

Digitalization Assistance Program and Human Resource Capacity Building to Enhance Transparency and Accountability of Koperasi Merah Putih in Karanganyar Gunung Village, Semarang

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Abstract: Cooperatives, as a pillar of the people's economy, play a strategic role in improving community welfare. However, in practice, cooperatives still face various challenges, particularly in terms of digitalisation and the limited capacity of human resources (HR). This community service activity aims to enhance digital literacy and HR capacity through assistance in implementing a digital-based financial system at Koperasi Merah Putih in Karanganyar Gunung, Semarang City. The method employed is a participatory approach based on assistance, which includes stages of needs assessment, training, intensive mentoring, and evaluation. The results indicate significant improvements in digital literacy and the technical capabilities of cooperative administrators, as reflected in the increase in the average pre-test score from 56.4 to 82.7 on the post-test. In addition, the administrators' ability to record transactions and prepare digital-based financial reports improved from 30% to 85%. The implementation of the digital system also promotes more systematic, transparent, and accountable cooperative management. Therefore, this assistance programme has proved effective in supporting the digital transformation of cooperatives through strengthening human resource capacity. Furthermore, the administrators' capacity to record transactions and generate digital-based financial reports increased from 30% to 85%. The deployment of the digital system encourages more methodical, transparent, and responsible cooperative management. As a result, this assistance programme has proven effective in supporting cooperatives' digital transformation by strengthening human resource capabilities.

Keywords: collaborative digitalisation, human resource capability, assistance, transparency, accountability.

Introduction

Cooperatives are a key component of the people-oriented economic system, playing an important role in improving community welfare through the concepts of cooperation and kinship. Cooperatives play an important role in regional economic development, particularly in promoting the long-term viability of micro, small, and medium-sized enterprises (MSMEs) (Maryam, 2025). Koperasi Merah Putih in Semarang City has the potential to significantly boost community-based economic systems (Damayanti et al.,

2025).

However, in fact, cooperatives continue to encounter a variety of obstacles, particularly in adjusting to the rapid advancement of digital technology (Megasyara et al., 2025). The majority of administrative and financial management operations are still carried out manually, increasing the risk of recording errors, reporting delays, and a lack of transparency and accountability in financial information. This circumstance suggests that cooperative governance has not entirely caught up with the demands of modernisation and digital transformation.

The advancement of information technology has fueled transformation in a variety of industries, including the cooperative sector. Digitalisation has become an important aspect in increasing operating efficiency, recordkeeping accuracy, and service quality for members (Susanti et al., 2025). Cooperatives that can best use digital technology function better, both internally and in providing timely, accurate, and transparent services to their members.

Human resources (HR) remains a significant barrier to the adoption of cooperative digitalisation (Rusiyanti et al., 2023). Many cooperative administrators continue to have low digital literacy, particularly when it comes to accounting apps and cooperative information systems. This lack of expertise results in inefficient use of technology and, in certain situations, resistance to change due to perceptions of complexity and difficulty in execution.

These characteristics point to a gap between the requirement for collaborative digitalisation and existing HR capability. As a result, coordinated efforts are necessary through help and training programmes that focus not just on technology implementation but also on improving HR competencies, allowing administrators to maintain digital systems independently and sustainably.

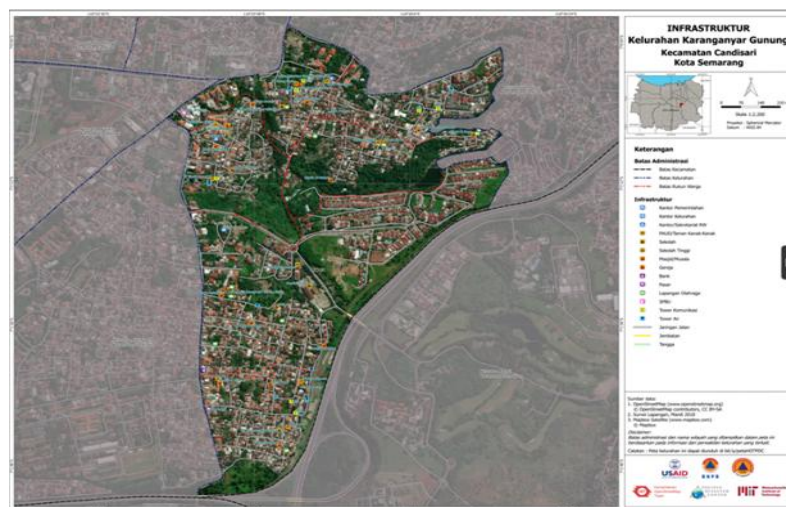


Figure 1. Location map of Karanganyar Village, Gunung Semarang

As of July 2025, a total of 177 Koperasi Merah Putih units had been created and scattered among Semarang's metropolitan communities. However, not all of these cooperatives have been able to perform optimally. Several hurdles remain, including a lack of digital literacy, limited HR capability, inadequate technological infrastructure, and difficulty in establishing trust and competitiveness. A similar situation exists at Koperasi Merah Putih in Karanganyar Gunung village, Semarang City, where major challenges are digitalisation and HR quality, preventing the cooperative from functioning optimally as an independent and viable economic entity (Ifa, 2024). Figure 1 depicts the location map of Karanganyar Gunung Village in Semarang.

METHOD

This community service programme took a participatory, assistance-based approach, with administrators from Koperasi Merah Putih in Karanganyar Gunung Village, Candi District, and Semarang City serving as partners. The implementation approach began with the identification and needs assessment phase, which involved observing, interviewing, and mapping the digital literacy levels of human resources (HR). The findings of this research served as the foundation for programme design, which included creating training modules, selecting relevant digital financial apps, and developing practical and user-friendly operational guidelines.

The programme was then executed through a series of socialisation sessions, training exercises, and rigorous mentorship. The programme focused on improving digital literacy and the usage of digital-based financial recording software through hands-on experience. Continuous mentorship was provided to guarantee that the system was properly implemented, including the creation of digital financial reports and the resolution of technical issues that arose during the process.

Evaluation was carried out by measuring improvements in HR competencies as well as the quality of outputs produced, such as cooperative financial reports. To ensure programme sustainability, user manuals for the system were developed, and internal cooperative personnel were appointed to be responsible for the ongoing operation of the digitalisation system.

Result and Discussion

The implementation of this community service programme at Koperasi Merah Putih in Karanganyar Gunung Village, Semarang City, resulted in increases in human resource (HR) capability, as well as the first use of digital technology in cooperative management. The results are provided in accordance with the previously defined stages of implementation, which include needs identification, training, mentoring, and evaluation (Figure 2).



Figure 2. Training and Mentoring

During the initial identification step, it was discovered that administrative and financial management processes were being carried out manually, and the cooperative administrators' digital literacy level was relatively poor. This circumstance limited the ability to prepare accurate and timely financial reports (Silvera, 2025). These findings emphasise the need for intervention through digital training and mentoring.

The administrators' comprehension of the need for digitalisation, as well as their fundamental skills in utilising financial recording programmes, improved significantly throughout the second stage, known as the training phase (Rimawan et al., 2025). This improvement was seen in participants' greater capacity to enter transactions, handle financial data, and comprehend the workflow of digital-based financial reporting. The learning-by-doing technique helped improve participants' practical skills.

Furthermore, throughout the mentorship phase, cooperative administrators began to incorporate digital apps into their everyday operating duties. Financial transaction recording grew more systematic and structured, which aided financial monitoring and review processes. Mentoring also helped reduce recording errors and increase the timeliness with which financial reports were prepared.

The programme was evaluated using pre- and post-test measurements, as shown in Table 1. The review included 20 cooperative administrators who were directly involved with the programme. In the first stage (pre-test), participants' digital literacy levels were relatively poor, with an average score of 56.4. Most participants were unfamiliar with digital financial recording applications and preferred manual approaches.

After the training and mentoring activities, the post-test results showed a considerable rise, with the average score climbing to 82.7. In addition, technical competencies in financial management improved significantly. Before the programme, only about 30% of participants could generate simple financial reports. Following the programme, 85% of participants were able to record transactions on their own and prepare digital-based financial reports.

Table 1 shows that the practice-based training and mentoring method

improved the capacity of cooperative human resources. The greatest substantial improvement was seen in the indication of financial report production, demonstrating that participants not only grasped the principles but could also apply them practically.

Table 1. Pretest and Posttest Results of Digital Literacy and Financial Management

No	Assessment Indicators	Pre-test (%)	Post-test (%)	Improvement (%)
1	Understanding of Basic Digital Literacy	58	85	27
2	Ability to use financial applications	52	80	28
3	Understanding of transaction recording	55	83	28
4	Ability to prepare financial reports	50	82	32
5	Understanding of transparency and accountability	57	84	27
Rata-rata		56,4	82,7	26,3

Data Source: 2026

The evaluation results show that digital literacy and cooperative human resource technical capabilities have improved significantly. The administrators can not only handle the programmes independently, but they have also learnt to recognise the value of openness and accountability in financial management. With the deployment of digital technologies, financial information has become more accessible and can be more easily accounted for by cooperative members.

During the mentorship phase, the digital system's implementation went smoothly. Approximately 80% of participants were able to frequently record transactions using digital tools, and 75% of cooperatives started preparing quarterly financial reports. This shows a good behavioural shift towards more structured and accountable financial management techniques.

The findings of this programme show that combining digital literacy upgrading and technical mentorship can speed up the process of cooperative digital transformation. These findings emphasise that the success of digitalisation is dependent not just on the availability of technology, but also on the readiness and competency of human resources, who are the system's key users.

Conclusion

The community service programme at Koperasi Merah Putih in Karanganyar Gunung Village demonstrates how integrating digitalisation with human resource (HR) skill training can dramatically improve cooperative management quality. This is demonstrated by an increase in the average pre-test score from 56.4 to 82.7 in the post-test, as well as administrators' improved capacity to independently record transactions and create digital-based financial reports. The use of digital financial tools has also helped to promote more systematic, transparent, and responsible cooperative

management.

Thus, the practice-based training and mentorship strategy (learning by doing) has proven helpful in assisting cooperatives with their digital transition.

Based on these findings, cooperatives should continuously optimise their use of digital technology by choosing qualified system administrators and implementing frequent human resource capacity-building activities. Furthermore, local governments and academic institutions must provide support, notably in the form of advanced training, digital system facilitation, and ongoing mentoring, to ensure the long-term viability of digitalisation activities.

Similar community service activities are projected to expand in the future, including integration with digital marketing features and business strengthening for cooperative members.

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