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Digital Transformation and Governance Reform in Indonesian Cooperatives: A Systematic Literature Review Analysis toward Vision 2045

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ABSTRACT

This paper examines governance challenges in the digital transformation of cooperatives in Indonesia and their implications for strengthening cooperative institutions in the digital economy. The research aims to analyse the relationship between governance structures and cooperative digitalisation and to identify strategic directions for strengthening digital cooperatives in support of Vision 2045. The paper uses a qualitative approach, drawing on a systematic literature review of academic publications, policy documents, and institutional reports on cooperative governance and digital transformation. The findings show that the success of cooperative digitalisation is influenced by three key factors: adaptive governance frameworks, supportive regulations that accommodate digital innovation, and improved digital literacy among cooperative members and managers. In addition, the development of an inclusive digital ecosystem is essential to facilitate the integration of digital technologies in cooperative management, services, and member participation. These results highlight that governance reform and digital capacity building are fundamental prerequisites for accelerating cooperative digital transformation. However, this study is limited to literature-based analysis and does not capture empirical variations in local cooperative practices. Therefore, future research should employ empirical approaches, such as case studies or surveys, to evaluate the effectiveness of digital cooperative governance and its impact on member welfare and regional economic development.

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1. INTRODUCTION

Cooperatives are widely recognised as an important foundation for inclusive and sustainable economic development. As membership-based economic institutions, cooperatives promote equitable welfare distribution, strengthen local economies, and enhance the socio-economic resilience of communities [1]. In the context of globalisation

and changing economic structures, cooperatives are no longer viewed solely as traditional economic organisations but also as strategic actors capable of responding to market dynamics and technological change [2].

The transition toward a digital economy has compelled economic institutions, including cooperatives, to undergo institutional and operational transformation. Digitalisation has significantly reshaped organisational resource management, decision-making processes, and stakeholder engagement [3], [4]. For cooperatives, digital transformation creates opportunities to improve operational efficiency, transparency, and member participation. At the same time, it also generates new challenges related to institutional capacity, technological readiness, and human resource capabilities.

In Indonesia, cooperatives hold a strategic position within the national economic system, as reflected in constitutional mandates and development policies. They are expected to function as instruments for strengthening **micro, small, and medium enterprises (MSMEs), creating employment opportunities, and** reducing socio-economic inequality [5]. However, empirical evidence shows that many cooperatives still face structural constraints, particularly in governance quality, managerial professionalism, and competitiveness in the digital economy [6]. Weak governance structures—characterised by limited transparency, insufficient accountability, and low member participation—often hinder cooperative performance and reduce institutional credibility [7].

Digitalisation is increasingly considered a potential solution for improving cooperative governance. **The adoption of digital technologies can enhance** administrative **transparency,** ensure accountable **financial** management, and facilitate more inclusive participation among cooperative members [8]. Nevertheless, digitalisation does not automatically guarantee institutional improvement. Its effectiveness largely depends on regulatory support, institutional readiness, and the organisational culture within cooperatives.

The process of cooperative digitalisation in Indonesia also encounters several structural barriers, including uneven digital infrastructure across regions, limited technological literacy among cooperative members, and resistance to organisational change [9]. These challenges indicate that digitalisation is not merely a technical adjustment but an institutional transformation process requiring supportive policies and continuous capacity development [10].

Within Indonesia's long-term development framework, the Vision of Golden Indonesia 2045 places digital economic transformation and governance reform as central pillars of national progress. In this context, cooperatives are expected to become key drivers of inclusive, adaptive, and competitive economic development [11]. Therefore, strengthening cooperative governance and accelerating digital transformation are crucial prerequisites for enabling cooperatives to contribute effectively to national development goals [12].

Recent international studies emphasise the growing importance of digitalisation in reshaping cooperative institutions. Ghirlanda and Kirov (2024), through a systematic literature review, demonstrate that platform cooperativism integrates collective ownership with digital infrastructures to improve value creation efficiency, although tensions remain between democratic governance and platform efficiency [13]. Similarly, Dawson Jr et al.

(2024) show that the success of cooperative digitalisation is strongly influenced by the governance design of collaborative digital platforms, which can enhance coordination, transparency, and trust among members [14]. Furthermore, Maulana and Dečman (2023) argue that digital transformation triggers institutional changes across regulative, normative, and cognitive dimensions, thereby requiring the adoption of collaborative governance models to maintain democratic principles within digitally transformed cooperatives [15].

To provide a clear analytical direction within the Systematic Literature Review (SLR) approach, this study formulates a set of research questions designed to identify the development of the literature, examine the conceptual relationship between cooperative governance and digital transformation, and explore policy implications for strengthening cooperatives in Indonesia within the framework of Vision 2045. Based on these objectives, the study addresses the following research questions:

RQ1: How has the existing literature conceptualised the relationship between governance structures and digital transformation in the cooperative sector?

RQ2: What governance challenges and institutional factors influence the digitalisation of cooperatives, particularly in developing country contexts such as Indonesia?

RQ3: How does the interaction between governance and digital transformation affect the sustainability and competitiveness of cooperatives?

RQ4: What policy and strategic implications can be derived from the literature to strengthen cooperative governance and digital transformation in Indonesia toward the Vision 2045 development agenda?

2. METHOD

This study employs a systematic literature review (SLR) approach characterised by descriptive-analytical analysis and conceptual synthesis [16]. The research data were obtained from relevant scientific literature, including international and national journal articles, academic books, policy reports, and regulatory documents related to cooperative governance and digital transformation in Indonesia. The literature selection followed several criteria, namely topical relevance (cooperative governance, digitalisation, digital business models, and digital economic transformation), publication period (2019-2025), and source quality, with priority given to peer-reviewed publications indexed in reputable databases such as Scopus, SINTA, and DOAJ.

The literature search was conducted systematically through several academic databases, including Scopus, SINTA, DOAJ, and Google Scholar, using keywords such as cooperative governance, digitalisation, platform cooperatives, digital governance, and cooperative transformation in Indonesia. The initial search identified 126 publications related to the research topic. After removing duplicates and screening titles and abstracts based on relevance, 58 articles were selected for full-text review. After further evaluation according to predetermined inclusion criteria, 8 articles were included in the final analysis. The selection procedure followed systematic review principles and was guided by the PRISMA framework to ensure transparency and reproducibility.

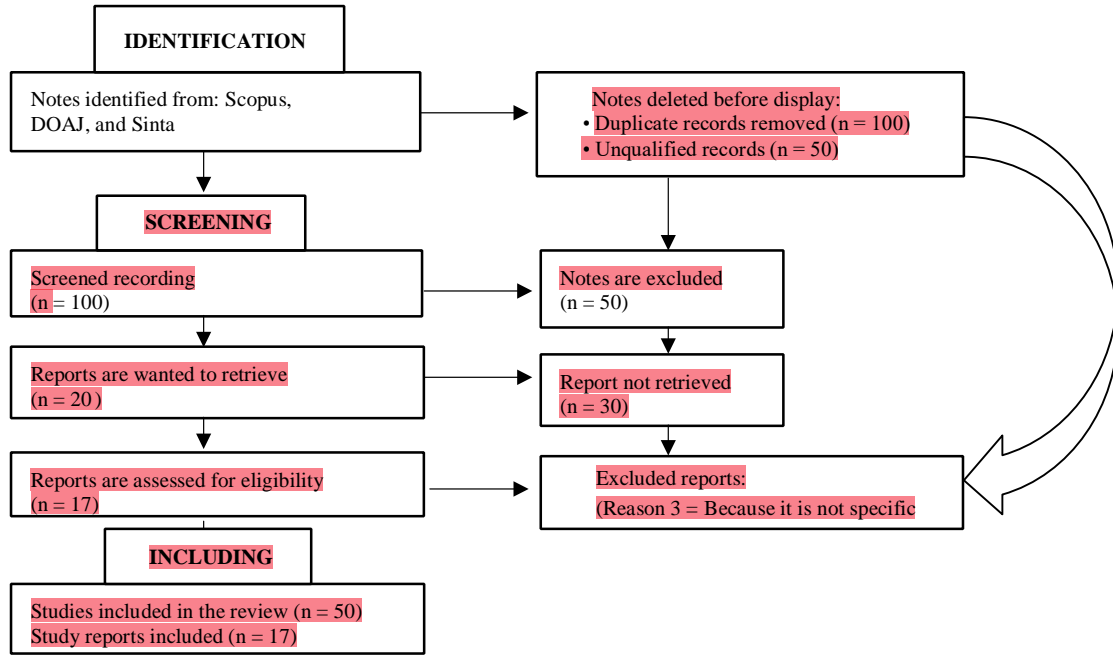


Figure 1. Research Identification Through Database

Data analysis was conducted using thematic synthesis and descriptive-analytic techniques through three main stages: coding, categorisation, and synthesis. Key concepts and findings from the selected articles were first coded and then grouped into broader themes, including governance principles, digital transformation processes, cooperative business models, and institutional challenges. These themes were subsequently synthesised to develop a conceptual framework that explains the relationship among governance, digitalisation, and cooperative sustainability. The findings were presented through literature summary tables, conceptual mapping, and analytical discussion, while validity and reliability were strengthened through source triangulation, consistent selection criteria, and systematic documentation of the review process.

3. RESULTS AND DISCUSSION

3.1. Trends in Cooperative Governance and Digitalisation Literature

The literature on cooperative governance and digitalisation from 2019 to 2025 shows a notable rise, mirroring the rapid advancement of global digital transformation and the reinforcement of platform-centric economic discourse. Cooperatives, regarded as economic entities founded on collective values and economic democracy, are increasingly recognised in digital transformation research due to their capacity to reconcile economic efficiency with social justice. This fact is evidenced by the growing volume of publications that characterise cooperatives as alternative participants in the digital economy, particularly in reaction to the supremacy of capital-driven platform enterprises.

Table 1. Summary of Cooperative Governance and Digitalisation Literature Trends (2019-2025)

| No | Researcher | Main Study Focus | Research methods | Geographic Context | Key Findings | Relevance to Research |
|----|---------------------------|----------------------------------------------------------|----------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| 1 | Ghirlanda & Kirov (2024) | Cooperativism and digital governance platform | Systematic Literature Review | Global (dominantly European) | Global (European-dominant) Digital platforms enable cooperative efficiency but also raise tensions between member democracies and platform logic. | Becomes the conceptual basis for governance-digitalisation integration |
| 2 | Dawson Jr et al. (2024) | Digital platform governance in agricultural cooperatives | Qualitative Case Study | North America | Collaborative governance strengthens member trust and transparency | Demonstrates the role of governance in the success of digitalisation |
| 3 | Maulana & Dečman (2023) | Digital transformation and institutional change | Systematic Review & Bibliometric | Global | Digitalisation affects the regulative, normative and cognitive dimensions of organisations. | Relevant for the analysis of cooperative institutional changes |
| 4 | Scholz & Schneider (2022) | Cooperative governance in the platform economy | Conceptual Analysis | Western Europe | Digital cooperatives as an alternative to capitalistic platforms | Strengthening the narrative of cooperatives in the digital economy |
| 5 | Massarutto et al. (2020) | Digital cooperative business model | Conceptual Studies | Global | Digital cooperatives have the potential to create an inclusive economy | Relevant to the mission of inclusive development |
| 6 | Birchall (2020) | Modern cooperative governance | Theoretical studies | Global | Adaptive governance determines the sustainability of cooperatives | Theoretical foundations of cooperative governance |
| 7 | Nugroho et al. (2022) | Digitalisation of Cooperatives in Indonesia | Descriptive Study | Indonesia | Digitalisation is still limited to operations and has not touched governance. | Shows gaps in the Indonesian context |
| 8 | Pranata & Suryani (2023) | Cooperative readiness to face digital transformation | Qualitative Study | Indonesia | Low digital literacy and institutional capacity | Reinforce the urgency of research |

This research's literature summary table systematically delineates the thematic, methodological, and geographical patterns in the examination of cooperative governance and digitalisation from 2019 to 2025. The table facilitates the identification of primary trends in academic discourse by comparing studies across focus, methodological approach, and

research context. Consequently, the table serves as a preliminary tool for understanding the evolution and trajectory of research on cooperative transformation in the digital age.

The table indicates that the majority of research continues to concentrate on conceptual themes, including digital cooperative governance, platform cooperativism, and innovation in technology-driven business models. The prevailing methodologies include conceptual studies, systematic literature reviews, and qualitative case studies, whereas quantitative and comparative empirical research across various contexts remains comparatively scarce. This pattern suggests that the examination of cooperative governance and digitalisation remains in the phase of reinforcing the conceptual framework, necessitating additional research that is more practical and grounded in empirical data.

The literature summary table indicates a predominance of research situated in developed nations, particularly in Western Europe and North America. These studies are typically underpinned by a well-established institutional framework and digital infrastructure, thereby presenting an optimal representation of collaborative digitalisation practices. Conversely, studies that specifically investigate the context of developing nations, such as Indonesia, remain scarce and tend to be superficial, frequently focusing solely on technology adoption while neglecting a comprehensive analysis of the ramifications of governance and institutional transformation.

In addition to geographical disparities, the table also highlights conceptual deficiencies in the literature, particularly the lack of a cohesive analytical framework that integrates governance and digitalisation. Much of the research continues to examine these two dimensions in isolation, thereby failing to offer a holistic understanding of the interplay between governance and the digital transformation of cooperatives. The disparity becomes more apparent when considered alongside long-term national development initiatives, such as Vision 2045, which is infrequently used as an analytical framework in digital cooperative research.

This literature summary table serves not only to present initial findings but also as a crucial foundation for developing a concept map illustrating the relationship between governance and cooperative digitalisation, as well as for formulating policy implications in the subsequent discussion section. This table employs source triangulation, consistent literature selection criteria, and documentation of the screening process to mitigate interpretation bias and enhance the validity of the research synthesis. The literature summary table serves a crucial function by connecting research methodologies with substantive analysis and policy recommendations to enhance the role of Indonesian cooperatives in alignment with Vision 2045.

3.2. Dynamics of Cooperative Governance in the Digital Era

Cooperative governance serves as the institutional framework that distinguishes cooperatives from other business entities, as it is founded on the principles of economic democracy, voluntary membership, and member control [22]. In the digital age, these principles encounter novel dynamics stemming from alterations in organisational operations, interactions, and value creation. Digitalisation alters not only the technical dimensions of cooperative operations but also impacts the decision-making framework, the dynamics

between management and members, and the mechanisms of organisational accountability[3]. Thus, comprehending the dynamics of cooperative governance in the digital age is essential for ensuring the sustainability of cooperative institutions.

The principle of transparency in cooperative governance has evolved in significance alongside the integration of digital technology. Transparency now extends beyond the submission of periodic financial reports to encompass unrestricted access to organisational information, business processes, and digital systems utilised by cooperatives [23]. Research indicates that implementing digital information systems enhances transparency by delivering data more rapidly, precisely, and readily accessible to users. The effectiveness of digital transparency depends largely on the system architecture and the management's commitment to disclosing information fairly and responsibly.

In addition to transparency, the principle of accountability is becoming increasingly vital in the realm of cooperative digitalisation. Digital technology enables the quantifiable tracking of management performance through data-driven reporting systems and digital audits. This condition may enhance organisational accountability as members possess more efficient monitoring tools [24]. Conversely, the literature indicates that the intricacy of digital systems may hinder members' comprehension of available information, thereby undermining accountability unless it is paired with enhanced capacity and digital literacy among members.

The role of member participation as a fundamental principle of cooperatives has undergone a notable transformation in the digital age. The utilisation of information technology facilitates the creation of novel participation mechanisms, including online forums, membership applications, and e-voting systems [25]. These innovations can enhance member engagement, overcome geographical barriers, and increase participation by younger demographics in cooperatives. Nevertheless, the literature underscores that digital participation is not inherent and may engender new exclusions for individuals with restricted access or technological proficiency.

The primary challenge in applying cooperative governance principles in the digital age is the escalating demands for professionalism in organisational management. Digitalisation necessitates human resources with advanced technical proficiency, particularly in the management of information systems, data, and digital platforms [26]. This condition frequently engenders tensions between managerial professionalism and democratic oversight by members, particularly when strategic decisions increasingly rely on technical expertise that most cooperative members lack.

The literature underscores potential conflicts of interest stemming from the digitalisation of cooperatives. The administration of digital systems and strategic data can confer substantial authority to specific individuals or factions within an organisation, potentially altering the internal power dynamics. In the absence of explicit governance mechanisms, digitalisation may facilitate opportunistic behaviour, data misuse, or decision-making that diverges from members' collective interests [27].

Altering the cooperative organisational structure presents an additional challenge frequently encountered during the digital transformation process. Digitalisation often promotes the centralisation of specific functions, particularly those associated with

technology and data management [28]. The literature indicates that this centralisation may enhance operational efficiency, yet it may also diminish member participation in decision-making processes. Consequently, cooperatives must reconcile the necessity for efficiency with the tenets of economic democracy by implementing adaptive organisational structures.

The governance role is increasingly strategic in ensuring the sustainability of cooperatives amid various challenges. Adaptive governance enables cooperatives to address technological advancements while preserving their identity and fundamental values [29]. Literacy indicates that cooperatives capable of adjusting internal regulations, oversight systems, and leadership styles to meet digital requirements are generally more resilient in the face of technological disruption.

Governance serves as a normative framework that guides the utilisation of digital technology to align with the cooperative's collective objectives. In this context, digital governance emerges as a framework that amalgamates cooperative principles with technological oversight. Digital governance enables cooperatives to oversee the utilisation of technology, safeguard member data, and equitably allocate digital benefits [30].

Research indicates that the sustainability of cooperatives in the digital age is significantly influenced by the quality of governance associated with technology implementation. Robust and participatory governance enhances members' trust and the social legitimacy of cooperatives, whereas constrained institutional capacity and limited digital literacy in developing nations such as Indonesia necessitate a comprehensive, incremental digitalisation strategy. In the absence of governance reform, digitalisation threatens to exacerbate the structural issues of cooperatives and diminish their effectiveness as tools of the people's economy.

3.3. Digitalisation and Cooperative Business Models: Opportunities, Risks, and Integration with Governance

Digitalisation has instigated profound transformations in cooperative business models, shifting from traditional frameworks to those increasingly reliant on technology and digital platforms [31]. Recent literature defines digitalisation not merely as the adoption of technological tools, but as a transformation in how cooperatives generate, distribute, and capture economic value for their members. This alteration necessitates that cooperatives modify their business models to remain relevant in the competitive digital economy while upholding the fundamental principles of cooperatives as collective, value-driven entities.

A prevalent topic in the literature regarding digital business model innovation is the notion of cooperative platforms. This model employs digital platform technology to link members as producers and consumers within a collaboratively managed ecosystem. Unlike commercial digital platforms, cooperative platforms allocate ownership and control to their members, preventing the centralisation of economic profits and strategic authority among a limited number of individuals [32]. This model is regarded as a more equitable option in the digital economy, aligning with the democratic tenets of cooperative economics.

In addition to cooperative platforms, the advancement of cooperative e-commerce is emerging as a significantly pertinent innovation in digital business models. Digitalisation enables cooperatives to enhance the market accessibility of members' products and services

via online platforms, encompassing local, national, and global dimensions [33]. Research indicates that cooperative e-commerce can enhance the competitiveness of member enterprises, particularly micro and small businesses, by lowering transaction costs and broadening consumer access. In this context, cooperatives serve as aggregators and facilitators, enhancing members' bargaining power in the digital marketplace.

Digital services for members are a crucial component of the transformation of cooperative business models. Digitalisation facilitates the delivery of enhanced membership services, including membership information systems, digital payments, online financing, and application-based consultation services. This service innovation enhances the internal efficiency of cooperatives and fortifies members' allegiance to the organisation [34]. The literature highlights that the quality of inclusive, readily accessible digital services is a crucial determinant of sustained member engagement in the digital age.

The main benefit of digitalisation for the cooperative business model is that it improves operational efficiency. Information technology facilitates the automation of administrative processes, the management of membership data, and data-driven decision-making [35]. This efficiency may lower cooperative operational expenses and enhance business surpluses available for distribution to members. Over time, digital efficiency can enhance the financial viability of cooperatives amid intensifying economic competition.

In addition to enhancing efficiency, digitalisation facilitates broader market access for cooperatives and their members. Digital technologies diminish cooperatives' reliance on local markets and facilitate integration into digital value chains [36]. Literature indicates that digital market access is crucial for cooperatives in developing nations, as it can mitigate geographic and physical infrastructure constraints. In the Indonesian context, this potential pertains to enhancing the role of cooperatives as catalysts for regional economic development and national economic inclusion.

Digitalisation enhances member inclusivity by offering more flexible and cost-effective services. Digital platforms enable individuals with restricted time or geographical constraints to engage in collaborative activities [37]. The literature underscores that digital inclusivity is contingent on individuals' **levels of digital literacy and access to technology.** In the absence of suitable intervention, digitalisation **may generate new forms of exclusion** within cooperatives.

A primary risk of digitising the cooperative business model is the potential for a digital divide among members. Variations in technological access, digital competencies, and infrastructure can engender disparities in participation and advantages. The literature indicates that cooperatives that do not anticipate the digital divide risk losing social legitimacy and diminishing member engagement. Consequently, collaborative digitalisation strategies must be complemented by initiatives to enhance literacy and ensure equitable digital access.

A significant risk is data security and member privacy. The digitalisation of cooperative business models entails the extensive management of members' personal data and economic transactions. In the absence of sufficient data governance, cooperatives are susceptible to data breaches, information misuse, and cyber threats [38]. The literature



underscores that data security is both a technical and a governance issue, involving members' trust in the cooperative.

Moreover, digitalisation can instigate a consolidation of authority within cooperative governance. The dominance of technology and strategic data by specific groups can undermine the principle of democratic control by constituents [27]. The literature warns that digital business models lacking robust governance mechanisms may mirror traditional corporate practices, thereby obscuring cooperatives' identity as member-centric organisations.

Confronting these opportunities and risks, the integration of governance and digitalisation is essential for cultivating a sustainable cooperative business model. The notion of digital governance provides a framework for overseeing the utilisation of digital technology in a transparent, accountable, and participatory fashion. Digital governance enables cooperatives to maintain collective control over strategic decisions related to technology and business models among their members.

The cooperative business model, founded on collective values, serves as the normative foundation for integrating governance and digitalisation. Digitalisation is regarded not as a final objective but as a tool to enhance member welfare and cooperative contributions to national development. By incorporating governance principles into the formulation of digital business models, cooperatives can emerge as pivotal participants in an inclusive and equitable digital economic transformation, aligning with Indonesia's developmental objectives towards Vision 2045.

3.4. Policy and Strategy Implications for Strengthening Indonesian Cooperatives Towards Vision 2045

The discourse on policy implications and strategies for enhancing Indonesian cooperatives in alignment with Vision 2045 originates from an assessment of the preparedness of national cooperatives to navigate the complexities of the digital economy. The literature shows that most cooperatives in Indonesia are still **in the early stages of digital transformation, with** different regions and types adopting technology at varying rates. Limited digital literacy among management and members, disparate managerial capabilities, and disparities in digital infrastructure constitute structural obstacles that hinder cooperatives' preparedness to transition to the digital economy [10]. This situation indicates that the evolution of digital cooperatives in Indonesia requires comprehensive, sustained policy interventions.

Nonetheless, cooperatives possess considerable strategic potential to confront the digital economy, particularly given their fundamental nature as member-based organisations and their collective values [39]. Within the framework of Vision 2045, cooperatives can serve as a crucial mechanism to guarantee that digital economic transformation fosters growth while simultaneously enhancing inclusivity and equality. The digitalisation of cooperatives can facilitate market access and financial services for small business groups, rural communities, and the informal sector, which traditional digital market mechanisms have inadequately served.

The significance of cooperatives in national development lies in their objective of enhancing people's economic well-being and economic democracy, which are integral to Indonesia's long-term vision[40]. The literature substantiates that digital cooperatives can serve as a conduit between technological innovation and the broader community's interests, positioning members as both proprietors and users of digital services. Within this framework, cooperatives serve as both economic entities and social institutions that enhance social cohesion and community economic resilience amid digital disruption.

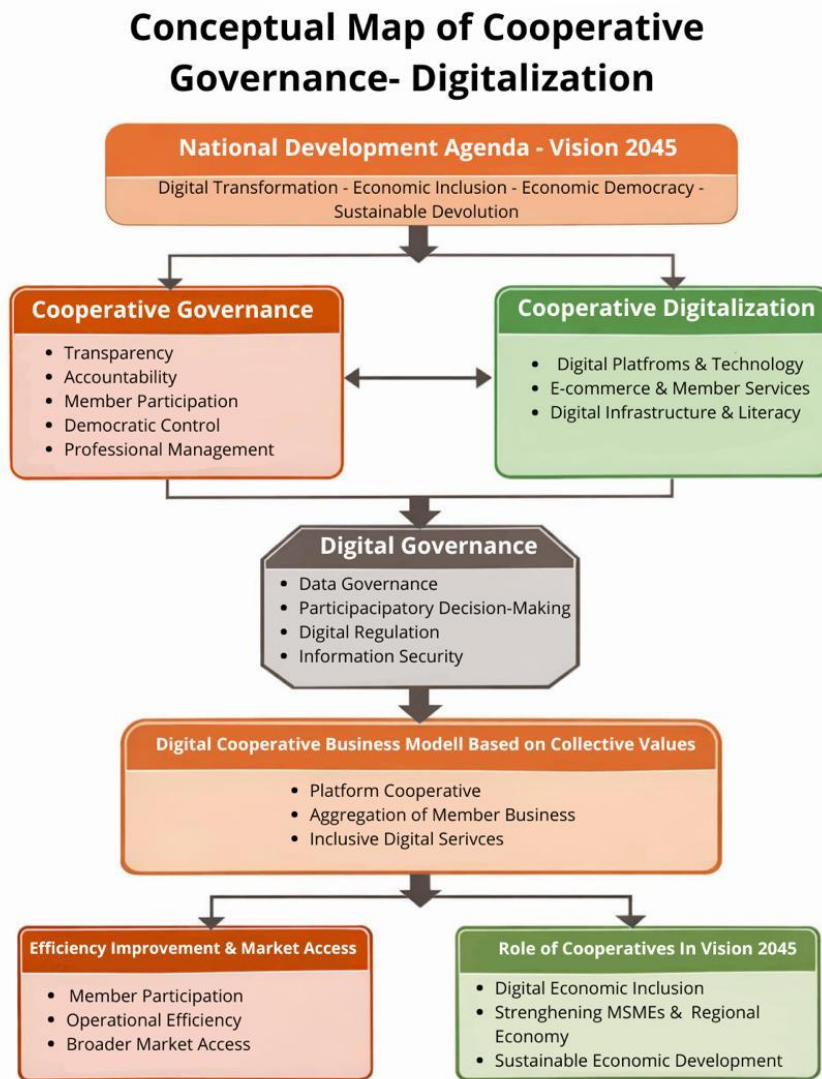


Figure 2. Conceptual Map of Cooperative Governance-Digitalisation Towards Vision 2045

The initial policy recommendation derived from the above image is the necessity for collaborative regulations that are responsive to digital innovation. The regulatory framework must ensure legal certainty for the advancement of digital cooperative business models, including cooperative platforms and technology-driven services, while upholding the fundamental principles of cooperatives. Excessively stringent regulations may hinder innovation, whereas overly lenient regulations can undermine member protection and the overall value of cooperatives.

The second policy recommendation pertains to enhancing the digital competencies of cooperative members and managers. Digital transformation cannot operate effectively without human resources possessing sufficient digital literacy and competence. Consequently, cooperative development policies must incorporate digital training initiatives, managerial support, and the enhancement of cooperative leadership that is responsive to technological advancements. This strategy is crucial to avert internal digital disparities and guarantee sustained member engagement.

The advancement and dissemination of digital infrastructure is the primary prerequisite for enhancing digital cooperatives, particularly in rural and underdeveloped regions. The literature highlights that insufficient access to adequate infrastructure may exacerbate regional disparities in the digitalisation of cooperatives. Consequently, cooperative development policies must align with the national agenda to enhance digital infrastructure and connectivity, ensuring that cooperatives across diverse regions have equitable access to the digital economy.

Fourth, the endorsement of a collaborative digital ecosystem is a crucial determinant in the success of digital cooperatives. This ecosystem encompasses collaborations among government entities, cooperatives, the private sector, financial institutions, and educational institutions. Research indicates that cooperatives integrated within digital innovation ecosystems are generally more adaptive and sustainable. In the Indonesian context, enhancing this ecosystem can empower cooperatives to become proactive participants in the national digital value chain.

This research presents practical policy implications and delineates a significant agenda for future investigation. Empirical research on digital cooperative practices in Indonesia remains relatively scarce, particularly concerning governance, business models, and their effects on members' welfare. Field research using case studies, surveys, and mixed-methods is essential to evaluate the applicability of conceptual findings in national empirical contexts.

A subsequent research agenda involves assessing the efficacy of governmental policies and programs pertaining to the digitalisation of cooperatives. This evaluation is crucial for determining the effectiveness of current policies in addressing the structural challenges faced by cooperatives and facilitating the attainment of Vision 2045 objectives. Integrating empirical methods and policy analysis can yield operational insights for developing strategies to enhance digital cooperatives in the future.

This discussion underscores that fortifying Indonesian cooperatives in line with Vision 2045 necessitates a comprehensive, cohesive policy strategy encompassing governance, digitalisation, and national development. Through adaptive regulations, capacity enhancement, digital infrastructure, and a supportive ecosystem, cooperatives have the potential to serve as a crucial pillar in Indonesia's inclusive, equitable, and sustainable digital economic transformation.

4. CONCLUSION

This study highlights the strategic importance of integrating governance reform with digital transformation to strengthen the role of cooperatives in the digital economy. The analysis indicates that the sustainability of cooperatives increasingly depends on their ability

to adapt governance structures to technological change while maintaining principles of transparency, accountability, and member participation. In the context of Indonesia's Vision 2045, such integration is essential to enabling cooperatives to function as inclusive economic institutions that support equitable and sustainable national development.

The study provides theoretical implications by developing a conceptual synthesis that explains the interaction between cooperative governance and digital transformation within the broader framework of institutional change. From a practical and policy perspective, the findings suggest that strengthening digital cooperatives requires supportive regulatory frameworks, enhanced members' digital competencies, and the development of an inclusive digital ecosystem that facilitates broader participation in the digital economy. These insights are relevant to policymakers, cooperative institutions, and development stakeholders seeking to strengthen cooperatives' institutional capacity in the era of digital transformation.

However, this research is limited by its reliance on secondary literature, which restricts its ability to capture empirical variations in cooperative digitalisation practices across different regions and sectors in Indonesia. Future studies are therefore encouraged to employ empirical approaches, such as case studies, surveys, or mixed-method designs, to examine more comprehensively how governance and digital transformation influence cooperative performance, member welfare, and regional economic development. Such research will help generate more operational and context-sensitive policy recommendations, thereby supporting the development of adaptive, competitive, and socially inclusive cooperatives in Indonesia.

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