

UDC 332

## **SOCIAL CAPITAL IN WASTE HANDLING**

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### **ABSTRACT**

The problem of waste pollution must be addressed immediately due to its damage on the environment and health. Densely packed Denpasar City affects the volume of waste produced, thus making Denpasar City the highest contributor to the volume of waste in Bali Province. Waste processing that implements a multi-stakeholder partnership strategy, such as the Waste Bank, is an alternative idea to solve the problem of increasing waste volume. This study aims to discuss the role of social capital in waste management in Denpasar City with the Waste Bank program. The research method used in this study is a literature review. The results show that the role of social capital in waste management is to highlight individual behavioral problems in reducing opportunistic behavior and motivating households to devote more effort to environmental protection measures such as recycling waste. Good waste management through social capital is shown by the existence of networks, norms, and beliefs that the community has in achieving the common goal of creating a clean environment. In the network aspect, it is found that there are social relationships and social relations that refer to Bonding, Bridging, and Linking. In the aspect of norms, waste management is seen as a role model for behavior / attitudes that are recognized and used as a reference for acting and acting that will stimulate individuals and other groups to voluntarily participate in waste recycling activities. In the aspect of trust, there is a positive response from the community towards waste management. based on their hopes and beliefs, that the efforts they are doing will have a positive impact on the environment, especially in waste processing.

### **KEY WORDS**

Social capital, waste bank, norms, trust, network.

The implementation of development in Indonesia in the SDGs (Sustainable Development Goals) era is stated in Presidential Decree Number 59 of 2017, concerning the Implementation of Achieving the Sustainable Development Goals. By the end of 2015, Indonesia had not fully succeeded in achieving the MDGs targets. The SDGs are a continuation of the Millennium Development Goals (MDGs) agreed by UN member countries in 2000 and ended at the end of 2015. However, both have fundamental differences, both in terms of substance and in the process of compiling the SDGs bringing 5 fundamental principles that balance the economic dimension, social, and environmental, namely 1) People (humans), 2) Planet (earth), 3) Prosperity, 4) Peace, and 5) Partnership (cooperation).

SDGs continues the MDGs targets in terms of how to realize human development. One of the targets yet to achieve in the MDGs era is the availability of clean water and sanitation (Sustainable Report, 2017). According to Jenna Jambeck et al. (2015), Indonesia is ranked second out of 192 countries as a contributor to plastic waste to the oceans. The problem of waste pollution is a very serious problem and must be addressed immediately, because its impact on the environment and health.

Bali Province itself experiences waste accumulation problems every year, especially during the rainy season. Besides being able to affect the beauty of Bali's tourist attraction, millions of tons of plastic waste can endanger marine life. Kuta Beach, Bali is now missing its shoreline under mountains of rubbish. As an island frequented by foreign tourists, the waste problem in Bali is the focus of the government and people who care about the environment. The plastic waste that fills rivers and oceans has been causing problems for years, such as

clogging up waterways in cities that can increase the risk of flooding. The population of Bali Province in 2013-2017 is shown in Table 1.

Table 1 – Total Population of Bali Province by Regency / City, 2016-2020

Regency/City	Total Population (Thousands)				
	2016	2017	2018	2019	2020
Jembrana	273,3	274,9	275,6	273,3	274,9
Tabanan	438,5	441,0	443,5	445,0	445,5
Badung	630,0	643,5	644,0	645,3	646,8
Gianyar	499,6	503,9	504,5	506,6	508,9
Klungkung	176,7	177,4	178,7	179,7	187,4
Bangli	223,8	225,1	226,6	227,8	228,1
Karangasem	410,8	412,8	413,7	414,8	416,8
Buleleng	650,1	653,6	656,2	658,1	659,6
Denpasar	897,3	924,3	930,6	947,3	962,3
Bali Province	4.200,1	4.246,5	4.273,4	4.297,9	4.330,3

Source: BPS Bali Province, 2020.

Table 1 show that the population in Bali Province is increasing from year to year. Each district / city experienced an increase in population, which caused the population density in each district / city to also increase. From Table 1 the area with the highest increase in population is in Denpasar City and the lowest is in Klungkung Regency. This shows that Denpasar City is the area with the largest population and recipient of migrants. BPS data (2020) shows that the proportion of the number of migrants living in Denpasar City is greater than the original population living in Denpasar City. This condition is very concerning, because with an area of 127.78 km<sup>2</sup>, the population density of Denpasar City has reached 9,155.46 people / km<sup>2</sup>. The increase in population will also have an impact on the volume of waste generation in Bali Province. Just like other big cities, Denpasar also has problems related to waste. The total waste generated is 3,500 cubic or the equivalent of 1,200 tonnes a day. This makes Denpasar City has the highest estimate of waste generation in Bali Province. The estimated total waste generation generated in Bali Province itself throughout 2020 is estimated to reach 11,836.51m<sup>3</sup> / day which has increased to 976.45 m<sup>3</sup> / day from 2019. Figure 1.2 shows the comparison of the volume of waste produced by each Regency / City in Bali Province from 2019-2020.

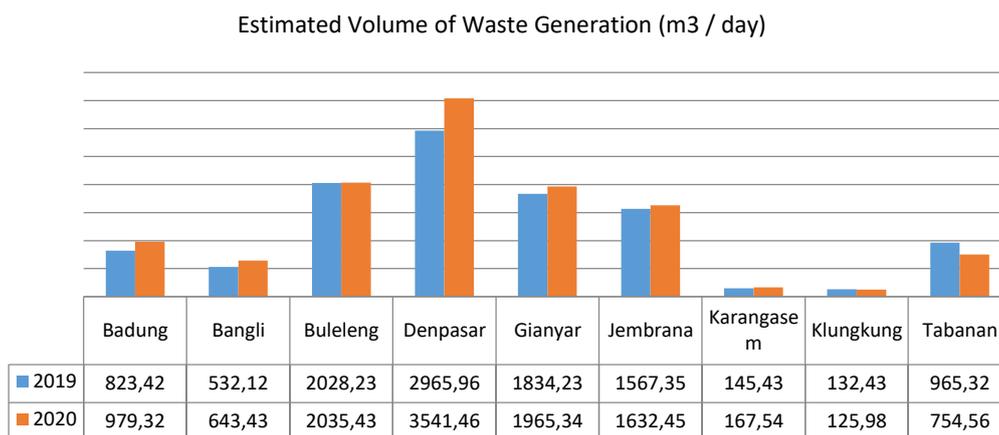


Figure 1 – Comparison of the Estimated Volume of Waste Generation from Regencies / Cities in Bali Province from 2019-2020 (Source: Bali Province Regional Environmental Status Report, 2018)

Denpasar City, which is the capital of Bali Province, is well-known as a tourist area and is an important center for economic growth in the Province of Bali. Denpasar City is in the first place with the most populous population in Bali Province from 2019-2020. The increase in population in Denpasar City will influence increasing the volume of waste in Denpasar.

The following in Table 2 is a projection of waste volume from 2016-2020 in each sub-district in Denpasar City.

Table 2 – Waste Volume in Denpasar City by District, 2016-2020

No	districts	Waste Volume (m <sup>3</sup> )				
		2015	2016	2017	2018	2019
1	South Denpasar	1.092	1.119	1.265	1310	1318
2	East Denpasar	595	605	612	614	620
3	West Denpasar	1.001	1.021	1.057	1077	1079
4	North Denpasar	764	774	782	788	791
Total		2.743	3.519	3.716	3,789	3,808

Source: Denpasar City DKP 2020.

Based on Table 2, Denpasar City produces an increasing volume of waste. The area with the highest volume of waste is South Denpasar District. Meanwhile, the area with the second highest volume of waste is West Denpasar. The increasing volume of waste in Denpasar City will become a serious problem if it does not get special attention from both the government and the community. The implementation of the SDGs, especially in terms of access to drinking water sources and proper sanitation, experiences obstacles due to the production of waste and waste whose volume is not balanced with the handling carried out. The unavailability of enough waste disposal sites (TPS) to accommodate a large volume of waste will result in a high volume of waste every year. In addition, it can worsen the drainage system, causing a new problem, namely annual flooding.

The Denpasar City Sanitation and Gardening Agency (DKP) stated that the volume of waste in Denpasar continued to increase from 2016-2019. The city of Denpasar produces 1,200 tons of this waste, which is equal to 530 times transported to the Suwung Final Disposal Site (TPA). Of this amount, nearly 90 percent is generated by households. While the remaining 10 percent is produced by restaurants and hotels. The Sanitation, Landscaping and Environment Agency of Denpasar City noted that 80 percent of waste production in Denpasar City is dominated by organic household waste. Waste production in Denpasar City per day reaches 2,500m<sup>3</sup> or close to 750 tons per day. Of this amount, 80 percent is organic waste and 20 percent is dry organic waste.

Starting from the problem of waste whose volume continues to increase and in line with the growing population density, the government encourages the people of Denpasar City to establish a waste bank, as an acceleration effort in the implementation of SDGs. The waste bank has raised public awareness to take part in waste management. With the Waste Bank, of course, it will be able to increase people's awareness about waste management, especially in terms of sorting types of waste. The number of Waste Banks in Denpasar City until 2019 is 128 Waste Banks scattered in each sub-district. Table 4 shows the number of Waste Banks in Denpasar City in 2019.

Table 4 – Number of Waste Banks in Denpasar City by sub-district in 2019

No	Districts	Number of Waste Banks (unit)	Number of Waste Bank Members (people)
1	South Denpasar	30	2.341
2	East Denpasar	43	4.774
3	West Denpasar	22	998
4	North Denpasar	33	2.818
Total		128	10.931

Source: Denpasar City Environment and Sanitation Office 2019.

In Table 4, it shows that East Denpasar District has the highest number of waste banks, while the lowest number of Waste Banks is West Denpasar. West Denpasar is the district with the second highest volume of waste in Denpasar City, while the number of waste banks owned by West Denpasar District is the least. The Denpasar City Government itself is targeting to have as many as 200 waste banks, which is still quite far from the current number, so what happens is that the volume of waste is increasing, not proportional to the availability of garbage storage places, or available Waste Bank units.

In addition, the problem of transporting waste is also an obstacle for the Waste Bank in Denpasar City, namely the lack of means of transporting waste to be transported to collectors. In the operational activities of the Waste Bank in Denpasar City, there are also problems, namely the lack of Human Resources (HR) to take charge of the activities of the Waste Bank in Denpasar City as well as parties who are active and competent in the field of waste processing. Waste Bank activities, especially in terms of sorting the waste that is saved by customers, where the garbage collected is still a lot that has not been sorted by the customer so that it requires labor to sort the waste. This problem is of course related to the problem of costs for paying workers, because the turnover that the Waste Bank earns per month is not necessarily sufficient for employee salaries.

According to Khairunisa (2016), Waste Bank, is an alternative idea that can solve the problem of increasing waste volume. Waste Bank activities aim to enable all levels of society, government, and private sector to carry out activities to limit waste generation, namely Reduce, Reuse and Recycle (3R) through smart, efficient, and programmed efforts. According to Nurcahyanti et al. (2014), the existence of a Waste Bank in Semarang City can reduce the volume of waste per week, but it still needs attention from the government to be able to establish an organization that can embrace all waste business players.

Waste management in the Waste Bank is one form of the implementation of the concept of Social Entrepreneurship, which is a term derived from entrepreneurship. A combination of two words, social which means community, and entrepreneurship which means entrepreneurship. A simple definition of a social entrepreneur is someone who understands social problems and uses the ability of entrepreneurship to make social change, especially in the fields of welfare, education, and health (Santosa, 2007).

Social Entrepreneurship has been known for many years, initiated by, among others, Florence Nightingale (founder of the first nursing school) and Robert Owen (founder of cooperatives). The notion of Social Entrepreneurship itself has developed since the 1980s, which was initiated by figures such as Rosabeth Moss Kanter, Bill Drayton, Charles Leadbeater and Professor Daniel Bell from Harvard University who have been successful in Social Entrepreneurship activities because since 1980 they have succeeded in forming 60 scattered organizations. around the world. Social Entrepreneurship tries to serve untapped markets, eliminating gaps in welfare, education, health, demographics, and employment opportunities (Elkington, 2008).

The Waste Bank activity is a manifestation of the implementation of the Social Entrepreneurship concept. When examined, the Waste Bank can be described as more than just a company that is established and has a dominant focus on community empowerment from a social aspect, but also as a movement to save the environment. In the end, ecological principles cannot be separated from the establishment and operation of the Waste Bank. On the other hand, the Waste Bank turns the environment into a primary ideology, which is then sliced down with economic orientation and social interests. Economic, social and environmental aspects are intertwined into the concept of a Waste Bank, so it is clear that a waste bank is not simply and singularly seen only from its economic values but is also built on the foundation of multidimensional aspects (Pratama, 2012).

The activities of the Waste Bank, which are thick with the value of social capital, can explain how massive the cultural role of citizens is in the development process and even the operation of the Waste Bank. In the end, the spirit of cooperation is assumed to be quite successful in running a waste management company. According to Mujiburrahmad (2014), community participation has a significant effect on waste management performance. The success of waste management in an area reflects the increasing public awareness of the importance of the environment. Community participation is a strategy that can be carried out to empower and develop the community so that it takes an active role in the planning, implementation and maintenance processes in community development carried out jointly.

Putnam (2002) states that high social capital will have an impact on the high participation of civil society in various forms. The positive result is that the government will have stronger accountability. Social capital can increase the degree of public awareness of the importance of good waste management. This awareness is a driving factor in the

institutionalization of values and norms at all levels of society regarding the importance of waste processing problems.

Widodo (2014) states that success in the problem of Waste Bank Performance is also influenced by the application of social capital because of the strength of social capital, especially regarding trust, networks, and norms. People who have high social capital will open the possibility to solve complex problems more easily. In the context of Waste Bank management, the actors involved can be identified, namely: Waste Bank managers, customers, garbage collectors, and facilitators. Then in principle, the value base they have developed is a combination of clarity of the basis of regional social ties (locality), a common viewpoint (mindset), and communication relations through networks (networking) that cross regional boundaries. In addition, social capital also develops through multi-dimensional relationships, in the sense that social relations do not stop at economic interests alone, but also mingle with friendship or neighborliness.

Fukuyama (2002) states that social capital that grows in a community, namely kindness and cooperative behavior based on shared norms will greatly help in strengthening the community entity. Social capital is different from other forms of capital, one of which is the ability to create and transfer ideas, thoughts, and the like through social mechanisms such as religion, traditions or habits that have been institutionalized from generation to generation.

The Waste Bank has economic value creative activities in its absolute partnership-based activities (relating to specific and unique raw materials), where the types of waste are very diverse and unstable, meaning that the waste is unstable. The instability of this waste raw material, of course, greatly affects the product of creativity which has implications for the fulfillment of production and marketing raw materials, so the waste bank needs a container or economic institution that can synergize between waste banks within its territory to facilitate the acquisition of production and marketing raw materials. So, it is inevitable that a waste bank must have a business umbrella that is not a separate economic legal institution (profit oriented) because it is primarily engaged as a non-profit or non-profit oriented business (foundation). In the economic aspect, even though a waste bank is a single economic or profit oriented entity, it will also not be able to survive and develop sustainably if it does not carry out permanent cooperation between waste banks or the public as a waste producer.

The existence of the Waste Bank itself can be said to be a social strategy. Talking about waste, of course, cannot be separated from its main sources, namely humans and households. This problem focuses on the discussion of the patterns and behavior of human consumption, even this will directly correlate with human attitudes and behavior in disposing of waste.

Discussion on integrated waste management, of course, does not only talk about technical issues or tangible assets, but also cannot be separated from intangible assets. This invisible asset is what in this study is said to be social capital. The development of Waste Bank management that relies on the empowerment of social capital, in fact, cannot be separated from the elements of the network which are formed from a sense of trust, mutual commitment, and a feeling of coincidence.

## **METHODS OF RESEARCH**

This research method uses a literature review. Material in the form of reviews, summaries, and thoughts about several library sources (articles, books, slides, information from the internet, etc.) on the topic being discussed is part of the writing of a Literature review. Writing that is relevant, up-to-date, and adequate reflects the writing of a good Literature review.

## **RESULTS AND DISCUSSION**

### **The Role of Social Capital in Waste Management**

The phenomenon of waste handling and its environmental impacts must be addressed by considering its relationship with other socio-economic, cultural, and institutional issues. Of

these, problems related to social capital are the most attractive because social capital can reduce opportunistic behavior and motivate households to devote more effort to environmental protection measures such as recycling. This is also driven by the implementation of effective law enforcement schemes and social norms (Amedeo et al, 2018).

Tsai (2008) argues that recycling behavior is not only an individual problem, but rather a collective action, because it can be influenced by social capital. According to Tsai's research, social capital has a significant impact on recycling behavior at the local level in Taiwan, with the proxy used for social capital being participation in voluntary organizations. Meanwhile, the number of social organizations is not significant. Therefore, recycling activities can be enhanced by community involvement such as membership in local voluntary organizations and networks, which must be supported and funded by the state.

The importance of social capital in waste management is also discussed by Jones et al., (2011) with reference to Greece. They found that social capital in the form of institutional and social trust, networking and adherence to social norms had an impact on community participation in voluntary recycling. For example, institutional trust in management encourages individuals to do their part because it is hoped that waste management will be efficient, while social trust increases the belief that other people also recycle well. Meanwhile, the network can spread information on how to recycle.

Participation in waste management can increase trust in the system itself. Those with higher social capital tend to have more environmentally responsible behavior. The norms that can be drawn to share information and help each other, similar research were also found by Danier et al., (2002) that there needs to be a focus on local needs so that people can participate in conservation efforts. Existing social capital can be mobilized for various functions even if it was not the original objective (Montgomery, 2000), making it possible to direct this type of social capital to waste management activities.

Several studies have investigated the influence of social capital on environmental behavior, in environmental sociology embodied in energy conservation activities after the world oil "shock" of the 1970s demonstrates the importance of local organizations and informal networks as key elements in gaining personal commitment and creating a sense of moral obligation to the issue. certain publics (Dietz and Vine, 1982; Heberlein and Warriner 1983; Olsen 1981).

According to Tsai (2008), the role of society in Taiwan in recycling is by asking the extent to which the level of social coherence of an area, measured as social capital, will affect the rate of recycling. The regional recycling rate is around 0.38-0.43 at the 5% significance level. This provides evidence that a region's social relations are highly correlated with its recycling performance; a region's level of social capital appears to increase its recycling rate. These findings imply that a successful recycling program requires interaction between people and the environment. Increasing the level of social capital of an area can also be included as part of the regional recycling program.

Social capital affects the waste recycling relationship. The relationship between sewage systems tends to capture the aspects of degradation and mistrust that differentiate certain territorial areas and large metropolitan cities, in the role that institutional quality plays in increasing the volume of recycled urban waste. Finally, with regard to environmental concerns, social capital does not appear to be a problem at a significant level when education levels are low, and the quality of institutions is weak. According to Guiso et al., (2004) in Italy, common trust develops when institutions and levels of education offer incentives that encourage people to act in collaboration.

Efforts to handle waste require collaboration in sustainable community development, which means that many local community organizations, leaders and government are needed to form partnerships with other levels of government, with the private sector. and with civil society organizations (Ann Dale et al., 2012). Previous research in environmental sociology has investigated how individual characteristics such as gender, age, income, and other demographics influence environmental behavior, as well as the relationship between environmental knowledge and attitudes to the environment (Stern et al. 1993; Stern et al.

1995; Stern et al. 1995; Stern et al. al. 1999; Grob 1995; Dietz et al. 1998; Golob & Hensher 1998; Tanner 1999; Choo & Mokhtarian 2004; Walton 2004; Flamm 2009; Kahn & Morris 2009). In most cases, it has been shown that those with a pro-environmental attitude tend to engage in more environmentally conscious behaviors, such as choosing alternative modes of transportation or owning a more fuel-efficient car.

According to Peng (2018), social capital can function as a 'relational glue' that underpins effective supply chain relationships in waste management. This suggests that social capital has a positive impact on governance practices and willingness to participate. Four main components of social capital are identified: social trust, institutional trust, social networks, and adherence to social norms. Based on research conducted by Nikoleta et al. (2011), theoretical analysis explores the link between these components and environmental policy and behavior to lay the groundwork for investigating the effect of social capital on environmental policy implementation. The influence of social capital on people's behavior which relates to the two solid waste management policies was investigated empirically through surveys. The findings suggest some differentiation regarding the influence of social capital components on environmental behavior in different environmental policy contexts.

Waste handling in rural and urban areas has different characteristics. In rural sociology, environmental research has centered on rural-urban differences, including the social ties that occur with agriculture which may inform respondents' attitudes towards environmental management and the different preservation of agricultural land in rural and urban areas (Berenguer 2005; Fortman and Kusel. 1990; Freudenburg 1991; Lowe and Pinhey 1982; Tremblay and Dunlap 1978).

### **Norms in Waste Management**

Norms as social resources are shared rules that guide one's behavior in acting. Norms give individuals a way in which they orient themselves towards others. Norms guide us in defining situations (Damsar et al, 2009). Norms are a set of rules that are expected to be obeyed and followed by members of the community in a particular social entity. In relation to social capital, norms cannot be separated from networks, beliefs, and values. By using the exchange approach, humans are rational creatures, that is, considering the advantages and disadvantages in both the intrinsic and extrinsic dimensions. If an exchange gets a profit, then a further exchange will appear which is expected to get a profit as well. The reciprocity of norms contains rights and obligations for the parties involved in the exchange. All parties must have the responsibility to maintain the norms formed in an exchange. If there are people who violate the norm, it will have an impact on reducing the benefits of the parties involved, and if this is violated, a sanction or punishment will be imposed.

Apart from social capital, other perspectives have been used to study social norms in the context of recycling behavior. Thomas et al, (2013) discuss the normalization of recycling behavior and its implications for other pro-environmental behavior in the UK. They found that recycling can become the norm among some sections of the population without becoming the norm across the population, as for example people with more environmentally friendly attitudes can adopt recycling norms more quickly than others. Meanwhile, according to their research, young people, people from a lower social class or those living in apartments in the UK have lower participation in recycling programs, indicating that they are not adopting recycling as the norm. followed. In addition, Thomas and Sharp (2013) found that the influence of norms on recycling is related to habits and identity, because initiating recycling requires effort and a change in routine, while identity as a "non-recycler" can create resistance to behavior change.

Norms are provisions that contain orders or prohibitions that must be obeyed by members of the community for the realization of values, which in the implementation of waste management through the Waste Bank can be seen from the role model of behavior / attitudes that are recognized and used as a reference for action and behavior that will spur individuals and other groups volunteering to participate in the Waste Bank activities

Fornara et al. (2011) discussed the effect of norms on recycling as a localized process in the environment. They divide norms into four categories which are created from

differences between descriptive norms and norms, as well as local and subjective norms. This will be explained in more detail in the theory section, but here it suffices to say that they argue that descriptive norms, that is, those based on the actual actions of others rather than their opinion of what to do (additional norms) are the most relevant to recycling behavior. When the result is interdependent on the involvement of others, as is the case with recycling, the perception of whether or not others are participating can have an important effect on behavior. This is because the value of individual contributions is related to the collective whole, and the rewards for recycling are higher the more people do it.

There are norms that regulate waste management, both written and unwritten. Written norms are in the form of standard operational work procedures, while unwritten norms are in the form of services to the community related to waste management. These norms can strengthen the rules in achieving the goals desired by the community to stay organized and move according to their functions. Related to the norms that apply in the community in waste management, there are several social sanctions for the community, including the norm of not littering, the norm of not throwing garbage on riverbanks, and the norm for planting trees in the yard as urban farming. The aspect of norms has led to rules in society that have created awareness and participation that must be owned by all citizens. (Rio et al, 2017).

### **Trust in Waste Management**

Trust is a characteristic of individual goals in certain types of situations, but it cannot be observed directly. Trust is the belief that other people have and will do the same things one does to others. In other words, trust is a confident belief, and it is guaranteed that the other party will respect their responsibilities, without any action that could harm either party. This allows a group of people to unite and can contribute to increasing and strengthening social capital (Putnam, 2000).

Regarding the trust of residents in waste management, it is manifested by the positive response from the community in waste management. The community becomes motivated in carrying out waste management because adequate facilities have been provided. In addition, currently the community can run the Waste Free Area (KBS) program by carrying out waste sorting activities in stages, starting from the household level to the village level. However, not all people are capable of sorting waste at the household level (Rio et al., 2017).

The trust factor in waste management can be seen in the activities of the waste bank, namely in its implementation it contains the concept of social capital, especially trust. Waste Bank customers, in this scope usually consist more of the community around the Waste Bank environment, sorting out the waste produced by each household to then be deposited with the officers at the Waste Bank. The efforts made by Waste Bank customers are not solely to increase their savings balance, but also based on their hopes and beliefs that the business they are doing will have a positive impact on the environment, especially in waste processing. In addition, in the operational activities of the Waste Bank, namely fellow actors and stakeholders of the Waste Bank activities, such as determining the "waste rate" by the main waste bank to the determination of choosing business partners who can provide resources and share knowledge and innovations in waste management, because of interaction. social activities (Rio et al, 2017).

Cooperation between people results in good quality social relationships, which can positively influence recycling attitudes. The introduction of the concept of social capital to social science has shifted the focus of research to social trust. In previous research, trust played a key role in generating cooperation (Herreros 2004; Putnam 2000; Uslaner 2002; Freitag and Buhlmann 2009). Although many previous studies have shown that trust is generated primarily by social factors such as participation in civic groups and associations (Putnam, 2000). Previous research has also found that an important source of general trust can be found in institutions (Sobel 2002; Hooghe et al., 2003; Freitag et al., 2009). However, Tsai (2008) found that relatively little attention has been paid to the conditions under which trust can influence waste management.

Vassanadumrongdee, et al (2017) conducted a study on public intention to participate in recycling and willingness to pay for services in a Bangkok environment. They based their

research on Theory of Planned Behavior (TPB), the main social factor found in this study which is belief in waste management. Hasbullah (2006) states that trust is a form of individual or group desire to take risks in their social relationships based on a feeling of confidence that others will do something as expected and will always act in a mutually supportive pattern of actions. At the very least, others would not act detrimental to themselves and their group.

Collective action based on mutual trust will increase community or group participation in various forms and dimensions, especially in the context of mutual progress. This allows a group or community to unite and contribute to increasing and strengthening social capital (Putnam, 1993).

### **Network in Waste Management**

In the operations of Bank Samaph, social networks can be described as inter-personal relationships that are expected to be mutually beneficial and are intended to be able to overcome problems experienced while running a business that occurs in the Waste Bank business as shown through; building partners in processing and sorting waste with collectors and other parties who can help realize the social mission of the Waste Bank.

A social network is a series of unique social relationships between a number of people, in which there is trust and that trust is maintained by norms that bind both parties. In waste management, there are social relationships and social relations that refer to the aspects of Bonding, Bridging and Linking. According to the results of research conducted by Damsar et al., (2009), the aspects that explain social networks in waste management are explained, namely, the Bonding Aspect in Integrated TPS is indicated by the similarity of backgrounds, namely Sundanese ethnicity and Islam. The social relations that exist occur because of the same background, namely Sundanese ethnicity. Furthermore, in religious equality, social ties are formed when religious activities and shared recreation also produce strong social bonds that are formed through interaction and communication.

Bridging aspect, namely the existence of cooperation between the Integrated TPS institution and community groups such as the Youth Organization, community groups and groups of PKK mothers. Collaboration is established because of the existence of common rules that must be obeyed, so that communication or coordination between these groups is established to achieve one expected goal. The linking aspect is the existence of a cooperative relationship between the Integrated TPS and community groups, organizations, and government agencies in establishing agreements and cooperation. In addition, TPST is also coordinated in promoting the Waste Free Area (KBS) program, so that in the future waste separation from homes can be carried out effectively and TPST efficiency will increase, so that the waste management system will be better in the future. The social ties that are formed are in the form of bonds of cooperation and cooperation which show aspects of social capital. Waste management at the community level, starting at the village level by building social relations with the RW / RT, Karang Taruna and PKK groups. In building a network with Karang Taruna, Karang Taruna helps in socialization and waste management activities both to residents and to youth. Furthermore, with the PKK group, namely making an appeal in waste management to reduce the amount of waste by collecting used goods that can be sold to then put the results into the group PKK treasury (Rio, 2017).

### **CONCLUSION**

The role of social capital in waste management is in highlighting individual behavioral problems in reducing opportunistic behavior and motivating households to devote more effort to environmental protection measures such as waste recycling. Good waste management through social capital is shown by the existence of networks, norms and beliefs that the community has in achieving the common goal of creating a clean environment. In the network aspect, it is found that there are social relationships and social relations that refer to Bonding, Bridging, and Linking. In the aspect of norms, waste management is seen as a role model for behavior / attitudes that are recognized and used as a reference for acting and

acting that will stimulate individuals and other groups to voluntarily participate in waste recycling activities. In the aspect of trust, there is a positive response from the community towards waste management. Based on their hopes and beliefs, that the efforts they are doing will have a positive impact on the environment, especially in waste processing.

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