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Implementation of Technology-Based Cooperative Information Systems: Reflections on the International PKM Visit

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Abstract

An international Community Service (PKM) activity provides strategic insights into the development of a digital technology-based cooperative information system. This study reflects the results of an academic visit to Malaysian national cooperatives, specifically ANGKASA, which has successfully implemented a technology-based integrated cooperative information system. This reflection identified best practices in member management, transaction recording, and digital financial reporting. The findings indicate that cooperative digitalization not only improves management efficiency and organizational transparency but also strengthens cooperative competitiveness at the national and regional levels. This PKM activity strengthens collaboration between universities and the cooperative movement in supporting the digital transformation of Indonesian cooperatives. The implications of this visit are expected to serve as a reference for the development of cooperative information systems in the academic environment and the wider community.

Keywords: digital cooperatives, information systems, international PKM, technological transformation, ANGKASA

INTRODUCTION

The development of information technology has driven digital transformation in various sectors, including cooperatives as a pillar of the people's economy. In the era of the Industrial Revolution 4.0, modernizing cooperatives is a necessity to address the challenges of efficiency, transparency, and global competitiveness (Ministry of Cooperatives and SMEs of the Republic of Indonesia, 2021). Technology-based cooperative information systems have proven capable of

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accelerating member service processes, improving financial accountability, and supporting data-driven decision-making (Setiawan et al., 2022). In the ASEAN context, Malaysia, through the Angkatan Koperasi Kebangsaan Malaysia Berhad (ANGKASA), has become a successful example of cooperative digitalization through the implementation of cloud-based systems and integrated mobile applications (ANGKASA, 2022).

The experience of an international Community Service (PKM) activity in Malaysia provides valuable insights into the importance of technology adaptation in the Indonesian cooperative sector. This visit not only strengthened cross-border collaboration but also revealed best practices in digital transformation that can be replicated in local contexts. In this regard, synergy between academia and cooperatives is a crucial foundation for realizing inclusive and sustainable technology-based cooperatives (Hussin & Nor, 2020). Therefore, this study aims to examine and reflect on the implementation of technology-based cooperative information systems through direct experience of international PKM as a strategic effort to improve the institutional capacity of Indonesian cooperatives.

METHOD

This study uses a qualitative approach with a reflective design from an international PKM visit to ANGKASA Malaysia. A research team from three universities conducted direct observations of the MyANGKASA Digital System (MDS) digital system, conducted semi-structured interviews with administrators and technical staff, and conducted a documentation study of reports and training materials. Data were then analyzed thematically, including groupings based on topics such as digital membership, online transactions, financial reporting, and supporting factors and constraints on digitalization. To ensure validity, data were triangulated between observations, interviews, and documentation. All activities were conducted with official permission and maintained confidentiality, and were used solely for academic purposes and the development of cooperatives in Indonesia.

RESULTS AND DISCUSSION

An international Community Service (PKM) activity in Malaysia conducted by a cross-disciplinary team of lecturers yielded several important findings related to the implementation of technology-based cooperative information systems. A visit to the headquarters of ANGKASA (Angkatan Koperasi Kebangsaan Malaysia Berhad) demonstrated that cooperative digitalization has become a key pillar in strengthening governance and providing services to cooperative members. One of the flagship systems introduced was the MyANGKASA Digital System (MDS), which enables real-time, integrated cloud-based transaction recording, online payments, membership management, and financial reporting (ANGKASA, 2022).

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Reflecting on the situation of cooperatives in Indonesia, PKM participants noted that most cooperatives, particularly those in universities and local communities, still rely on manual or semi-digital record-keeping, which can lead to inefficiencies, data errors, and limited access to information by members (Isbandi et al., 2021). Interviews and field observations indicate that the success of cooperative digitalization in Malaysia depends not only on the availability of technology but also on institutional commitment, human resource training, and supportive regulations.

One important aspect of this visit was understanding digital cooperative governance. ANGKASA successfully implemented a data-driven decision-making system, with an analytical dashboard accessible to cooperative managers and supervisory authorities. This system allows for greater transparency and oversight, while also increasing member participation through access to Android and iOS-based mobile applications (Hussin & Nor, 2020).

In the context of cooperative development in Indonesia, the implementation of a similar system has significant potential, particularly among academic cooperatives with access to expert staff and information technology facilities. A previous study by Pranata et al. (2022) showed that implementing a web-based cooperative information system on campus increased operational efficiency by up to 40% and accelerated the annual reporting process for administrators and members.

However, challenges that must be anticipated in replicating the Malaysian model in Indonesia include limited digital infrastructure in remote areas, low digital literacy among cooperative administrators, and the lack of binding national cooperative information system standards. Therefore, collaboration between the government, universities, and the private sector is key to promoting equitable cooperative digitalization.

This international PKM produced strategic recommendations in the form of: (1) development of an open-source cooperative information system that can be accessed and modified by local cooperatives; (2) ongoing cooperative HR training with digital literacy and e-governance modules; and (3) regulatory support from the government in the form of incentives for cooperative digitalization and credible cooperative information system accreditation.

Overall, this visit and reflection emphasized the importance of technology adoption in strengthening the sustainability and competitiveness of cooperatives, in line with the national digital economy vision and the SDGs agenda, particularly Goal 8 (Decent Work and Economic Growth) and Goal 9 (Industry, Innovation, and Infrastructure) (UNDP, 2023).

CONCLUSION

An international Community Service (PKM) activity in Malaysia provided strategic and reflective insights into the importance of implementing technology-based cooperative information systems in strengthening cooperative competitiveness and governance. Field studies at ANGKASA Malaysia demonstrated that digitizing cooperatives through integrated information systems significantly improved operational efficiency, financial reporting

transparency, and member participation. Key factors for the success of this digitalization include regulatory support, human resource training, and technology systems that adapt to cooperative needs.

Reflections on the state of cooperatives in Indonesia indicate the need to accelerate digital transformation, involving collaboration between the government, higher education institutions, and cooperative actors. Key recommendations from this activity include the development of an open-source cooperative information system platform, digital training for cooperative managers, and national regulations that support inclusive digitalization. By adopting good practices from ANGKASA Malaysia, cooperatives in Indonesia have the potential to become modern economic entities capable of competing in the digital era and contributing to sustainable national economic development.

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