ICESE
Interaction, Community Engagement, and Social Environment
ICESE 1(1): 40–51
ISSN 3025-0293

Interaction analysis of youth participation with the household waste management system regarding the existence of local waste treatment facilities

Ari Naldi [1*]

[1] Faculty of Humanities, Universitas Indonesia; UI Campus, Depok 16424, West Java, Indonesia
[*] Correspondence: ari.naldi91@ui.ac.id

Received Date: May 9, 2023 Revised Date: June 20, 2023 Accepted Date: July 24, 2023

Cite This Article:
Naldi, A. (2023). Interaction analysis of youth participation with the household waste management system regarding the existence of local waste treatment facilities. *Interaction, Community Engagement, and Social Environment, 1*(1), 40-51. https://doi.org/10.61511/icese.v1i1.2023.186

Abstract
Community participation is inseparable from youth participation to achieve sustainable household waste management. Some research pointed out that the presence of a waste treatment facility (WTF) near the waste generator may influence community participation in waste management but only a few of them discussed the relationship between WTF and youth participation. This paper discusses about WTF's impact on youth participation in household waste management with a case study in Paulan Village, Central Java. Paulan Village has succeeded to stop transporting waste to the regional landfill since the local government operates WTF in mid-2019. However, does its existence influence youth participation in household waste management? This study used field observation, questionnaires, and in-depth interview methods, involving four key informants. Based on the descriptive content analysis, it was found that the presence of local WTF does not have a strong influence on increasing youth participation unless there is intensive intervention involving stakeholders, especially the local government. This paper suggests that intensive campaigns, like monthly or bimonthly socialization, and rewards are needed to optimize youth participation in household waste management. Besides, adults' intervention is also needed in guiding the young generation to give more contributions to the community by involving in household waste management.
Keywords: local government; local waste treatment facility; sustainable household waste management; youth participation.

1. Introduction

As the part of community, youths are needed to get involve in household waste management. According to Allievi et al. (2018), youths are the important actors who might be encouraged to initiate and campaign for behavioral change in the community, especially consumption pattern changes that might have a positive impact on food and environmental sustainability. Youth participation is very important because their attitude is likely to challenge and break the old values that can create positive changes in society (Rexhepi et al., 2018). The role of youth in environmental activities is very important, especially to raise awareness and provide information to the community that can encourage behavior change, and young people can play a key role in this process (Percy-Smith & Burns, 2013). In the context of waste management, community or youth participation can be shown by doing reduce-reuse-recycle (3Rs) and home-composting (Kurisu, 2015). However, there are four aspects of Lundy (2007) to watch regarding to empower youth in a social program, they are Space—providing a safe and inclusive space to express their views; Voice—provides appropriate information and facilitates the expression of their views; Audience—ensures that youth views are communicated to someone with a responsibility to listen; Influence—ensuring that youth views are taken seriously and acted upon, if necessary. Based on those

aspects, the role of adults is also important as a guide or facilitator and liaison for those who want to do an internship or work together in an activity with the aim of developing the leadership character of youths (Kirshner, 2008). However, youths are often viewed as the minority while talking about community participation in waste management.

The presence of a waste treatment facility at micro level area, village, or urban village, would help the local government in reducing waste disposal to the landfill site, especially from the household sector. However, community participation in the related village or urban village is required to achieve the sustainability in local waste management. Most of the waste produced in Indonesia comes from the household sector, which is around 48% (Widowati, 2019). Indonesia as a developing country with an exponential growth rate in population, will continue to face the increment in the volume and type of waste each year (BPS, 2020). This situation would worsen the condition of many landfills in any cities/regencies if there is no holistic approach on waste management system. The other big problem in Indonesia is that the waste generation in the community has not been able to be hauled 100% to the landfill due to the limited supporting infrastructure even in the big city as Jakarta. The landfill is supposed to be functioned as the final processing site (TPA) regarding to Law of Republic Indonesia Number 18 Year 2008 about Solid Waste Management. However, in Indonesia, the landfill has been functioned as the final disposal site which mostly cover one city or one regency. In 2016-2017 period, there were 188 of 355 landfill in Indonesia have been operated through sanitary landfill system and the rest of them still using an open dumping method (BPS, 2018). However, both methods have no big differences as there is no final processing step for ending the solid waste as well as the old paradigm of waste management, collect-transport-dispose (CTD) is still in use by many local governments (Hendra, 2016). This condition of course would make the landfill approaching its capacity and threaten the environment as there is no final waste processing.

Lack of community participation influences the persistence of the CTD paradigm in solid waste management. The persistence of CTD paradigm is inseparable from the government's role in providing outreach, supporting facilities, and incentives to motivate the community to change their behavior in becoming more responsible for what they produce and consume (Ajzen, 1991). Since the issuance of Minister of Environment Regulation Number 13 Year 2012 about Guidelines for Implementation of Reduce, Reuse, and Recycle through Waste Bank, in 2020, Indonesia has had 10,860 Waste Bank spreading from Sabang to Merauke, to reduce or prevent tons of waste transported to the regional landfill (KLHK, 2020). Waste Bank is a waste management program by repurchasing waste in the form of deposits such as the banking system, while it is given as the reward for them who do sorting their waste (Siriratpiriya, 2014). However, the operation of the Waste Bank model often creates an imbalance between the aspects of social, economic, and environmental sustainability as it encourages people to “generate” more than to prevent or reduce the valuable waste as plastic bottle or cardboard, which supposed to be minimized by behavioral change campaigns and a more responsible consumption pattern and lifestyle (Wan et al., 2019). Practically, not all Waste Banks in Indonesia were run sustainably and not a few of them also stopped operating for financial reasons and were not supported by the local government (Setyono, 2019; Setyorini, 2019). Community participation also influence the sustainability of Waste Banks in Indonesia, especially for households that have a need for additional income and have low educational backgrounds and wages below the average (Maryati et al., 2018). In addition, effectiveness (operational time, ability of employees/managers, implementation of work programs) and efficiency (financial stability and number of customers) are two parameters that need to be considered in Waste Bank operations (Meidiana & Gamse, 2010).

In some research, it was found that the presence of waste treatment facility such as recycling center, Waste Bank, or incinerator might give little influence to the participation or behavior change of local community (Barr, 2007; Rahman, 2016). However, if there is no supporting facility around, community participation in household waste management

might getting worse in that area (O'Connell, 2011; Xiao et al., 2017). Therefore, knowledge transfer to the community is needed to increase community participation in waste management at the local level, especially in terms of prevention, sorting, and processing waste (Dhokhikah et al., 2015). Among 83,813 villages/urban villages in Indonesia, not all of them has the capability to treat their own waste while there is no waste treatment facility (WTF) in their area (BPS, 2020). Paulan Village is one of 177 villages/urban villages in Karanganyar Regency, Central Java that has succeeded to manage its own waste as it has operated waste treatment facility in the form of incineration, composting, and Waste Bank program. Since the WTF has begun to operate in mid-2019, Paulan Village has not transported their household waste to regional landfill even the residual waste (Sudjatmiko, 2019). This achievement has made Paulan's environment much better than in 2018 while it was dependence to waste transportation service company who often came irregularly (Okenews, 2018). However, the current system is still lack of community participation to ensure the sustainability of its waste management, as there was low effort to reduce or prevent daily waste generation processed at the WTF. On the other hand, 14.7% of Paulan's community are covered by youth, aged 15 to 24 years old (BPS Karanganyar, 2020). Therefore, this study aims to analyze WTF's effect on community participation in waste management, which specifically focused on youth participation.

A sustainable waste management is a waste management system that is environmentally sound, including its social and economic aspects, which can be achieved through strategic planning, institutional capacity building, fiscal incentives, appropriate technology, public-private partnerships, and community participation (The Energy and Resources Institute, 2014). The principle of a sustainable waste management system is based on the theory of sustainable development. In practice, a sustainable waste management system must meet environmental, social, and economic aspects in its operation (Thai, 2014).

Keeping the waste management system with the old paradigm will always give a negative impact on the environment and human health as it causes air pollution; promote the growth of bacteria, flies, and rodents in disposal sites; contribute to the release of greenhouse gases into the atmosphere; and contaminating groundwater from leachate that is not handled correctly (El-Haggar, 2007). Therefore, a better waste management system is needed to minimize or eliminate negative impacts on the environment and public health, namely, a sustainable waste management system based on community participation (Kalra, 2020).

Zero Waste is a broad concept in sustainable waste management, although its implementation will be difficult considering the changes that need to be made from the pre-production to post-consumption stages, which will undoubtedly affect economic, social, and environmental aspects (Zaman & Lehmann, 2011). According to the Zero Waste International Alliance/ZWIA (2018), the concept of Zero Waste is "the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health." Based on this definition, it is not surprising that sustainable waste management efforts are often focused on prevention or reduction of waste generation before it is decided to enter the reuse, recycle, recovery, and disposal stages (Hong Kong Environment Bureau, 2013; UNEP, 2011).

Community participation is a major aspect in realizing sustainable solid waste management (Ibrahim & Mohamed, 2016). However, youths are often excluded in community participation whereas 16% of world population are covered by youths (aged 15-24 years old) and 16.5% of Indonesia's total population are also youth (BPS, 2020; United Nations, 2018). The youths can participate by sorting their waste at home, influencing their parents or household assistants (ART) and their surroundings to do the sorting, as well as partially or fully involved in non-governmental organizations in the environmental sector, such as managing the waste collection, helping waste operators

(giving education/outreach), and help promote the implementation of waste management to the local community where they live (Joseph, 2006). Moreover, behavior change is needed as becoming more responsible to the waste generated by implementing 3Rs, changing consuming behavior, and doing home composting to achieve the sustainability of waste management (Kurisu, 2015).

Youth participation will feel more meaningful and useful if it is initiated by themselves, so that there will be a sense of belonging to the ideas and projects they have planned, even with an agenda initiated by the adults which involving youth in every decision making to form an intergenerational partnership (Checkoway & Gutierrez, 2006; Percy-Smith, 2009). The form of youth participation could be in the form of project initiation, campaign, research, providing education to the community, or directly making changes or taking action for their community (Percy-Smith & Burns, 2013). Moreover, youth participation also has a significant role in environmental movements. The role of youth in the environmental agenda is very important, primarily to raise awareness and provide information to encourage behavior change in the community (Percy-Smith & Burns, 2013).

Freedom of expression, technological developments, and easy access to information have brought considerable changes to Indonesian youth's way of thinking, one of which is the emergence of Indonesian children and youths who are increasingly concerned with environmental issues at the local, national, and global levels (Parker & Prabawa-Sear, 2020). Isabel and Melati are two Indonesian youths who succeeded in convincing other youths and adults to take part in keeping the Bali's beaches clean (in particular) through their Bye Bye Plastic Bag movement by reducing the use of plastic bags, which finally succeeded to intervene the Bali Regional Government to issue Pergub Bali Number 97 of 2018 concerning the Restriction of the Single-Use Plastic Waste Generation (Bye Bye Plastic Bags, 2019; Gapura Bali, 2019). Other than that, in 2018 and 2019, young people in Garut, West Java had initiated annual environmental clean-up activity in commemoration of World Cleanup Day (WCD), which succeeded in inviting 789 volunteers in 2018 and 876 volunteers in 2019 from various groups, from children to adults, to collect garbage found on the road together and clean up the environment around them (Kania et al., 2020). Those are some good examples to see how meaningful youth participation is to make environmental conditions even better, one of which is by participating in household waste management.

In Rahman's research (2016), it was found that the presence of waste treatment facility (such as recycling center) has a positive influence on a person's environmental behavior and concern, but this does not have a strong influence when compared to social-environmental factors and beliefs. Also, Barr (2007) has also stated earlier that waste treatment facility, particularly recycling facility, does not have a strong influence on individual behavior to make him/her reduce (reduce), reuse, or recycle waste. In other studies, many authors stated that the unavailability of the waste treatment facility or supporting infrastructure greatly affects community participation in waste management (O'Connell, 2011; Xiao et al., 2017). Moreover, many studies have found that the closer the distance between the facility and the community would increase the community's willingness to participate in reducing and sorting the waste (Siringo et al., 2020; Yusof et al., 2019; Zhang et al., 2019). However, based on Wang et al. (2018) research, in the case of Chinese people in a rural area, the participation of rural community in household waste management is not much influenced by the existence of local waste treatment facility. On the other hand, factors from an educational background and economic welfare were strongly influenced people's behavior in household waste management.

In previous studies, the formation of individual's pro-environmental behavior in terms of waste management such as recycling and reducing waste production was also influenced by the presence of facilities which were seen from the aspect of distance to the processing site or waste recycling center (Lange et al., 2014; Zhang et al., 2019), waste collection methods (Price & Pitt, 2012; Saphores et al., 2012; Siringo et al., 2020), as well as the feasibility and adequacy of other supporting facilities. Moreover It is necessary do

transfer knowledge to the community through training, counseling, campaigns, and other forms of socialization activities as the key to increasing community participation in waste management at the local level, especially in preventing, sorting, and processing waste (Dhokhikah et al., 2015). Giving socialization, education, and outreach to the local community might increase people's intention to change their behavior (Meyer, 2015). However, it's also important that the intervention from the government and the facility's operator is also needed as to provide incentives in the form of goods, coupons, or savings funds as an appreciation to the community for their efforts in reducing and sorting waste (Yau, 2010; Zhang et al., 2019). This kind of intervention is reasonable and necessary because behavior change of individual mostly occurred as there are some motives that encouraged him/her to change their behavior (Ajzen, 1991; Palupi & Sawitri, 2018).

2. Methods

This paper defines youth based on United Nations' definition which classified youths in age group of 15-24 years old (United Nations, 2018). This study used a qualitative research approach by doing field survey for two weeks, spreading questionnaires and conducting in-depth interviews with four informants, consisting of Paulan Village Head (IN-1), Coordinator of TPS Desa Paulan (IN-2), Chief of Pancaran Citra Muda (local youth organization in Sanggir Hamlet) (IN-3), and Vice Chief of Pancaran Citra Muda (IN-4). Before doing the interview, the authors had distributed questionnaire which responded by 36 out of 530 Paulan's youths. The small number of responds was caused by the limited access to contact and spread the questionnaire online to all youths as it was occurred during COVID-19 pandemic situation. All respondents were asked to fill out questionnaires in the form of closed-ended and open-ended questions about their knowledge and perceptions on the presence of waste treatment facility in Paulan Village and the level of their participation in household waste management. All questionnaires' answers were used as the foundation to be questioned further with the informants. On the other hand, the interviews were done offline by following health protocols due to the COVID-19 pandemic. All informants were chosen by snowballing method as they were all referred by Paulan Village Head as the main person and the initiator of the waste treatment facility development in the village.

3. Results and Discussion

Household waste management in Paulan Village is handled by BUMDes Paulan (village's enterprise) and has been running for less than two years since the village government operated the village waste treatment facility in mid-2019. The facility is located at the southern part of the village, in the middle of rice fields about 300 meters from residential area as shown in Figure 1 and Figure 2. What has been done in Paulan village is a part of Regency Government's program. The program is contained in the regional regulations of Karanganyar Regency, in this case the Regional Medial Term Development Plan (RPJMD) for 2019-2023 through Leaflet No. 050/2094.21 concerning Completion of Waste in Villages/Urban Villages in Realizing Improved Access to Comprehensive and Sustainable Sanitation in 177 villages/urban villages spread throughout the regency. However, only Paulan Village has successfully implemented this program by completing waste management in the village and no longer transporting the waste to regional landfill in Jumantono sub-district, Karanganyar Regency.

Moreover, the construction of the waste treatment facility in Paulan Village is also based on the community's long-lasting waste problem. It is also the most challenging problem for the village government to handle every year. Joko Margono, as the Head of Paulan Village, admitted that since he became the village head in 2007, he was always faced with the waste management issue in the community. The problem was getting more complex every year, such as setting temporary landfills for four times, irregular transportation schedules by the district Environmental Service (DLH), flowed leachate and scattered garbage on the road, etc. At last, in 2018, Mr. Joko got support from the private

sector (a company that owns one of the housing estates in Paulan Village) to build a garbage collection facility in Paulan Village. The village government welcomed the offer but with a more mature concept, making a waste processing center for Paulan Village, so all the waste can be managed every day without relying on DLH to pick-up and transport the waste to the regional landfill. In the end, TPS Desa Paulan can operate regularly starting in mid-2019 with direct supervision from the Head of Paulan Village, Joko Margono, assisted by BUMDes Paulan.

Figure 1. Waste Treatment Facility (TPS) of Desa Paulan

Figure 2. One of two waste carriers is on the way to TPS Desa Paulan

Unfortunately, community participation in household waste management in Paulan Village is still not adequate as most people whose waste is transported by BUMDes do not segregate waste at home. However, few of them have sorted out certain types of waste deposited into Paulan Village's Waste Bank. The Waste Bank Program in Paulan Village started its operations quite well because, within one year, it was able to attract up to 218 customers and provided a profit of 8-10 million rupiah for the village's savings. However, COVID-19 pandemic that came in early 2020 turned out to have a major impact on the

village's Waste Bank operations, reducing its customers by more than 50%. The lack of community participation in waste management in Paulan Village is inseparable with the lack of socialization and outreach to the whole community by the village government, as mentioned by IN-2 and IN-3.

> *"Before the pandemic, socialization to the community was held once a year. The socialization was carried out in a forum with the head of the RT/RW (head of neighborhood/hamlet). On the other hand, there was no particular socialization held for the youths or having collaboration with the local youth organization." (IN-2)*
>
> *"The socialization is only done through neighborhood (RT) monthly forum which usually attended by our fathers and our mothers' monthly social gathering (arisan). Besides, our organization does not have a kind of governing board who can be our liaison with the village government." (IN-3)*

Unfortunately, the socialization was not accompanied by workshops or educational activities. Besides, the socialization carried out by the village government often ends up in neighborhood forums between the youths' father and mother.

Many social activities in the Paulan Village such as community service activities (named *'kerja bakti'*), Indonesian independence celebration night, people's wedding ceremony, and several other community activities were involving youths which mostly organized by the local youth organization, for example Pancaran Citra Muda in Sanggir Hamlet. However, Pancaran Citra Muda has not been offered to involve directly in the development of household waste management in Paulan Village.

> *"Yes, for now we have not involved karang taruna (local youth organization) or youth as individual, as we know that not many people want to being in touch with garbage or waste." (IN-1)*

Informant IN-3 also admitted that the lack of involvement of Pancaran Citra Muda and other youths in household waste management was occurred because there has never been any socialization and education related to solid waste issues from the local government to the youths. In addition, based on the interview with IN-1, he also admitted that since waste management in Paulan Village is managed by BUMDes Paulan, there has been no discourse to involve youth in waste management considering that there are still many things that need to be developed from technical and managerial aspects. However, until the end of his position as village head in 2024, IN-1 and the village government officials have discussed a particular program for village youth capacity building, which is expected to attract a lot of youth interest in developing village through innovation in local waste management development, such as developing BSF maggot farming for processing the organic waste.

Based on the questionnaire results in pre-interview phase, 77% of the respondents said that TPS Desa Paulan influence their willingness to participate in household waste management. However, it does not give a significant influence to their behavior. Based on the questionnaire, most respondents have avoided littering, and only a few of them have implemented the 3Rs. The implementation of the reducing stage is generally shown by preventing single-use plastic bags and bringing personal food containers to wrap food. Besides, the reusing stage is generally carried out by reusing plastic bags for shopping in minimarket. Meanwhile, the application of recycling is generally shown by using condensed milk cans to become plant pots. However, those who have implemented the 3Rs in their daily lives have been implementing this habit since TPS Desa Paulan has not existed, and they are still doing it today. On the one hand, many of the respondents felt that the presence of TPS Desa Paulan has changed their perceptions and increased their environmental awareness, especially regarding the issue of solid waste but not specifically change or increase their participation.

Informant IN-3 and IN-4 suggest that besides socialization and education, such a routine agenda and rewards are also needed to improve the youth participation of Paulan Village in household waste management.

"We, Pancaran Citra Muda, often have routine monthly meeting. So, in accordance to interfere youth participation in household waste management, we could plan such a routine agenda that aims to educate our member in managing waste. Education is the basic we need before we are taking an action, so anyone will know the reason why they are doing reduce-reuse-recycle of waste they produce." (IN-3)

"Besides, providing routine agenda for the youths to get involved, rewards are also needed to motivate them. The rewards are not always about money, but it may customize based on the youths' needs at the present time, such as stationary, books, mobile game's vouchers, internet or phone credit, etc." (IN-4)

This study found that based on the questionnaire results and some statements from the related stakeholders, the presence of waste treatment facility at the local level had little effect on intervening Paulan's youth participation in household waste management, though intervention from the related stakeholders is needed to improve their participation. This finding supports Barr's (2007) research and Rahman's (2016), which state that the presence of waste treatment facility near waste sources such as residential areas does not surely increase community participation in waste management. It was proven by the questionnaire results that only few of the local youths have done sorting and reducing waste at home. Besides, the presence of TPS Desa Paulan only gave a slight influence to youth participation, though it brings much positive changes for their environment. In addition, based on the questionnaires, it was also found that the proximity of the waste treatment facility's location to the waste source did make the people of Paulan Village more concerned about the environment. This finding support Yusof et al.'s (2019) dan Zhang et al.'s (2019) research, which states that the waste treatment facility's proximity to the waste source can trigger the community to participate. Moreover, according to the findings, the presence of waste treatment facility is not enough to increase youth participation in household waste management. As (Yau (2010); Struk (2017); and Zhang et al. (2019)) said in their research, some interventions such as socialization, education, and incentives/rewards are needed to trigger the behavior changes and participation of any individual, for the children, youth, adult, or the elder.

4. Conclusions

The establishment of a waste treatment facility near residences such in Paulan Village does not look strong enough to interfere the community participation in household waste management, especially for the youths. The less impact to increase youth participation is inseparable from the related stakeholders' role, especially the village government, which does not give enough intervention to the youth such as socialization and education. In Paulan Village, a youth organization named Pancaran Citra Muda (Sanggir Hamlet's youth organization) can be offered to become a partner for the village government to increase youth participation in Paulan Village or Sanggir Hamlet in particular. The implementation of comprehensive socialization and education in the community cannot be carried out by the village government alone. Therefore, youth organization and the whole community need to be involved in village government programs that prioritize human resource development, especially youth's capacity in the social, environmental, and economic aspects. This study has attempted to analyze the influence of waste treatment facility at the local level to the youth participation in waste management. This paper suggests that intensive campaigns, like monthly or bimonthly socialization, and rewards are needed to optimize youth participation in household waste management. Besides, adults' intervention is also needed in guiding the young generation to contribute more for the community by involving in household waste management. Moreover, further research is highly recommended to conduct statistical tests with a larger number of samples in a particular research area, which has a local waste treatment facility at the village/urban village scope area, moreover if it's located at a smaller scale area or closer to the residences.

Acknowledgement
The authors would like to thank the Reviewers and Editors of the ICESE Journal.

Author Contribution
Conceptualization, Naldi, A.; Methodology, Naldi, A.; Software, Naldi, A.; Validation, Naldi, A.; Formal Analysis, Naldi, A.; Data Curation, Naldi, A.; Writing – Original Draft Preparation, Naldi, A.; Writing – Review & Editing, Naldi, A.

Funding
This research received no external funding.

Ethical Review Board Statement
Ethical review and approval were waived for this study due to no personal data was collected in this study.

Informed Consent Statement
Not applicable.

Data Availability Statement
The data is available upon request.

Conflicts of Interest
The authors declare no conflict of interest.

References
Ajzen, I. (1991). The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes, 50, 179–211.

Allievi, F., Dentoni, D., & Antonelli, M. (2018). The Role of Youth in Increasing Awareness of Food Security and Sustainability. Encyclopedia of Food Security and Sustainability, 1–6. https://doi.org/10.1016/B978-0-12-812687-5.22021-2

Barr, S. (2007). Factors influencing environmental attitudes and behaviors: A U.K. case study of household waste management. In Environment and Behavior (Vol. 39). https://doi.org/10.1177/0013916505283421

BPS. (2018). Statistik Lingkungan Hidup Indonesia 2018. Jakarta: Badan Pusat Statistik.

BPS. (2020). Statistical Yearbook of Indonesia. In Statistik Indonesia 2020 (Vol. 1101001). Jakarta.

BPS Karanganyar. (2020). Kecamatan Colomadu Dalam Angka 2020. In BPS. Karanganyar.

Bye Bye Plastic Bags. (2019). Home-Bye Bye Plastic Bags. Retrieved December 15, 2019, from http://www.byebyeplasticbags.org/

Checkoway, B. N., & Gutierrez, L. M. (2006). Youth Participation and Community Change. Journal of Community Practice, 14(1–2), 1–9. https://doi.org/10.1300/J125v14n01

Dhokhikah, Y., Trihadiningrum, Y., & Sunaryo, S. (2015). Community participation in household solid waste reduction in Surabaya, Indonesia. Resources, Conservation and Recycling, 102, 153–162. https://doi.org/10.1016/j.resconrec.2015.06.013

El-Haggar, S. (2007). Sustainable Industrial Design and Waste Management. San Diego: Elsevier Inc.

Gapura Bali. (2019). Bali leads the way and officially bans single-use plastic bags, straws and polystyrene across the island. Retrieved May 11, 2020, from gapurabali.com website: https://www.gapurabali.com/news/2019/06/25/bali-leads-way-and-officially-bans-single-use-plastic-bags-straws-and-polystyrene

Hendra, Y. (2016). Perbandingan Sistem Pengelolaan Sampah di Indonesia dan Korea Selatan: Kajian 5 Aspek Pengelolaan Sampah. Aspirasi, 7(1), 77–91.

Hong Kong Environment Bureau. (2013). Hong Kong Blueprint for Sustainable Use of Resources 2013-2022. Hong Kong: Hong Kong Environment Bureau.

Ibrahim, M. I. M., & Mohamed, N. A. E. M. (2016). Towards Sustainable Management of Solid Waste in Egypt. Procedia Environmental Sciences, 34, 336–347. https://doi.org/10.1016/j.proenv.2016.04.030

Joseph, K. (2006). Stakeholder participation for sustainable waste management. Habitat International, 30, 863–871. https://doi.org/10.1016/j.habitatint.2005.09.009

Kalra, N. (2020). Community Participation and Waste Management. In S. K. Ghosh (Ed.), Sustainable Waste Management: Policies and Case Studies (Vol. 1). https://doi.org/10.1007/978-981-13-7071-7

Kania, I., Alamanda, D. T., Pundenswari, P., & Ramdhani, A. (2020). Waste management by Garut youth movement, Indonesia. Test Engineering and Management, 82(3738), 3738–3745.

Kirshner, B. (2008). Guided participation in three youth activism organizations: Facilitation, apprenticeship, and joint work. In Journal of the Learning Sciences (Vol. 17). https://doi.org/10.1080/10508400701793190

KLHK. (2020). Sebaran Fasilitas Pengelolaan Sampah. Retrieved July 22, 2021, from SIPSN website: https://sipsn.menlhk.go.id/sipsn/

Kurisu, K. (2015). What Are Pro-Environmental Behaviors (PEBs)? In Pro-environmental Behaviors (pp. 1–26). https://doi.org/10.1007/978-4-431-55834-7_1

Lange, F., Brückner, C., Kröger, B., Beller, J., & Eggert, F. (2014). Wasting ways: Perceived distance to the recycling facilities predicts pro-environmental behavior. Resources, Conservation and Recycling, 92, 246–254. https://doi.org/10.1016/j.resconrec.2014.07.008

Lundy, L. (2007). "Voice" is not enough: Conceptualising Article 12 of the United Nations Convention on the Rights of the Child. British Educational Research Journal, 33(6), 927–942. https://doi.org/10.1080/01411920701657033

Maryati, S., Arifiani, N. F., Humaira, A. N. S., & Putri, H. T. (2018). Factors influencing household participation in solid waste management (Case study: Waste Bank Malang). IOP Conference Series: Earth and Environmental Science, 124(1). https://doi.org/10.1088/1755-1315/124/1/012015

Meidiana, C., & Gamse, T. (2010). Development of Waste Management Practices in Indonesia. European Journal of Scientific Research, 40(2), 199–210.

Meyer, A. (2015). Does education increase pro-environmental behavior? Evidence from Europe. Ecological Economics, 116, 108–121. https://doi.org/10.1016/j.ecolecon.2015.04.018

O'Connell, E. J. (2011). Increasing public participation in municipal solid waste reduction. Geographical Bulletin - Gamma Theta Upsilon, 52(2), 105–118.

Okenews. (2018). Berhari-hari Tak Diambil Petugas, Sampah di Karanganyar Menggunung. Retrieved April 2, 2020, from https://news.okezone.com/read/2018/01/05/512/1840919/berhari-hari-tak-diambil-petugas-sampah-di-karanganyar-menggunung

Palupi, T., & Sawitri, D. R. (2018). The Importance of Pro-Environmental Behavior in Adolescent. E3S Web of Conferences, 31, 2–5. https://doi.org/10.1051/e3sconf/20183109031

Parker, L., & Prabawa-Sear, K. (2020). Environmental Education in Indonesia: Creating Responsible Citizens in the Global South. https://doi.org/10.4324/9780429397981

Percy-Smith, B. (2009). Evaluating the development of young people's participation in two Children's Trusts, Year Two report. Leicester: National Youth Agency.

Percy-Smith, B., & Burns, D. (2013). Exploring the role of children and young people as agents of change in sustainable community development. Local Environment, 18(3), 323–339. https://doi.org/10.1080/13549839.2012.729565

Price, S., & Pitt, M. (2012). The influence of facilities and environmental values on recycling in an office environment. Indoor and Built Environment, 21(5), 622–632. https://doi.org/10.1177/1420326X11427340

Rahman, N. A. (2016). Knowledge, internal, and environmental factors on environmental care behaviour among aboriginal students in Malaysia. International Journal of Environmental and Science Education, 11(12), 5349–5366.

Rexhepi, A., Filiposka, S., & Trajkovik, V. (2018). Youth e-participation as a pillar of sustainable societies. Journal of Cleaner Production, 174, 114–122. https://doi.org/10.1016/j.jclepro.2017.10.327

Saphores, J. D. M., Ogunseitan, O. A., & Shapiro, A. A. (2012). Willingness to engage in a pro-environmental behavior: An analysis of e-waste recycling based on a national survey of U.S. households. Resources, Conservation and Recycling, 60, 49–63. https://doi.org/10.1016/j.resconrec.2011.12.003

Setyono, K. (2019). Ada 800 Bank Sampah Mati di DIY, Danais Bisa Jadi Solusi. Retrieved May 31, 2020, from Gatra.com website: https://www.gatra.com/detail/news/457456/gayahidup/ada-800-bank-sampah-mati-di-diy-danais-bisa-jadi-solusi

Setyorini, V. P. (2019). KLHK : bank sampah bisa mati tanpa koneksi. Retrieved May 31, 2020, from Antaranews.com website: https://www.antaranews.com/berita/840903/klhk-bank-sampah-bisa-mati-tanpa-koneksi

Siringo, R., Herdiansyah, H., & Kusumastuti, R. D. (2020). Underlying factors behind the low participation rate in electronic waste recycling. Global Journal of Environmental Science and Management, 6(2), 203–214. https://doi.org/10.22034/gjesm.2020.02.06

Siriratpiriya, O. (2014). Municipal Solid Waste Management in Thailand: Challenges and Strategic Solution. In Agamuthu Pariatamby & M. Tanaka (Eds.), Municipal solid waste management in Asia and the Pacific Islands: Challenges and Strategic Solutions (pp. 337–354). https://doi.org/10.1007/978-981-4451-73-4_17

Struk, M. (2017). Distance and incentives matter: The separation of recyclable municipal waste. Resources, Conservation and Recycling, 122, 155–162. https://doi.org/10.1016/j.resconrec.2017.01.023

Sudjatmiko, T. (2019). Pengolahan Terpadu, Paulan Bebas Sampah. Retrieved July 22, 2021, from krjogja.com website: https://www.krjogja.com/berita-lokal/jateng/solo/pengolahan-terpadu-paulan-bebas-sampah/

Thai, N. T. K. (2014). Municipal Solid Waste Management in Vietnam Challenges and Solutions. In A. Pariatamby & M. Tanaka (Eds.), Municipal solid waste management in Asia and the Pacific Islands: Challenges and Strategic Solutions (pp. 355–377). https://doi.org/10.1007/978-981-4451-73-4_18

The Energy and Resources Institute. (2014). Waste to Resources: A Waste Management Handbook. New Delhi: TERI Press.

UNEP. (2011). Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication.

United Nations. (2018). World Youth Report: Youth and the 2030 Agenda for Sustainable Development World. New York.

Wan, C., Shen, G. Q., & Choi, S. (2019). Waste Management Strategies for Sustainable Development. Encyclopedia of Sustainability in Higher Education, 1–9. https://doi.org/10.1007/978-3-319-63951-2_194-1

Wang, F., Cheng, Z., Reisner, A., & Liu, Y. (2018). Compliance with household solid waste management in rural villages in developing countries. Journal of Cleaner Production, 202, 293–298. https://doi.org/10.1016/j.jclepro.2018.08.135

Widowati, H. (2019). Komposisi Sampah di Indonesia Didominasi Sampah Organik. Retrieved April 28, 2020, from databoks website:

https://databoks.katadata.co.id/datapublish/2019/11/01/komposisi-sampah-di-indonesia-didominasi-sampah-organik

Xiao, L., Zhang, G., Zhu, Y., & Lin, T. (2017). Promoting public participation in household waste management: A survey based method and case study in Xiamen city, China. Journal of Cleaner Production, 144, 313–322. https://doi.org/10.1016/j.jclepro.2017.01.022

Yau, Y. (2010). Domestic waste recycling, collective action and economic incentive: The case in Hong Kong. Waste Management, 30(12), 2440–2447. https://doi.org/10.1016/j.wasman.2010.06.009

Yusof, K., Ismail, F., Yunus, J., Kasmuni, N., Ramele@Ramli, R., Omar, M., … Mustaffa, H. (2019). Community Participation and Performance of Waste Segregation Program in Malacca: Towards Sustainable Waste Management. MATEC Web of Conferences, 266, 02003. https://doi.org/10.1051/matecconf/201926602003

Zaman, A. U., & Lehmann, S. (2011). Challenges and Opportunities in Transforming a City into a "Zero Waste City." Challenges, 2(4), 73–93. https://doi.org/10.3390/challe2040073

Zero Waste International Alliance. (2018). Zero Waste Hierarchy of Highest and Best Use 7.0. Retrieved May 30, 2020, from ZWIA.org website: http://zwia.org/zwh/#1533001727654-06e7e2c8-d52a

Zhang, B., Lai, K. hung, Wang, B., & Wang, Z. (2019). From intention to action: How do personal attitudes, facilities accessibility, and government stimulus matter for household waste sorting? Journal of Environmental Management, 233(February 2018), 447–458. https://doi.org/10.1016/j.jenvman.2018.12.059