

Improving Service Quality at Bank Sampah APEL, Sleman Yogyakarta, Through a Digitalization Program

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ARTICLE INFO

Article history

Received: September 5, 2024

Revised: October 3, 2024

Accepted: December 13, 2024

Keywords

Waste Crisis;

Waste Bank;

Bookkeeping Management;

Digital Technology.

ABSTRACT

Background: Yogyakarta faces a waste crisis due to the Piyungan landfill closure, with Sleman generating 320 tons of waste daily. Waste Banks like APEL in Sleman manage waste through composting, recycling, and crafting, reducing waste and offering economic benefits.

Contribution: The application of excel in the preparation of financial statements will contribute greatly to improve the quality of financial statements presented by BUMDes and have an impact on the effectiveness of decision making which ultimately supports the progress of these BUMDes.

Method: APEL employs the 3R system, raising environmental awareness but faces challenges in manual management and limited digital promotion. BUMDes Damar Limo manages diverse transactions and must produce key financial reports.

Results: BUMDes Damar Limo of central Bengkulu Region. has CekDam tourism, tourist trains and batik production as main business. Transactions that occur in these BUMdes include receipt of capital deposits, purchases of vehicles, equipment, raw materials, merchandise inventory, and supplies, payment of salaries and other costs, and revenue generation. The reports that must be presented include the income statement, statement of financial position, and statement of BUMdes health.

Conclusion: The implementation of the Excel Accounting has an impact on presenting higher quality financial statements and managing BUMDes efficiently and professionally.

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1. Introduction

Waste is a critical environmental issue that demands serious attention. Its presence not only disrupts the aesthetic of the environment but can also lead to ecosystem damage. Waste dumped into the ocean, for instance, poses a significant threat to marine life and can create dead zones in bodies of water, gradually reducing biodiversity . Therefore, protecting the environment from waste pollution is of utmost importance [1]. One region facing this challenge is Yogyakarta.

Yogyakarta is still experiencing a waste emergency because the Piyungan Regional Final Processing Site (TPA) has ceased its operations. As a result, many residents struggle to manage their waste, leading to garbage piling up in several locations [2]. Kustini Sri Purnomo, the Regent of Sleman, stated that Sleman is one of the regencies in Yogyakarta that contributes the most waste. It is estimated that at least 320 tons of waste are produced daily. This large amount is due to the increasing population in Sleman, which currently stands at 1.1 million residents, plus an additional 300,000 newcomers [3]. This issue has led to calls for independent waste management in each area, one of which is through the establishment of waste banks.

Waste banks play an important role in helping communities maintain environmental cleanliness, for example by collecting or processing waste piles into compost, recycled crafts, and more. This system allows local residents to sort their waste and hand it over to the waste bank for more effective management. Additionally, the waste bank serves as a service center for waste depositors, operated by waste bank staff. The waste management process in these banks reflects principles similar to conventional banks, with the difference being that depositing waste in a waste bank generates benefits, much like saving money in a regular bank [4].

In general, waste banks play a crucial role in environmental conservation by reducing waste by 1.7%, equivalent to 1,389,522 tons per year, while also generating an average income of Rp. 1,484,669.82 annually [5]. The contribution of waste banks has been proven in various regions of Indonesia, including Yogyakarta, where their positive impact has been recognized and appreciated by the government. One example of a waste bank that has received commendation from the local government in Yogyakarta is the Bank Sampah APEL.

Bank Sampah APEL (Ayo Peduli Lingkungan) is located in Condongcatur, Sleman, Yogyakarta, and has been active since October 3, 2010. Over the years, APEL has won several Green and Clean awards from the regional government of DIY Province and Sleman Regency. The establishment of APEL as a waste bank was initiated by the serious waste accumulation problem, prompting its formation to address this issue [6]. APEL has made a significant contribution to the government in waste management and works in collaboration with the Environmental Agency to maintain environmental sustainability.

The vision of the APEL Waste Bank in RW 13, Condongcatur, Sleman, Yogyakarta, is to create a clean and green environment free from waste. This vision reflects APEL's primary goal of maintaining environmental cleanliness and promoting greening in the area. By emphasizing sustainable environmental conservation efforts, APEL is committed to changing

the mindset of the community to be more aware of the impact of waste and the importance of preserving nature.

APEL's mission is to encourage the residents of RW 13 to actively participate in waste management through the 3R principles (Reduce, Reuse, Recycle). This means residents are expected to reduce waste production by limiting the use of hard-to-process materials (Reduce), reuse items that are still functional to minimize waste (Reuse), and recycle waste, especially inorganic waste, so it can be reused in new, useful forms (Recycle).

In addition, APEL aims to manage waste that has been sorted by the residents, which is then processed to increase income for the community while keeping the environment clean and orderly. Bank Sampah APEL encourages residents to plant trees in their yards as part of its greening mission, which not only beautifies the environment but also helps absorb pollution and improve air quality around RW 13 [7].

Essentially, the APEL program is similar to typical waste banks, where each depositor receives a savings book that records the amount of waste deposited. However, the difference lies in the types of waste accepted, as APEL only accepts paper, plastic, glass, and metal. Additionally, APEL frequently processes waste into handicrafts. Nevertheless, its main goal remains the same: to reduce waste accumulation and address the waste crisis in order to maintain environmental sustainability. Below is an image depicting the waste collection activities and the processing of waste into crafts:



Figure 1. Waste Management Activities

Although the Bank Sampah APEL program generates profit, introducing innovations like waste banks to the community and encouraging collective concern for waste is not an easy task. This is due to the apathetic attitude of some community members toward the environment and their lack of awareness about the dangers of waste. Additionally, the partners' limited understanding of technology often leads to complaints from customers, particularly regarding membership data management. Moreover, the partners' lack of sensitivity to the benefits of

social media has resulted in inactive and monotonous social media platforms. This situation has hindered the promotion of the partner's programs to a broader audience and limited their ability to attract stakeholders. As a consequence, the waste bank's craft products are not well-known and are less marketable. Below is a screenshot of the partner's social media and conventional bookkeeping system:

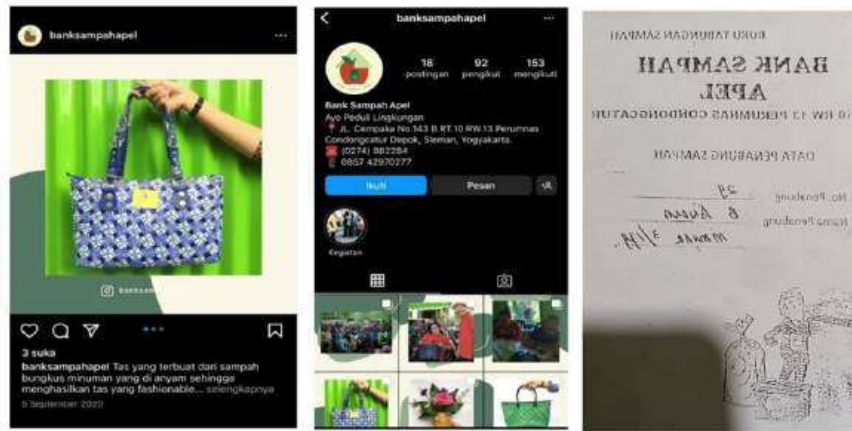


Figure 2. Partner's Social Media and Bookkeeping

Based on the situational analysis, it can be concluded that the partner's main challenges lie in their traditional management system, as there is no digital service in place, making data collection impractical and inefficient. Another issue is that the account books frequently suffer damage due to improper storage, scratches, exposure to water, or other risks, which ultimately creates additional waste. This contradicts the vision and mission of Bank Sampah APEL. Secondly, the promotion of the Bank Sampah APEL program is lacking because social media has not been fully utilized to introduce the partner's programs. There is also insufficient knowledge and expertise in creating social media content, as well as the absence of promotional videos explaining the program, among other issues. The impact of this situation is a lack of community participation in waste management, which prevents the program's objectives from being achieved. Additionally, public awareness of the importance of waste management has decreased, which can exacerbate environmental issues [8]. Without effective promotion, the potential for collaboration with other parties in this program is also limited .

Therefore, the purpose of this community service activity is to provide training for the partners on a digital service system and to equip them with the skills to promote their programs more effectively through social media. Additionally, the community service aims to mentor the partners in using applications and creating content to assist in promoting their craft products. This activity aligns with the Key Performance Indicators (IKU) 2 of Universitas Amikom Yogyakarta, which emphasizes providing students with experiences outside the campus. As such, this initiative is expected to offer opportunities for students, particularly those in the "Merdeka Belajar Kampus Merdeka" (MBKM) program, to gain practical experience beyond the classroom. It will also allow them to develop themselves and apply or recognize several

subjects they have studied, such as Digital Business (in mentoring the promotion of partner craft products on social media), Information and Communication Technology (for optimizing applications and social media), and Public Relations Media Production (in creating partner promotional videos).

Moreover, this community service project is in line with IKU 5, which stipulates that the work of lecturers should benefit society or gain international recognition. This is demonstrated by the implementation of a digital service application that will be used by the APEL Waste Bank group to improve the quality of their services and marketing efforts.

Several key elements will be the main focus of this community service activity: 1) Modernizing the Management System: the goal is to make the waste bank's management system more efficient and effective by incorporating digital technology for data management, transaction tracking, and handling customer complaints. This will enhance the services provided by the waste bank to the community. 2) Improving Promotion and Communication: Strengthening the promotion of the Bank Sampah APEL by increasing social media activity and creating engaging and informative promotional content. The aim is to raise public awareness of the Bank Sampah APEL program, broaden the reach of its messages, and encourage community participation. 3) Enhancing Partner Knowledge and Skills: Providing training and guidance to partners on creating social media content, using digital technology, and promoting craft products effectively.

2. Method

The implementation Method of the Community Empowerment Program to Enhance Service and Marketing Quality at Bank Sampah APEL, Sleman, Yogyakarta through digitalization involves three methodological stages: preparation, execution, and evaluation. Here's the detailed explanation:

2.1. Preparation Stage

In this stage, the team begins with a survey and direct observation at the Bank Sampah APEL to understand the situation and challenges faced by the partner. The survey gathers data on operational processes, administrative management challenges, and issues with social media use. After the observation, the team holds discussions with the partner to ensure a shared understanding of the main problems and to schedule the activities. These discussions are crucial for developing a realistic plan tailored to the partner's needs, while also incorporating feedback on their expectations for the program's outcomes. The preparation phase is crucial as it lays the foundation for the program's success. Through surveys and direct observation, the project team can identify problems in a more in-depth and specific manner, ensuring that the solutions offered are truly aligned with the partner's needs [9]. Additionally, the discussion process not only strengthens communication

between the team and the partner but also allows both parties to agree on realistic priorities and targets. With thorough preparation, the program implementation can be more effective, measurable, and aligned with the partner's expectations, ultimately leading to optimal positive outcomes.

2.2. Socialization program

Several activities are carried out during this stage:

- 2.2.1. **Initial Socialization:** Following the survey and observation, the team conducts an initial socialization with the management and members of Bank Sampah APEL. This session emphasizes the importance of the training, explaining the goals and long-term benefits of using digital technology for bookkeeping and promotion. The team also gives an overview of the bookkeeping application and social media as part of the solutions to be implemented. The socialization phase in community service activities plays a crucial role. This process not only helps individuals interact and communicate more effectively with others but also serves as a comprehensive tool for personal development. Through socialization, individuals gain new knowledge, insights, and skills that can support their roles in society [10]. Moreover, socialization functions as a medium for understanding and internalizing the values, norms, and cultural practices that prevail in their surroundings. By grasping these aspects, individuals can participate more actively and in alignment with societal expectations. Furthermore, socialization enhances the ability to adapt to a constantly changing life environment and aids in self-reflection, allowing individuals to better understand their roles within the community. Thus, socialization forms an essential foundation for building effective and sustainable engagement in community service activities.
- 2.2.2. **Training:** The training is divided into two sessions, held at different times: First Session: Focuses on using a website and digital bookkeeping application. Bank Sampah APEL managers are introduced to an application that tracks customer balances, monitors waste transactions, and uses other digital features to reduce manual errors. Second Session: Focuses on social media usage for promotion and content creation. The team teaches basic graphic design techniques using applications like Canva, and strategies for effective promotion on platforms such as Instagram. The goal is to enhance bank Sampah APEL's visibility in the community.
- 2.2.3. **Technology Implementation:** After completing both training sessions, the next step is applying the technology. The team, alongside the partner, conducts a trial run of the bookkeeping application to assess its functionality within the waste bank's operations. This allows both the team and the partner to identify any weaknesses or issues that need to be addressed before full implementation. It is important to note that digital bookkeeping has a positive impact on reducing paper usage and also simplifies the process of inputting and transmitting transaction data. For this reason, digital

bookkeeping is highly needed in today's era [11].

2.3. Evaluation Stage: The final stage consists of the following activities:

2.3.1. Assistance and Evaluation: The team distributes satisfaction surveys to the partner to assess the effectiveness of the training provided. Additionally, regular monitoring of the bookkeeping application and social media usage is conducted to determine whether the technology is functioning as expected. This evaluation helps to identify the program's strengths and weaknesses, and to decide on future improvements [12]. Evaluation refers to the process of critically assessing a program, activity, or similar undertaking. It involves collecting information about the activities and outcomes of the program. The primary purpose of evaluation is to make judgments about the program, improve its effectiveness, and provide a basis for decision-making [13].

2.3.2. Program Sustainability: The team prepares a sustainability plan, which includes holding follow-up training or regular workshops to update the partner's knowledge on digital technology usage. Furthermore, the team plans to address the weaknesses identified during the evaluation, such as improving application features or adjusting promotional strategies. This ensures that the program continues to run effectively and sustainably. Further details can be seen in the following flowchart in Figure 3.

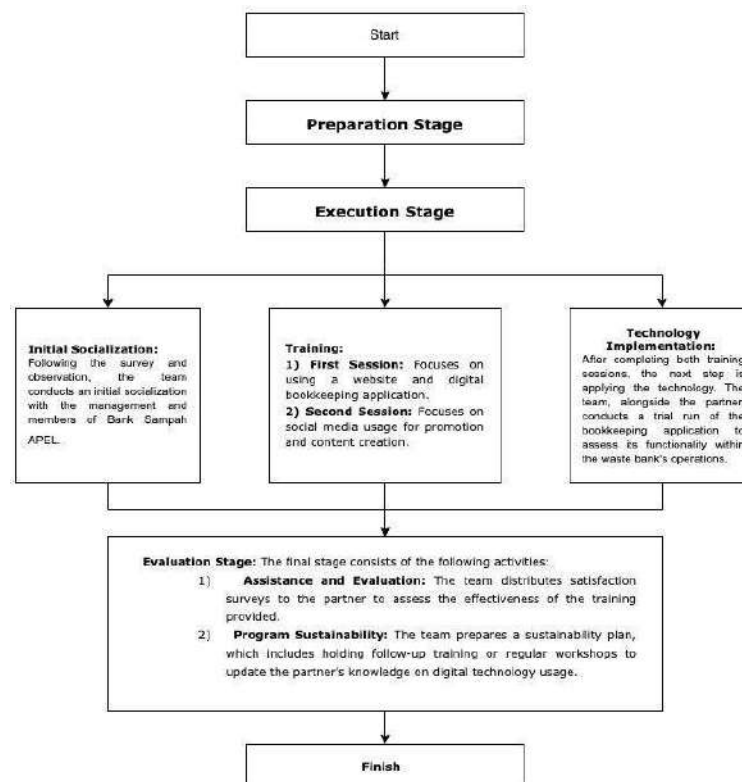


Figure 3. Flowchart of community service

3. Results and Discussion

In this community empowerment activity, the team began by conducting a survey and performing a situational analysis to identify the partner's main problems. Situational analysis is the process of separating existing problems and consolidating them into a single issue that needs to be solved and decided upon. This decision is made after several calculations and considerations that are deemed effective [14]. This step is considered important because it can provide an effective, efficient, and targeted solution. After the survey, the team identified the partner's main issues and discussed them with the partner. This identification was done through in-depth interviews focusing on the challenges faced by the partner, particularly regarding the management and marketing of the Bank Sampah APEL.

After identifying the problems, the service team and the partner agreed to conduct two training sessions, focusing on the introduction of digital bookkeeping applications and the training of bookkeeping and social media administrators. On the first day, August 3, 2024, the activity was attended by 20 participants, including the management, customer data managers, social media managers, and customer representatives. This activity was held at the Bank Sampah APEL Pavilion located at Jl Cempaka No. 143, Perumnas Condongcatur, Depok, Yogyakarta.

The event consisted of three sessions, starting with a welcome speech by Zahrotus Sa'idah, the head of the service team, followed by Herliyanti, the head of the Bank Sampah APEL management. In this speech, the head also handed over a Cooperation Certificate between the Bank Sampah APEL and Universitas Amikom Yogyakarta. Next, the first session began with a presentation on digitalization by Etik Anjar Fitriarti. In this session, the speaker provided a basic overview of the concept of digitalization, which would be introduced to the partner. This material was considered important because many of the Bank Sampah APEL administrators lacked an understanding of digitalization due to age factors.

It is important to note that for Generation X or Baby Boomers (around 50 years old and above), the speed of technology development can be a challenge in their work. This is due to a lack of skills in accessing technology, the rapid development of technology, and other factors [15]. Given this condition, the introduction of the concept of digitalization is necessary to ensure that the application can be easily accepted by participants and later implemented broadly within the community, particularly among those registered as customers of the Bank Sampah APEL. After the presentation on digitalization, the second session introduced the digital bookkeeping application, which would be implemented at Bank Sampah APEL. This application includes several supporting features, such as customer identity, balance information (balance obtained from waste weighing at the Bank Sampah APEL), articles on waste management (both organic and non-organic), Bank Sampah APEL activity agendas, and a FAQ (Frequently Asked Questions). Previously, this application had been discussed with the Bank Sampah APEL management, but improvements were made gradually, tailored to the needs and

preferences of both the management and the customers. Figure 4 is a screenshot of the digital bookkeeping application.

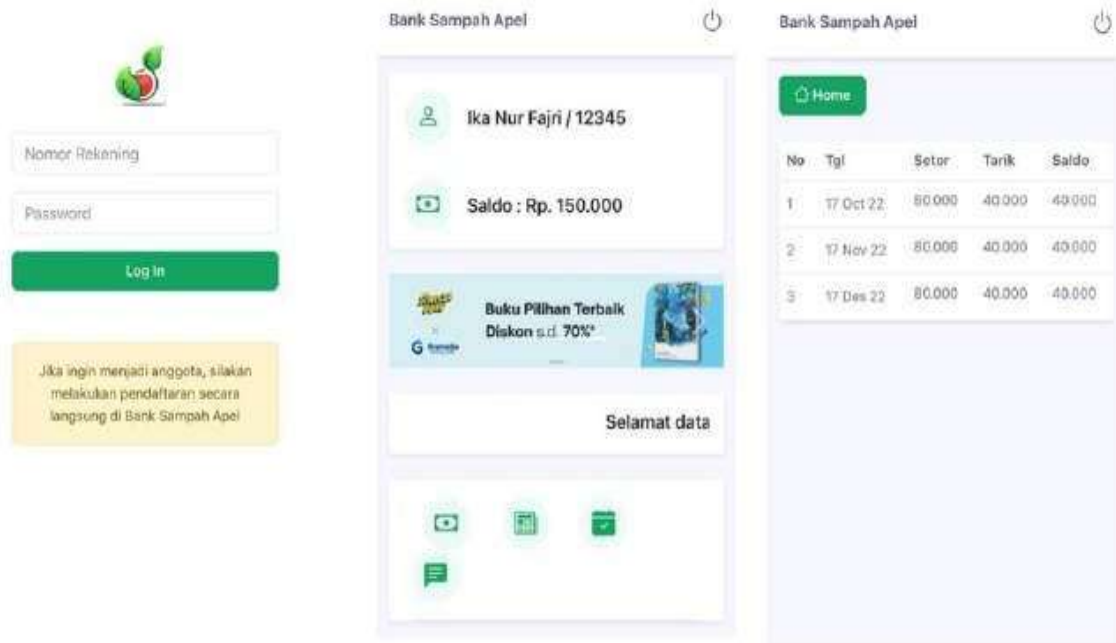


Figure 4. Display of the Digital Bookkeeping Application for Bank Sampah APEL (banksampahapel.com)

In general, this application is designed to help customers monitor their balance and stay informed about activities at Bank Sampah APEL without needing to visit the location. Additionally, the application is expected to minimize paper usage as a recording medium. Several customers have complained about lost, damaged, or unclear transaction slips, which affected the tracking of the waste they deposited. Therefore, this application aims to simplify data management for Bank Sampah APEL administrators and reduce excessive paper usage.

The final session was a Q&A and prize distribution for the five fastest participants to ask questions. This session was not only for questions but also allowed for feedback regarding the application. Some customers suggested adding features like transaction history, a display for recycled crafts made by customers to be sold, and a cash withdrawal feature. These suggestions were noted by the service team and will be discussed with the partner. The cash withdrawal feature, in particular, requires careful consideration due to the additional administrative costs from the bank, which could burden customers. Nonetheless, the service team appreciated the feedback and awarded prizes for the suggestions. Figure 5 is the documentation of the event.



Figure 5. First Training Session

The second training session was held on August 31, 2024, at Kaktus Coffee Place, located at Jalan Gondang Raya No 4-5, Kentungan, Condongcatur, Yogyakarta. This training focused on the issues faced by both partners, specifically the lack of promotion for Bank Sampah APEL to the wider community and the suboptimal use of social media by Bank Sampah APEL. The training was designed to be more intensive, involving only the social media managers and the bookkeeping managers (a total of 5 participants). Therefore, the training consisted of two sessions: the first emphasized social media design, and the second was a photography training session.

The first session began with an introduction to Canva as a design platform. Participants were introduced to several supporting features for design, such as color selection, fonts, and more. After the introduction, participants were given the opportunity to edit draft images that were planned to be posted on Bank Sampah APEL's Instagram. Understanding design is crucial, especially for optimizing social media, as attractive design quality can build a strong brand identity and enhance user interaction, thereby gradually creating a positive identity [16]. The second session focused on photography training. In this session, participants learned about the importance of mastering photography techniques. Photos indirectly convey implicit messages and create lasting memories [17]. Therefore, it is important to consider several components during the photography process, such as lighting and exposure [18]. Although simple, proper composition can evoke empathy and imagination in viewers. Thus, understanding photographic techniques is essential [19]. This principle served as the foundation for the photography training session.

However, given the lack of supporting cameras and the age of the managers, both the bookkeeping and social media managers, this training session utilized available equipment, such as smartphones. The use of such basic equipment underscores the importance of mastering techniques in photography. [Figure 6](#) photos from the second training session.



Figure 6. Second Training Session.

After conducting the two-day training, the service team carried out both internal and external evaluations. This evaluation is important as it helps measure the success of the assistance activities. Furthermore, through evaluation, the service team can identify the strengths and weaknesses of the training program, which can be improved or developed in future service activities [20]. In the external evaluation, the team involved Herliyanti, the head of Bank Sampah APEL. The evaluation results concluded that further training would be held, especially for the bookkeeping and social media managers. This decision was agreed upon as the participants felt that the duration of the training was insufficient and that they needed a deeper understanding of the features they would use.

To optimize the evaluation, the service team also prepared a satisfaction survey using a linear scale to measure the training's effectiveness and the participants' satisfaction levels. The survey results showed that participants felt satisfied and found the training beneficial. On a scale from 1 to 5, the majority of participants rated it a 5, indicating they were very satisfied with the training outcomes. The use of a linear scale aims to simplify and accelerate the measurement process. The responses for each option in the survey can be presented as alternatives, clarifying the information related to those choices. With this method, partners will find it easier to complete and evaluate satisfaction surveys, as the process becomes more straightforward and easier to understand [21].

In addition to offering training solutions, the service team also proposed revitalization. The term "revitalization" refers to the process of improving or enhancing the quality of various aspects to strengthen an organization. Essentially, revitalization aims to revitalize activities so

that the program can be utilized more effectively [22]. Revitalization is not solely about physical renovation; it can also refer to program revitalization, image, networking, and management. In this service activity, the team proposed two revitalizations: revitalization of networking (utilizing social media) and revitalization of management (improving bookkeeping management from conventional methods to digitalization) [23]. The networking revitalization involved optimizing social media, starting with a logo redesign to better align with the vision and mission of Bank Sampah APEL while still maintaining the dominant red and green colors to protect the institution's identity. The color red in this context symbolizes strength and passion. In psychology, red is often associated with joy and energy [24]. Therefore, the project team proposed the use of red for the new logo of Bank Sampah APEL. Besides reflecting the color of an apple, red is also intended to represent the energy and enthusiasm of the Bank Sampah APEL's management team.

Furthermore, the color green carries significant meaning, symbolizing balance, tranquility, and a connection to nature. Additionally, green is often interpreted as a symbol of health and sustainability [25]. For this reason, the project team decided to incorporate green into the logo of Bank Sampah APEL. The bank serves as a manifestation of concern for the environment, particularly in relation to the damage caused by waste. Thus, the color green is expected to reflect the bank's commitment to protecting and preserving the environment. [Figure 7](#) is the old and new logos of Bank Sampah APEL.



Figure 7. Logo Redesign.

Overall, the service activities at Bank Sampah APEL have successfully achieved their main objectives: enhancing the understanding and capabilities of the managers in digital bookkeeping management and promotion through social media. With two training sessions held, the partners have gained foundational knowledge of digital bookkeeping management applications, which is expected to facilitate more efficient recording and management of customer data. Additionally, the social media design skills acquired are anticipated to help Bank Sampah APEL expand its reach and promotion to the community.

However, there are still challenges that need to be addressed, such as the limited duration of training and technological constraints among older managers. As a note, advanced age often poses a challenge in learning new technologies, including social media. This is due to several factors, such as a reluctance to allocate time, concerns about potential negative impacts, and fear of unknown risks. These combined factors can lead to resistance toward new technologies. This resistance is one of the primary reasons older individuals find it difficult to understand and adapt to technological advancements [26]. Nevertheless, with plans for follow-up training and improvements in application features, it is hoped that the partners will be better prepared to face these challenges and implement digitalization more effectively. The satisfaction survey results showed positive outcomes, indicating that participants felt direct benefits from the training activities.

Furthermore, this program is expected to not only stop at training but also continue with more comprehensive revitalization efforts. Through revitalization of networking and management, Bank Sampah APEL can continue to grow and strengthen its position as an important institution in waste management and community empowerment. Thus, the collaboration between Universitas Amikom Yogyakarta and Bank Sampah APEL can contribute more broadly to promoting sustainability and innovation in waste management.

4. CONCLUSION

Based on the discussion, the service team concludes that the activities at Bank Sampah APEL have successfully provided a positive impact on improving bookkeeping management and digital promotion through social media. The training conducted in two sessions has helped the managers and customers of Bank Sampah APEL understand the concept of digitalization and how to use digital bookkeeping applications, which is expected to enhance operational efficiency and reduce paper usage. Additionally, the social media training provided essential design and photography skills to promote the bank's activities more effectively to the community.

Although there were challenges, such as technological limitations among older managers and the perceived short duration of the training, the evaluation showed that

participants felt satisfied and experienced significant benefits from the training. Plans for follow-up training and application improvements demonstrate a commitment to continue supporting Bank Sampah APEL in enhancing its management. With revitalization in networking and management, Bank Sampah APEL has a significant opportunity to maximize its role and function in the community. The collaboration between Universitas Amikom Yogyakarta and Bank Sampah APEL provides a tangible contribution to community empowerment and more modern and sustainable waste management.

Acknowledgement

We would like to express our deepest gratitude to the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) for the financial support provided (Contract Number: 127/E5/PG.02.00/PM.BARU/2025), which has enabled these activities to run smoothly. We also extend our thanks to Universitas Amikom Yogyakarta for all forms of support and facilitation during the implementation of the activities. Last but not least, we thank our partner, Bank Sampah APEL, for their time and cooperation, as they warmly welcomed us and actively participated in these events.

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