

Economic Empowerment and Community Education through Bank Sampah: A Systematic Review of Waste Management Initiatives

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Abstract: This article explores the contributions of Bank Sampah (Waste Bank) to economic empowerment and community participation in waste management, based on a systematic review of literature published between 2014 and 2024. The review highlights how Bank Sampah initiatives serve as effective tools for generating supplementary income for low-income households, promoting entrepreneurship, and fostering local economic development through waste recycling. In addition to their economic impact, Bank Sampah programs contribute significantly to community engagement by encouraging residents to take an active role in waste segregation and environmental stewardship. The review identifies the challenges that affect the sustainability of these programs, including financial dependency, infrastructure limitations, and cultural barriers. Despite these challenges, the Bank Sampah model has demonstrated considerable potential in enhancing social capital, empowering marginalized groups, and promoting environmental awareness. The findings underscore the need for policy support, robust community education, and strategic partnerships to ensure the long-term viability and scalability of Bank Sampah programs. This review provides valuable insights into how waste management initiatives can contribute to sustainable socio-economic development and environmental sustainability at the community level.

Keywords: Bank Sampah, economic empowerment, community participation, waste management, sustainability.

INTRODUCTION

Waste management has become one of the most pressing global challenges, particularly in urban areas where the rapid expansion of populations and industries has led to the generation of waste at unprecedented rates. In many developing countries, including Indonesia, traditional waste management systems are often inefficient and unable to cope with the growing volumes of waste (E. Nurhayati & Nurhayati, 2023; Sunari & Nurhayati, 2023). This has resulted in severe environmental degradation, health risks, and economic inefficiencies. However, in response to these challenges, innovative solutions have emerged, one of the most promising being the concept of the Bank Sampah (Waste Bank). The Bank Sampah is a community-based initiative that engages individuals in recycling activities, providing them with a platform to exchange their waste, particularly recyclable materials, for economic credits that can be used for various purposes, such as purchasing goods or services, or even redeeming cash (Miftahorrozi et al., 2022). By

transforming waste into a valuable resource, this model not only addresses environmental concerns but also empowers communities economically and socially.

One of the key features of the Bank Sampah model is its ability to combine waste management with community empowerment (Miftahorrozi et al., 2022). By encouraging individuals to segregate and recycle their waste, Bank Sampah not only helps reduce the environmental impact of improper waste disposal but also provides participants with an economic incentive to engage in these practices. Recyclable materials collected by the Bank Sampah are exchanged for credits, which can be redeemed for goods or services. This system creates a direct link between waste management and economic benefit, offering low-income households an opportunity to generate additional income. Furthermore, this model helps alleviate poverty by providing financial benefits to communities that might otherwise have limited access to economic resources (Ismiraj et al., 2023). This innovative approach empowers individuals and communities, promoting a sense of ownership

and responsibility towards waste management, and encouraging long-term behavioral change (Ismiraj et al., 2023; Miftahorrozi et al., 2022).

Moreover, the Bank Sampah model significantly contributes to the promotion of community participation in waste management activities. Traditional waste management systems often operate through centralized, top-down approaches where the public has little involvement in decision-making or implementation. In contrast, Bank Sampah is rooted in grassroots efforts, where local communities actively engage in managing their own waste. This participatory approach not only fosters greater public awareness about the importance of recycling but also builds a sense of collective responsibility. Participants become more aware of the environmental benefits of recycling, which in turn motivates them to continue engaging with the program. This empowerment is particularly important in marginalized communities where access to environmental education and resources may be limited (Nur'aeni et al., 2023; S. Nurhayati et al., 2020; S. Nurhayati, Nurjaman, et al., 2024). By taking part in these initiatives, individuals acquire valuable skills in waste management, thereby contributing to sustainable practices at the local level.

The primary aim of this literature review is to explore and critically analyze the contributions of Bank Sampah to both the local economy and community education and participation in waste management. While many studies have focused on the environmental impacts of recycling and waste segregation, there remains a gap in the literature regarding the socio-economic benefits of these initiatives. This research seeks to bridge this gap by examining how the Bank Sampah model fosters economic improvement in local communities, particularly by generating income through the recycling of waste. Additionally, the review will delve into the role that Bank Sampah plays in enhancing community participation in waste management practices, thus contributing to a culture of environmental responsibility and collective action. The novelty of this study lies in its focus on the socio-economic dimensions of the Bank Sampah model, an aspect that has not been fully explored in existing literature. While many studies emphasize the environmental benefits of waste banks, there is less research on how these programs contribute to local economic development and community participation. This

literature review seeks to fill this gap by providing a comprehensive analysis of the multi-dimensional impacts of Bank Sampah. It will explore how the program contributes not only to reducing the environmental footprint of waste but also to increasing household incomes, enhancing community cohesion, and fostering a culture of sustainability. Additionally, the review will assess the challenges faced by these programs, such as financial constraints, infrastructural limitations, and the need for greater public awareness, which could hinder the effective implementation and scalability of the Bank Sampah model.

The contribution of this research is twofold. First, it expands the current understanding of waste management practices by highlighting the economic and social benefits of the Bank Sampah model. By focusing on community-based solutions, this review sheds light on how waste management can be approached as a tool for economic empowerment and social development. Second, it provides valuable insights into the factors that contribute to the success of Bank Sampah initiatives, offering practical recommendations for policymakers, non-governmental organizations, and community leaders who wish to implement or scale up similar programs. Through this, the study aims to influence the broader discourse on sustainable waste management and community empowerment, offering a model that can be adapted to different socio-economic contexts and contribute to national and global efforts towards sustainable development.

METHOD

This study employs a systematic literature review methodology to explore the contributions of the Bank Sampah (Waste Bank) model to economic improvement and community participation in waste management. A systematic review is an effective method for synthesizing existing research, identifying key trends, and drawing comprehensive conclusions from a range of scholarly sources (Iswahyudi et al., 2023; S. Nurhayati, Kurnianta, et al., 2024). This approach allows for a thorough analysis of the socio-economic impacts of Bank Sampah initiatives. The review process begins with the identification of relevant academic databases, including Google Scholar, DOAJ, Scopus, Semantic Scholar, and ResearchGate. To ensure

the relevance and timeliness of the findings, only articles published within the last ten years (2014–2024) are included in this review. This time frame allows the study to focus on the most current research and developments surrounding the Bank Sampah model. Keywords such as “Bank Sampah,” “waste management,” “community participation,” “economic empowerment,” “recycling,” and “sustainable development” are used to guide the search. Studies focusing on Bank Sampah initiatives, especially those in Indonesia or similar community-based waste management programs, are prioritized. The selection process involves screening titles and abstracts to identify studies that are directly relevant to the research questions. The inclusion criteria are based on the focus of the study on the Bank Sampah model, its socio-economic and environmental impact, and the quality of the methodology used in the research. Articles that do not address the key research questions or lack empirical data are excluded. Data analysis were conducted using thematic synthesis, which involves identifying recurring themes and patterns across the selected studies. The analysis will focus on understanding the impact of Bank Sampah on local economic development, community engagement, and the challenges faced by these initiatives. This methodology will provide a comprehensive and rigorous synthesis of the current state of research on the socio-economic contributions of Bank Sampah.

RESULTS AND DISCUSSION

This section synthesizes the findings from a systematic literature review on the contributions of Bank Sampah (Waste Bank) to economic empowerment and community participation in waste management. Drawing on research from the past decade (2014-2024), this review identifies several key themes, including economic empowerment, community engagement, and challenges to sustainability. These themes provide a comprehensive understanding of how the Bank Sampah model contributes to socio-economic and environmental goals, while also revealing the complexities and limitations inherent in its implementation.

Economic Empowerment and Sustainable Development

One of the most frequently discussed benefits of Bank Sampah in the literature is its

capacity to foster economic empowerment, particularly for low-income communities. Numerous studies confirm that Bank Sampah offers an effective strategy for generating additional income for families in marginalized sectors. Through the sale of recyclable materials such as plastics, paper, and metals, households can earn credits or cash, which can significantly improve their economic standing. This supplementary income, though modest in many cases, is often used to address essential needs, including food, healthcare, and education. A study by Miftahorrozi et al. (2022) provides compelling evidence of the economic impact of Bank Sampah, noting that participants in urban areas of Indonesia saw noticeable improvements in their monthly household income through waste recycling activities. The study underscores the economic independence that these programs can create by transforming waste into a resource that directly benefits participants. Similarly, Purwaningsih (2015) highlights that, beyond income generation, Bank Sampah fosters entrepreneurship by encouraging the establishment of small-scale businesses around recycling. These businesses, often centered on waste processing and the production of recycled materials, contribute to local economic development by creating jobs and expanding market opportunities for recyclable goods.

While the direct economic benefits of Bank Sampah are clear, the scale and sustainability of these financial impacts remain a matter of debate. Although modest improvements in household income are reported, particularly in economically disadvantaged areas, the financial viability of Bank Sampah programs is often contingent on external funding sources, including government grants, donations, or support from non-governmental organizations (Ismiraj et al., 2023). Furthermore, as highlighted by previous research, many waste bank participants earn relatively small amounts from waste recycling, which limits the transformative potential of the model for larger-scale economic development (Wulandari et al., 2017). Another important aspect of economic empowerment through Bank Sampah is its alignment with the principles of a circular economy. The reuse and recycling of waste materials reduce the demand for virgin resources, contributing to environmental sustainability while simultaneously creating economic opportunities. According to Rimantho et.al. (2022), the Bank Sampah model enables

communities to adopt a circular economic framework that not only fosters financial independence but also promotes ecological resilience by reducing waste and encouraging sustainable consumption.

Community Education to Improve Community Engagement and Social Capital

Bank Sampah programs also make significant contributions to community engagement by involving local residents directly in waste management processes through community education programs (E. Nurhayati & Nurhayati, 2023; Sunari & Nurhayati, 2023). The participatory nature of these initiatives is one of the most widely recognized strengths of the Bank Sampah model, particularly in terms of fostering a sense of ownership and environmental stewardship among participants. By taking responsibility for their own waste, individuals are not only contributing to cleaner surroundings but are also educated about the environmental impacts of waste disposal and the importance of recycling (Ismiraj et al., 2023). A central finding from the literature is that community engagement through Bank Sampah leads to enhanced environmental awareness and pro-environmental behavior (Janmaimool & Denpaiboon, 2016; Muljaningsih et al., 2023; Rimantho et al., 2022). Haryanto et al. (2017) note that participants in Bank Sampah programs tend to exhibit a heightened understanding of waste management and recycling processes, often becoming advocates for environmental sustainability within their communities (Challcharoenwattana & Pharino, 2018; Muljaningsih et al., 2023). Moreover, these programs serve as platforms for social mobilization, where communities unite to tackle shared environmental issues. This collaborative approach promotes the development of local social capital, enhancing the collective ability to address challenges and seize opportunities (Fatmawati et al., 2022).

Bank Sampah initiatives also foster social inclusion by providing marginalized groups, including women and youth, with opportunities to participate in community-driven activities. As Asteria and Herdiansyah (2022) observe, women in particular play pivotal roles in managing Bank Sampah programs, often taking leadership positions in both administrative and educational functions. These leadership roles empower women, particularly in rural areas, where women's participation in public life is often

limited. Additionally, the involvement of youth in environmental education programs and waste collection efforts helps instill lifelong values of environmental responsibility and community service, thereby contributing to the long-term sustainability of the initiatives. However, the degree of participation in Bank Sampah programs can vary significantly across different communities (Challcharoenwattana & Pharino, 2018; Erika Depi Permatasari et al., 2022). While some communities exhibit strong engagement and high levels of active participation, others face challenges in maintaining consistent involvement. Social and economic barriers, such as poverty, lack of time, or limited waste production, can reduce individuals' willingness or ability to participate fully in waste management efforts (Bhawal Mukherji et al., 2016). Furthermore, cultural attitudes towards waste, including traditional practices of waste disposal or resistance to new recycling behaviors, can impede the effectiveness of these programs in certain areas (Kountouris, 2022). Therefore, while the potential for community empowerment through Bank Sampah is substantial, the practical implementation of these initiatives requires ongoing efforts to overcome cultural and logistical barriers to ensure widespread participation.

Challenges to Sustainability and Scalability

Despite the promising outcomes of Bank Sampah programs, several sustainability challenges persist, which threaten the long-term viability of these initiatives. Financial sustainability remains one of the most significant concerns (Agustini et al., 2023). While Bank Sampah programs can generate income from recyclable materials, many rely heavily on external funding or government support, especially during their initial stages (Erika Depi Permatasari et al., 2022). Without a clear revenue model or sufficient private sector involvement, these programs may struggle to maintain operations once external funding dries up. Another key challenge is the lack of infrastructure, particularly in rural or underdeveloped areas (Khanal et al., 2024). Many Bank Sampah programs lack the necessary collection systems, sorting facilities, and processing plants to handle large volumes of recyclable materials efficiently. Inadequate infrastructure can result in inefficiencies, such as delays in waste collection or improper

segregation of materials, which undermine the overall effectiveness of the program (Salim et al., 2023). Additionally, the informal nature of some Bank Sampah programs, particularly in rural areas, often leads to poor management and suboptimal waste processing, making it difficult to scale these initiatives across larger regions (Fatmawati et al., 2022; Wulandari et al., 2017).

Moreover, public awareness and education are critical for the continued success of Bank Sampah programs. While many communities show interest in recycling, the lack of comprehensive education on waste segregation and recycling methods can limit the success of these initiatives (E. Nurhayati & Nurhayati, 2023; Sunari & Nurhayati, 2023). Effective outreach programs and community training are essential for raising awareness about the environmental and economic benefits of waste management. Without these efforts, even the most well-designed Bank Sampah programs may fail to achieve their desired impact. Finally, regulatory challenges also play a role in limiting the scalability and impact of Bank Sampah. Many regions still lack adequate waste management regulations or face challenges in enforcing existing policies (Hirpe & Yeom, 2021). Policy support and regulatory frameworks are necessary to ensure the sustainability of Bank Sampah programs and provide the necessary infrastructure for large-scale waste management (Muljaningsih et al., 2023). The Bank Sampah model has proven to be a valuable tool for promoting economic empowerment and enhancing community participation in waste management. The ability of Bank Sampah to provide supplementary income, foster entrepreneurship, and promote environmental stewardship is well-documented in the literature. However, the sustainability of these programs hinges on overcoming key challenges, including financial dependency, infrastructural limitations, and public awareness. For Bank Sampah to reach its full potential, a multi-faceted approach is required, one that involves policy interventions, community education, and public-private partnerships to build robust, self-sustaining waste management systems. Addressing these barriers will ensure that Bank Sampah can continue to serve as a model for economic and environmental sustainability, benefiting both local communities and the broader society.

CONCLUSION

This systematic literature review has critically examined the role of Bank Sampah (Waste Bank) in enhancing community participation in waste management and promoting economic empowerment, specifically addressing the research questions and aims outlined in the introduction. The review confirms that Bank Sampah is a promising model for both socio-economic development and environmental sustainability, offering unique insights into how waste management initiatives can contribute to local economies and strengthen community engagement. First, regarding the research aim of understanding the contribution of Bank Sampah to economic empowerment, the review highlighted that these programs play a crucial role in providing supplementary income to low-income households, particularly through the sale of recyclable materials. This economic benefit, while modest, enables households to improve their financial stability and addresses some of the immediate needs such as food, healthcare, and education. Moreover, the Bank Sampah model supports the development of small businesses and entrepreneurial opportunities, reinforcing local economies through the recycling and processing of waste materials. However, the financial sustainability of these programs remains an ongoing challenge, with many initiatives relying on external funding and struggling to establish self-sustaining economic models. Secondly, in response to the research question regarding community participation, the review identified that Bank Sampah fosters active community engagement by involving local residents in waste management. Participation in waste segregation and recycling enhances environmental awareness and builds social capital, contributing to a sense of collective responsibility for environmental stewardship. The model has also demonstrated a capacity to empower marginalized groups, particularly women and youth, by offering them leadership roles and opportunities for social inclusion. However, barriers such as economic constraints and cultural attitudes toward waste need to be addressed to improve participation rates across diverse communities. While Bank Sampah initiatives show promise in achieving economic and social objectives, addressing key challenges such as financial sustainability, infrastructure limitations, and public awareness is essential to ensure their long-term success. Policy

support and community-based interventions will be critical in overcoming these barriers and scaling the model for broader impact.

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