gas during the rainy season. Conversely, if the dry season arrives, the volume of gas will be reduced due to dry waste conditions. During the dry season, the Landfill officers and self-help group management regularly water the garbage piles to keep it wet and support the methane gas production.

A significant obstacle in the methane gas utilization program is the high cost of installation set, especially the blowers. In normal cases, if the blowers are damaged, the self-help group administrator must submit a proposal to the Local Government to replace the damaged blowers. The construction of new gas wells also requires a permit from the instituion that supervised the landfill. Sanitary Department for Malang Regency and Sanitary and Parks Department for Malang City. This process takes a long time to be finished, so the group cannot fix the technical problem quickly as soon as possible or built a new gas wells when the gas volume in the well has been reduced. If damage only occurs to the gas pipelines around the settlement, the group can replace the pipe by themselves using the members funds. Even though the methane gas utilization program is handed over to the community, in several aspects, such as tool replacement, the self-help group is still depends on the local government.

C. Social Network Analysis

1. Rate of Participation

RoP represents the participation of respondents in the community in research area. In Mulyorejo Village, there are 7 formal and non-formal communities, namely the Tirta Sari HIPPAM (community-based water supply system), Karang Taruna Mahardika (youth community), PKK (family welfare empowerment), Takmir (recitation of mosque management) of Ibn Fattah Mosque, tahlilan (Dhikr community), recitation, and arisan (women social gathering) groups. Meanwhile in Karangnongko village, respondents participate in four communities; the Karangsari Farmer Group, the recitation of the Takmir (recitation of mosque management) of Baiturrahman Mosque, PKK (family welfare empowerment), and recitation. Determination of high and low RoP is easier if seen from the range of values. The range of RoP values is obtained from the results of the division between the number of institutions and the class categories used (Table III).

Categories	Range	
	Kelurahan Mulyorejo	Karangnongko Village
Low	0 - 2,33	0 – 1,33
Medium	2,34 – 4,67	1,34 – 2,67
High	4,68 - 7	2,68 - 4

Table 3:- Categories and scores of RoP.

Villages	RoP Scores	Categories
Mulyorejo	2,09	Low
Karangnongko	2,32	Medium

Table 4:- RoP in Mulyorejo and Karangnongko Village.

The RoP analysis (Table IV) shows that the level of community participation in Karangnongko Village is in medium category, while Mulyorejo Village is in a low category. This difference is caused by the number of respondents participating in groups. The level of participation in Karangnongko Village was higher because 52% of respondents participated in 2 to 4 communities/groups in Karangnongko Village, and 29% of respondents even participated in 3 communities/groups. The institutions that have the most respondents' affiliations are the types of religious institutions, namely the Takmir of Baiturrahman Mosque (77%) and recitation (73%).

The low participation of the community in Mulyorejo Village was showed by the finding that most respondents only participate in 1 (33%) or 2 (37%) communities out of 7. The group of respondents who participated in 3 types of institutions was only 14%. This is quite low compared to Karangnongko Village. The difference in the number of samples in the two study sites is not significant, so the level of respondent participation in the two regions can be compared equally. The communities which were mostly attended by respondents in Mulyorejo Village were arisan/gathering (29.93%) and recitation (21.65%).

The findings show that the level of respondents' participation in the community can be influenced by the character and nature of the local community itself. Mulyorejo Village Respondents have the characteristics of urban communities that tend to be apathetic and individualistic. In contrast, respondents in Karangnongko Village still have the character of rural communities with a high sense of kinship and togetherness. This affects the level of participation in society. Other findings in both Karangnongko Village and Mulyorejo Village, is that the communities that were most followed by respondents were a religious community. This is influenced by the similarity of religious backgrounds in the majority of respondents, which is Islam. The level of participation can affect the type of typology of social capital. Participation in the community is the key to social capital, if the respondent's participation is low, then the community's social capital cannot develop. Previous studies on social capital proved that the value of participation in the SNA analysis is an important benchmark in determining the typology of social capital [22,23].

2. Density

Density shows the connection between actors and their connections in the community itself. The higher (closer to 1) the density value is, the actors in the institution are increasingly connected.

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Range	Scores		Categories
	Mulyorejo	Karangnongko	
0 – 0,333	-	-	Low
0,334 – 0,667	0,654	-	Medium
0,668 - 1	-	0,884	High

Table 5:- Density in Mulyorejo and Karangnongko Village.

The results of the analysis (Table V) show that the density in Karangnongko Village is in the high category, while Mulyoejo Village is in the medium category. The high value of density in Karangnongko Village is because respondents are connected to the same local community. Respondents in Karangnongko Village had the strongest affiliation with the Baiturrahman Mosque and tahlilan community, which were 77% and 73%, respectively. Meanwhile, the biggest affiliation within communities in Mulyorejo Village was arisan (29%) and recitation (22%). A high-density value can make the community develop better because it is based on good relations between fellow members of the community.

3. Centrality

Centrality is measured by calculating the degrees, closeness, and betweenness values to identify the existence of central actors in the network.

Statistics	Degree	Betwenness	Closeness
Mean	0.48	0.12	0.76
Min	0.14	0.00	0.54
Max	0.70	0.47	0.95
Std. Dev.	0.15	0.15	0.11
Variance	2.29	2.36	1.30
Level of Centrality			
Low 0 – 0,333	22,67 %	84 %	0 %
Medium 0,334 – 0,666	58,67 %	16 %	22,67 %
High 0,667 – 1	18,67 %	0 %	77,33 %

Table 6:- Centrality in Mulyorejo.

Statistics	Degree	Betwenness	Closeness
Mean	0.82	0.05	0.90
Min	0.41	0.00	0.64
Max	0.93	012	100
Std. Dev.	0.12	0.04	0.08
Variance	1.54	0.19	0.80
Level of Centrality			
Low 0 – 0,333	0%	100%	0%
Medium 0,334 – 0,666	7.44%	0%	5.31%
High 0,667 – 1	92.55%	0%	94.68%

Table 7:- Centrality in Karangnongko.

Centrality measurements show that Karangnongko Village (Table VI) has the highest degree and closeness values. Whereas in the value of betweenness, Karangnongko Village has a lower value than the Mulyorejo Village. Based on the degree and betweenness values in the two study areas, it can be concluded that there were no respondents who were central actors. The absence of a central actor indicates that fellow respondents in the network are strongly connected. Therefore, information spread does not require the role of a mediator. Good connectivity shows that the spread of information and knowledge can be conveyed simultaneously, quickly and efficiently, so that no members miss any information.

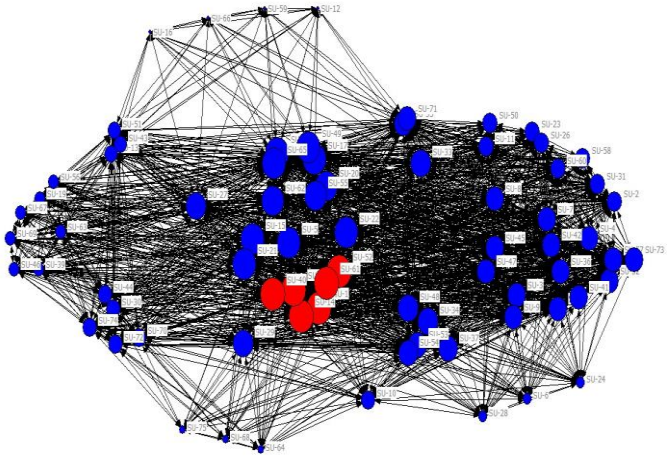

Fig. 3:- Netdraw of Respondents in Mulyorejo

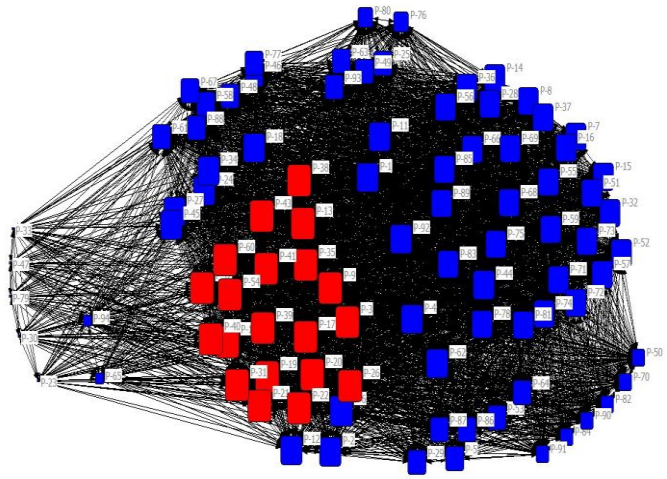

Fig. 4:- Netdraw of Respondents in Karangnongko

In Netdraw (Fig. 3 & 4), the red circle and square symbol indicates the respondent who has the highest degree value, while the blue circle indicates the respondent who has the lower value. Based on the network pattern, it appears that the social network in Karangnongko Village (Fig. 2) is more compact than Kelurahan Mulyorejo (Fig. 1). This is because Karangnogko Village as a whole has better RoP, density, and centrality. A compact network and interconnected nodes indicate a solid network. Societies that have such social capital can be classified as bonding social capital.

IV. CONCLUSION

Based on the analysis of the rate of participation (RoP), it is clear that the members in Karangnongko Village have a better rate of participation (medium) than Mulyorejo Village (low). The user of methane gas in Karangnongko Village participates in 2 to 3 organizations from a total of 4, while the community in Mulyorejo Village only participates in 1 to 2 institutions from 7 institutions. Furthermore, the density value of Karangnongko Village is in the high category, while Mulyorejo Village is included in the low category.

The results of the calculation of centrality do not indicate the existence of respondents who act as central actors in both study locations. The value of betweenness centrality in both villages shows low value. That indicates that the members of the organization in both villages are connected, thus the role of a central actor is not needed. In addition, Karangnongko Village has a high value of the degree centrality, while Mulyorejo Village is included in the medium category. The actor who has the most affiliation with other actors has the potential to emerge as a central actor. Based on the SNA and NetDraw analysis, it is discovered that many actors have high degree values (indicated by red notation) in Karangnongko Village and Mulyorejo Village. Therefore, it can be said that members of the self-help group are connected.

The typology of Mulyorejo Village and Karangnongko Village leads to bonding social capital. The community of methane gas users in Karangnongko Village has the characteristics of a strong social bond, so it is predicted that they are better in managing the methane gas utilization program independently and sustainably. Strong bonding social capital in the Karangnongko Village community is powered by the similarity of religion, ethnicity, and strong kinship between community members. On the other hand, the methane gas community in the Mulyorejo Village has a social bond in the medium category, so that it can affect the cohesiveness in program management and the sustainability of the program itself. However, Mulyorejo Village has the potential to lead to bridging social capital because it has a heterogeneous community background and various community. Some communities, such as the Family Welfare Empowerment (PKK), youth community (Karang Taruna), and the local drinking water company (HIPPAM) can be the social capital for bridging because each has a social network that is engaged in community empowerment.

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