



Digital Transformation in Waste Management: A Study of the Digital Waste Bank Program in Bojonegoro

Maya Puji Lestari*, Ahmad Taufiq & Rupiarsieh

Public Administration Study Program, Faculty of Social & Political Sciences,
Universitas Bojonegoro, Indonesia

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Abstract

This study aims to analyze digital transformation in waste management in Bojonegoro Regency. This study uses a descriptive qualitative method with data collection techniques through literature studies, observations, and interviews. This research is based on the Royyana Theory, which involves five indicators, namely human resources, processes, strategies, structures, and technology as tools to improve performance. The study results show that implementing digital waste banks in Bojonegoro Regency has fulfilled essential aspects of digital transformation. Competent human resources can run the program effectively; the service process is carried out optimally to support work efficiency; digitalization socialization strategies to the community have proven to be efficient and easy to understand; the management structure of the digital waste bank is running well; and the integration of technology has made it easier for people to make transactions digitally. The significance of the results of this study lies in the real positive impact, namely increasing public awareness and participation in digital-based waste management, which ultimately contributes to environmental sustainability. This research shows that digital waste banks can be a relevant innovation model for other regions in supporting digital transformation for ecological management.

Keywords: Digital Transformation; Waste Management; Digital Waste Bank; Bojonegoro Regency

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*Corresponding author:

E-mail: lestarimaya2405@gmail.com

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INTRODUCTION

Environmental challenges have now emerged as one of the world's most pressing issues, requiring action to ensure long-term sustainability. Indonesia presents significant challenges, especially in waste management. Because population growth and urbanization contribute to an increase in waste. Based on data collected from the National Waste Management Information System in 2022, it is stated that 38.2% of waste sources come from household waste. Depending on the type of waste, food waste can make up to 40% of the total composition, while plastic waste comes in second with 17%. To date, 20 million tons of national waste have been produced. However, the amount of waste managed has only reached 10 million tons (Ministry of Environment and Forestry, 2023).

Efforts in managing waste must be the authority of the local government and the community. One of the facilities specifically designed to manage waste is a waste bank with 3R principles consisting of *reduce, reuse, and Recycle*. In addition to being a means of waste management, the role of the waste bank itself is used as a means of education, the implementation of a circular economy, and as a tool for modifying behavior in managing waste. Agencies or institutions that have authority in managing waste banks are local governments, companies, and the general public. This is by the purpose of the Law of the Republic of Indonesia Number 18 of 2008 concerning Waste Management. The results of practical waste management activities can become valuable and profitable production goods so that waste from consumption is not only piled up in landfills. After sorting the waste, the community must be connected to a facility that can handle it, a waste bank (Law of the Republic of Indonesia, 2008).

Various concrete efforts have been made, especially in realizing the SDGs (*Sustainable Development Goals*), which aim to create sustainable development in practice (Amirya & Irianto, 2023). Indonesia ranks with the largest population in the world. This certainly causes the accumulation of waste due to daily activities. Bojonegoro Regency is one of the cities that supports the waste bank initiative to overcome the waste problem. This is evidenced by 168 waste banks spread throughout Bojonegoro Regency. Based on information on

the Bojonegoro Government website, the average waste produced by Bojonegoro Regency from households and companies is 550 tons/day (bojonegorokab.go.id, 2020). The Bojonegoro Regency Government has made a comprehensive strategy to overcome this problem: waste management through the waste bank program.

The application of the concepts of sustainability, benefits, justice, concern, unity, safety, security, and economic value contained in Article 3 of the Bojonegoro Regional Regulation Number 5 of 2017 concerning Waste Management (Bojonegoro, 2017). Waste management agreements are necessary because the article's primary purpose is to improve environmental quality and public health conditions and convert waste into resources, as stated in Article 4. Based on this, the community and the government can collaborate to establish a Waste Bank.

One of the Author observation targets is a waste bank located in Bojonegoro. In addition to the rapid increase in the population, the existence of the State Vital Object project in the oil drilling and processing industry is also a consideration for the establishment of a waste bank. This phenomenon has a direct impact in the form of a considerable increase in waste production, which is not proportional to the availability of land for final disposal.

The rapid development of information and communication technology has also presented digital transformation that triggers opportunities to optimize waste management systems. Improving operational efficiency, accessibility, openness, and data integration are just some of the advantages of turning landfills into digital platforms, namely the Women's Main Waste Bank application,

According to Sepriano (2023), digital transformation is known for new skills developed thoroughly and holistically, allowing adjustments to relationships, organizational structures, cultures, and administrative models to improve community services. So, in addition to making waste management more straightforward, a digital waste bank offers more visible and measurable financial incentives. Individual communities can monitor their participation in recycling programs, earn awards, and track their contributions with the help of online tools and platforms (Sepriano, 2023).

This transformation is also in line with the Sustainable Development Goals (SDGs) agenda by the United Nations (United Nations) agreement. So, based on the Bojonegoro Regent Regulation Number 74 of 2020, the Bojonegoro Regency Government hereby designed to establish a digital waste bank. This program aims to increase public awareness and togetherness in waste management and increasingly develop into an industry with a touch of modernization to use it effectively and efficiently, including in its bookkeeping methods. By East Java Governor Regulation Number 9 of 2022 concerning Regional Waste Management, the Bojonegoro Regency Government targets a reduction in organic and inorganic waste, especially plastic waste, by 30% through the establishment of a digital waste bank (bojonegorokab.go.id, 2022).

Research on digital transformation by Fony Pangandaheng et al. entitled Digital Transformation: A Literature Review on the Business and Government Sectors in 2022. The research method is a literature study. It was obtained that in the business sector, strategies can be applied by synergizing digital transformation with cultural values, especially at the top management. On the other hand, leadership positions and the commitment of all stakeholders are necessary for government sector planning. Creating public values in the fields of economy, administration, society, and democracy is a broad strategy that can be carried out. In terms of government, knowledge is needed about managing initiatives in digital transformation. Although digital transformation can be defined as an absolute necessity, the level of transformation seems to be in harmony with the organization's capabilities (Pangandaheng et al., 2022).

M. Miftahul Huda, Natalina, researched waste management in 2022, titled "Analysis of the Implementation of the Waste Management System in Rajabasa District, Bandar Lampung City." The study used a qualitative method. The results contained waste produced from 7 villages in the Rajabasa sub-district, reaching approximately 25 tons daily (Huda & Natalina, 2022).

Furthermore, research on the topic of digital waste banks has been carried out by Rossa Ilma Silfiah, Ali Mohtarom, Kuni Muqtaniyatul Ulum with the title Digitization of Waste Banks with the Implementation of a

Clean Application System in Karangsono Village, Sukorejo District, Pasuruan Regency in 2021. The research method chosen is Community Development. The results of this study show that some residents choose to burn garbage that is considered unnecessary and trade unused items to flea markets, which shows a lack of concern for the environment. The participants were more elderly than young people because young people in the area were busier at work. As a result, the implementation of the waste bank application system is difficult to accept because the tendency of the public still does not understand related to modern technology applied to waste banks (Silfiah et al., 2021).

Sustainable and innovative waste management is urgently needed to deal with environmental problems and achieve sustainable development goals. The transformation of the digital waste bank is not only a step forward in waste management but also an inseparable part of the design of the strategy implemented to significantly impact the development of a clean, healthy, and sustainable environment. This innovation also has great potential to encourage inclusive green economic growth, especially by utilizing digital technology as the main driver. In this context, the transformation of digital waste banks in Bojonegoro Regency has high strategic value in answering various challenges, including low public awareness of waste management, limitations of traditional infrastructure, and the need for technology integration in regional development.

This step will not only increase the effectiveness of household waste management. However, it will also help create a more ecologically aware society and enable it to face future challenges more responsively. Based on this background, this research is focused on analyzing digital transformation in waste management in Bojonegoro Regency. This study also examines how the digital waste bank program can significantly impact the community's quality of life and identify optimization opportunities in the implementation process.

This study aims to understand the application of digital technology in waste management, evaluate the effectiveness of the digital waste bank program, and explore its impact on public awareness and participation

in better environmental management. The urgency of this topic is becoming increasingly important in the era of digitalization when the synergy between technology, society, and environmental policies can be the key to the success of sustainable development. By conducting this analysis, the research is expected to offer optimal strategies to increase the role of digital transformation as a solution to complex and sustainable environmental problems.

RESEARCH METHODS

The research method chosen is qualitative descriptive, drawing conclusions about the conditions at the research site based on available data. This research aims to analyze digital transformation in waste management activities in Bojonegoro Regency. The indicators used to support the research are indicators by Royyana's (2021) presentation: processes, human resources, structures, strategies, and technological developments.

To ensure the relevance and depth of the data, this study uses purposive sampling, a sample selection strategy based on specific criteria previously determined. This criterion is focused on subjects with competence and direct

experience in implementing digital waste banks. These subjects include waste bank managers, related parties in local government, and the community who use digital waste bank services.

The data collection technique is carried out through three main approaches, namely:

1. Literature Studies: Collect and analyze secondary data from books, scientific journals, papers, and official documents relevant to the research topic. This literature study provides a theoretical and contextual foundation for further analysis.
2. In-Depth Interviews: Use structured and semi-structured interview guides to investigate information from sources such as waste bank managers, the community, and relevant officials. The information obtained will focus on the implementation, benefits, and challenges of managing digital waste banks.
3. Direct Observation: Conduct direct observations at the location of the digital waste bank to identify its process, technology used, community interaction, and management structure's effectiveness.

The informant subjects in this study can be seen in Table 1.

Table 1. Research Informant Data

It	Information	Informant
1	Head of Waste Division of the Environmental Agency	1 Person
2	Waste Bank Officer	1 Person
3	Waste Bank Application Users	2 people
Sum		4 people

Source of 2024 Processed Data Table

According to Miles and Huberman in Sugiyono (2009), data analysis is divided into three parts: data reduction, data presentation, and conclusion drawing.

1. Data Reduction is summarizing, sorting, and simplifying raw data to highlight information relevant to the research's focus. Data not aligned with the research objectives will be eliminated to maintain the analysis's efficiency and focus.
2. Data Presentation: Reduced data is organized in narratives, tables, diagrams, or infographics to provide a clear and systematic picture. Data presentation supports the understanding of patterns, relationships, and trends that emerge from the research results.

3. Drawing Conclusions: The final step is to interpret and generalize based on the analyzed data. To ensure the validity of the findings, conclusions were drawn by comparing primary and secondary data.

This research is designed to produce a deeper understanding of the effectiveness of digital transformation in waste management in Bojonegoro Regency and to identify optimal strategies that can be applied to support the sustainability of the digital waste bank program.

RESULTS AND DISCUSSION

The application of technology is indispensable in supporting digital transformation, which is closely related to

changing old processes and exploring new possibilities. The role of digital transformation is the use of digital technology to change work patterns in various sectors (Pangandaheng et al., 2022). It is important to research the application of digital transformation to the use of waste banks in Bojonegoro district to provide an overview of the readiness of the people of Bojonegoro city to take advantage of digitalization optimally.

Based on Royyana's Theory (2021) which states that digital transformation is defined as a change that occurs in institutions and agencies with the involvement of various aspects, namely:

1. Human Resources (HR)

Implementing a transformation can require significant time, money, and personnel, as well as the unavailability of resources in the institution to see the transformation process complete. To overcome these obstacles, it is essential to plan and budget transformation efforts carefully (Septian, 2021). This can include identifying key resources, i.e., human resources, developing realistic schedules, and engaging stakeholders in the planning process to ensure that everyone understands the human resources needed to achieve success. In addition to improving program efficiency, reviewing current human resources can assist companies in identifying potential risk bottlenecks (Kodriyah et al., 2022). An institution can avoid barriers by examining its policies and procedures and ensuring quality and compliance with legal obligations.

Based on the results of an interview conducted by the Head of the Waste Division of the Bojonegoro Regency Environment Agency regarding the process of transforming conventional waste banks into digital waste banks, the integration of cultural values in the provision of digital waste bank services, and the efficiency of the use of waste banks in helping waste officers to book waste deposits from the community, it shows that waste processing activities can run optimally accompanied by the provision of education to the community regularly because the existence of waste must be minimized. Activities to optimize the use of waste banks involve the people of Bojonegoro as a whole, without exception, so participation from all levels of society is needed, not only the government. The next effort is to collaborate with waste bank group partners; the

Bojonegoro district government conducts waste management digitalization training. In the digitalization training, it was explained how the partners of this waste bank group will be required to disseminate knowledge and have the ability to convert digitally in the future.

The waste bank group is dominated by housewives and young women in its empowerment. This training not only improves the skills of members but also offers career prospects at the local level, as announced by the waste bank group. Partnering with a waste bank group is not only an effective method but also important for developing long-term partnerships with local communities.

The government can close the participation gap by ensuring that the people of Bojonegoro have the understanding and skills to participate actively in the digital environment. In line with his book, Sepriano (2023) states that the availability of human resources with the necessary knowledge and skills is important to ensure that the expected benefits principles are followed while implementing e-government.

Regarding the integration of cultural values in the provision of digital waste bank services, data was obtained that according to the information of the resource person, the culture that must be raised first is a sense of responsibility, a sense of belonging, and understanding the importance of waste management. So it is hoped that the existence of digital waste bank technology can create literacy skills before asking questions related to the digitization of waste banks and during waste collection activities so that they can be handled effectively and faster because, in the women's parent waste bank application, the process or steps starting from waste collection to money withdrawal are already listed. Therefore, understanding must be instilled through information disseminated thoroughly both as internal consumption and in cyberspace continues to be developed because it can hinder digital transformation and service processes.

The efficiency aspect of the implementation of digital waste banks in helping waste bank officers to be able to manage waste deposited by the community shows that the implementation of waste banks runs optimally in helping officers because all waste bank officers get digital training usually

explained and assisted related to the preparation of financial reports on the application contained in the waste bank as a form of responsibility from the management to the community.

This indicator is in line with previous research, especially the statement that one of the components of digital transformation involves interrelated changes in society, culture, administration, and organization.

2. Process

Initially, this waste bank program was carried out manually. In 19 sub-districts and 164 villages, Bojonegoro Regency has formed 168 Waste Bank groups, whose main task is to sort waste and sell it directly according to its weight in kilograms. This is by the Saraswati article (2023), which explains manual waste management activities by waste bank groups every day (Bungram, 2023)

Based on interviews with waste bank officers in Bojonegoro regarding the level of public awareness in sorting waste based on its type before being deposited into the waste bank, the organizational structure in the waste bank to support service and responsiveness to the community, as well as service strategy innovations that can be applied by utilizing digital technology so that service activities to waste depositors can be carried out optimally.

Based on the interviews, data was obtained that the public's concern for sorting waste types before being deposited is still very lacking, as evidenced by the fact that most of the waste brought to the officers has not been sorted. That is why, initially, not all residents participated in the waste bank. Based on the description above, the program's objectives have not been achieved, public knowledge about waste management is still low, and in terms of self-management, the community assumes that waste bank officers will directly sort the waste disposed of. As a result, the target to be achieved is not optimal.

However, the innovation of a digital waste bank called the Women's Main Waste Bank application now benefits not only the waste bank group but also the Bojonegoro Regency Environmental Agency because people can deposit waste into a machine without meeting the officer. Besides that, it also allows more accurate data analysis. The Bojonegoro Regency Government fully supports this

program and works with IT experts to improve the quality of the application.

In addition, Bank Jatim also supports this program by providing identity cards to members of the digital waste bank group. Thus, they can transact through the bank's Virtual Account. In addition, 168 waste bank groups have received assistance in the form of three-wheeled vehicle loans to help transport waste. The SATU Indonesia Awards recognizes this initiative because it can positively impact the environment and the surrounding community, so it plays a role in increasing community participation. (Nurullah, 2023)

Adjustment of the organizational structure is considered important to improve the service and responsiveness of the digital waste bank; namely, digital transformation is carried out so that information is conveyed to the public about waste management services in the form of a matrix and accelerates the evaluation process of fluctuations and transaction values. In addition, (Rasid & Pramono, 2021) also explained that digitalization will accelerate and simplify the process of public services and decision-making.

A strategy that can be applied as an innovation to accelerate the waste bank service process by utilizing digital technology is the creation of a digital platform dedicated to management, including transactions, collection, and sorting of waste. The existence of a digital platform that is integrated with this technology can certainly support the success and accelerate waste bank services more optimally.

Every transaction on the waste bank can be directly captured as data, allowing storage and withdrawal to be carried out using various remote location patterns without direct communication with bank officials (Bungram, 2023).

This indicator is in accordance with previous research, namely by Eriyanto Rasid and Ramona (21), which shows that the digital transformation process can be more efficient in terms of time and cost, and the community can be facilitated in the development of the Women's Main Waste Bank application because it can be accessed from anywhere.

3. Strategy

An important element in the effectiveness of implementing the recommended system is the level of preparation of the waste bank

group. To ensure the success of the implementation, group officers must participate in digitalization training and system socialization.

The interview conducted by the Head of the Waste Division of the Bojonegoro Regency Environment Agency covered several aspects related to improving the security and accuracy of information system-based data, performance indicators to assess the digital transformation of waste banks, and the working mechanism of the women's parent waste bank application.

Based on the interview results, data was obtained that officers' efforts to update regularly, looking at the activities of waste bank groups or the difficulties experienced so that they can make improvements, and adjusting the security system and data accuracy must improve the security and accuracy of the data.

In terms of performance indicators, to assess the digital transformation of waste banks, it is necessary to evaluate fluctuations and transaction values digitally using the objective matrix method; the indicators used for performance assessment are accessibility, data integration, and improving people's digital skills. By creating a matrix of several performance indicators of the waste bank group, the objective matrix method is used in evaluating the waste bank group.

According to the objective matrix, it is a system for measuring partial productivity that is designed to track productivity in each department within the organization using productivity standards that are specific to that department. Each performance indicator has a weight based on how important the criteria are to the institution's goals, along with targets in the form of specific improvement paths (Yulifiyanto & Haryadi Sarjono, 2017)

The use of technology in services has many benefits. Technology strategies allow officers to develop a comprehensive plan to integrate technology into public service delivery, thereby achieving digital transformation indicators consisting of data management, increasing accessibility, and people's ability to take advantage of digitalization.

This indicator is based on previous research, namely by Sopamena (2024), which explains that improving public services is very important in a technological era like this. Public services are a strategy carried out by agencies

to facilitate services and access the services provided.

4. Structure

This female parent waste bank application has several features that make it easy to use for both customers and waste bank groups (Silfiah et al, 2021).

According to Rogers (1995), complexity is the difficulty of an innovation to understand and implement. In this scenario, it is clear how big the obstacles are passed. Improvements and improvement activities are always intensified as a manifestation of follow-up, routine monitoring, and review. The public service officers in Bojonegoro Regency act as agents of change in the work environment (Pebriyanto, D. Y., & Suprastiyo, 2023).

The results of the interview conducted by the Head of the Waste Division of the Bojonegoro Regency Environmental Service regarding the efforts implemented to ensure that waste bank officers have good capabilities and are competent in the use of technology, handle cultural shifts so that the existence of waste banks can be interpreted positively, and implement the socialization of the digital waste bank system in Bojonegoro district.

The efforts implemented to ensure that waste bank officers have good capabilities and are competent in the use of technology, namely by providing digitalization training by the local government so that each group of waste banks understands technological developments, prepares themselves for digital services, and still complies with the law. Thus, waste bank officers can perform excellent service per applicable regulations (Setyaningsih, 2023).

In the women's parent waste bank application, admins, customers, and couriers can use various account management features to facilitate account management and application operations. Customers can check transactions, sell waste, manage accounts, and withdraw balances. Customer balance information can be seen in the balance withdrawal menu. By exchanging the balance, we can get donations or credit (Silfiah et al., 2021).

Efforts to handle cultural changes are by conducting gradual socialization and guidance so the community can get used to every change. In line with the results of interviews conducted by waste bank application users in Bojonegoro regarding the mechanism for the socialization

of the digital waste bank system in Bojonegoro district, socialization activities are carried out by presenting stakeholders such as the Regency Government, village officials, or other related parties. Socialization usually gets follow-up in the form of visits to people's homes to be given a further understanding of the program.

Thus, socializing regularly and coaching are essential for adjusting to every change. To encourage digital transformation in services, intensive, comprehensive digitalization training for residents to improve digital literacy efforts, providing the community's role, introducing digital waste banks, and then developing easy-to-develop applications are some of the efforts.

5. Technology

According to Listyaningsih et al. (2024), managing public services with the integration of technology can increase their efficiency, quality, and effectiveness. Information technology also assists citizens in obtaining public services more efficiently, makes the government more transparent and accountable, and accelerates the public service process.

The interview was conducted with the Head of the Waste Division of the Bojonegoro Regency Environment Agency regarding the role of technology in encouraging transparency and accountability in the digital waste bank service process and efforts to minimize community difficulties when using digital waste bank services.

Based on the interview results, it is known that technology has an important role in accelerating services, so the implementation of digital waste banks has good transparency and accountability. In addition, digital document processing systems and waste disposal procedures allow for more effective information sharing, storage, and retrieval, including fast document access, better transparency, and less risk of data loss. Thus, the level of service provided by the women's parent waste bank application has also become more reliable, as data is no longer processed manually. The women's parent waste bank application can help achieve maximum service quality improvement in the waste management process.

Efforts to minimize community difficulties in using digital waste bank services can be overcome by evaluating and finding a

solution to the obstacles experienced so that services are more optimal. Thus, the community does not need to be afraid of various obstacles that may occur because the Bojonegoro Regency Environmental Service can undoubtedly overcome them. On the other hand, technology and digitalization increase the transparency and openness of services, thus allowing users to find out how to collect waste through the Women's Main Waste Bank application. Information technology can save time and costs to improve the effectiveness and efficiency of public service management (Sopamena, 2024).

In July 2022, the number of waste bank groups increased from 168 to 188, with a target of reaching 430 by the end of 2022. Meanwhile, not all of them have taken advantage of the new Women's Main Waste Bank application in several sub-districts and villages that utilize this program because they are waiting for the readiness of other waste banks. However, the team of officers has prepared 430 Google Form links based on the number of villages in Bojonegoro and sent them to 168 member waste banks (bojonegorokab.go.id, 2022).

Some of the waste bank groups in Bojonegoro Regency are still running manually. This implies that people who cannot access digital services (or prefer non-digital options) have problems or shortcomings that can only be overcome through technology, training, or encouraging non-users to use digital services.

According to the article, access to digital services refers to it (Angsana Dkk, 2022) "Digital Enforcement" or digital coercion. His research has found a considerable increase in the proportion of people who have difficulty accessing government services because digital channels are the only alternative, as well as claims that access to public services is a human right and that the transition to digital public services that are not equally accessible deprives some people of their rights. Bojonegoro residents have not fully felt the Bojonegoro Regency digital waste bank program because it is waiting for the readiness of each waste bank group (Bungram, 2023).

Based on the results of the previous discussion, the researcher will outline the identification and procedures involved in digital transformation in Bojonegoro. Because digitalization is a form of service development, an agency can take advantage of it as a positive

impact because the ease of data access facilitates government administration while encouraging efficiency and effectiveness. However, in this case, the bureaucracy must be flexible, imaginative, creative, and focused on solutions.

Integrating digital waste banks with technological sophistication brings convenience and modernization to the community in managing waste. Implementing a digital waste bank in Bojonegoro Regency will be a reference for surrounding districts to participate in technology literacy. The convenience offered by digital waste bank services makes people more aware of the importance of waste management, which can later be deposited into the waste bank to be exchanged for rupiah and generate profits. In addition, the level of capability of waste bank officers in providing services will add added value to make depositors comfortable and safe in transacting at digital waste banks.

CONCLUSION

The Bojonegoro Regency Government's digital transformation efforts in waste management have shown positive results, primarily through implementing the digital waste bank program. However, its effectiveness has not been fully felt by the entire community because other waste bank groups are still unable to adopt this system due to obstacles.

The progress of this program is measured based on five leading indicators put forward by Royyana (2021): human resources, processes, strategies, structures, and technology. Regarding human resources, training, and socialization have been carried out to increase the capacity of the community and government apparatus to manage the digital system. The waste management process has also become more efficient with a digital platform that can shorten service time. Regarding strategy, the government regularly updates digital systems to make them more accessible, allowing for accurate data collection and processing. In terms of structure, collaboration efforts between stakeholders through periodic socialization have been carried out to ensure that the implementation of the system remains relevant to the culture of the local community. Finally, the technological aspect significantly accelerates public services and facilitates evaluation, reducing barriers.

The success of this digital transformation provides a strategic direction for further development. To increase the reach of the benefits of the digital waste bank program, it is necessary to conduct a more in-depth evaluation related to obstacles to community groups that have not actively participated. Further research is recommended to identify the factors influencing technology adoption among local communities and examine the potential integration of digital waste banks with other initiatives that support green economic growth. Thus, this transformation can be optimally utilized to support waste management that is more inclusive, sustainable, and relevant to the sustainable development goals (SDGs).

The Bojonegoro Government's digital transformation efforts have yielded positive results. However, the digital waste bank in Bojonegoro Regency has not been fully felt by all Bojonegoro people because they are waiting for the readiness of other waste bank groups.

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