



RESEARCH ARTICLE

# SIKEPI (Coffee Financial System): Innovative Platform as a Form of Financial Digitalization of the Karangpring Village Coffee Farming Community

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## Abstract

Karangpring Village has significant potential in coffee commodities, with robusta, arabica, and liberica varieties. This potential makes the village an icon in the national coffee world. Advances in technology and digitalization offer solutions to facilitate daily activities, including in the agricultural sector. Karangpring Village requires the implementation of technology and digitalization to strengthen its superior coffee commodities. The current practice of recording village community finances is still simple and conventional, so digitalization is needed to modernize the process, which is expected to stimulate economic growth and increase the selling value of coffee. This study proposes the SIKEPI (Coffee Financial System) application, which is designed with a simple accounting system so that it is easy to understand and implement by the community. Through socialization, training, and personal assistance, it is hoped that coffee farmers in Karangpring Village can improve digital literacy and accounting understanding through the SIKEPI application.

## Keywords

SIKEPI Application; Finance; Mentoring; Coffee Farmers.

## 1 | INTRODUCTION

The current era of digitalization has brought about significant changes across various aspects of human life. Digitalization here refers to the integration and transformation of culture, economy, and existing technology. This digital transformation, which includes the implementation of information and communication technology in various aspects of life, not only changes how people work but also how they interact, learn, conduct business, and think. The relationship between digitalization and human activity is increasingly close, as evidenced by technology touching almost all aspects of life. Digitalization has also created new opportunities and become a solution to existing problems (Ramadhan Rizki, 2022).

Ineffectiveness in financial management processes leads to numerous new issues, such as reduced welfare and the inability to allocate finance effectively for more productive activities, such as business ventures and creating new opportunities based on existing potential. Financial management encompasses planning, budgeting, recording, and financial reporting, which are essential to ensure the optimization of resources used. Many individuals or communities still face difficulties in financial management, such as planning expenses, managing cash flow, and making financial decisions (Wardhani Mas *et al.*, 2020). Amidst the ever-changing dynamics of the community's economy, the ability of people to manage finances often faces various challenges. Improper financial management can lead to serious financial problems, such as accumulating debt, difficulty meeting basic needs, and the inability to plan (Kholik Aziz *et al.*, 2024).

One example of these financial problems occurs in the community of Karangpring Village, Jember Regency. According to data from Jember Regency in 2023, Karangpring Village has a land area of 1,259.43 hectares, with 645.235 hectares, or 45%, designated as coffee plantations. Consequently, 75% of the residents of Karangpring Village are employed as coffee farmers. The high potential of coffee in Karangpring brings significant benefits to the local community, especially coffee entrepreneurs. However, on the other hand, the community still faces various problems related to financial management due to low financial literacy and the absence of a system aimed at streamlining their turnover or income (Arum Diah Puspa, n.d.). In response to these issues, the Student Organization Capacity Building Program (PPK Ormawa) of the Accounting Department has created an innovative IoT (Internet of Things)-based application platform that provides several features related to financial management and efficient recording of cash inflows and outflows. This application will serve to facilitate the Karangpring Village community in managing their business finances as a step towards the welfare of all residents of Karangpring Village.



Figure 1. Coffee Production Cycle: From Harvesting to Drying

Starting from these problems, the PPK Ormawa Accounting Department Program comes with a solution in the form of an IoT-based application. This application is expected to help the people of Karangpring Village in managing their business finances more effectively, so that it can improve the welfare and economic potential of the village.

## 2 | BACKGROUND THEORY

Digitalization acts as a primary force reshaping the global economy, altering how individuals and organizations interact and conduct business. The shift involves not only technology adoption but also fundamental changes to economic structures and processes. Digitalization creates opportunities for efficiency and innovation, fostering business models responsive to market demands (Shi, 2022). Yet, challenges such as the digital divide and the need to improve digital literacy emerge, potentially worsening economic disparities (Klymenchukova, 2023). Therefore, understanding how digitalization can be effectively integrated within specific local settings, such as the coffee farming community in Karangpring Village, becomes crucial. Effective financial management is essential for the economic sustainability of individuals and communities. It includes planning, budgeting, and accurate financial reporting, all of which support the optimal use of financial resources (Ismanto & Pebruary, 2023). Financial literacy, encompassing both understanding and applying financial knowledge, is vital for informed decision-making. A lack of financial literacy can cause serious

financial problems, including difficulties managing debt and long-term financial planning (Lu, 2018). For coffee farmers in Karangpring, improved financial literacy through digital platforms like SIKEPI can enable better financial management and enhance their economic well-being. Information and communication technologies play a significant role in facilitating financial management. Digital applications and platforms can boost the efficiency of transaction recording and financial analysis (Klymenchukova, 2023). By using technology, individuals and organizations can improve the accuracy and transparency of their financial operations (Shi, 2022). Within the SIKEPI framework, technology use can aid coffee farmers in Karangpring to access previously hard-to-reach financial services, promoting greater financial inclusion (Amjad, 2023). The Internet of Things (IoT) offers considerable potential for financial management by connecting physical devices to collect and analyze data in real-time (Hua *et al.*, 2018). Regarding financial management, IoT can automate transaction recording and monitor cash flows, enabling more efficient financial management (Das & Ghose, 2019). IoT implementation within platforms such as SIKEPI can assist coffee farmers in monitoring their financial status more accurately and responding effectively to market changes. The combination of digitalization and technology, including IoT, offers substantial potential to enhance financial management within agricultural communities. By using these technologies, challenges such as limited financial literacy and difficulties in transaction recording can be addressed (Firoozjaei *et al.*, 2020). Technology implementation in financial management can not only improve efficiency but also contribute to the overall economic well-being of the community (Amjad, 2023). Innovation in financial management is critical for navigating the changing economic environment. Such innovation includes not only adopting new technologies but also developing new methods and approaches more responsive to community needs (Sato, 2024). Within SIKEPI, innovation in financial services can yield positive impacts on economic growth and social welfare among coffee farmers in Karangpring (Yujie & Qiuxia, 2022).

## 3 | METHOD

### 3.1 Activity Form

The community of Karangpring Village is in great need of a system that can provide a solution to the financial problems they face. The promising potential of coffee has not made the community of Karangpring Village more prosperous; instead, it has brought about new issues related to managing the finances from their business endeavors. The PPK Ormawa HMJA team has created a highly beneficial and applicable application system for the community, aimed at managing their finances or revenue. This financial application is called SIKEPI (Coffee Financial System), which includes several features, such as recording cash inflows and outflows and generating simple financial reports. In the process of implementing the SIKEPI platform in the community, the PPK Ormawa HMJA team follows several steps, including:

- 1) Discussion between the PPK Ormawa HMJA Team and the Community  
At the beginning of the program, the PPK Ormawa HMJA team held discussions with the Karangpring Village community to seek solutions to existing problems. During this opportunity, the majority of the community expressed that their main issue lies in their inability to effectively manage the revenue from their businesses. They mentioned that most still rely on manual bookkeeping with rudimentary tools and lack a systematic approach.
- 2) Development of the SIKEPI Application System  
After discussing with the community, the PPK Ormawa HMJA team identified a solution to the issues faced by the community: creating a simple financial application system that can be operated by all community members. The development of this application was carried out by the PPK Ormawa HMJA team in collaboration with students from the Faculty of Computer Science to program the application. The creation of the application began with designing features that are simple and applicable for the community.
- 3) Socialization and Training on the Use of the SIKEPI Application for the Community  
The next step taken by the PPK Ormawa HMJA team after the SIKEPI application was completed is to conduct socialization and basic training for the entire community to apply the SIKEPI application in their daily lives. This socialization involved introducing the Karangpring Village community to the SIKEPI application and providing guidance on how to use each feature and component within the application. The application was designed with simple features to ensure ease of understanding for the community. During this opportunity, the PPK Ormawa HMJA team encouraged all community members to download the SIKEPI application and integrate it into their daily activities, especially in their businesses.
- 4) Person-to-Person Assistance  
After introducing and providing basic training on the use of the SIKEPI application to the community, each member of the PPK Ormawa HMJA team conducted person-to-person assistance. This support was provided intensively, with one student assisting one community member. The purpose of this assistance is to ensure

that the community can understand the application and use it efficiently. This support was provided by students for one week to observe how the community utilized the application in their daily lives.

#### 5) Monitoring and Evaluation

The assistance team conducted evaluations of the training and support programs implemented with the community, in collaboration with the University of Jember. Following this, the assistance team performed monitoring once a month for the Karangpring community. In the following year, the assistance team will conduct monitoring every three months. This is done as a commitment from the Program Strengthening Capacity (PPK) Ormawa of the Accounting Student Association (HMJA) of the University of Jember to establish a sustainable program.

### 3.2 Implementation Timeline

The implementation of the service activities by the Program Strengthening Capacity (PPK) Ormawa of the Accounting Student Association (HMJA) of the University of Jember took place from March to August 2024. The timeline for each stage of the SIKEPI application implementation in the Karangpring community is as follows:

#### 1) Discussion between the PPK Ormawa HMJA Team and the Community

The discussion activity took place on March 1, 2024.

#### 2) Development of the SIKEPI Application System

The development of the SIKEPI application by the collaboration between the PPK Ormawa HMJA team and the Faculty of Computer Science students occurred from March to July 2024.

#### 3) Socialization and Training on the Use of the SIKEPI Application for the Community

The socialization and training activity was conducted on August 2, 2024.

#### 4) Person-to-Person Assistance

The person-to-person assistance process for the community by the PPK Ormawa HMJA team occurred during August 2024.

#### 5) Monitoring and Evaluation

Monitoring and evaluation by the PPK Ormawa HMJA team and the University of Jember team were conducted monthly to assess the progress and changes in the community's lifestyle regarding the application of the SIKEPI financial application.

### 3.3 Activity Location

The introduction of financial solutions by the PPK Ormawa HMJA team from the University of Jember was conducted in Karangpring Village, Sukorambi District, Jember Regency, East Java. Specifically, the activities aimed at solving problems in Karangpring Village were carried out at:

#### 1) Discussion between the PPK Ormawa HMJA Team and the Community

The discussion activity was held at the Karangpring Village Hall.

#### 2) Development of the SIKEPI Application System

The development of the SIKEPI application was conducted in collaboration with the Faculty of Economics and Business at the University of Jember.

#### 3) Socialization and Training on the Use of the SIKEPI Application for the Community

The socialization and training activity took place at the Karangpring Village Hall.

#### 4) Person-to-Person Assistance

The person-to-person assistance process was conducted in each community member's home to ensure intensive support.

#### 5) Monitoring and Evaluation

Monitoring and evaluation were conducted in the homes of community members who applied the SIKEPI financial application.

## 4 | RESULTS AND DISCUSSION

### 4.1 Results

#### 4.1.1 Application Development

The SIKEPI application, which stands for Coffee Financial System, is an innovative application developed by students from the University of Jember aimed at facilitating accounting-based financial record-keeping. In accordance with the implementation method, our activities began with the development of the SIKEPI application. This development was carried out in collaboration with students from the Faculty of Computer Science. The application features several functionalities that simplify its use, including: profile, dashboard, and reports.



Figure 2. SIKEPI LOGO

#### 4.1.2 Application Features

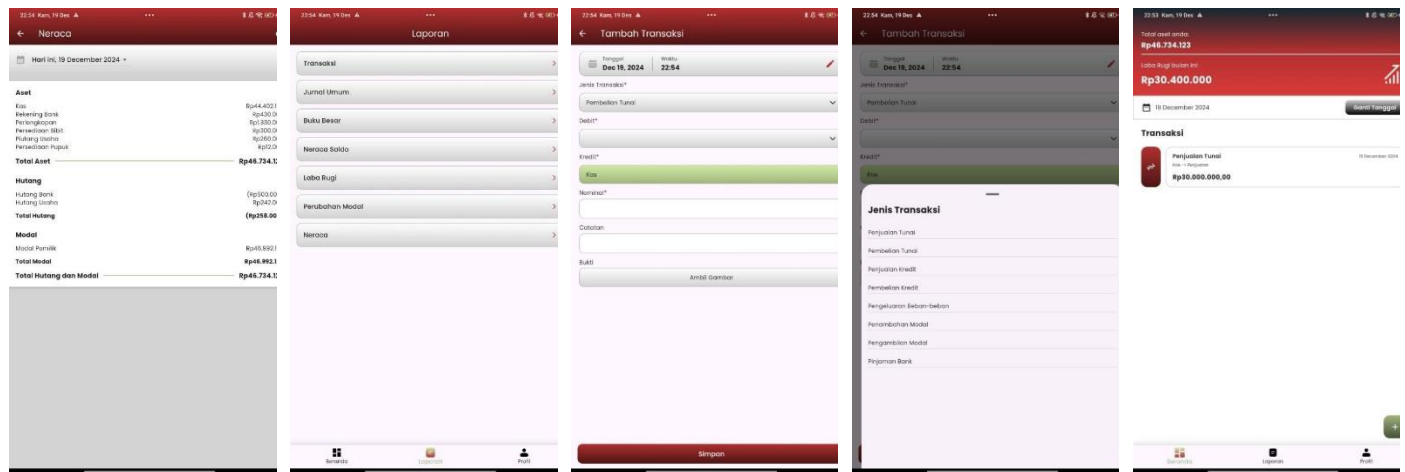


Figure 3. Application Features View

The first feature in this application is the profile. Users are required to register before using the application. During registration, users are asked to provide information such as their name, business, email, and phone number. The profile feature serves to distinguish each user from others. Users can also choose and upload a profile picture. The second feature is the dashboard. This is the core feature of the SIKEPI application. The dashboard contains the journal entries where users can record transactions. Users can document all transactions related to coffee purchases and sales. This feature is also equipped with automated account naming. Users can upload transaction evidence as needed. Recordings can include cash receipts, cash expenditures, credit/cash sales, credit/cash purchases, capital deposits, personal withdrawals, debts, and more. The final feature is the reporting feature. Users who have recorded transactions in the dashboard can download financial reports from this section. The reports are automatically generated and recorded. Available reports include income statements, changes in equity, and balance sheets/financial positions. The community service program related to financial digitalization is one of the initiatives by us, the students of the University of Jember. The essence of this program and innovation is to provide digital and technological understanding of accounting and financial record-keeping to the Karangpring Village community as the target group. Following the application development, the team conducted program socialization with the community. In Karangpring, about 80% of the population are coffee farmers who are not yet technologically savvy, especially regarding financial record-keeping. Therefore, this innovation is expected to foster coffee farmers who are knowledgeable about technology and financial digitalization. The socialization took place on June 14, 2024, at the Karangpring Village office. During the socialization, the importance of digitalization and technological understanding was emphasized to enhance the community's competencies and income. The community responded positively and enthusiastically to this innovation, feeling supported by the digitalization efforts. At the end of the socialization, the team held an interactive Q&A session to gauge the community's interest in the SIKEPI application, along with a quiz with prizes. The final results indicated that the community was very pleased and interested in the SIKEPI innovation, as evidenced by their active participation during the Q&A session.

#### 4.1.3 Training and Person-to-Person Assistance

Person-to-person assistance was provided by the team to offer routine training and support to the community in using the application. This aims to ensure that the Karangpring community understands financial digitalization through the SIKEPI application. Assistance was conducted in Karangpring Village. The assistance

process received full support from the community. Residents were very enthusiastic about learning how to use the SIKEPI application. The support was conducted in stages and was temporal. The target groups varied, including women, adults, and seniors.

#### 4.1.4 Monitoring and Evaluation

Monitoring was conducted by the team to ensure that the SIKEPI application used by the community remains capable and functional. This monitoring also serves as a system maintenance effort. Monitoring and evaluation are performed once a month.

#### 4.2 Discussion

The implementation of the SIKEPI application in Karangpring Village is an important step in efforts to improve financial literacy and digitalization among local coffee farmers. This initiative is in line with the current trend in the use of digital devices to improve financial management in rural communities. As stated by Wiralestari *et al.* (2024), the integration of digital accounting systems in small businesses, such as coffee shops, can significantly improve financial monitoring and reporting capabilities, which are critical for sustainable growth. The development of the SIKEPI application addresses the critical need for effective financial management tools tailored to the agricultural sector. Rizki Ramadhan and Priyanti (2022) emphasize that the implementation of financial systems in rural areas can lead to better resource allocation and increased economic stability. By providing an easy-to-use platform to track income and expenses, SIKEPI empowers farmers to make informed financial decisions, ultimately leading to increased profitability and productivity.

Training and socialization efforts are critical to the success of the SIKEPI application. The enthusiasm seen during the socialization session indicates positive acceptance among community members, which is critical for the adoption of new technologies (Aziz *et al.*, 2024). As highlighted by Mas'udah *et al.* (2022), developing financial literacy is critical to enable farmers to navigate the complexities of the modern agricultural market. By equipping them with the necessary skills and knowledge, SIKEPI not only improves their financial literacy but also fosters a culture of accountability and transparency. Regular monitoring and evaluation of the application's use is essential to ensure its effectiveness and sustainability. The approach taken by the HMJA PPK Ormawa team to conduct monthly assessments reflects best practices in project management and community engagement (Shi, 2022). Continuous feedback from users will help identify areas for improvement and ensure that the application evolves to meet the changing needs of the community. The introduction of the SIKEPI application in Karangpring Village is a promising initiative that leverages technology to improve financial management among coffee farmers. By focusing on digital literacy, providing practical tools, and ensuring ongoing support, the program has the potential to transform the financial landscape of rural farming communities. Future research should explore the long-term impact of such initiatives on farmer economic empowerment and overall rural development.

## 5 | CONCLUSIONS AND FUTURE WORK

Based on the innovation program regarding the SIKEPI application and the dedication carried out by the team, it can be concluded that the formation of the SIKEPI application is an innovative step in financial digitalization, which can be utilized for the coffee business activities of the Karangpring Village community. The target group, namely the coffee farming community of Karangpring Village, has been able to operate the SIKEPI application well, including journaling and preparing financial reports based on the accounting system. In addition, the target group has also understood in detail about the accounts and digitalization of accounting and finance contained in the SIKEPI application. They now have financial records and regular reports regarding coffee business activities in the village. As a follow-up activity plan, after the introduction of the application, the team will monitor and evaluate the innovation program that has been implemented. Furthermore, application improvements and maintenance will be carried out to ensure that the application can function better and meet user's needs optimally.

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