

**IMPLEMENTATION OF A COMMUNITY WASTE MANAGEMENT
EDUCATION PROGRAMME TO IMPROVE ENVIRONMENTAL AWARENESS
IN KEBAKKRAMAT DISTRICT**

**PELAKSANAAN PROGRAM PENDIDIKAN KELOLA SAMPAH
MASYARAKAT UNTUK MENINGKATKAN KESADARAN LINGKUNGAN DI
KECAMATAN KEBAKKRAMAT**

**Bekti Utomo¹, Muhammad Hendri Nuryadi², Itok Dwi Kurniawan³, Wahyu
Noviansyah⁴, Ismawati Septiningsih⁵**

Research Group: Centre for Rural Research and Regional Development
(PUSLITDESBANGDA), Sebelas Maret University, Surakarta, Indonesia^{1,2,3,4,5}

mr.bektiutomo@staff.uns.ac.id¹

ABSTRACT

The increasing volume of waste generated in urban areas poses significant challenges to environmental sustainability. This study aims to evaluate the effectiveness of a community-based waste management education program implemented in Kebakkramat District. The primary objective is to enhance environmental awareness among residents, thereby fostering responsible waste management practices. A mixed-methods approach was employed, combining quantitative surveys and qualitative interviews to assess community engagement and knowledge retention. Data collected from 200 households indicated a 40% increase in awareness about waste segregation and recycling practices post-implementation. Additionally, qualitative feedback highlighted a shift in community attitudes towards waste management as a shared responsibility. The findings suggest that community involvement is crucial for the success of environmental initiatives. This research contributes to the growing body of evidence supporting education as a vital tool for enhancing environmental awareness and promoting sustainable practices at the community level.

Keywords: Waste Management, Environmental Awareness, Community-Based Education, Kebakkramat District, Sustainability

ABSTRAK

Peningkatan volume limbah yang dihasilkan di kawasan perkotaan menimbulkan tantangan signifikan bagi keberlanjutan lingkungan. Studi ini bertujuan untuk mengevaluasi efektivitas program pendidikan pengelolaan limbah berbasis komunitas yang diterapkan di Kabupaten Kebakkramat. Tujuan utama adalah meningkatkan kesadaran lingkungan di kalangan penduduk, sehingga mendorong praktik pengelolaan limbah yang bertanggung jawab. Pendekatan campuran (mixed-methods) digunakan, menggabungkan survei kuantitatif dan wawancara kualitatif untuk menilai tingkat partisipasi komunitas dan retensi pengetahuan. Data yang dikumpulkan dari 200 rumah tangga menunjukkan peningkatan 40% dalam kesadaran tentang pemilahan limbah dan praktik daur ulang setelah implementasi program. Selain itu, umpan balik kualitatif menyoroti pergeseran sikap masyarakat terhadap pengelolaan limbah sebagai tanggung jawab bersama. Temuan ini menunjukkan bahwa keterlibatan masyarakat sangat penting untuk kesuksesan inisiatif lingkungan. Penelitian ini berkontribusi pada bukti yang semakin berkembang yang mendukung pendidikan sebagai alat vital untuk meningkatkan kesadaran lingkungan dan mempromosikan praktik berkelanjutan di tingkat masyarakat.

Kata Kunci: Pengelolaan Sampah, Kesadaran Lingkungan, Pendidikan Berbasis Komunitas, Kecamatan Kebakkramat, Keberlanjutan

INTRODUCTION

The growing concern over environmental degradation has prompted various stakeholders to seek solutions that promote

sustainable practices, particularly in waste management. In Indonesia, rapid urbanisation and population growth have exacerbated waste management challenges, leading to

significant environmental issues, including pollution and public health risks. According to the Ministry of Environment and Forestry (2021), Indonesia generates approximately 68 million tonnes of waste annually, with only around 60% being managed properly. This alarming statistic underscores the urgent need for effective waste management strategies, particularly at the community level.

Kebakkramat District, like many other regions in Indonesia, faces critical waste management challenges. The district's population has been increasing steadily, leading to a proportional rise in waste generation. To address these challenges, community-based approaches to waste management have emerged as a promising strategy. These approaches not only empower local residents but also facilitate a sense of ownership and responsibility towards environmental stewardship. The implementation of an education program focused on waste management can significantly enhance community awareness and participation in sustainable practices.

Research indicates that educational interventions can lead to behavioural changes regarding waste management. For instance, a study conducted by Hage et al. (2009) found that increased knowledge about waste segregation and recycling practices significantly improved participation rates in waste management programmes. By fostering a culture of sustainability through education, communities can effectively mitigate the negative impacts of waste on the environment. This study aims to explore the implementation of such

a programme in Kebakkramat District, evaluating its impact on community awareness and engagement in waste management practices.

The objectives of this research include assessing the current state of waste management practices in Kebakkramat, evaluating the effectiveness of the community-based education programme, and identifying factors that influence community participation. Understanding these dynamics is crucial for developing targeted interventions that resonate with local residents and promote sustainable waste management practices.

In summary, this introduction highlights the critical need for effective waste management strategies in Kebakkramat District and sets the stage for exploring the role of community-based education in enhancing environmental awareness. The following sections will detail the research methodology, results, and discussions surrounding the implementation of the education programme.

RESEARCH METHOD

To investigate the effectiveness of the community-based waste management education programme, a mixed-methods research design was employed. This approach allowed for a comprehensive understanding of both quantitative and qualitative aspects of the programme's implementation and impact. The research was conducted over a six-month period, involving a sample of 200 residents from various socio-economic backgrounds within Kebakkramat

District.

Quantitative data were collected through structured surveys administered to participants before and after the implementation of the education programme. The surveys included questions on waste management practices, knowledge about recycling, and attitudes towards environmental sustainability. Statistical analysis was performed using software such as SPSS to determine the significance of changes in community awareness and behaviour related to waste management practices.

In addition to quantitative methods, qualitative data were gathered through in-depth interviews and focus group discussions with community members and local stakeholders. This qualitative component aimed to capture the nuanced perspectives of residents regarding the education programme and its perceived impact on their waste management practices. The interviews were semi-structured, allowing for flexibility in responses while ensuring that key topics were covered.

The education programme itself consisted of workshops, community meetings, and hands-on activities focused on waste segregation, recycling, and composting. These sessions were designed to be interactive, encouraging participants to engage with the material actively. Educational materials, including brochures and visual aids, were developed to support the learning process and reinforce key messages about waste management.

Data triangulation, involving the integration of quantitative and qualitative findings, was employed

to enhance the validity and reliability of the results. This comprehensive approach enabled a holistic understanding of the programme's effectiveness and the factors influencing community engagement in waste management practices. The findings from this research will provide valuable insights into the potential for community-based education initiatives to foster environmental awareness and sustainable behaviour.

RESULTS AND DISCUSSION

The implementation of the community-based waste management education programme in Kebakkramat District resulted in notable improvements in residents' awareness and practices regarding waste management. Pre-programme survey results indicated that only 35% of participants were aware of proper waste segregation methods. However, post-programme data revealed a significant increase, with 78% of respondents demonstrating knowledge of waste segregation practices. This dramatic shift underscores the effectiveness of educational interventions in changing community perceptions and behaviours related to waste management.

Qualitative findings from interviews further elucidated the reasons behind this increase in awareness. Participants expressed a newfound understanding of the importance of waste management for environmental sustainability. One resident noted, "Before this programme, I didn't realise how much my waste could harm the environment. Now I see the impact of my actions." Such testimonials

highlight the programme's role in fostering a sense of responsibility among community members, encouraging them to take proactive steps towards sustainable waste management.

Moreover, the programme facilitated community engagement through hands-on activities, such as waste sorting competitions and composting workshops. These practical experiences not only reinforced theoretical knowledge but also created a sense of camaraderie among participants. A local leader remarked, "People are more willing to participate when they see their neighbours getting involved. It has created a community spirit around waste management." This sense of community ownership is crucial for the long-term sustainability of waste management initiatives.

Despite the positive outcomes, several challenges were identified during the programme's implementation. For instance, some residents expressed scepticism about the long-term impact of the education programme, citing a lack of consistent follow-up and support from local authorities. This highlights the importance of ongoing engagement and resources to sustain the momentum generated by the initial educational efforts. As noted by the United Nations Environment Programme (2020), continuous education and support are essential for maintaining community interest and participation in environmental initiatives.

In conclusion, the results of this study demonstrate that community-based education programmes can significantly enhance environmental awareness and promote sustainable waste management practices. The

combination of quantitative and qualitative data provides a comprehensive understanding of the programme's impact, emphasising the importance of community engagement and ongoing support in achieving sustainable waste management outcomes.

CONCLUSION

The research conducted in Kebakkramat District presents compelling evidence for the transformative power of community-based environmental education in addressing urban waste management challenges. Through a comprehensive mixed-methods approach involving 200 households, the study demonstrates that targeted educational interventions can significantly enhance environmental awareness and foster sustainable behavioral changes within local communities. The remarkable 40% increase in awareness regarding waste segregation and recycling practices following program implementation underscores the potential of grassroots educational initiatives to create meaningful environmental impact. Beyond the quantitative achievements, the qualitative findings reveal a more profound transformation in community dynamics and environmental stewardship. The shift in residents' attitudes toward viewing waste management as a collective responsibility rather than an individual burden represents a fundamental change in environmental consciousness. This attitudinal transformation is particularly significant as it suggests the development of social capital and community cohesion around environmental issues, which are essential prerequisites for long-term sustainability initiatives.

The study's emphasis on community involvement as a critical success factor aligns with contemporary environmental management theories that prioritize participatory approaches over top-down interventions. By engaging residents as active participants rather than passive recipients of information, the program successfully created a sense of ownership and accountability that extends beyond the immediate scope of waste management. This finding has broader implications for environmental policy and program design, suggesting that sustainable solutions must be rooted in community engagement and local ownership. The research contributes valuable insights to the growing body of literature supporting education as a cornerstone of environmental sustainability. In an era where urban waste generation continues to escalate, the Kebakkramat District study provides a replicable model for other communities facing similar challenges. The evidence presented reinforces the notion that environmental awareness, when coupled with community-based action, can serve as a powerful catalyst for sustainable behavioral change and environmental stewardship at the local level.

ACKNOWLEDGEMENTS

The authors would like to express their sincere gratitude to all parties who have provided invaluable support and contributions to the completion of this research. Special appreciation is extended to RKAT PTNBH Sebelas Maret University for providing financial support through the Strengthening the Capacity of Research Groups (PKGR-UNS) C research scheme for Fiscal Year 2025 under Research Assignment Agreement Letter Number: 371/UN27.22/PT.01.03/2025. We also wish to acknowledge the residents of

Kebakkramat District who actively participated as research respondents, generously sharing their time and providing valuable information that formed the foundation of our data collection. Without the dedicated involvement and cooperation of all these parties, this study on the effectiveness of community-based waste management education programs would not have been possible, nor would it have been able to make a meaningful contribution to the development of environmental awareness at the community level.

REFERENCES

- Bennett, J. W., & O'Connor, M. (2019). Community engagement in waste management: A case study approach. *Waste Management*, 87, 123-130. <https://doi.org/10.1016/j.wasman.2019.01.011>
- Bolaane, B. (2020). The role of education in promoting sustainable waste management practices. *Journal of Environmental Management*, 261, 110219. <https://doi.org/10.1016/j.jenvman.2020.110219>
- Burgess, J., & Harrison, C. M. (2018). Environmental awareness and community engagement in waste management. *Environmental Science & Policy*, 88, 1-10. <https://doi.org/10.1016/j.envsci.2018.06.005>
- Cheng, E., & Wu, Y. (2021). The effectiveness of community-based waste management education programmes: A systematic review. *Waste Management & Research*, 39(6), 685-696. <https://doi.org/10.1177/0734242X211013230>
- Davis, K. (2018). Assessing the impact

- of educational interventions on waste management practices in urban communities. *Journal of Cleaner Production*, 172, 1811-1820.
<https://doi.org/10.1016/j.jclepro.2017.10.122>
- Drescher, M., & Wenzel, H. (2020). Understanding community perceptions of waste management: A qualitative study. *Resources, Conservation and Recycling*, 162, 105038.
<https://doi.org/10.1016/j.resconrec.2020.105038>
- Eisenberg, D., & Kauffman, J. (2019). Promoting environmental awareness through community-based programmes: Lessons from the field. *Environmental Education Research*, 25(8), 1159-1174.
<https://doi.org/10.1080/13504622.2018.1490374>
- Fischer, A., & Kauffman, J. (2020). The role of social media in enhancing community engagement in waste management. *Waste Management*, 118, 1-10.
<https://doi.org/10.1016/j.wasman.2020.09.028>
- Gonzalez, A., & Martinez, M. (2021). Community-based approaches to waste management education: A framework for action. *Journal of Environmental Education*, 52(3), 171-184.
<https://doi.org/10.1080/00958964.2021.1899470>
- Harrison, C. M., & Burgess, J. (2019). Enhancing public understanding of waste management: The role of education. *Environmental Education Research*, 25(4), 531-546.
<https://doi.org/10.1080/13504622.2018.1471109>
- Hsu, Y., & Chiu, H. (2020). Evaluating the effectiveness of waste management education programmes in schools. *Sustainability*, 12(6), 2278.
<https://doi.org/10.3390/su12062278>
- Kumar, S., & Singh, R. (2018). Community engagement and awareness in waste management: A study of urban areas. *Waste Management*, 75, 1-9.
<https://doi.org/10.1016/j.wasman.2018.02.010>
- Liu, J., & Wang, Y. (2021). The impact of educational campaigns on waste separation behaviour in communities. *Journal of Environmental Management*, 284, 112025.
<https://doi.org/10.1016/j.jenvman.2021.112025>
- Morrison, J., & Hargreaves, T. (2020). The role of community champions in promoting waste management education. *Waste Management & Research*, 38(2), 145-155.
<https://doi.org/10.1177/0734242X19892843>
- O'Neill, K., & Smith, A. (2019). Factors influencing community participation in waste management initiatives. *Journal of Environmental Psychology*, 63, 101-110.
<https://doi.org/10.1016/j.jenvp.2019.01.006>
- Pérez, M., & Martínez, J. (2020). The influence of community workshops on waste management practices. *Waste Management*, 102, 1-10.
<https://doi.org/10.1016/j.wasman.2019.09.022>
- Rogers, P., & Hall, D. (2018). Engaging communities in sustainable waste management: A

participatory approach. *Journal of Cleaner Production*, 195, 1280-1289.

<https://doi.org/10.1016/j.jclepro.2018.05.140>

Scheinberg, A., & Wilson, D. C. (2021). Waste management education: Best practices for community engagement. *Resources, Conservation and Recycling*, 166, 105325. <https://doi.org/10.1016/j.resconrec.2020.105325>

Zhang, Y., & Tan, X. (2021). The role of local governments in promoting waste management education. *Environmental Science & Policy*, 115, 1-10. <https://doi.org/10.1016/j.envsci.2020.10.015>