

## *Empowering Waste Management by Establishing a Waste Corner to Become a Healthy School*

### **Pemberdayaan Pengelolaan Sampah dengan Pembentukan Pojok Sampah Guna Menjadi Sekolah Sehat**

Yusma Indah Jayadi\*, Widia Maharani, Nurlita, & Dian Rezki Wijaya

*Public Health Study Program, Faculty Medicine and Health Sciences, University Islam Alauddin Makassar, Indonesia*

---

#### **Abstract**

Waste is often defined as goods or materials that are considered useless so that they never get good management through the recycling process. Human quality is a major issue and has an important role in management efforts. Empowerment programs in the environment school as a source of environmental learning through waste management is one of the efforts that can be given to students to increase environmental awareness. This empowerment program aims to increase the knowledge and awareness of the school community in waste management correctly and properly. This Empowerment Program was conducted at SJHS 8 Makassar by making waste corner and forming waste corner cadres through the approach of Participatory Learning and Action (PAL). This program involved 15 students who became cadres of the waste corner and 45 students who were given education by the waste corner cadres. As a result of this empowerment, a waste corner was formed and 15 waste corner cadres were selected. Giving training to waste corner cadres was considered effective because there was an increase in knowledge before and after the training, from 12.67 to 18.87. Besides that, education by waste corner cadres to 45 students of SJHS 8 Makassar showed an increase in knowledge, from 13.22 to 17.91. The result of the paired t-test showed a significance value of  $p = 0.000$  ( $p < 0.05$ ) so it could be concluded that there is a different level of knowledge of cadres and students before and after training/education on waste management. Community empowerment through the establishment of waste corners and waste corner cadres as well as providing training/education related to waste management has a significant effect on the level of knowledge about waste management. Therefore, it is necessary to provide continuous socialization to increase the interest and participation of the school community in waste management.

---

#### **Abstrak**

Sampah sering kali diartikan sebagai barang atau material yang dianggap tidak berguna sehingga tidak pernah mendapatkan pengelolaan yang baik melalui proses daur ulang. Kualitas manusia menjadi isu utama dan memiliki peran penting dalam upaya pengelolannya. Program pemberdayaan di lingkungan sekolah sebagai sumber belajar lingkungan melalui pengelolaan sampah merupakan salah satu upaya yang dapat diberikan kepada siswa untuk meningkatkan kepedulian terhadap lingkungan. Program pemberdayaan ini bertujuan untuk meningkatkan pengetahuan dan kesadaran warga sekolah dalam pengelolaan sampah dengan baik dan benar. Program Pemberdayaan ini dilakukan di SJHS 8 Makassar dengan membuat pojok sampah dan membentuk kader-kader pojok sampah melalui pendekatan Participatory Learning and Action (PAL). Program ini melibatkan 15 siswa yang menjadi kader pojok sampah dan 45 siswa yang diberikan edukasi oleh kader pojok sampah. Hasil dari pemberdayaan ini adalah terbentuknya pojok sampah dan terpilihnya 15 orang kader pojok sampah. Pemberian pelatihan kepada kader pojok sampah dinilai efektif karena terjadi peningkatan pengetahuan sebelum dan sesudah pelatihan, yaitu dari 12,67 menjadi 18,87. Selain itu, edukasi yang dilakukan oleh kader pojok sampah kepada 45 siswa SJHS 8 Makassar menunjukkan adanya peningkatan pengetahuan dari 13,22 menjadi 17,91. Hasil uji t berpasangan menunjukkan nilai signifikansi  $p = 0,000$  ( $p < 0,05$ ) sehingga dapat disimpulkan bahwa terdapat perbedaan tingkat pengetahuan kader dan siswa sebelum dan sesudah pelatihan/edukasi pengelolaan sampah. Pemberdayaan masyarakat melalui pembentukan pojok sampah dan kader pojok sampah serta pemberian pelatihan/edukasi terkait pengelolaan sampah memberikan pengaruh yang signifikan terhadap tingkat pengetahuan tentang pengelolaan sampah. Oleh karena itu, perlu dilakukan sosialisasi secara terus menerus untuk meningkatkan minat dan partisipasi warga sekolah dalam pengelolaan sampah.

---

\* Corresponding author:

E-mail address: [yusmaidahjayadi@gmail.com](mailto:yusmaidahjayadi@gmail.com)

*Keywords:* Empowerment, management rubbish, formation corner.

---

## 1. Introduction

In The 21st century, humans slowly realize that earth needs wise environmental management. The future of the next generation depends on the way people currently live on earth. It is our responsibility to protect the earth for the survival of humans and other living things. The United Nations (UN) has proposed the *Sustainable Development Goals* (SDGs) agenda to achieve civilization that is not only focused on economic growth, but also environmentally friendly development. This agenda encounters many challenges in its realization. One of these challenges is in waste management to reduce earth pollution.

Waste is often interpreted as goods or materials that are considered useless so that they never get good management through the recycling process (Mujahiddin et al., 2018). A World Bank report shows that approximately 2.01 billion metric tons of municipal waste is produced annually worldwide. About a third to 40% are not managed thus causing more trouble on earth. Global waste production accounted for about 5% of global emissions in 2016, with an output equivalent to 1.6 billion metric tons of carbon dioxide, while food waste accounted for 47% of these emissions. (Kaza et al., 2018).

Based on Ministry of Environment data Life and Forestry year 2021 on record in System Information Management National Waste (SIPSN) from 233 regencies / cities in Indonesia is known that generation waste in Indonesia reaches 29,332,354.04 tons per year with percentage handling rubbish new reached 49.51% or equivalent with 14,522,639.32 tons per year (KLHK, 2021). Statistics Environment Living Indonesia 2021 notes that estimation production of Makassar City waste reaches 3,186.7 m<sup>3</sup> per day with presentation waste transported reaching 87.94% (Sub-directorate of SLH, 2021).

Efforts to deal with waste problems are basically not only technical problems, but also from management aspects. For this reason, the solution is not limited to transporting and disposing of waste at the final location, but waste reduction management is carried out from the source, then the waste is sorted and recycled. The waste disposal-transportation model has not been a solution to the waste problem (Wulandari et al., 2017). Human quality is a major issue and has an important role in efforts to save the environment. Competence in the fields of knowledge, attitudes and actions related to the environment is very necessary for all levels of society in an effort to save the environment.

Community empowerment refers to the process of enabling people to increase control over their lives. 'Empowerment' refers to the process by which people gain control over the factors and decisions that shape their lives. It is a process by which they enhance their assets and attributes and build capacity to gain access, partners, networks and/or voice, to gain control. (Labonté & Laverack, 2008). Empowerment assumes that every person is an asset to themselves, and the role of external agents is to catalyze, facilitate or "accompany" the community in gaining power. Therefore, community empowerment is more than just community participation or involvement. It implies community ownership and actions that are explicitly aimed at social and political change (Baum, 2008).

Previous studies have proven that community empowerment through the establishment of waste banks in the school environment is effective as an approach in waste management. Waste bank customers are able to use waste according to its type, collect waste and then save in the school waste bank according to the weighing schedule which is usually done regularly at least once a week (Ulfah et al., 2016). Another research in Cimanggu Satu reported that through counseling activities and workshops on making mini composters and making trash cans from used bottles attended by 47 people were able to reduce the accumulation of organic waste and inorganic waste and there was a change in people's behavior to be more concerned about environmental cleanliness by not littering (Asnifatima et al., 2018).

In community empowerment, the formation of cadres is one of the strategies that can be done to increase community participation. Previous study has noted that cadres are an aspect of social capital to build community participation (Syahli & Sekarningrum, 2017). In addition, the empowerment of the Karang Sari Village community in changing knowledge, skills, attitudes and behavior with the approach method of cadres and community leaders in general was successful, as evidenced by the high level of attendance of the community and village officials in the stage of counseling, socialization, and signing of commitment letters by 387 residents and all hamlets carrying out waste sorting movements simultaneously. The method of strengthening cadres is proven to be able to move the community in the community empowerment process (Widodo, 2021).

Therefore, empowerment at the school level as a source of environmental learning through waste management is one of the efforts that can be given to students to increase environmental awareness. Empowerment is carried out in the form of skills training to reduce, utilize, and recycle waste into products that have more value. Philosophically, waste management is an effort to turn waste from a problem into an economic source for everyone (Widiyanto & Rahab, 2017). Thus, public awareness of waste management is very important to build. Public awareness to actively participate in environmental hygiene programs needs to be grown and encouraged because a clean environment will not succeed if the community does not participate in achieving its goals.

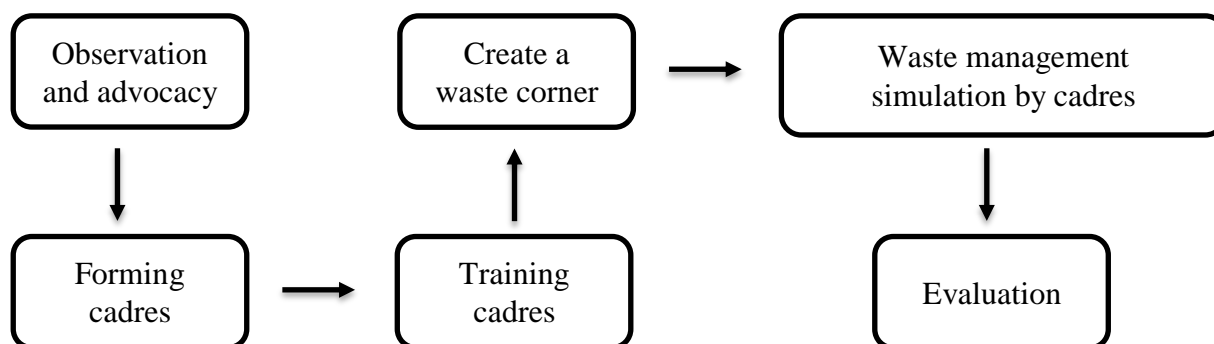
Based on the results of preliminary observations at the State Junior High School (SJHS) 8 Makassar, it is known that waste management has not been carried out properly. The school community does not yet have awareness and knowledge related to proper waste management. Moving on from this background, the author feels it is important to carry out empowerment related to waste management at SJHS 8 Makassar by initiating the establishment of a waste corner and training waste cadres as the first step to foster the active participation of the entire school community and its surroundings in waste management.

## 2. Methods

This empowerment was carried out at SJHS 8 Makassar which involved 15 students who became cadres of the waste corner. This community empowerment program is classified as a quasi-experimental research because researchers provide treatment to cadres through providing education related to waste management and providing pre-tests and post-tests as evaluation methods to measure the increase in cadre knowledge. In addition, as an output of the empowerment process, researchers as facilitators and cadres who have been formed, set up a garbage corner as a container to collect waste which will then be processed into crafts or sold to second-hand collectors.

The implementation of this community empowerment program is carried out with a Participatory Learning and Action (PLA) approach. In a simple sense, a participatory approach is one in which everyone who has an interest in the intervention has a voice, either directly or through a representative. The participatory approach allows everyone to have the right to play a role in shaping decisions that affect their lives. A participatory approach builds a sense of ownership which is a strong foundation for successful interventions in society (Carlisle et al., 2018).

The flow of implementation of the waste management empowerment program at SJHS 8 Makassar can be seen in the figure 1.



**Figure 1.** Empowerment flow management garbage at SJHS 8 Makassar

## 3. Result

After conducting field observations, advocacy, determining problem priorities and formulating problem solving with the parties of SJHS 8 Makassar, the researcher as a facilitator of community empowerment through waste management does the following:

### a. Cadre Formation

In community empowerment, the formation of cadres is one of the strategies that can be done to increase community participation. The method of strengthening regeneration is proven to be able to move the community in the community empowerment process (Widodo, 2021). Referring to this, researchers as a team of facilitators initiated the

formation of a waste corner cadre at SJHS 8 Makassar. The facilitator team selected 15 students at SMPN 8 Makassar who are members of the Youth Red Cross (YRC) organization of SJHS 8 Makassar to become waste corner cadres who will then receive education from the facilitator team as the basic capital of waste corner cadres in inviting their peers to actively participate in waste management, especially in the school environment.

The main duties and functions of the waste corner cadres of SMPN 8 Makassar are as follows:

1) The Main Duties of the Waste Corner Cadre

- a) Mobilizing and motivating the school community to actively participate in waste management activities at SMPN 8 Makassar
- b) Participated in a series of training activities for cadres in the garbage corner
- c) Educating their peers regarding how to manage waste properly and correctly
- d) Disseminate and socialize programs related to waste management to school communities
- e) Become an active caretaker of the waste corner
- f) Encourage and convince policymakers at SJHS 8 Makassar to really listen, consider and facilitate waste management at SJHS 8 Makassar.

2) Functions of the Waste Corner Cadre

- a) Mobilizer, namely those who motivate, encourage and mobilize the participation, self-help and mutual cooperation of the school community in waste management and protecting the environment;
- b) Mentor, who facilitate, educate, provide input or accompany their peers in waste management;
- c) Planner, those who plan activities in a participatory manner, starting from collecting data on potential, assets and problems, needs, priorities and plans for participatory waste management activities;
- d) Intermediary, who connect various interests or between needs and resources, provide information to facilitators and stakeholders regarding the development of waste management at SJHS 8 Makassar;
- e) Advocate, who provides advocacy or encourage stakeholders to be willing to listen, consider and be sensitive to the needs of the school community related to waste management;
- f) Executor, who organizes the school community to be actively involved in waste management and implementing technical matters related to the implementation of the waste corner;

b. *Cadre Training related to Waste Management*



**Figure 2.** Giving pre-test to cadre

Before conducting training, the facilitator conducts storytelling activities in order to build a comfortable and relaxed atmosphere. Education and training of waste corner cadres is carried out lecture methods accompanied by brainstorming through 3R songs (Reuse, Reduce, Recycle) and using poster media to provide material related to the meaning of waste, waste characteristics, waste management, and waste management planning in schools.



**Figure 3.** Training waste management to cadre

This activity was divided into three sessions, including giving a pre-test, then presenting the material by the facilitator, and ending with giving a post-test to measure changes in the level of understanding of the cadres in the garbage corner. The pre-test and post-test results of the waste corner cadre can be seen in the following table.

**Table 1.** Knowledge Level of Waste Corner Cadres Before and After Training

Knowledge	Mean	Standard Deviation	p
Pre-test	12.67	2.895	0.000
Post-test	18.87	3,292	

The table 1 shows that there was an increase in knowledge before and after the waste management training for cadres, from 12.67 to 18.87. The results of the paired t-test show a significance value of  $p = 0.000$  ( $p < 0.05$ ) so that it can be concluded that there was differences in the level of knowledge of cadres before and after waste management training.

*c. Create a Waste Corner*

The waste corner was launched as an effort to overcome the waste problem. The waste corner carries the concept of waste management which focuses on involving the school community, especially the active participation of students at SJHS 8 Makassar, in the form of efforts to reduce, separate and utilize waste. The waste corner is also a vehicle for education and outreach in waste management by trained waste corner cadres for the school community.

The establishment of a waste corner was carried out by mobilizing all waste corner cadres. The stages of establishing a garbage corner were as follows:

- 1) Conduct field observations to find school assets that can be used as trash corner locations. From the results of observations, a building was found near the garbage disposal area. This building was then converted into a waste corner at SJHS 8 Makassar.



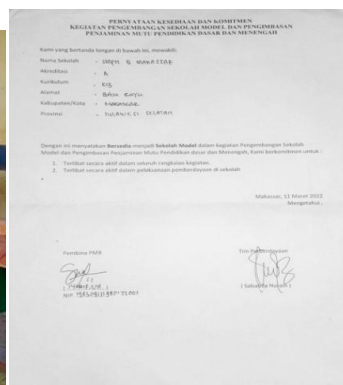
**Figure 4.** Waste corner location

- 2) Waste sorting practices. Previously, cadres had known the waste sorting process in theory from the training provided by the facilitator. Then, after the establishment of the waste corner, the cadres are directed to practice directly sorting organic and inorganic waste and sorting waste based on its condition, which is recyclable or non-recyclable.



**Figure 5.** Waste sorting practices

- 3) Signing commitment letter. Signing of a letter of commitment. The empowerment process is an effort so that people can live independently by utilizing their strengths. Fifteen cadres who were elected are members of YRC SJHS 8 Makassar who will be the administrators of the waste corner and are responsible for the continuity of the empowerment program through the establishment of a waste corner at SJHS 8 Makassar. To affirm this commitment, the facilitator made a statement letter which was then signed by the YRC supervisor of SJHS 8 Makassar.



**Figure 5.** Signing a commitment letter by the YRC supervisor of SJHS 8 Makassar

*d. Waste Management Educational Simulation by Cadres*

This step is a real implementation of the Participatory Learning and Action (PLA) approach where cadres learn to conduct waste management education through direct simulation. The simulation step is carried out to ensure that the trainees (partners) are able and able to perform and carry out the role of cadres / counselors properly and effectively. This simulation activity is carried out with several steps as follows:

- 1) Selecting 45 students of SJHS 8 Makassar which was then formed into 15 groups, where each group consisted of 3 students.
- 2) Each group is accompanied by one waste corner cadre who will provide education related to waste management with lecture methods and poster media.
- 3) To be able to measure the level of understanding of students, the cadres of the waste corner provide pre-test and post-test questions.
- 4) After going through the educational step, the cadres of the waste corner will invite each group to the waste corner to practice directly on how to sort waste.

The results of the facilitator's monitoring showed that the cadres of the waste corner were able to actualize their knowledge related to waste management properly, as evidenced by their ability to educate their peers. Meanwhile, the level of knowledge of 45 students of SJHS 8 Makassar from the results of education for waste corner cadres can be seen in the table 2.

**Table 2.** Students' knowledge related to waste management before and after education

Knowledge	Mean	Standard Deviation	p
Pre-test	13.22	3.218	0.000
Post-test	17.91	2,512	

The table 2 shows that there was an increase in knowledge before and after waste management education, from 13.22 to 17.91. The results of the paired t-test show a significance value of  $p = 0.000$  ( $p < 0.05$ ) so that it can be concluded that there was differences in the level of knowledge of students before and after waste management education.

**Figure 6.** Simulation education management trash by cadre to students

#### 4. Discussion

Community empowerment is a process that develops and strengthens the community's ability to continue to be involved in the development process so that the community can solve the problems faced and can make decisions independently (Gs & Ranga, 2015). Empowerment is the improvement of a society's ability to be independent, acquire skills and knowledge, control its future and also the ability to influence others (Suharto, 2004).

In this case, the research team as a facilitator carried out empowerment at the school level related to waste management. This empowerment obtained quite good results with the increase in knowledge both in the waste corner cadres and 45 students of SJHS 8 Makassar. The results of the t-test also prove that there was difference in the level of knowledge of waste corner cadres and students before and after waste management education. This result is in line with previous research in Sleman, Yogyakarta which reported the results of the implementation of community service carried out by the formation of 20 young cadres and an increase in the knowledge of young cadres by 80% (Ranita et al., 2022).

In community empowerment, the formation of cadres is one of the strategies that can be done to increase community participation as in research in Wonosobo which revealed that the empowerment of the Karang Sari Village community in changing knowledge, skills, attitudes and behaviors with the approach method of cadres and community leaders in general succeeded, evidenced by the high level of attendance of the community and village officials in the stage of counseling, socialization, and signing of commitment letters by 387 residents and all hamlets carrying out the waste sorting movement simultaneously. The method of strengthening regeneration is proven to be able to move the community in the community empowerment process (Widodo, 2021).

In addition to the formation of cadres, the establishment of a waste corner is a form of actualization of the implementation of waste management empowerment at SJHS 8 Makassar. In its application, the waste corner management model requires the involvement of the school community and existing institutions, so that the waste in the area can be reduced, separated, and reused so that a clean and healthy environment can be realized. The application of the waste corner in waste management efforts has been implemented in Bandung, where the results of the program evaluation show that the Kangpisan Corner waste management model has been implemented both at the community and household levels and the community has participated in waste processing on the basis of its awareness. However, the participation of stakeholders and social institutions at the Rukun Warga level is very necessary, so that the Kangpisan movement continues to run and maintain its continuity (Sekarningrum et al., 2021).

The empowerment of waste management carried out at SJHS 8 Makassar is carried out with a Participatory Learning and Action (PLA) approach. The participatory approach allows everyone to have the right to play a role in shaping decisions that affect their lives. A participatory approach builds a sense of ownership which is a strong foundation for successful interventions in society (Carlisle et al., 2018). The basic principle of the PLA approach is the involvement of target groups who become waste corner cadres in the learning process of active participation in waste management so as to improve their knowledge and skills in managing waste corners.

The principle of PLA in this empowerment can be seen from the formation of cadres who will then act concretely to educate the school community in general or their peers to actively participate in waste management through the waste corner at SJHS 8 Makassar. The Participatory Learning and Action (PLA) approach can be one of the attractive options and can be applied in community empowerment. PLA, also known as learning by doing, can be implemented by the NGO You Can through the implementation of environmental school activities. Although this activity was still very small and limited in scope, the community has been able to show activeness through the presence and real participation in the activities carried out in Pota Wangka Village (Rachim & Ginting, 2019).

## 5. Conclusion

Based on the results of waste management empowerment carried out at SJHS 8 Makassar, the following conclusions can be drawn.

- a) Waste management at SJHS 8 Makassar can improve the knowledge and skills of the school community, especially waste corner cadres through empowering young cadres in terms of waste management.
- b) The establishment of a waste corner and waste corner cadres who are then responsible for the continuity of the waste corner program as a waste management container at SJHS 8 Makassar.
- c) The method of strengthening cadres has proven to be able to move the school community in the waste management process.

## References

- Asnifatima, A., Irfan, A. M., & Putri, K. A. (2018). Pemberdayaan Masyarakat Melalui Pengelolaan Sampah Rumah Tangga Di Desa Cimanggu Satu. *Abdi Dosen: Jurnal Pengabdian Pada Masyarakat*, 2(3), 224–233. <https://doi.org/10.32832/abdidos.v2i3.181>
- Baum, F. (2008). Foreword to Health promotion in action: from local to global empowerment. *Glob. Conf. Health Prom*, 21, 88–89.
- Carlisle, K., Farmer, J., Taylor, J., Larkins, S., & Evans, R. (2018). Evaluating community participation: A comparison of participatory approaches in the planning and implementation of new primary health-care services in northern Australia. *The International Journal of Health Planning and Management*, 33(3), 704–722.
- Gs, S., & Rangga, K. K. (2015). *Pengembangan dan pemberdayaan masyarakat: konsep, teori dan aplikasinya di era otonomi daerah*. Graha Ilmu.
- Kaza, S., Yao, L., Bhada-Tata, P., & Woerden, F. Van. (2018). *What a waste 2.0: a global snapshot of solid waste management to 2050*. World Bank Publications.
- KLHK. (2021). *Capaian Kinerja Pengelolaan Sampah*. Kementerian Lingkungan Hidup Dan Kehutanan. <https://sipsn.menlhk.go.id/sipsn/>
- Labonté, R., & Laverack, G. (2008). *Health promotion in action: from local to global empowerment*. Springer.
- 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. <https://doi.org/10.33258/birci.v1i3.34>
- Rachim, H. A., & Ginting, P. A. (2019). Pemberdayaan Masyarakat Di Desa Pota Wangka Labuan Bajo Melalui Program Peduli Lingkungan ( Sekolah Lingkungan) Dengan Metode Partisipatory Learning and Action. *Prosiding Penelitian Dan Pengabdian Kepada Masyarakat*, 6(1), 46. <https://doi.org/10.24198/jppm.v6i1.22785>
- Rianita, M., Sinaga, E., Istianti, D. W., Tinggi, S., Kesehatan, I., Yakkum, B., & Muda, K. (2022). Strategi Inovasi

Pengelolaan Sampah Berbasis Masyarakat “Kamu BTS (Kader Muda Bergerak Tuk Sampah)” di Kelurahan Hargobinangun Pakem. *Jurnal Pengabdian Kesehatan*, 5(3), 232–238.

- Sekarningrum, B., Sugandi, Y. S., & Yunita, D. (2021). Penerapan Model Pengelolaan Sampah “PojoK Kangpisman.” *Kumawula: Jurnal Pengabdian Kepada Masyarakat*, 3(3), 548. <https://doi.org/10.24198/kumawula.v3i3.29740>
- Subdirektorat SLH. (2021). *Statistik Lingkungan Hidup 2021* (04300.2108; 3305001). Badan Pusat Statistik.
- Suharto, E. (2004). *Pendekatan Pekerjaan Sosial Dalam Pemberdayaan Masyarakat Miskin: Konsep, Indikator dan Strategi*.
- Syahli, R., & Sekarningrum, B. (2017). Pengelolaan sampah berbasis modal sosial masyarakat. *Sosioglobal: Jurnal Pemikiran Dan Penelitian Sosiologi*, 1(2), 143–151.
- Ulfah, N. A., Normelani, E., & Arisanty, D. (2016). Studi Efektivitas Bank Sampah Sebagai Salah Satu Pendekatan Dalam Pengelolaan Sampah Tingkat Sekolah Menengah Atas (SMA) Banjarmasin. *JPG (Jurnal Pendidikan Geografi)*, 3(5), 22–37. [http://eprints.ulm.ac.id/1924/1/volume 3 nomor 5\\_c.pdf](http://eprints.ulm.ac.id/1924/1/volume%203%20nomor%205_c.pdf)
- Widiyanto, A. F., & Rahab, R. (2017). Community participation in bank of garbage: Explorative case study in Banyumas regency. *Masyarakat, Kebudayaan Dan Politik*, 30(4), 367–376.
- Widodo, A. S. (2021). Peran Kader Masyarakat Dalam Program Pengelolaan Sampah Mandiri Di Desa Karang Sari, Sapuran, Wonosobo. *Prosiding Seminar Nasional Program Pengabdian Masyarakat*, 1, 1316–1325. <https://doi.org/10.18196/ppm.36.322>
- Wulandari, D., Hadi Utomo, S., & Narmaditya, B. S. (2017). International Journal of Energy Economics and Policy Waste Bank: Waste Management Model in Improving Local Economy. *International Journal of Energy Economics and Policy* |, 7(3), 36–41. <http://www.econjournals.com>