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Digitalization of Cooperative Governance in Indonesia: Legal Adaptation to Electronic General Meetings and Electronic Voting

Digitalización de la gobernanza cooperativa en Indonesia: adaptación jurídica a las asambleas generales electrónicas y al voto electrónico

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Digitalization of Cooperative Governance in Indonesia: Legal Adaptation to Electronic General Meetings and Electronic Voting

(Digitalización de la gobernanza cooperativa en Indonesia: adaptación jurídica a las asambleas generales electrónicas y al voto electrónico)

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Sumario: I. Introducción. II. Fundamentos conceptuales y jurídicos de la gobernanza cooperativa. III. Transformación digital y gobernanza cooperativa. IV. Marco jurídico de las asambleas generales electrónicas. V. Conclusión. Declaración sobre el uso de tecnologías asistidas por IA. Bibliografía.

Abstract: This study examines the legal adaptation required for digital cooperative governance in Indonesia, focusing on electronic General Meetings and electronic voting. Using doctrinal legal research, it analyzes the Cooperative Law (Law No. 25 of 1992, as amended in relevant part by Law No. 6 of 2023), the Electronic Information and Transactions Law (Law No. 11 of 2008, as amended by Laws No. 19 of 2016 and No. 1 of 2024), and Government Regulations No. 7 of 2021 and No. 71 of 2019. Indonesian law expressly permits online and offline member meetings, yet lacks integrated procedural standards for authentication, quorum, voting integrity, system reliability, electronic records, and digital inclusion. The article proposes minimum safeguards for secure participation, auditable voting, continuity during system failure, and authenticated electronic minutes to protect democratic member control and the enforceability of cooperative decisions.

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Keywords: Cooperative law; Digital governance; Electronic voting; General Meeting; Indonesia.

Resumen: Este estudio examina la adaptación jurídica necesaria para la gobernanza cooperativa digital en Indonesia, con especial atención a las asambleas generales electrónicas y al voto electrónico. Mediante una investigación jurídica doctrinal, analiza la Ley de Cooperativas (Ley n.º 25 de 1992, modificada en lo pertinente por la Ley n.º 6 de 2023), la Ley de Información y Transacciones Electrónicas (Ley n.º 11 de 2008, modificada por las Leyes n.º 19 de 2016 y n.º 1 de 2024), y los Reglamentos Gubernamentales n.º 7 de 2021 y n.º 71 de 2019. El derecho indonesio permite expresamente las reuniones de socios en línea y presenciales, pero carece de normas procedimentales integradas sobre autenticación, quórum, integridad del voto, fiabilidad del sistema, registros electrónicos e inclusión digital. El artículo propone salvaguardias mínimas para una participación segura, una votación auditable, la continuidad ante fallos del sistema y la autenticación de las actas electrónicas.

Palabras clave: Derecho cooperativo; Gobernanza digital; Voto electrónico; Asamblea general; Indonesia.

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I. **Introduction**

The rapid advancement of digital technologies has profoundly transformed the organizational structures and governance mechanisms of economic entities worldwide. Digitalization has moved beyond operational efficiency to reshape institutional decision-making processes, communication models, and governance practices (Varoglu, Gokten, and Ozdogan 2021). In this context, cooperative enterprises, traditionally rooted in democratic participation and collective management, are increasingly confronted with the need to integrate digital tools into their governance frameworks. As digitalization redefines the modalities of organizational interaction, cooperatives must adapt their legal and institutional arrangements to ensure that their democratic governance remains effective, legitimate, and legally secure in the digital era (Rodríguez Musa and Hernández Aguilar 2025).

Cooperatives occupy a unique position within the legal and economic landscape due to their distinctive governance model based on member participation, democratic control, and collective ownership. Unlike capital-based companies, the legitimacy of cooperative decisions derives directly from member participation, typically exercised through the General Assembly as the supreme decision-making body (Snaith 2017). Consequently, any transformation in the methods through which members participate such as the shift from physical assemblies to electronic meetings raises fundamental legal questions concerning the validity, legitimacy, and enforceability of cooperative decisions in digital environments. The digital transformation of cooperative governance is therefore not merely a technical matter but a legal and institutional challenge that requires careful normative adaptation (Izquierdo Muciño 2025).

In recent years, digital transformation has emerged as a global phenomenon affecting cooperatives across diverse jurisdictions. Studies have demonstrated that digital technologies, including electronic communication systems, cloud computing, and digital platforms, enable cooperatives to enhance operational efficiency, improve member engagement, and expand their reach beyond geographical constraints (Izquierdo Muciño 2025). However, digital transformation also introduces legal complexities, particularly regarding the recognition of electronic decision-making processes and the protection of cooperative principles such as democratic participation, equality among members, and transparency. These developments underscore the urgent need to examine whether existing cooperative legal frameworks are adequately equipped to accommodate digital governance practices (Rodríguez Musa and Hernández Aguilar 2025).

Recent academic literature has begun to explore the relationship between cooperative law and digitalization, focusing primarily on institutional digital transformation, cooperative incorporation procedures, and regulatory modernization. For instance, Rodríguez Musa and Hernández Aguilar analyze the digital transformation of Cuban cooperatives, highlighting both the legal limitations and the potential of existing frameworks to support digital adaptation. Their study emphasizes that while legal systems may recognize digital transformation as a strategic objective, significant regulatory gaps remain in facilitating its effective implementation within cooperative governance structures (Rodríguez Musa and Hernández Aguilar 2025).

Similarly, Rodríguez González examines digital tools for the establishment and registration of cooperatives. The study shows that digitalization can simplify incorporation procedures and reduce administrative burdens, while also revealing that cooperative legislation may lag behind digital administrative practice. Because its analysis is centered on formation and registration, it leaves unresolved the distinct governance questions raised by electronic General Meetings and electronic voting (Rodríguez González 2025).

Further research on Mexican cooperatives highlights that digitalization is becoming an essential component of cooperative development, particularly in facilitating communication, improving operational efficiency, and strengthening decision-making processes. Nevertheless, these studies also emphasize that cooperative assemblies the cornerstone of cooperative democracy face substantial challenges in digital environments, including unequal access to technology, data security concerns, and legal uncertainty regarding electronic participation and voting mechanisms. These challenges reveal the complex interplay between technological innovation and legal legitimacy in cooperative governance (Izquierdo Muciño 2025).

While existing literature has made significant contributions to understanding the broader digital transformation of cooperatives, most studies focus primarily on digitalization in areas such as cooperative incorporation, operational efficiency, or general regulatory modernization. Relatively limited attention has been given to the specific legal implications of digitalizing cooperative governance mechanisms, particularly electronic general meetings and electronic voting systems. This gap is notable because these mechanisms directly affect the exercise of cooperative democracy, the validity of collective decisions, and the protection of members' legal rights.

The transition from traditional in-person assemblies to electronic meetings raises fundamental legal questions concerning procedural

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validity, member identification, voting integrity, and decision enforceability. Cooperative law has historically been developed based on the assumption of physical interaction among members, and many legal provisions do not explicitly address digital participation or electronic voting. As a result, the introduction of digital governance practices may create legal uncertainty, institutional risks, and potential disputes regarding the validity of cooperative decisions made through electronic means.

Moreover, digital governance presents both opportunities and risks for cooperative democracy. On the one hand, electronic meetings and voting systems can enhance accessibility, facilitate participation by geographically dispersed members, and improve governance efficiency. On the other hand, they may also introduce risks related to digital exclusion, cybersecurity vulnerabilities, and the potential erosion of participatory equality among members. Ensuring that digital governance strengthens rather than undermines cooperative principles requires careful legal adaptation and regulatory clarity.

The COVID-19 pandemic further accelerated the digitalization of governance processes across various organizational forms, including cooperatives. Emergency measures adopted during the pandemic allowed organizations to conduct meetings electronically, demonstrating both the feasibility and the necessity of digital governance mechanisms. However, these temporary adaptations have highlighted the lack of comprehensive and permanent legal frameworks governing digital cooperative governance, reinforcing the need for systematic legal reform and doctrinal analysis.

In this context, this article seeks to examine the legal adaptation required to support the digitalization of cooperative governance, with particular emphasis on electronic general meetings and electronic voting systems. It analyzes the extent to which existing cooperative legal frameworks accommodate digital governance practices and identifies regulatory gaps that may undermine legal certainty, democratic legitimacy, and institutional effectiveness. By focusing specifically on governance mechanisms, this study complements existing literature that has primarily addressed digitalization in cooperative formation and general operational contexts.

The novelty of this research lies in its specific focus on the legal implications of digital cooperative governance, particularly the validity and legitimacy of electronic decision-making processes within cooperative institutions. Unlike previous studies that primarily examine digital transformation from a structural or administrative perspective, this article provides a focused legal analysis of governance adaptation, empha-

sizing the interaction between cooperative principles, legal validity, and digital technology. This approach contributes to advancing the doctrinal and regulatory understanding of cooperative law in the digital age.

Ultimately, this study aims to contribute to the development of a coherent legal framework capable of supporting digital cooperative governance while preserving the fundamental principles of cooperative democracy. By analyzing the legal challenges and opportunities associated with electronic meetings and electronic voting, this article seeks to provide both theoretical insights and practical recommendations to ensure that cooperative law remains relevant, effective, and responsive to the realities of digital transformation.

II. **Conceptual and Legal Foundations of Cooperative Governance**

Cooperatives constitute a distinct form of legal entity characterized by their democratic governance structure and member-centered organizational model (Meira 2022). Unlike capital-based corporations, cooperatives are founded upon the voluntary association of individuals who unite to meet their common economic, social, and cultural needs through a jointly owned and democratically controlled enterprise (Hammer 2012). This distinctive legal nature places cooperative governance at the center of cooperative identity, making the participation of members not merely a procedural requirement but the fundamental source of institutional legitimacy. The legal structure of cooperatives therefore reflects a unique balance between organizational efficiency and democratic participation, requiring governance mechanisms that ensure both legal certainty and member empowerment (Henrÿ 2022).

The legal recognition of cooperatives as autonomous legal entities has been established in various national and international legal frameworks. Cooperative law defines cooperatives as legal persons capable of holding rights, assuming obligations, and acting independently through their institutional organs. However, the exercise of cooperative legal personality depends fundamentally on collective decision-making processes carried out through its governance organs, particularly the General Assembly. As a result, cooperative governance is not simply an internal administrative function but a legal process through which the cooperative expresses its will and exercises its legal capacity (Vodenicharov 2020).

At the core of cooperative governance lies the principle of democratic member control, which distinguishes cooperatives from other forms of business organizations. This principle ensures that cooperative members

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retain ultimate authority over the direction and management of the cooperative through participatory decision-making mechanisms (Lenhart 2023). Each member typically possesses equal voting rights regardless of capital contribution, reinforcing the democratic character of cooperative governance. This principle reflects the cooperative philosophy that economic participation should be governed by collective decision-making rather than capital ownership (Snaith 2017; Vodenicharov 2020).

The General Assembly serves as the supreme decision-making organ within the cooperative structure. It represents the institutional forum through which members collectively exercise their governance rights, including the adoption of policies, election of management bodies, approval of financial statements, and determination of the cooperative's strategic direction (Miribung 2020). The legal authority of the General Assembly derives directly from cooperative law and the cooperative's statutes, making it the primary mechanism through which the cooperative expresses its institutional will. Consequently, the proper functioning of the General Assembly is essential to maintaining the legal validity and legitimacy of cooperative decisions (Buang and Abu Samah 2021).

The decisions adopted by the General Assembly have binding legal effects on the cooperative and its members. These decisions form the legal basis for cooperative actions, including contractual agreements, financial transactions, and administrative decisions. Their validity therefore depends on compliance with procedural requirements established by applicable law and the cooperative statutes, including notice, quorum, voting procedures, and accurate documentation. Procedural defects may expose a resolution to challenge or undermine its enforceability (Bierecki 2021).

The legal validity of cooperative decisions is closely linked to the participation of members in the decision-making process. Participation ensures that cooperative decisions reflect the collective will of members rather than the unilateral actions of management bodies (Novković and McMahon 2023). From a legal perspective, participation serves as the foundation for institutional consent, which legitimizes cooperative decisions and protects member rights. This participatory requirement reinforces the democratic nature of cooperatives while ensuring that governance processes remain transparent, accountable, and legally enforceable (Pönkä 2018).

Collective cooperative decisions are institutional legal acts produced through structured deliberation and voting. Their legitimacy depends on verifying participant status and voting entitlement and on preserving an accurate record of the process. In electronic settings, these functions re-

quire reliable authentication, traceable participation, and records capable of later verification (Pönkä 2018; Vázquez Pena 2022).

The governance structure of cooperatives typically includes multiple institutional organs, including the General Assembly, the Board of Directors, and supervisory bodies. While management bodies are responsible for operational decision-making, their authority derives from and remains subordinate to the General Assembly (Puusa 2024). This hierarchical relationship ensures that ultimate governance authority resides with the cooperative members, preserving the democratic character of cooperative governance. The legal framework governing these institutional relationships establishes clear roles and responsibilities to prevent abuse of authority and ensure accountability.

The legitimacy of cooperative governance depends not only on legal compliance but also on adherence to cooperative principles. These principles, recognized internationally, emphasize democratic participation, equality among members, and transparency in governance processes. Legal frameworks governing cooperatives are designed to protect these principles by establishing procedural safeguards that ensure member participation and prevent the concentration of power. As a result, cooperative governance is both a legal and normative system that integrates legal rules with cooperative values (Vodenicharov 2020).

In the modern legal environment, cooperative governance must also address the challenges posed by technological and social change. Traditional governance models were developed in an era where physical presence was assumed to be the primary mode of participation. However, advances in digital technology have created new opportunities for member participation through electronic communication and digital platforms. These technological developments require a re-examination of existing legal frameworks to ensure that cooperative governance remains effective and legally valid in digital contexts.

The transition toward digital governance raises fundamental questions regarding the interpretation of legal concepts such as presence, participation, and consent. Legal frameworks must determine whether electronic participation can be considered equivalent to physical participation and whether electronic voting can produce legally valid decisions. These questions highlight the need for legal adaptation to ensure that cooperative governance mechanisms remain aligned with technological realities while preserving the fundamental principles of cooperative democracy.

Legal certainty is a critical requirement for cooperative governance, particularly in the context of digital transformation. Members must have confidence that decisions adopted through cooperative gov-

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ernance processes are legally valid and enforceable. Similarly, external stakeholders, including creditors, regulators, and business partners, must be able to rely on the legal validity of cooperative decisions. Ensuring legal certainty requires clear legal rules governing governance procedures, including the use of digital technologies.

In conclusion, cooperative governance is founded upon a legal and institutional framework that emphasizes democratic participation, legal validity, and institutional legitimacy. The General Assembly plays a central role in expressing the cooperative's institutional will, and the validity of cooperative decisions depends on compliance with legal and procedural requirements. As digital technologies reshape governance practices, cooperative law must adapt to ensure that digital participation mechanisms preserve the legal validity, legitimacy, and democratic integrity of cooperative governance.

III. **Digital Transformation and Cooperative Governance**

Digital transformation has emerged as a defining characteristic of contemporary institutional governance, reshaping how organizations operate, communicate, and make decisions. In the cooperative context, digitalization affects not only operational efficiency but also governance mechanisms, particularly the functioning of the General Assembly and member participation. Cooperative governance, traditionally based on physical interaction and in-person deliberation, is increasingly incorporating digital technologies that enable remote participation, electronic communication, and electronic voting. This transformation raises important legal questions regarding the validity, legitimacy, and enforceability of cooperative decisions adopted through digital means (Sturn 2024).

Unless otherwise stated, all references in Sections III and IV to statutes, laws, and government regulations refer to Indonesian law. The UNCITRAL instruments discussed below are used solely as international interpretive benchmarks for functional equivalence and electronic-signature reliability.

The legal recognition of electronic governance mechanisms is closely linked to the broader legal recognition of electronic information and electronic transactions. In Indonesia, Law No. 11 of 2008 on Electronic Information and Transactions, as amended by Law No. 19 of 2016 and Law No. 1 of 2024, recognizes electronic information, electronic documents, and electronic signatures as legally significant where the statutory requirements are satisfied. This framework provides an

important legal basis for electronic meetings and electronic voting when accessibility, integrity, authenticity, and reliability can be demonstrated (Indonesia 2008; Indonesia 2016; Indonesia 2024; Lahangatubun and Muliyono 2025).

Government Regulation No. 71 of 2019 concerning the Implementation of Electronic Systems and Transactions further strengthens the legal basis for digital governance by imposing requirements concerning the security, reliability, accountability, and continuity of electronic systems. These requirements are directly relevant when electronic platforms are used to conduct cooperative meetings, authenticate participants, record proceedings, and preserve decision records (Indonesia 2019; Sitorus and Wanma 2024).

Within Indonesian cooperative law, Law No. 25 of 1992 places the General Meeting at the center of cooperative decision-making and treats member participation as the normative basis for major institutional decisions. Article 22(3), as amended through Law No. 6 of 2023, expressly provides that a General Meeting may be conducted online and/or offline. Indonesian law therefore recognizes electronic participation at the level of primary legislation, although it does not prescribe detailed procedures for authentication, voting integrity, system failure, or evidentiary preservation (Indonesia 1992; Indonesia 2023, art. 22(3); Mulyawan 2023).

Government Regulation No. 7 of 2021 operationalizes this statutory recognition. Article 8(1) permits cooperative member meetings to be conducted online and/or offline; Article 8(2) requires the results to be reported electronically; and Article 8(3) allows manual reporting when the electronic system cannot be used. The regulation gives direct implementing-level recognition to online meetings while leaving important procedural questions about authentication, voting integrity, system failure, and evidentiary preservation to be developed more specifically (Indonesia 2021, art. 8).

At the international level, the UNCITRAL Model Law on Electronic Commerce (1996) provides an interpretive benchmark through the principle of functional equivalence. The principle supports treating electronic communications and electronic records as legally capable of performing functions traditionally associated with paper-based documents when reliability and integrity requirements are satisfied. In cooperative governance, this approach is relevant to electronic meeting records, voting results, and digital documentation of collective decisions (UNCITRAL 1996; Emeasoba 2025).

The UNCITRAL Model Law on Electronic Signatures (2001) further supports the use of reliable electronic authentication to link a signa-

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tory to an electronic record and to confirm approval of its contents. In cooperative governance, comparable authentication mechanisms can help verify member identity, validate participation, and strengthen the evidentiary reliability of electronic resolutions (UNCITRAL 2001; Ruhi 2024).

Digital governance mechanisms provide significant opportunities to enhance cooperative participation. Electronic meetings enable members to participate regardless of geographic location, reducing barriers associated with travel, time constraints, and physical accessibility. This increased accessibility can strengthen cooperative democracy by enabling broader member participation and improving the inclusiveness of governance processes, particularly in large or geographically dispersed cooperatives (Sturn 2024).

In addition to enhancing participation, digital governance can improve the efficiency and effectiveness of cooperative decision-making. Electronic systems can facilitate faster communication, streamline administrative processes, and improve record-keeping. Digital platforms enable cooperatives to distribute meeting materials, conduct voting, and record decisions more efficiently than traditional paper-based systems. These efficiency gains can strengthen cooperative governance by reducing administrative burdens and improving institutional responsiveness (Ratnawati and Santoso 2024).

Despite these advantages, digital governance also introduces significant legal and institutional challenges. Ensuring the authenticity of member participation, protecting the confidentiality of votes, and maintaining the integrity of electronic systems are critical concerns. Electronic governance systems must incorporate robust security measures to prevent fraud, unauthorized access, and manipulation of voting results. Failure to address these concerns may undermine the legitimacy and legal validity of cooperative decisions.

Another important challenge is ensuring equal access to digital governance mechanisms. The digital divide, characterized by unequal access to technology and varying levels of digital literacy, may create inequalities in member participation. Cooperative law must ensure that digital governance mechanisms do not exclude certain members or undermine the principle of democratic participation. Legal frameworks must therefore balance technological innovation with the protection of member rights.

Legal certainty is essential for the successful implementation of digital cooperative governance. Members must have confidence that decisions adopted through electronic governance mechanisms are legally valid and enforceable. Clear legal rules governing electronic

meetings and electronic voting are necessary to prevent disputes and ensure institutional stability. Legal frameworks must establish requirements for system reliability, participant identification, and procedural transparency.

In conclusion, digital transformation presents both opportunities and challenges for cooperative governance. Legal recognition of electronic systems under national and international law provides a strong foundation for digital governance. However, cooperative law must continue to evolve to ensure that electronic meetings and electronic voting mechanisms preserve the legal validity, democratic legitimacy, and institutional integrity of cooperative decision-making.

IV. **Legal Framework for Electronic General Meetings**

The original 1992 framework centered on attendance by members and left the manner of implementation to the cooperative's statutes, without expressly addressing electronic participation. Article 22(3), as amended by Law No. 6 of 2023, now permits General Meetings to be conducted online and/or offline. The current legal issue is therefore no longer whether electronic attendance is permissible, but whether the procedure can reliably establish notice, participation, quorum, deliberation, voting, and an auditable record (Indonesia 1992; Indonesia 2023, art. 22(3)).

A significant legal development occurred with Government Regulation No. 7 of 2021 concerning the Facilitation, Protection, and Empowerment of Cooperatives and Micro, Small, and Medium Enterprises. Article 8 expressly permits cooperative member meetings to be conducted online and/or offline. It also requires meeting results to be reported electronically, with a manual route when the electronic reporting system cannot be used. This provision supplies a direct legal basis for electronic cooperative meetings without requiring every member to be physically present in one location (Indonesia 2021, art. 8).

The legal recognition of electronic General Meetings reflects an important shift in the interpretation of member participation within cooperative law. Participation need not be defined solely by physical presence if members can receive information, deliberate, exercise voting rights, and be identified through a reliable electronic process. The relevant legal inquiry is therefore whether electronic participation performs the governance functions required for democratic member control without diminishing equality, transparency, or the integrity of collective decision-making (Vázquez Pena 2022).

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The legal validity of electronic General Meetings is further supported by Law No. 11 of 2008 concerning Electronic Information and Transactions, as amended by Law No. 19 of 2016 and Law No. 1 of 2024. Indonesian law recognizes electronic information and electronic documents as legally significant where statutory requirements are satisfied. Accordingly, electronic attendance records, meeting materials, voting records, and resolutions can form part of the evidentiary basis for cooperative decision-making, provided their accessibility, integrity, authenticity, and reliability can be demonstrated (Indonesia 2008; Indonesia 2016; Indonesia 2024).

Government Regulation No. 71 of 2019 concerning the Implementation of Electronic Systems and Transactions reinforces this framework by requiring electronic systems used for legally significant activities to meet standards of security, reliability, accountability, and continuity. For electronic General Meetings, these requirements support the need for systems that can identify participants, preserve records, protect data, and maintain auditable evidence of deliberation and voting (Indonesia 2019).

At the international level, the UNCITRAL Model Law on Electronic Commerce (1996) provides an interpretive benchmark through functional equivalence: electronic form should not, by itself, deprive information or a legally relevant process of effect when the electronic method can perform the function required of the traditional form. Applied cautiously to cooperative governance, this principle supports electronic participation and electronic records when the underlying requirements of access, integrity, participation, and verifiability are preserved (UNCITRAL 1996).

The principle of functional equivalence is particularly relevant to cooperative General Meetings, as it allows electronic participation to satisfy legal requirements for member presence and participation. As long as electronic platforms enable members to access information, participate in deliberations, and exercise voting rights, electronic participation can fulfill the legal functions traditionally associated with physical attendance. This interpretation ensures that legal frameworks remain technologically neutral while preserving the essential elements of cooperative governance.

Despite this legal recognition, the validity of electronic General Meetings depends on compliance with procedural safeguards. Cooperative law requires that members receive proper notification of meetings, including information regarding the time, agenda, and method of participation. In the case of electronic meetings, this includes providing clear instructions on accessing electronic platforms and ensuring that members

have sufficient opportunity to participate. Failure to provide adequate notification may undermine the legal validity of meeting decisions.

Another critical requirement is the verification of member identity. Electronic meetings must incorporate mechanisms to ensure that only authorized members participate in deliberations and decision-making. Identity verification mechanisms may include secure login systems, electronic authentication, or digital signatures. These mechanisms are essential to prevent unauthorized participation and ensure the integrity of cooperative governance processes.

Transparency and procedural integrity are also essential requirements for electronic General Meetings. Members must be able to follow discussions, express their opinions, and observe decision-making processes in real time. Electronic platforms must therefore provide reliable communication channels that enable meaningful participation. If electronic systems fail to provide adequate communication capabilities, the legitimacy of cooperative decisions may be compromised.

The reliability of electronic systems is another key factor in determining the legal validity of electronic General Meetings. Electronic platforms must ensure accurate recording of attendance, deliberations, and voting results. These records serve as legal evidence of cooperative decisions and may be required in the event of legal disputes. Therefore, cooperatives must ensure that electronic meeting systems comply with legal requirements for data integrity and security.

Legal adaptation is necessary to address potential disputes arising from electronic General Meetings. Courts and regulatory authorities must be able to assess whether electronic meetings comply with legal requirements and whether decisions adopted through electronic means are legally valid. Clear legal standards governing electronic meetings can reduce uncertainty and enhance confidence in digital cooperative governance.

In conclusion, the legal framework for electronic General Meetings has evolved to accommodate digital governance while preserving legal certainty and member participation. Law No. 25 of 1992, as amended in relevant part by Law No. 6 of 2023, expressly permits online and offline General Meetings; Government Regulation No. 7 of 2021 provides implementing recognition; and Law No. 11 of 2008, as amended by Law No. 19 of 2016 and Law No. 1 of 2024, supports the legal significance of electronic records. Together with Government Regulation No. 71 of 2019 and UNCITRAL principles, these instruments provide a legal foundation for electronic cooperative governance. The remaining task is to establish cooperative-specific procedural safeguards and clear standards for implementation.

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V. **Conclusion**

This study finds that Indonesian law already provides a legal basis for electronic cooperative governance, but that basis remains fragmented. Law No. 25 of 1992, as amended in relevant part by Law No. 6 of 2023, establishes the General Meeting and expressly permits it to be conducted online and/or offline; Government Regulation No. 7 of 2021 operationalizes that recognition and regulates reporting of meeting results; Law No. 11 of 2008, as amended by Law No. 19 of 2016 and Law No. 1 of 2024, recognizes electronic information and documents; and Government Regulation No. 71 of 2019 establishes requirements for reliable electronic systems. None of these instruments, however, supplies an integrated procedure specifically governing electronic cooperative General Meetings and electronic voting. The principal gaps concern member authentication, notice and access, quorum verification, one-member-one-vote integrity, confidentiality where required, audit trails, system failure, preservation and authentication of electronic minutes, and procedures for contesting irregular electronic decisions.

Accordingly, Indonesian cooperative law should be supplemented by a specific statutory or implementing framework establishing minimum mandatory standards for digital governance: prior electronic notice and accessible meeting information; secure member authentication; real-time and meaningful participation; automatic verification of quorum and voting eligibility; tamper-evident voting records and audit logs; data-security and retention duties; contingency procedures for system failure; accessible alternatives for members affected by digital exclusion; and authenticated preservation of minutes and voting results. UNCITRAL principles of functional equivalence and reliable electronic signatures can serve as interpretive benchmarks, but they cannot substitute for detailed cooperative-specific rules. A framework built on these safeguards would transform general legal recognition of digital processes into operational legal certainty while preserving democratic member control, equal voting rights, transparency, and the enforceability of cooperative decisions.

Declaration on the Use of AI-Assisted Technologies

Artificial intelligence tools were used solely to assist language editing, grammar improvement, formatting, and manuscript organization. All legal analyses, interpretations, arguments, conclusions, and the final responsibility for the manuscript remain entirely with the authors.

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