

Evaluating the Impact of Emak.id Waste Bank on Environmental Awareness: A Case Study in Bandar Lampung

Ahmad Khairudin Syam¹
Dini Merianza²
Triyana Febriyanti³
Defrizal⁴
Malik⁵

defrizal@ubl.ac.id

¹²³⁴⁵Universitas Bandar Lampung

ABSTRACT

This study investigates the influence of EMAK.ID Waste Bank on the environmental awareness of residents in Bandar Lampung. In the context of escalating environmental issues, including floods, landslides, and pollution, exacerbated by rapid population growth in Indonesia, effective waste management practices are essential. Despite the presence of various waste banks, EMAK.ID stands out for its notable success in reducing waste and engaging the community. Using a descriptive quantitative approach, this research examines how EMAK.ID's initiatives impact environmental consciousness. A sample of 100 respondents from EMAK.ID Waste Bank's customer base was surveyed, with data analyzed using simple linear regression. The results indicate a positive and significant relationship between EMAK.ID Waste Bank's activities and increased environmental awareness, with statistical significance confirmed through F-tests and T-tests. The findings highlight the effectiveness of EMAK.ID's waste management and educational programs in enhancing community environmental responsibility. This study offers valuable insights into how targeted waste management solutions can significantly improve environmental consciousness and suggests that similar approaches could benefit other communities facing environmental challenges.

Keywords: Environmental Awareness, Waste Management, EMAK.ID Waste Bank, Bandar Lampung, Community Engagement

Introduction

This study explores the impact of [EMAK.ID](#) Waste Bank on the environmental awareness of residents in Bandar Lampung. The context of this investigation is shaped by Indonesia's escalating environmental issues, which include frequent natural disasters like floods, landslides, and pollution (Aboyitungiye et al., 2021; Rahmasary et al., 2021). These problems are largely attributed to rapid urbanization and population growth. The population of Indonesia has almost doubled from 147.49 million in 1980 to 259.94 million by 2011, a surge that significantly contributes to the increasing volume of waste and subsequent environmental degradation (Prajati et al., 2017; Rame et al., 2022).

In Bandar Lampung, a city grappling with similar challenges, several waste management initiatives have been introduced. Notably, [EMAK.ID](#) stands out among these initiatives. [EMAK.ID](#) is a privately operated waste bank that has shown considerable success in waste reduction and in encouraging community involvement (Chintia Hestiriniah & Austin, 2022; Purnama Putra et al., 2018; Qomariyah et al., 2022). It operates differently from the waste banks managed by the city's Environmental Agency, some of which have faced operational challenges (Addinsyah & Dewa Ayu Agung Warmadewanthi, 2020; Satori et al., 2020; Suparmini & Junadi, 2018). [EMAK.ID](#) has effectively engaged 2,437 residents, facilitated the reduction of 122.3 tons of waste, and provided an innovative model for waste management by turning waste into economic value (Agustini et al., 2023; Alite et al., 2023; Towolioe et al., 2020).

Despite these achievements, there is a notable gap in the literature regarding the specific effects of [EMAK.ID](#)'s waste bank on environmental awareness among its users. Previous research has not sufficiently addressed how such waste management systems influence public attitudes and behaviors towards the environment.

This study aims to bridge this gap by rigorously analyzing the relationship between [EMAK.ID](#)'s waste bank operations and the environmental consciousness of Bandar Lampung's residents.

Understanding the influence of [EMAK.ID](#) on environmental awareness is vital for several reasons. First, it offers insights into the effectiveness of waste banks as a tool for enhancing public environmental awareness. Second, it provides empirical evidence on how such initiatives can contribute to more sustainable urban environments. Finally, the findings of this study could inform the design and implementation of future waste management strategies, both within Indonesia and in other regions facing similar challenges. By investigating this uncharted area, the study aims to contribute valuable knowledge that could drive improvements in waste management practices and promote more sustainable behaviors among urban populations.

Methodology

This study utilized a descriptive quantitative approach to investigate the relationship between EMAK.ID Waste Bank and environmental awareness among its users. The quantitative method was selected to yield numerical data that could be statistically analyzed, providing a clear picture of how effectively the waste bank fosters environmental consciousness (Meidiana et al., 2019; Rugatiri et al., 2021; Wulandari et al., 2021). Conducted in Bandar Lampung during February 2023, the study sampled 100 respondents from a total of 2,437 EMAK.ID Waste Bank customers. A Multi-Stage Sampling technique was employed, beginning with the selection of districts based on active waste bank groups and their respective waste tonnage and savings (Barusman, 2019). From these districts, the top ones were identified, and respondents were chosen accordingly. Data collection involved administering questionnaires and utilizing stationery, a camera, and a recorder. The independent variable in the study is EMAK.ID Waste Bank (X), which includes aspects such as knowledge, service, perception, and pricing, while the dependent variable is environmental awareness (Y), encompassing general beliefs, personal attitudes, and information/knowledge related to environmental issues. Data analysis was carried out using simple linear regression with SPSS v.28, where the regression model is expressed as $(Y = 10.027 + 0.501X + e)$, with (e) representing the error term. Hypothesis testing was conducted through F-tests and T-tests to evaluate the significance of the regression coefficients and the overall impact of EMAK.ID Waste Bank on environmental awareness.

Result and Discussion

a. Result

The regression analysis provided compelling evidence of a positive relationship between EMAK.ID Waste Bank and environmental awareness. The regression equation $(Y = 10.027 + 0.501X + e)$ demonstrates that with each unit increase in the impact of EMAK.ID Waste Bank, environmental awareness rises by 0.501 units. This significant relationship is further supported by a p-value of less than 0.05, indicating that EMAK.ID Waste Bank has a meaningful effect on environmental awareness among its participants.

The results of the F-test, with an F value of 111.179 and a p-value below 0.05, reinforce the finding that EMAK.ID Waste Bank significantly influences environmental awareness when all variables are considered collectively. This confirms the hypothesis that EMAK.ID Waste Bank positively impacts environmental awareness in Bandar Lampung.

Additionally, the T-test results yielded a t value of 10.544 with a p-value under 0.05, underscoring the individual significance of EMAK.ID Waste Bank's effect on environmental awareness. The positive coefficient of 0.501 indicates that the activities facilitated by EMAK.ID Waste Bank, such as waste sorting, collection, and recycling education, are effective in enhancing participants' environmental consciousness. Overall, these findings suggest that EMAK.ID Waste Bank plays a crucial role in promoting environmental awareness through its various initiatives, thereby contributing to more sustainable practices within the community.

b. Discussion

The findings of this study substantiate the positive impact of the EMAK.ID Waste Bank on environmental awareness in Bandar Lampung. The significant relationships observed through the analysis underscore EMAK.ID's effectiveness in fostering a heightened sense of environmental consciousness among community members, supporting previous assertions about the role of waste management initiatives in addressing environmental (Chintia Hestiriniah & Austin, 2022; Purnama Putra et al., 2018; Qomariyah et al., 2022). The regression analysis reveals that each increment in the impact of EMAK.ID Waste Bank corresponds to a measurable increase in environmental awareness, affirming that the waste bank's efforts are both significant and

substantial, consistent with findings from other successful waste management initiatives (Agustini et al., 2023; Alite et al., 2023; Towolioe et al., 2020).

EMAK.ID Waste Bank's approach, which includes regular waste collection, sorting, and recycling, plays a pivotal role in enhancing community environmental awareness, as noted by similar programs in prior research (Addinsyah & Dewa Ayu Agung Warmadewanthi, 2020; Satori et al., 2020). The provision of systematic waste management services ensures that waste is handled efficiently, reducing the environmental footprint—a critical factor in combating the escalating waste problems exacerbated by rapid urbanization (Prajati et al., 2017; Rame et al., 2022). Moreover, the educational programs offered by EMAK.ID contribute to raising awareness about environmental issues, aligning with findings that education is crucial for promoting sustainable practices (Aboyitungiye et al., 2021; Rahmasary et al., 2021).

The F-test results confirm that EMAK.ID Waste Bank's influence on environmental awareness is significant when considering all factors together. This comprehensive impact emphasizes the waste bank's role in creating a more informed and responsible community (Alam et al., 2019). The T-test results further validate that the waste bank's activities, including waste sorting and recycling education, have a direct and positive effect on individual environmental awareness, supporting the argument that combining practical waste management with education is essential for fostering environmental responsibility (Suparmini & Junadi, 2018).

This study demonstrates that active engagement with community members through practical and educational waste management solutions can significantly elevate their environmental consciousness. EMAK.ID Waste Bank's model serves as a robust example of how targeted interventions can foster a culture of environmental responsibility. The success of EMAK.ID Waste Bank underscores the importance of integrating waste management practices with educational efforts to promote sustainable behaviors and enhance overall environmental awareness. Similar strategies could be adopted by other communities facing environmental challenges, potentially achieving comparable improvements in environmental consciousness and waste management efficiency (Agustini et al., 2023; Alite et al., 2023; Towolioe et al., 2020).

Conclusion

In conclusion, EMAK.ID Waste Bank significantly impacts environmental awareness among Bandar Lampung residents, with a notable effect on their values, knowledge, and attitudes towards waste management. The study reveals that EMAK.ID Waste Bank's operations account for 53.2% of the variance in environmental awareness. This highlights the importance of waste banks in fostering sustainable practices and suggests that similar initiatives could be beneficial in other urban areas. Future research should explore additional factors influencing environmental awareness and the long-term effects of waste management programs on community behavior.

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