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Social construction in plastic waste management for community empowerment and regional structure

Arifin Saleh^{*)}, Mujahiddin Mujahiddin, Sigit Hardiyanto
Universitas Muhammadiyah Sumatera Utara, Indonesia

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ABSTRACT

The growth rate of plastic waste in Indonesia increases every year. The Central Statistics Agency (BPS) revealed that plastic waste in Indonesia reaches 66 million tons per year. In Hamlet 15, Pematang Johar Village, there is the Suka Mulia Garbage Bank, which has been established since 2020 and has 60 customers. The presence of this waste bank has changed waste management activities, especially plastic. Villagers have started to actively save waste and turn plastic waste into eco-bricks. Changes in waste management in the community make this research aim to analyze the process of change that occurs by using the social construction approach proposed by Berger and Luckmann. This research design is qualitative with a descriptive approach. The data in this study consisted of secondary and primary data. The results of this study found that there is a social construction model in plastic waste management, where from the externalization stage to the objectification stage, a community empowerment process occurs through the socialization of ideas and practices for making ecobricks.



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Corresponding Author:

Arifin Saleh,
Universitas Muhammadiyah Sumatera Utara
Email: arifinsaleh@umsu.ac.id

Introduction

The waste problem in Indonesia is a problem that has not been resolved until now. Meanwhile, with an increase in population will come an increase in the volume of waste generated by human activities. The problem of plastic waste in Indonesia needs serious attention. This is due to the growth rate of plastic waste in Indonesia every year. Plastic is a recyclable material, or material that can be recycled; that's why there are many ways to process plastic. In addition, plastic is also a chemical substance that is difficult to degrade or decompose by nature; it takes hundreds or even thousands of years for plastic to decompose by nature. Plastics are widely used in many aspects of human life. starting from food packaging materials to automotive material needs. The main problem with plastic is that it cannot be decomposed naturally. It takes a very long time to clean up plastic waste from the face of the earth. Moreover, because the use of plastic is almost uncontrollable, Plastic also makes the air temperature hotter day by day because of its non-porous polymer nature. According to (Pratiwi, 2016), every human activity will produce waste or trash. where the amount or volume of waste is proportional to the level of consumption of goods or materials used every day. As with the type of waste, it also depends on the type of material we consume. One person on average produces more than half a ton of waste per year, so if calculated, it is around one kilogram per day. If this is not managed properly, it will have a negative impact on both the environment and society.

The Ministry of Environment and Forestry (KLHK) released a report on an increase in the composition of plastic waste in Indonesia to 6 percent per year since 2000 (Andi, 2022). In 2021, the Central Statistics Agency (BPS) even said that plastic waste in Indonesia had reached 66 million tons per year (Merdeka, 2022). Many approaches can be taken to overcome the waste problem. In social science disciplines, approaches that can be taken in overcoming the problem of plastic waste are policy-based approaches (Astuti, 2016); (Yustiani & Maryadi, 2019); (Emilia & Ferza, 2020) and those based on community participation and empowerment (Sufianti, 2014); (Dwiyanto, 2011); (Mohamad et al., 2012). One form of waste management based on community participation and empowerment is through a waste bank. At the waste bank, the community is actively encouraged to carry out waste management collectively. This system will accommodate, sort, and distribute waste with economic value to the market. So that people get economic benefits from saving waste that has been sorted and deposited.

In Pematang Johar Village, where this research will be conducted, there is the Suka Mulia Waste Bank which was established in early 2020 and already has 60 customers. Before the Suka Mulia Garbage Bank was established, waste management activities in Pematang Johar Village, especially in Hamlet 15 were still collect-transport-disposal at the TPS in Pematang Johar Village. In addition, there are still people who manage waste by burning it in their yards (Tanjung & Saputra, 2021). After the Suka Mulia Waste Bank was established, waste management activities began to change. People are starting to actively save plastic waste that has been sorted from home. There are two mechanisms for saving plastic waste at the Suka Mulia Waste Bank, the first mechanism is saving plastic waste by weighing kilos and the second is saving plastic waste using the eco brick method. For those who save waste using the eco brick method, the price of plastic waste is paid higher, namely Rp. 2,000, - for the size of 1 bottle of 600 ml mineral water. The results from the waste saved in the form of ecobricks are then managed in a waste bank to be used as creations in the form of sofa chairs, welcome gates and also planting media. Meanwhile, plastic waste that is not in the form of eco-bricks is processed into paving blocks.

The existence of changes in waste management in the community makes this study aim to analyze the process of change that occurs using the social construction approach proposed by (Berger Peter & Luckmann, 1966). This approach was chosen because it can explain the process of social reality formation through a dialectical mechanism consisting of the process of objectification, internalization, and externalization. In the dialectical analysis framework, the forms/models of social construction will be seen in community empowerment and regional planning and the resulting impacts. Based on this explanation, this research article is interested in analyzing the form of Social Construction in Plastic Waste Management for Community Empowerment and Regional Planning in Pematang Johar Village, Deli Serdang Regency, North Sumatra.

The analyzed form of social construction is expected to contribute to the practical and academic levels. At a practical level, this paper will explain that social construction efforts in waste management for community empowerment and regional planning have many variations and distinctive differences, especially when associated with the local context of villages that have different social and cultural resources in each area. region. At this practical level, it is also hoped that the analyzed forms of social construction can provide input for the development and management of waste banks in other areas; that the waste bank does not only function as an economical waste management institution but can also have an impact on community empowerment and regional structuring in the village.

At the academic level, research using (Berger Peter & Luckmann, 1966) social construction approach will illustrate that social and cultural resources are the main potential and an inseparable part of the social construction process. So that these resources can be used as a tool for social change for the community to manage waste through a waste bank that can increase community empowerment and make regional arrangements more aesthetic. In addition, at the academic level, it will also be seen that the implementation of empowerment and regional planning is a human product so that it can be socially constructed to produce the goals to be achieved. Of course, the construction process is not an easy thing, it takes a real movement to raise awareness to the public on the importance of maintaining and preserving the environment so that it is free from waste – especially – plastic.

Another aspect, the choice of using a social construction approach in this study is also due to the absence of research that uses this approach in analyzing social changes that occur in society, especially social changes carried out by waste banks. Most previous studies have focused on discussing the role of waste banks in helping the community's economy (Linda, 2016); (Arico & Jayanthi, 2018); (Syahputra, 2018) and also community empowerment (Mujahiddin et al., 2018); (Mujahiddin, 2019). Therefore, this research article will raise the title: Social Construction in Plastic Waste Management for Community Empowerment and Regional Planning in Pematang Johar Village, Deli Serdang Regency, North Sumatra. The formulation of the problem to be answered in this study is: How is the social construction model in plastic waste management for

community empowerment and regional planning in Pematang Johar Village? This research explains how to deal with plastic waste, which is increasing and difficult to decompose. The community creates waste banks, which are rarely used by people in other areas. This waste bank was established to tackle the accumulation of plastic waste, which is increasing in number every year. This has the potential to benefit the surrounding community and empower it. With this waste bank, the community can work together to select and sort waste that has a saleable value and that does not. Waste that has a saleable value can be recycled and sold to the market so that people get an income, while waste that has no saleable value will be made into handicrafts for their characteristics. the area.

Method

This research design uses a qualitative descriptive approach. This approach was chosen to reveal in depth the social construction process in the management of plastic waste for community empowerment and regional planning in Pematang Johar Village, Deli Serdang Regency. The type of research used is qualitative, according to (Anggito & Setiawan, 2018), who define qualitative research as data collection in a natural setting with the intention of interpreting phenomena that occur where the researcher is a key instrument, sampling data sources is carried out purposefully and snowballs, collection techniques use triangulation (combined), data analysis is inductive or qualitative in nature, and the results of qualitative research emphasize meaning rather than generalization. In this study, the terms used for research subjects are Informant and Key Informant research. Later the interviewed informants will be taken purposively based on certain considerations and objectives. The informants interviewed were representatives of waste bank management and representatives of waste bank customers. As for the procedure for collecting data in this study, namely, first the researcher prepares who will be asked to interview, second, the researcher prepares the questions to be asked, third, the researcher brings in sources and starts interviewing, fourth, the results of the interviews can be written or recorded, and fifth, the researcher manages the results of the interviews that have been obtained.

The data in this study will be collected in two ways, namely: first, secondary data is collected from various books, journals, research reports, and online news. Second, primary data was collected through in-depth interviews with each of the selected informants and FGDs. In addition, for the completeness of research data, documentation is also carried out on matters related to the enrichment of research data. The data that has been collected will be analyzed using an interactive model qualitative approach as proposed by Miles and Huberman, which consists of three main things, namely: data reduction, data presentation, and concluding/verification, as intertwined things at the time before, during, and after data collection in parallel forms, to build general insights called analysis (Idrus, 2009).

Results and Discussions

There are many ways to explain a social reality, one of which is the social construction theory approach initiated by Peter L Berger and Thomas Luckmann in their book entitled: *The Construction of Reality; A Treatise in the Sociology of Knowledge*. In this book, Berger and Luckmann explain that reality is socially formed and its formation is based on a meeting between objective reality and subjective reality that is dialectical in society. The dialectical nature is characterized by the presence of three dialectical processes, namely; externalization, objectification, and internalization (Manuaba, 2008).

Berger and Luckmann say that if individual reality is considered a subjective reality, then through the process of externalization, the individual's knowledge is converted into objective reality. These changes occur because in the externalization process individuals adapt themselves to their socio-cultural world in which there is interaction with various types of individuals who have socio-cultural diversity. At this time, individuals will experience intersubjective dynamics, namely the negotiation process between individual knowledge and the knowledge of others which ultimately forms an objective reality between two or more people.

In the long run, this intersubjective dynamic will result in two processes, namely the development process and the legitimization process. The institutionalization process is characterized by repeated externalization processes to produce sufficient patterns and habits so that they can be understood together. Sufficient habituation will result in precipitation. In other terms, this deposition is referred to as a tradition that is passed down to each generation. After that, the institutionalized objective reality gains its legitimacy through the objectification of the meaning of the inherited values. The function of this legitimacy is to make the inherited values make sense subjectively. In the end, the whole process above explains that individuals seek to understand the definition of objective reality, as well as contribute to the construction of shared knowledge.

The social construction process described above is also seen in the management of plastic waste in Pematang Johar Village, Deli Serdang Regency. In this village, the management of plastic waste based on community participation was first initiated by Sumariono, he is one of the residents of Dusun 15 of Pematang Johar Village, who is currently given the manage to serve as the head of Hamlet 15. Initially, the plastic waste management activities driven by Sumariono were carried out using the eco brick method. This method was first learned by Sumariono from his friend in the Bukit Lawang Tourism Area, Langkat Regency. "His name is Mr. Nok. There I saw for the first time what ecobricks were. Where plastic waste is put into plastic drink bottles and then arranged to be used as fences, seats, and other types of buildings." (Interview with Sumariono, the initiator of the Ecobrick in Pematang Johar Village and also the Head of Hamlet 15 in Pematang Johar Village)

After seeing the process of making ecobricks, Sumariono became interested in applying it in his hamlet, namely Hamlet 15 Pematang Johar Village, with the initial idea of making ecobricks as mini trash cans which are expected to reduce the intensity of people throwing away plastic waste. In addition, by looking at the eco brick practice in the Bukit Lawang Tourism Area, Sumariono feels that he must participate in preserving nature which has so far provided many benefits for his life and all of humanity. "Nature has given us many benefits and favors. The food we eat usually comes from nature. So if I die later, what have I given to this world? That becomes my question. So I started the eco brick campaign ." (Interview with Sumariono, the initiator of the Ecobrick in Pematang Johar Village and also the Head of Hamlet 15 in Pematang Johar Village)

As a Koran teacher – for children – in Dusun 15 Pematang Johar Village, Sumariono started campaigning his ideas for his 100 Koran students and invited them to do eco bricking. Sumariono then calculated that if one child can collect one bottle of ecobricks every week, then 100 bottles of ecobricks will be collected every week and with this calculation, Sumariono believes the effect will be able to reduce the intensity of plastic waste disposal. Likewise, this movement does not run smoothly, there are two approaches taken by Sumariono so that this ecobrick movement can be implemented in real terms. The first approach was taken by Sumariono by inviting his Koran students to go around the hamlet citing plastic waste. This plastic waste is then collected, sorted, and cleaned at Sumariono's house. After that, every Saturday night, Sumariono made a special night program by gathering the students from the Koran to practice making ecobricks.

"So Saturday night was a special night, there was no studying the Koran, but more about studying and playing. Usually, at the age of 4 to 5 years, we invite you to color. For elementary school grades 1 and 2, we teach the practice of prayer. While the others, who are in grade 3 from elementary to middle school, we teach them to make ecobricks ." (Interview with Sumariono, the initiator of the Ecobrick in Pematang Johar Village and also the Head of Hamlet 15 in Pematang Johar Village).

The second approach is taken by Sumariono by paying for each bottle of ecobricks produced by the community. This approach is taken so that there is no negative perception in the community regarding the garbage collection activities carried out by the children of the Koran. In addition, this approach is also carried out so that there is compensation felt by the people who are involved in the implementation of ecobricks. According to Sumariono, the payment for each bottle of ecobrick only applies to the general public who make ecobricks from home with the price of each bottle of 500 milliliters being paid Rp. 1,000,- and for each 1,500 milliliter ecobrick bottle, Rp. 2,000,-. Meanwhile, for each ecobrick that is produced from the Koran activities on Saturday nights, Sumariono does not pay for it because it is part of the ecobrick skill planting activity in the Koran.

The explanation above shows the externalization process carried out by Sumariono. Starting from the desire to implement the ecobrick idea in his village until the idea is accepted and implemented by his students and community members. The form of instilling knowledge given by Sumariono to his students every Saturday night and also the socialization given to community members ultimately made his hamlet, Dusun 15, pinned as an ecobrick hamlet by the Village Head of Pematang Johar. The existence of this embedding is a sign that the intersubjective dynamics that occur between individuals have turned into objective reality. Of course, it takes a long process and time until the subjective reality that is built from managing plastic waste through ecobricks becomes objective reality. At least according to Sumariono, it will take up to 2 years for this ecobrick activity to get recognition from the village government. During those 2 years, there were various campaigns and awareness activities carried out by Sumariono and his students, one of which was holding an art recitation performance which was held every year using a stage decorated with ecobricks.



Figure 1. Activities of Collecting Waste and Making Ecobricks
Source: Research Document (2022)



Figure 2. Performing Art Performances Using *Ecobricks*

The process of repeated externalization in the management of plastic waste through *ecobricks* eventually settles and becomes an objective reality which according to (Berger Peter & Luckmann, 1966) is referred to as the process of institutionalization and the process of legitimacy. At this stage, the institutionalization process of waste management activities carried out through *ecobricks* can be marked by the formation of the Suka Mulia Waste Bank. The background for the formation of the Suka Garbage Bank began with the waste bank management training given to a group of people in Pematang Johar Village, and at that time Sumariono became one of the training participants because it was considered by the Head of Pematang Johar Village to have the potential to open and develop a waste bank. have a background in waste *management* through the *eco break*. Sure enough, what was hoped by the Head of Pematang Johar Village, Mr. Sudarman SE, came true. Six months after the waste bank training was conducted, in December 2020 the Suka Begin Waste Bank was successfully formed by Sumariono and supported by the Pematang Johar Village Government.

With the establishment of the Suka Mulia Waste Bank, waste management activities in Hamlet 15, Pematang Johar Village has become institutionalized and legitimate. Interestingly, since the existence of a waste bank, waste management through *ecobricks* has become easier to implement because plastic waste

materials including plastic bottles which become ecobrick media are easier to obtain from people's waste savings. The large amount of plastic waste collected in the Suka Mulia Waste Bank makes the potential for making ecobricks bigger. Because of that, Sumariono started to appoint a resident of hamlet 15 named Dahlan to be an officer at the waste bank who was given the task of watering the plants planted with plastic waste media. In addition, Dahlan was given the task of making ecobricks at the Suka Mulia Waste Bank.



Figure 3. Plants Using Plastic Waste Planting Media from Suka Mulia Garbage Bank

Source: Research Document (2022)

As a person who works daily at the Suka Mulia Waste Bank, Dahlan said that Sumariono was given a daily salary of Rp. 30.000,-. According to Dahlan, the honor was very helpful for him, who so far does not have a permanent job in Pematang Johar Village. At the waste bank, Dahlan carried out the process of making ecobricks from start to finish, namely; starting by peeling plastic waste that can be used as raw materials ecobricks to wash the garbage before putting it into plastic bottles to become ecobricks. According to Dahlan, in one month he can produce 15 to 20 bottles of ecobricks. "Some of the bottles that are not used as ecobricks are used as planting media for the village parks. Meanwhile, what we cannot recycle at the waste bank will be sold." (Results of Interview with Dahlan, Suka Mulia Garbage Bank Officer)



Figure 4. Plastic Waste Management Activities Before Being Ecobricks at the Noble Garbage Bank

Source: Research Document (2022)

The presence of the Suka Mulia Waste Bank, in the end, is not only able to speed up the process of making ecobricks and also other plastic waste management but is also able to provide an economic impact on the community members who are customers at the Suka Mulia Waste Bank. Mrs. Marpaung is one of the customers who actively save their waste in the waste bank, especially in the form of ecobricks. In one week – you can collect 10 to 15 bottles of ecobricks and the results can be used by Mrs. Marpaung for shopping for household needs, such as buying rice, cooking oil, and so on. Interestingly, several waste bank customers save ecobrick waste, not for economic purposes but more in a participatory manner, namely helping to reduce plastic waste in their environment. The results of ecobrick management that have been collected are then packaged and managed to make various forms of objects that can be reused. For example, Sumariono said that he had received an offer to sell the ecobricks he made into a living room sofa for Rp. 700,000,-.

The existence of institutionalized plastic waste management activities through the Suka Mulia Waste Bank indicates that the plastic waste management program – both in the form of ecobricks and in the form of waste savings – has been accepted in the community of Dusun 15 Pematang Johar Village. This acceptance

illustrates that the process of objectification in waste management through the establishment of a waste bank institution has been internalized into the daily activities of the village community. This internalization process then continues continuously until now and remains (read; sediment) until it contributes back to the externalization process. The deposits that occur in the end continue to form positive dynamics for the development of the Suka Mulia Waste Bank. This can be seen from the innovation programs carried out by the Suka Mulia Waste Bank which generally have an impact on community empowerment and regional planning.



Figure 5. The Development of the Waste Bank Program That Affects Village Area Arrangement and Community Empowerment

Source: Research Document (2022)

In Figure 5 above, it can be seen that there is a development of innovations carried out by waste banks from the continuous exchange of ideas between individuals who are involved in participatory waste management. The objectified and internalized exchange of ideas ultimately results in products resulting from waste recycling such as; the formation of ecobrick parks and ecobrick gates, then the creation of a reading garden which became a place for learning for the children of 15 hamlets as well as a place for ecobrick management. Another thing is the innovation of plastic waste management which has been developed into paving blocks.

The existence of innovation development carried out by the waste bank is also a sign that the internalization process has taken place quite strongly in the bodies of individuals who are involved in participatory plastic waste management. This form of participatory involvement is an illustration that individuals have been able to identify institutions/organizations that according to them can provide changes to themselves and their environment. The additional income from eco bricking activities and saving waste as well as environmental management by building a garden from recycling plastic waste made the individuals involved in a participatory manner begin to feel the importance of the presence of the Suka Mulia Waste Bank in their hamlet.

Overall, the process of each stage of social construction that has been described previously has been community empowerment and regional structuring. This can be seen from Figure 6 above, where the social construction model in plastic waste management shows that the externalization and objectification stages have resulted in a community empowerment process which is marked by the spread of ecobrick ideas to villagers, especially students from the Koran who were educated by Sumariono. The spread of this idea is also followed by the provision of training on making ecobricks every Saturday night which has an impact on increasing the skills of the children of Dusun 15 Pematang Johar Village in managing plastic waste. Not only children who take part in the recitation but the skills of managing plastic waste in the form of ecobricks are also obtained by the villagers and they use it to sell or save in the waste bank. In addition, the establishment of a waste bank also creates new job opportunities where the waste bank has one officer who is paid to manage plastic waste into ecobricks. Meanwhile, the objectification and internalization stages have resulted in a regional structuring process. Where in these two stages (read; after the waste bank was established), the production of ecobricks became more than before because the waste bank managed to collect more plastic waste. So that the results from the production of ecobricks are managed to become gates in hamlet parks formed from plastic bottle waste.

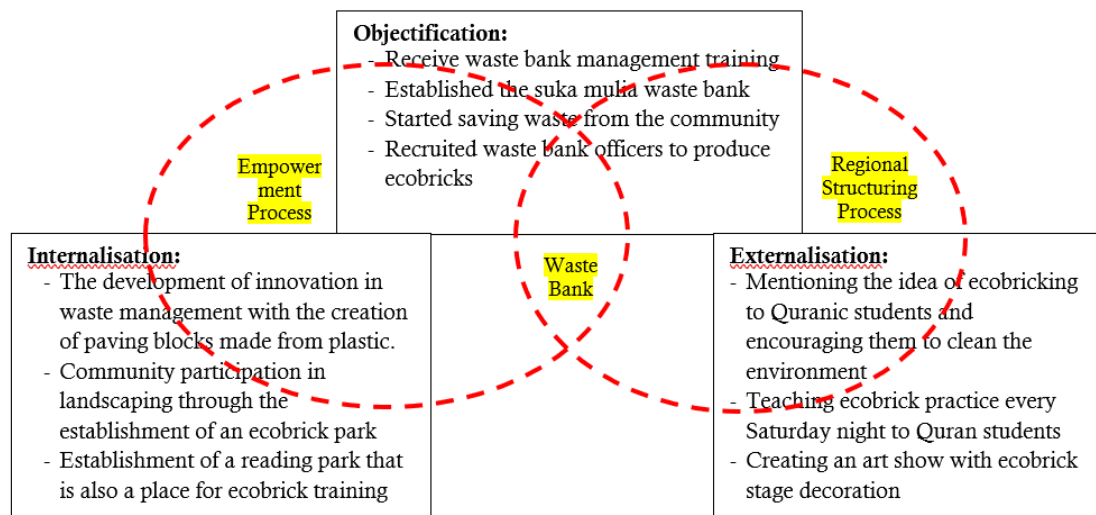


Figure 6. Social Construction Model in Plastic Waste Management for Community Empowerment and Regional Planning

Source: Processed Research Data (2022)

Conclusions

Based on the discussion of the results of the research above, it has been seen that each stage of the dialectical mechanism from the analysis of social construction is used in looking at the management of plastic waste for community empowerment and regional planning in Pematang Johar Village, Deli Serdang Regency. Each stage of the dialectical mechanism succeeded in constructing the social reality of the Dusun 15 community in Pematang Johar Village. For example, from the externalization stage to the objectification stage, there is a community empowerment process through the dissemination of ideas and practices for making ecobricks. At this stage, the waste bank began to be established and became a sign that waste management had been institutionalized and had been legitimated by the Pematang Johar Village Government. Meanwhile, from the objectification stage to the internalization stage, there is a regional structuring process which is marked by the establishment of several parks based on plastic waste and ecobricks in the area of hamlet 15. The presence of these parks makes hamlet 15 known as hamlet ecobrick in Pematang Johar Village.

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References

- Andi. (2022). Artikel ini telah tayang di Bisnis.com dengan judul "KLHK: Peningkatan Komposisi Sampah Plastik 6 Persen Per Tahun", Klik selengkapnya di sini: <https://ekonomi.bisnis.com/read/20200207/257/1198747/klhk-peningkatan-komposisi-sampah-plastik-6-persen-per-tahun>. Bisnis.Com. <https://ekonomi.bisnis.com/read/20200207/257/1198747/klhk-peningkatan-kompossi-sampah-plastik-6-persen-per-tahun>.
- Anggito, A., & Setiawan, J. (2018). Metodologi penelitian kualitatif. CV Jejak (Jejak Publisher).
- Arico, Z., & Jayanthi, S. (2018). Pengolahan limbah plastik menjadi produk kreatif sebagai peningkatan ekonomi masyarakat pesisir. Martabe: Jurnal Pengabdian Kepada Masyarakat, 1(1), 1–6.
- Astuti. (2016). Application of paid plastic bags as an effort to reduce the use of plastic bags. Journal of Research and Development: Media Information Research, Development and Science an Technology, 32–40. <https://ejurnal-litbang.patikab.go.id/index.php/jl/article/view/50/45>
- Berger Peter, L., & Luckmann, T. (1966). The social construction of reality. A Treatise in the Sociology of Knowledge.
- Dwiyanto, B. M. (2011). Model peningkatan partisipasi masyarakat dan penguatan sinergi dalam pengelolaan sampah perkotaan.

- Emilia, S., & Ferza, R. (2020). Dynamics, problems, and implications of waste management policy (case study on cities of Bogor and Bekasi). *Jurnal Kebijakan Pembangunan*, 15, 11–24.
- Idrus, M. (2009). *Social Science Research Methods; Qualitative and Quantitative Approach*. (Second Edition) (2nd ed.). Erlangga Publisher.
- Linda, R. (2016). Pemberdayaan Ekonomi Kreatif Melalui Daur Ulang Sampah Plastik (studi kasus bank sampah berlian kelurahan tangkerang labuai). *Jurnal Al-Iqtishad*, 12(1), 1–19.
- Manuaba, I. P. (2008). Understanding Social Construction Theory. *Journal of Society, Culture and Politics*. *Journal of Society, Culture and Politics*., 221–230. <http://journal.unair.ac.id/downloadfull/MKP2603-d17a31df4afullabstract.pdf>
- Merdeka. (2022). 66 juta ton limbah plastik setahun di indonesia. <https://www.merdeka.com/uang/indonesia-hasil-66-juta-ton-limbah-plastik-per-tahun-apa-solution.html>.
- Mohamad, F., Sutra, D. C., & Kusnawati, E. (2012). Pemberdayaan masyarakat dalam pengelolaan sampah di Dukuh Mrican Sleman Yogyakarta. *Jurnal Health and Sport*, 5(03).
- Mujahiddin, M. (2019). The Process of Society Empowerment in Managing Waste for Sustainable Development (Study on Waste Bank in Sicanang District Belawan). *Italian Sociological Review*, 9(3), 455.
- Mujahiddin, M., Tanjung, Y., & Augus, E. (2018). Analysis of the Effect of Waste Bank Program on Empowerment of Poor Women in Kelurahan Sicanang Belawan Medan. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 1(3), 105–113.
- Pratiwi, D. (2016). Pengenalan pengolahan sampah untuk anak-anak taman kanak-kanak melalui media banner. *BIOEDUKASI (Jurnal Pendidikan Biologi)*, 7(1).
- Sufianti. (2014). Environmentally Sustainable Development: A Strategy for Waste Management Through a Participatory Approach. *Journal of Administrative Sciences: Media Science Development and Administrative Practice*. <https://doi.org/10.31113/jia.v1i2.194>
- Syahputra. (2018). The Role of the Medan Deli District Government in Improving the Community's Economy and Housewives in the Management of Waste Banks in Medan Deli District. *Public Reform*. <http://jurnal.dharmawangsa.ac.id/index.php/jupublik/article/view/406>
- Tanjung, Y., & Saputra, S. (2021). Pelatihan Pengelolaan Sampah Rumah Tangga di Desa Pematang Johar, Deli Serdang. *Dinamisia: Jurnal Pengabdian Kepada Masyarakat*, 5(3), 623–630.
- Yustiani, & Maryadi. (2019). Comparative Study on Application of Plastic Bag Usage Policy. *JOURNAL OF TAX Indonesia (Indonesian Tax Review)*, 51–59. <https://jurnal.pknstan.ac.id/index.php/JPI/article/view/717/436>