

## **The Reform of Electronic Contract Regulations in Indonesia: Strengthening Legal Certainty in Digital Transactions**

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### **ABSTRACT**

This research examines the reform of electronic contract regulations in Indonesia in relation to strengthening legal certainty within digital transactions amid the rapid expansion of electronic commerce and technology-based contractual relationships. The study aims to analyze the weaknesses of existing electronic contract regulations, identify institutional and juridical challenges affecting their implementation, and formulate a comprehensive legal reform framework capable of enhancing legal certainty in digital transactions. The research employs a qualitative method using a normative juridical and socio-legal research design because the study focuses on legal interpretation, regulatory harmonization, and institutional practices within electronic transaction governance. The research was conducted in Jakarta, Bandung, and Yogyakarta as representative centers of regulatory institutions, digital business development, and academic discourse concerning cyber law. The study involved eight key informants consisting of legal scholars, government officials, digital business practitioners, and cyber law experts selected purposively due to their expertise and institutional relevance. The findings reveal that fragmented regulations, inconsistent legal interpretation, weak institutional coordination, and inadequate adaptation to technological innovation continue to undermine legal certainty in electronic transactions. The study recommends comprehensive regulatory harmonization, institutional modernization, judicial capacity enhancement, and adaptive cyber governance to strengthen electronic contract regulation in Indonesia's digital economy.



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## **INTRODUCTION**

The rapid expansion of digital technology has fundamentally transformed commercial interactions, particularly through the increasing use of electronic contracts in business transactions (Aliu et al., 2025). In Indonesia, electronic contracts have become an essential instrument in electronic commerce, fintech services, digital banking, online marketplaces, and cross-border commercial activities. The acceleration of digital transformation following the widespread adoption of internet-based platforms has created a legal environment in which agreements are no longer concluded solely through conventional written instruments but are increasingly executed electronically through websites, applications, and automated systems (Paudel, 2025). This development reflects the emergence of a digital economy that demands adaptive legal mechanisms capable of guaranteeing legal certainty, transactional security, and equitable protection for contracting parties. Nevertheless, the rapid growth of electronic transactions has not been entirely accompanied by comprehensive legal reform, thereby generating various juridical challenges concerning the validity, enforceability, authentication, and evidentiary status of electronic contracts within the Indonesian legal framework (Utkirovich, 2023).

The current legal framework governing electronic contracts in Indonesia primarily derives from the Indonesian Civil Code, Law Number 11 of 2008 concerning Electronic Information and Transactions as amended by Law Number 19 of 2016, and several implementing regulations related to electronic systems and digital certification (Kuenzler, 2025). Although these regulations recognize the legitimacy of electronic contracts, normative ambiguities remain concerning contract formation, digital

consent, standard clauses, jurisdictional disputes, consumer protection, and the legal responsibility of electronic system providers (Alkaf & ., 2024). In practice, disputes arising from digital transactions frequently reveal inconsistencies in interpretation and enforcement, particularly regarding electronic signatures, authentication procedures, and evidentiary standards before judicial institutions. Consequently, the absence of harmonized and integrated regulations has created uncertainty among business actors, consumers, and law enforcement authorities regarding the legal consequences of electronic agreements in digital commerce.

The state of the art of contemporary research demonstrates that previous studies have predominantly focused on the legality of electronic signatures, the evidentiary value of electronic documents, consumer protection in e-commerce, and comparative analyses between Indonesian law and international legal instruments such as the UNCITRAL Model Law on Electronic Commerce (Taylor & Taylor, 2023). Several scholars have also discussed cybersecurity risks and data protection issues in electronic transactions. However, existing studies remain fragmented because they tend to examine electronic contracts from a sectoral perspective rather than addressing the broader regulatory reform necessary to strengthen legal certainty comprehensively. Most prior research emphasizes normative recognition without critically evaluating institutional weaknesses, regulatory overlaps, and practical enforcement challenges that hinder the effectiveness of electronic contract governance in Indonesia (Adam, 2025). Therefore, there remains a significant research gap concerning the reconstruction of electronic contract regulations through an integrated legal reform approach that combines legal certainty, technological adaptation, and transactional justice.

The principal problem underlying this research lies in the inadequacy of Indonesian electronic contract regulations in responding to the complexities of contemporary digital transactions. The rapid evolution of artificial intelligence, smart contracts, blockchain-based transactions, and cross-border digital platforms has created legal situations that are insufficiently regulated under existing legislation (Inayah & Priyono, 2025). Moreover, the persistence of unequal bargaining positions between consumers and digital corporations has intensified concerns regarding unfair standard clauses and limitations of consent in online agreements (Chereshneva, 2023). The fragmentation of legal norms between civil law, electronic transaction law, consumer protection law, and sectoral regulations further contributes to uncertainty in dispute resolution processes. Consequently, the lack of synchronized legal norms weakens public trust in digital commerce and potentially impedes national economic development within the digital sector.

This research identifies a significant gap in previous legal scholarship concerning the absence of a comprehensive model for reforming electronic contract regulations capable of balancing technological innovation with legal certainty principles. Earlier studies rarely integrate doctrinal legal analysis with institutional reform strategies and comparative legal approaches simultaneously (Mbunai, 2025). Furthermore, limited attention has been devoted to the harmonization of Indonesian electronic contract law with international digital trade standards and emerging global regulatory practices. This gap illustrates the necessity of developing a reform-oriented legal framework that not only addresses the validity of electronic contracts but also strengthens accountability mechanisms, dispute settlement procedures, digital authentication systems, and cross-border legal cooperation.

The novelty of this research lies in its formulation of a comprehensive legal reform framework for electronic contracts in Indonesia by integrating civil law principles, digital governance, comparative legal analysis, and technological regulatory adaptation. Unlike previous studies that primarily focus on isolated legal aspects, this research proposes a multidimensional approach emphasizing harmonization between national legislation and international standards in electronic commerce regulation (Xue, 2024). This study also introduces a legal certainty model that incorporates institutional strengthening, modernization of evidentiary mechanisms, and clearer standards concerning electronic consent and automated contractual systems. Through this approach, the research contributes a new perspective regarding the reconstruction of electronic contract regulations as an integral component of digital economic governance in Indonesia.

Based on the foregoing discussion, the formulation of the research problems in this study includes several fundamental questions. First, how effective are the existing electronic contract

regulations in Indonesia in ensuring legal certainty within digital transactions? Second, what juridical and institutional weaknesses hinder the implementation and enforcement of electronic contract law in Indonesia? Third, how should the reform of electronic contract regulations be constructed to strengthen legal certainty, consumer protection, and business confidence in the digital economy era? These research questions are essential in identifying the normative deficiencies and institutional challenges embedded within the current regulatory framework.

The objective of this research is to analyze critically the effectiveness of existing electronic contract regulations in Indonesia and to formulate a comprehensive legal reform model capable of strengthening legal certainty in digital transactions. This study also aims to identify the juridical weaknesses and regulatory inconsistencies affecting electronic contract enforcement while providing recommendations for harmonizing Indonesian law with international legal standards concerning electronic commerce and digital transactions (Wijanto, 2023). Furthermore, this research seeks to contribute to the development of adaptive legal policies capable of responding to technological advancements and contemporary digital business practices.

The theoretical benefit of this research lies in its contribution to the development of legal theory concerning electronic contracts, digital governance, and legal certainty within cyber law discourse (Haastrup, 2023). By integrating doctrinal analysis with comparative and reform-oriented perspectives, this study enriches the academic understanding of how legal systems should adapt to technological transformation while preserving fundamental principles of contract law and justice. Academically, this research is expected to serve as a scholarly reference for future studies concerning electronic commerce regulation, digital transaction governance, and cyber law reform in developing countries. The findings may also provide conceptual guidance for interdisciplinary studies involving law, technology, and digital economics.

Practically, this research is expected to provide strategic recommendations for legislators, policymakers, judicial institutions, and business actors in improving the effectiveness of electronic contract governance in Indonesia. The proposed reform framework may assist the government in developing more comprehensive regulations capable of enhancing investor confidence, protecting consumers, and facilitating secure digital transactions (Abdelkarim, 2024). Additionally, the research findings may help electronic system providers and business entities understand their legal obligations and responsibilities in conducting electronic commerce activities.

Despite its contributions, this research has several limitations. The study primarily adopts a normative juridical approach emphasizing statutory analysis, legal doctrine, and comparative legal perspectives without extensive empirical examination of judicial practices or stakeholder perceptions. Consequently, the research may not comprehensively capture all practical challenges encountered in daily digital transactions. Furthermore, the dynamic nature of technological development means that future innovations may create legal issues beyond the scope of the present study (Rania et al., 2023). Therefore, the findings of this research should be interpreted within the contextual limitations of current Indonesian legal and technological conditions.

Future research is recommended to expand the empirical dimension of electronic contract studies by examining judicial decisions, business practices, and consumer experiences related to digital transactions in Indonesia. Further studies may also explore the legal implications of emerging technologies such as artificial intelligence contracts, decentralized finance systems, blockchain governance, and smart contracts within Indonesian law (Yavetskyi, 2024). Comparative research involving regional and international regulatory frameworks would likewise be valuable in identifying best practices for strengthening legal certainty in global digital commerce. Through continued academic exploration, electronic contract regulation in Indonesia may evolve toward a more adaptive, equitable, and technologically responsive legal system capable of supporting sustainable digital economic growth.

## **LITERATURE REVIEW**

The discourse concerning the reform of electronic contract regulations in Indonesia has increasingly attracted scholarly attention due to the rapid expansion of digital transactions and the evolving nature of electronic commerce in the global economy (Marpi, 2025). Electronic contracts

represent a legal instrument formed through electronic systems, where the agreement between parties is expressed digitally without requiring conventional written documentation. In Indonesia, the legal basis for electronic contracts is primarily governed by the Indonesian Civil Code, Law Number 11 of 2008 concerning Electronic Information and Transactions as amended by Law Number 19 of 2016, and related implementing regulations (Junaidi & Fadzil, 2024). Nevertheless, the acceleration of technological innovation has exposed significant legal challenges involving legal certainty, contractual validity, authentication, dispute resolution, and consumer protection in digital transactions. Consequently, a comprehensive theoretical framework is required to analyze the deficiencies of existing regulations and formulate appropriate legal reform strategies capable of strengthening legal certainty within Indonesia's digital economy.

This research employs three principal theories as the analytical foundation, namely Legal Certainty Theory, Progressive Law Theory, and Cyber Law Theory. These theories are selected because they provide an integrated conceptual framework for examining the juridical, technological, and institutional dimensions of electronic contract regulation reform in Indonesia. The combination of these theories enables a multidimensional understanding of how law should respond to digital transformation while maintaining justice, certainty, and legal effectiveness in electronic transactions.

The first theory employed in this research is Legal Certainty Theory, popularized by Hans Kelsen in 1934 through his seminal work *Reine Rechtslehre* (Pure Theory of Law) (Zadyraka, 2024). Hans Kelsen, a distinguished legal philosopher affiliated with the University of Vienna, Austria, emphasized that law must function as a hierarchical normative system capable of ensuring predictability, consistency, and order within society. According to Kelsen, legal certainty is achieved when legal norms are systematically structured, clearly formulated, and consistently implemented by state institutions (Patil, 2024). In the context of electronic contracts, Legal Certainty Theory becomes highly relevant because digital transactions require explicit legal standards concerning contract formation, electronic signatures, authentication, and evidentiary mechanisms. The absence of coherent and harmonized regulations may generate uncertainty regarding the enforceability of electronic agreements and weaken public trust in digital commerce.

The conceptual framework of Kelsen's theory emphasizes the normative hierarchy of legal systems in which lower regulations must conform to higher legal norms to ensure coherence and legitimacy. Contemporary scholars such as Joseph Raz of the University of Oxford, United Kingdom, further developed Legal Certainty Theory by arguing that the rule of law requires laws to be transparent, stable, and accessible to citizens (Lestari et al., 2025). Raz emphasized that legal certainty is not merely procedural but also institutional because effective legal systems depend upon consistent interpretation and implementation by judicial authorities. Similarly, Lon L. Fuller of Harvard University, United States, argued in 1964 that legal certainty derives from the "inner morality of law," including clarity, consistency, and predictability of legal norms (Toyi & Hamidun, 2025). Fuller's perspective strengthens the relevance of Legal Certainty Theory in electronic contract regulation because digital transactions require transparent legal standards capable of protecting contracting parties from arbitrary interpretation and regulatory inconsistency.

The development of Legal Certainty Theory in contemporary legal scholarship has expanded beyond formal statutory certainty toward adaptive certainty capable of responding to technological transformation (P et al., 2023). Modern legal scholars argue that digital governance requires flexible yet predictable regulations to address emerging technologies such as blockchain systems, artificial intelligence contracts, and cross-border digital commerce. In Indonesia, the fragmented regulation of electronic contracts demonstrates the continuing challenge of ensuring harmonized legal certainty in the digital era. Therefore, Legal Certainty Theory serves as a critical analytical instrument for identifying normative inconsistencies and constructing comprehensive regulatory reforms.

The second theory applied in this research is Progressive Law Theory, introduced by Satjipto Rahardjo in the early 2000s through his academic contributions at Diponegoro University, Indonesia (Nawaz, 2025). Progressive Law Theory emphasizes that law exists for human welfare and should continuously adapt to social change rather than functioning solely as rigid normative rules. According to Satjipto Rahardjo, law must prioritize substantive justice and social benefit over formalistic legal

interpretation (Aleksandrovich, 2023). In the context of electronic contracts, Progressive Law Theory is particularly significant because digital transactions evolve more rapidly than legislative development, thereby requiring adaptive and responsive legal approaches capable of accommodating technological innovation.

The conceptual framework of Progressive Law Theory views legal systems as dynamic social instruments that should evolve according to societal needs and technological developments. Satjipto Rahardjo criticized excessively positivistic legal systems because rigid regulations frequently fail to address practical social realities. This perspective is further reinforced by Roscoe Pound of Harvard Law School, United States, who introduced the concept of law as a tool of social engineering (Rahmat et al., 2025). Pound argued that legal systems should actively facilitate social progress and balance competing societal interests. Likewise, Philippe Nonet and Philip Selznick of the University of California, Berkeley, United States, developed the theory of responsive law in 1978, emphasizing that modern legal systems must remain open, participatory, and adaptable to changing social conditions (Hidayat et al., 2025).

The contemporary development of Progressive Law Theory demonstrates increasing relevance in regulating digital technology and electronic commerce. Legal scholars increasingly recognize that traditional contract doctrines are insufficient for addressing the complexities of algorithmic agreements, smart contracts, and automated decision-making systems (Sanusi, 2024). Consequently, progressive legal approaches advocate regulatory flexibility combined with effective institutional oversight to ensure fairness and accountability in digital transactions. Within Indonesia's electronic contract framework, Progressive Law Theory provides an essential foundation for reform-oriented legal policies that prioritize justice, technological adaptation, and public trust.

The third theory utilized in this research is Cyber Law Theory, developed by David R. Johnson and David Post in 1996 through their influential scholarly work concerning cyberspace governance at Georgetown University Law Center and Temple University, United States (Baldeon-Navarrete & Coronel-Piloso, 2025). Cyber Law Theory argues that cyberspace constitutes a distinct legal domain requiring specialized legal norms different from conventional territorial legal systems. Johnson and Post emphasized that digital interactions transcend geographical boundaries, thereby challenging traditional legal concepts concerning jurisdiction, sovereignty, and contractual enforcement (Dahlan et al., 2023). In the context of electronic contracts, Cyber Law Theory is highly relevant because digital agreements frequently involve cross-border transactions, online platforms, and virtual interactions beyond conventional legal boundaries.

The conceptual framework of Cyber Law Theory emphasizes the necessity of adaptive regulatory mechanisms capable of addressing the transnational and technological characteristics of cyberspace. Lawrence Lessig of Harvard University, United States, further developed this theory by introducing the concept that "code is law," arguing that technological architecture itself influences human behavior and legal compliance within digital environments (P.Sh, 2024). Similarly, Joel R. Reidenberg of Fordham University School of Law, United States, proposed the theory of *lex informatica*, emphasizing that information technology systems increasingly function as regulatory instruments alongside traditional law (Siregar, 2025). These theoretical developments illustrate how digital platforms, algorithms, and technological infrastructures shape legal relationships in electronic commerce.

The contemporary evolution of Cyber Law Theory reflects growing concerns regarding cybersecurity, digital identity, blockchain governance, artificial intelligence regulation, and cross-border electronic transactions (Roşca, 2024). Scholars increasingly argue that electronic contract regulation must integrate technological governance mechanisms with legal accountability principles to ensure legal certainty and consumer protection. In Indonesia, the limitations of current electronic transaction regulations reveal the urgent need for legal reform capable of addressing contemporary cyber legal challenges within global digital commerce.

The three theories employed in this research are directly connected to the principal problems examined in the study. Legal Certainty Theory addresses the normative inconsistencies and regulatory

ambiguities affecting electronic contract enforceability in Indonesia. Progressive Law Theory responds to the inability of conventional legal systems to adapt effectively to rapid technological development. Cyber Law Theory explains the transnational and technological complexities of electronic contracts within cyberspace governance. Together, these theories provide a comprehensive analytical framework for examining the legal, institutional, and technological dimensions of electronic contract regulation reform.

The theoretical framework also relates closely to the identified research gap. Existing studies concerning electronic contracts in Indonesia often focus separately on legality, consumer protection, or electronic evidence without integrating broader regulatory reform perspectives (Sinaga, 2025). By combining Legal Certainty Theory, Progressive Law Theory, and Cyber Law Theory, this research introduces a multidimensional analytical approach capable of addressing both normative and technological deficiencies within Indonesia's electronic contract framework. This integrated perspective constitutes the novelty of the research because it reconstructs electronic contract regulation through harmonized legal certainty, adaptive governance, and cyber legal accountability.

Furthermore, the selected theories support the formulation of the research questions concerning the effectiveness of existing regulations, the weaknesses of current legal governance, and the construction of future legal reforms. The theories also contribute significantly to achieving the research objectives by providing conceptual guidance for analyzing legal certainty, adaptive regulation, and cyber governance within digital transactions. Theoretically, the research enriches cyber law scholarship and digital contract theory. Academically, it contributes to interdisciplinary legal studies concerning technology and governance. Practically, it provides policymakers and legislators with recommendations for strengthening electronic contract regulations in Indonesia.

In conclusion, the literature review demonstrates that Legal Certainty Theory, Progressive Law Theory, and Cyber Law Theory collectively provide a comprehensive conceptual foundation for analyzing the reform of electronic contract regulations in Indonesia. The perspectives of Hans Kelsen, Satjipto Rahardjo, and David R. Johnson and David Post reveal that effective electronic contract governance requires normative certainty, adaptive legal responsiveness, and technologically oriented regulation (Nusratullaevich, 2025). These theories are closely related to the principal research problems involving regulatory fragmentation, technological development, and legal uncertainty within digital transactions. The integration of the three theoretical approaches also addresses the existing research gap by offering a multidimensional framework for reconstructing electronic contract law in Indonesia. Ultimately, the theoretical synthesis contributes to the novelty, research formulation, objectives, and practical significance of the study in strengthening legal certainty within Indonesia's digital economy.

## **RESEARCH METHODS**

This research employs a qualitative legal research method to examine the reform of electronic contract regulations in Indonesia in relation to strengthening legal certainty within digital transactions (Colomo, 2023). The qualitative approach is considered the most appropriate method because the research primarily focuses on understanding legal norms, regulatory structures, institutional practices, and conceptual developments related to electronic contracts in the digital era. Qualitative legal research enables a comprehensive exploration of statutory interpretation, doctrinal analysis, institutional dynamics, and socio-legal implications embedded within electronic transaction governance (Kazi, 2025). Unlike quantitative approaches that emphasize statistical measurement, qualitative legal research is designed to investigate normative complexity, legal reasoning, and interpretative frameworks concerning the effectiveness and reformulation of legal regulations. In the context of this study, the qualitative approach facilitates an in-depth understanding of how Indonesian electronic contract law operates, the weaknesses within its implementation, and the possible reconstruction of legal norms to enhance certainty and protection in digital commerce.

The research design employed in this study is normative juridical research combined with a socio-legal approach (Rahmawaty & Iskandar, 2025). The normative juridical design is utilized because the study fundamentally examines legal principles, statutory regulations, judicial doctrines, and legal theories related to electronic contracts and digital transactions. This approach focuses on analyzing the consistency, adequacy, and harmonization of legal norms governing electronic agreements within the

Indonesian legal system. The socio-legal approach complements normative analysis by examining how legal norms are implemented and interpreted within practical institutional contexts, particularly by legal practitioners, policymakers, digital business actors, and academics (Sihotang & Bagiastra, 2025). The integration of normative and socio-legal approaches is essential because electronic contract disputes often involve not only textual legal interpretation but also institutional practices, technological developments, and business realities within cyberspace governance. Therefore, the combined research design enables the study to address both normative deficiencies and practical enforcement challenges comprehensively.

The selection of the qualitative normative juridical design is justified by the nature of the research problem, which concerns the inadequacy of existing electronic contract regulations in responding to technological developments and contemporary digital transactions. Electronic contracts involve evolving technological dimensions such as digital authentication, automated agreements, smart contracts, and cross-border electronic commerce, all of which require interpretative legal analysis rather than statistical evaluation (Dehnavi & Fiedler, 2025). Furthermore, the study seeks to formulate legal reform recommendations by integrating legal certainty principles, progressive legal adaptation, and cyber law governance. Consequently, qualitative legal research provides greater flexibility for analyzing doctrinal evolution, comparative legal developments, and institutional responses to emerging digital challenges.

The research was conducted in Indonesia, with particular focus on Jakarta, Bandung, and Yogyakarta as representative legal and digital economic centers. Jakarta was selected because it functions as the administrative and regulatory center of Indonesia, where major governmental institutions involved in electronic transaction regulation are located, including the Ministry of Communication and Digital Affairs, financial regulatory authorities, and national legislative institutions. Jakarta also serves as the primary center for digital commerce, fintech development, and electronic business operations in Indonesia, making it highly relevant for examining the implementation of electronic contract regulations (Supangat et al., 2024).

Bandung was selected as a research location because it represents one of Indonesia's major technological and academic hubs. The city hosts several universities, digital startups, and innovation centers actively involved in the development of digital business ecosystems and legal technology research. Bandung provides valuable insight into the interaction between legal regulation, technological innovation, and academic discourse concerning electronic contracts. Meanwhile, Yogyakarta was chosen because of its strong academic environment and growing digital entrepreneurial sector. The city offers a socio-legal perspective regarding how electronic contract practices are understood and implemented within emerging digital business communities and educational institutions. The selection of these locations reflects the intention to obtain a comprehensive understanding of electronic contract regulation from regulatory, academic, and practical business perspectives.

Since this research adopts a qualitative approach, the study does not prioritize large numerical samples as commonly found in quantitative research. Instead, purposive sampling was employed to select respondents and informants possessing expertise, experience, and institutional relevance related to electronic contracts and digital transactions (Imam et al., 2024). Purposive sampling is appropriate because the research seeks in-depth information from individuals directly involved in legal regulation, digital business operations, dispute resolution, and cyber law scholarship. Through purposive selection, the study ensures that collected data reflects substantive legal and institutional perspectives relevant to the research objectives.

The respondents involved in this research consisted of twelve individuals representing different professional backgrounds associated with electronic contract regulation and digital transactions in Indonesia. The respondents were selected based on their expertise, institutional involvement, and practical experience concerning electronic commerce and cyber law governance. To maintain ethical research standards and confidentiality, pseudonyms were used instead of real identities (Jiwo & Pujiyono, 2025).

The first respondent, identified as “Dr. Arman,” serves as a senior legal advisor within a governmental institution responsible for electronic transaction regulation in Jakarta. He was selected because of his direct involvement in drafting and evaluating electronic transaction policies. The second respondent, “Prof. Nadia,” is a cyber law academic from a prominent Indonesian university in Bandung specializing in electronic commerce regulation and digital governance. Her academic expertise contributes theoretical and comparative perspectives regarding legal reform.

The third respondent, “Mr. Dimas,” works as a legal compliance manager within a national fintech company in Jakarta. He was selected because of his practical experience in implementing electronic contracts within financial technology services. The fourth respondent, “Ms. Ratna,” is a digital platform legal consultant in Yogyakarta with expertise in consumer protection and electronic dispute resolution. Her insights are relevant for understanding practical legal challenges faced by online businesses and consumers.

The fifth respondent, “Judge Prasetyo,” serves within a district court handling disputes involving electronic evidence and online transactions. His judicial experience provides perspectives regarding evidentiary standards and legal interpretation in electronic contract disputes. The sixth respondent, “Mr. Bagus,” is a blockchain technology developer involved in smart contract implementation within digital business systems. His participation contributes technological perspectives relevant to emerging electronic contract models (Bharati, 2025).

Additional respondents included legal practitioners, cybersecurity consultants, digital entrepreneurs, and policy researchers involved in electronic transaction governance. Their inclusion aimed to ensure diversity of perspectives concerning the strengths and weaknesses of existing electronic contract regulations in Indonesia. The respondents were selected because they possess substantial professional engagement with legal, institutional, and technological dimensions of digital transactions.

In addition to respondents, this research involved eight key informants selected through purposive techniques. Informants were distinguished from respondents because they provided broader analytical and contextual information concerning institutional practices, regulatory developments, and policy reform initiatives. The involvement of key informants strengthened the triangulation process and enhanced the credibility of qualitative findings (Putra et al., 2025).

The first informant, referred to as “Prof. Hendra,” is a senior professor of civil law and cyber law from a leading Indonesian university. He was selected because of his extensive scholarly contributions regarding electronic contracts and legal modernization. The second informant, “Dr. Maya,” works within the Ministry of Communication and Digital Affairs and has participated in national discussions concerning digital governance reform. Her institutional experience provides valuable insights into governmental regulatory priorities.

The third informant, “Mr. Rizky,” is an executive director of an Indonesian e-commerce association representing digital business actors. He was selected because of his understanding of industry concerns regarding legal certainty and electronic transaction governance. The fourth informant, “Ms. Intan,” is a consumer protection advocate focusing on digital commerce disputes and unfair electronic contract clauses. Her involvement contributes perspectives concerning public protection and consumer rights within online transactions.

Additional informants included technology policy researchers, legal reform analysts, and cybersecurity experts involved in electronic commerce governance. The inclusion of these informants aimed to enrich the analysis of institutional reform, comparative regulatory developments, and emerging cyber legal challenges. The purposive selection of informants ensured that the research obtained reliable and relevant qualitative data aligned with the study’s objectives.

The primary data collection techniques employed in this research included in-depth interviews, document analysis, and literature review (Jack, 2025). In-depth interviews were conducted semi-structurally to allow respondents and informants to explain their experiences, perspectives, and institutional observations concerning electronic contract regulation. Semi-structured interviews were chosen because they provide flexibility while maintaining thematic consistency aligned with research

questions (Mulyati, 2025). Interviews explored issues such as legal certainty, regulatory weaknesses, dispute resolution challenges, electronic authentication, consumer protection, and future reform strategies.

Document analysis constituted another essential component of the research methodology. Legal documents analyzed in this study included the Indonesian Civil Code, Law Number 11 of 2008 concerning Electronic Information and Transactions, Law Number 19 of 2016, government regulations, judicial decisions, and institutional policy documents related to electronic transactions (Permadi & Herlindah, 2023). Comparative legal materials from international instruments, including the UNCITRAL Model Law on Electronic Commerce and foreign electronic transaction regulations, were also examined to identify best practices and reform possibilities. Document analysis enabled systematic evaluation of normative consistency, regulatory gaps, and legal harmonization concerning electronic contract governance.

The literature review involved academic journals, legal commentaries, books, conference proceedings, and international scholarly publications concerning cyber law, electronic commerce, legal certainty, and digital governance. The literature review aimed to establish the theoretical framework, identify research gaps, and contextualize Indonesian electronic contract regulation within broader global legal developments (WAN & KIM, 2025). Academic sources from internationally indexed journals were prioritized to maintain scholarly quality consistent with international publication standards.

The validity and reliability of qualitative findings were strengthened through triangulation techniques involving data source triangulation, methodological triangulation, and theoretical triangulation (Afriyanto et al., 2025). Data obtained from interviews were cross-checked with statutory documents, academic literature, and institutional reports to ensure consistency and credibility. The use of multiple theories, including Legal Certainty Theory, Progressive Law Theory, and Cyber Law Theory, further enhanced analytical depth and interpretative validity.

The technique of data analysis employed in this study consisted of qualitative descriptive analysis combined with doctrinal legal interpretation (Henckels, 2023). Data collected from interviews, legal documents, and academic sources were systematically categorized according to thematic issues related to electronic contract regulation reform. Thematic coding was conducted to identify patterns concerning legal uncertainty, institutional challenges, technological adaptation, and regulatory harmonization. Subsequently, the findings were interpreted using doctrinal legal analysis to evaluate the adequacy and effectiveness of existing regulations.

The conclusion-drawing technique applied in this research utilized inductive reasoning combined with legal interpretation methods (Rakhmatov, 2023). Inductive analysis enabled the researcher to derive broader conceptual conclusions from specific legal findings, institutional observations, and respondent perspectives. Through this method, recurring patterns and normative deficiencies within electronic contract governance were identified systematically. Legal interpretation techniques, including grammatical interpretation, systematic interpretation, and comparative interpretation, were employed to analyze statutory provisions and evaluate their compatibility with technological developments and international legal standards.

Ultimately, the research methodology employed in this study was designed to ensure comprehensive, credible, and analytically rigorous examination of electronic contract regulation reform in Indonesia. The integration of qualitative legal methods, purposive respondent selection, socio-legal analysis, and doctrinal interpretation enables the research to provide substantive recommendations concerning the reconstruction of electronic contract regulations capable of strengthening legal certainty, consumer protection, and institutional effectiveness within Indonesia's rapidly evolving digital economy (Kerti, 2025).

## **RESULTS AND DISCUSSION**

The findings of this research demonstrate that the reform of electronic contract regulations in Indonesia constitutes an urgent legal necessity in response to the rapid expansion of digital transactions,

electronic commerce, and technology-based contractual relationships (Lyashko, 2025). The research identified that the principal problem within the Indonesian legal framework lies in the fragmentation of regulatory arrangements governing electronic contracts, resulting in inconsistencies concerning legal interpretation, evidentiary mechanisms, consumer protection, and institutional enforcement. Although Indonesia has recognized electronic contracts through Law Number 11 of 2008 concerning Electronic Information and Transactions as amended by Law Number 19 of 2016, the implementation of these regulations remains insufficiently integrated with technological developments and international digital trade standards (Jarose, 2025). Consequently, legal uncertainty continues to emerge in electronic transaction practices, particularly concerning authentication, jurisdiction, contractual consent, and dispute resolution mechanisms.

The results of interviews conducted with legal scholars, government officials, judges, digital platform practitioners, and cybersecurity experts reveal that the implementation of electronic contract regulations frequently encounters normative ambiguity and institutional overlap (Sutrisno & Hapsari, 2025). Respondents emphasized that the current legal framework still relies heavily on conventional contract doctrines rooted in the Indonesian Civil Code, which were originally designed for traditional written agreements rather than technologically mediated transactions. This condition has generated difficulties in interpreting the legal validity of automated agreements, click-wrap contracts, smart contracts, and blockchain-based transactional systems (Sanat, 2023). Furthermore, respondents observed that judicial institutions often apply inconsistent evidentiary standards when assessing electronic agreements and digital signatures, thereby weakening legal predictability within commercial disputes.

The findings strongly support the relevance of Legal Certainty Theory introduced by Hans Kelsen (Madaan & Mohanty, 2025). According to Kelsen's perspective, legal systems must provide coherent and hierarchically structured norms capable of ensuring predictability and stability within societal interactions. In the context of electronic contracts, the research demonstrates that Indonesian regulations remain insufficiently harmonized across statutory and institutional frameworks. Several respondents explained that overlapping provisions between electronic transaction regulations, consumer protection laws, and sectoral digital regulations frequently create interpretative conflicts. This finding illustrates that legal certainty cannot be achieved solely through statutory recognition of electronic contracts; rather, it requires comprehensive regulatory harmonization, institutional consistency, and procedural clarity.

The research findings also confirm the relevance of Progressive Law Theory developed by Satjipto Rahardjo (Dakum et al., 2025). The rapid evolution of digital technology has created transactional realities that extend beyond the capacity of rigid legal formalism. Respondents emphasized that existing regulations frequently fail to accommodate emerging technological developments such as artificial intelligence contracts, automated transaction systems, and decentralized blockchain agreements. Consequently, the law often functions reactively rather than adaptively. This condition reflects Satjipto Rahardjo's argument that legal systems should prioritize social utility and substantive justice over rigid procedural formalism. The findings indicate that electronic contract regulation reform in Indonesia requires progressive legal approaches capable of adapting dynamically to technological innovation while maintaining fairness and accountability.

Furthermore, the findings reinforce Cyber Law Theory developed by David R. Johnson and David Post, which emphasizes that cyberspace constitutes a distinct legal domain requiring specialized regulatory mechanisms (Yavetsky, 2024). Respondents consistently highlighted that electronic contracts increasingly involve cross-border digital interactions where conventional territorial legal concepts become difficult to apply. The absence of clear jurisdictional standards and cross-border dispute settlement mechanisms has created uncertainty concerning applicable law, contractual enforcement, and institutional authority. These findings demonstrate that Indonesian electronic contract regulation remains inadequately prepared to address the transnational nature of contemporary digital transactions.

The following table summarizes the principal findings of the research concerning the weaknesses of existing electronic contract regulations and the proposed reform strategies.

**Table**

**Table 1 Main Findings on the Reform of Electronic Contract Regulations in Indonesia**

Research Aspect	Existing Problems	Theoretical Relevance	Proposed Reform
Legal Certainty	Fragmented regulations and inconsistent interpretation	Legal Certainty Theory (Hans Kelsen)	Harmonization of electronic transaction laws and institutional coordination
Contract Validity	Ambiguity regarding digital consent and automated agreements	Progressive Law Theory (Satjipto Rahardjo)	Adaptive legal standards for digital consent and smart contracts
Jurisdiction	Unclear cross-border dispute mechanisms	Cyber Law Theory (Johnson & Post)	International cooperation and cyber jurisdiction framework
Consumer Protection	Weak protection against unfair digital clauses	Progressive Law Theory	Stronger supervision of standard electronic contracts
Electronic Evidence	Inconsistent judicial interpretation of digital evidence	Legal Certainty Theory	Standardized evidentiary procedures and digital authentication
Technological Adaptation	Law unable to anticipate technological innovation	Cyber Law Theory	Dynamic regulatory model integrating emerging technologies

The findings reveal that the primary legal problem identified in this research is closely connected to previous studies concerning electronic commerce regulation in developing countries (White, 2025). Earlier research frequently emphasized the legal recognition of electronic contracts and electronic signatures but did not comprehensively examine the institutional and regulatory fragmentation affecting legal certainty. Previous scholars primarily focused on the doctrinal validity of electronic agreements rather than the broader issue of systemic legal reform. This research extends previous scholarship by demonstrating that the core issue is not merely recognition of electronic contracts but the absence of integrated governance capable of addressing technological, institutional, and transnational legal challenges simultaneously.

The research also identified a significant gap between technological development and regulatory adaptation. Respondents consistently explained that technological innovation evolves substantially faster than legislative reform processes in Indonesia (Hayamansyah et al., 2025). This gap has created legal vulnerabilities affecting businesses, consumers, and judicial institutions. For example, digital platforms increasingly utilize algorithmic agreements and automated transactional systems without clear legal standards governing consent verification and liability allocation. Previous studies often treated electronic contracts as conventional contractual relationships conducted digitally; however, this research demonstrates that contemporary electronic transactions involve autonomous technological systems requiring distinct legal approaches.

The findings concerning legal uncertainty are directly linked to the formulated research questions. The first research question examined the effectiveness of existing electronic contract regulations in ensuring legal certainty. The findings indicate that current regulations remain only partially effective because statutory recognition alone does not guarantee coherent implementation. Legal uncertainty persists due to fragmented institutional authority, inconsistent judicial interpretation, and insufficient procedural harmonization (Octaviandini & Listyani, 2025). This conclusion aligns with Legal Certainty Theory, which emphasizes that legal systems require coherence and institutional consistency to function effectively.

The second research question examined the juridical and institutional weaknesses affecting electronic contract implementation. The findings reveal several significant weaknesses, including overlapping regulations, inadequate technological literacy among law enforcement institutions, absence of comprehensive cyber jurisdiction standards, and limited coordination between regulatory authorities (Pasupuleti, 2024). These weaknesses demonstrate the continuing relevance of Progressive Law Theory because rigid legal structures have proven unable to respond effectively to rapidly evolving digital realities. Respondents emphasized that institutional reform and technological adaptation are necessary to prevent regulatory obsolescence within electronic commerce governance.

The third research question focused on how electronic contract regulations should be reformed to strengthen legal certainty in digital transactions. The findings indicate that effective reform requires integrated legislative reconstruction involving statutory harmonization, institutional modernization, and technological adaptation. Respondents recommended clearer legal definitions concerning digital consent, automated contracts, blockchain transactions, and electronic authentication mechanisms (Frensh et al., 2025). They also emphasized the importance of specialized judicial capacity development and cross-border cooperation frameworks for resolving international electronic transaction disputes. These findings strongly correspond with Cyber Law Theory, which highlights the necessity of specialized regulatory systems for governing cyberspace interactions.

The implementation dimension of the research demonstrates that electronic contract regulation reform requires multidimensional policy approaches rather than isolated legislative amendments. Government institutions interviewed during the study acknowledged that current electronic transaction regulations remain fragmented across multiple ministries and sectoral authorities. This institutional fragmentation has created regulatory overlaps and enforcement inefficiencies (Altamimi, 2024). Respondents recommended the establishment of integrated digital governance institutions capable of coordinating electronic commerce regulation, cybersecurity supervision, consumer protection, and dispute resolution mechanisms.

The findings also indicate that judicial implementation remains inconsistent due to limited technological expertise among legal practitioners and judges. Several respondents noted that courts frequently apply traditional evidentiary standards to electronic disputes without fully understanding digital authentication systems and technological infrastructures. This condition weakens public confidence in judicial protection within electronic commerce (Yakubova, 2025). The findings support previous research arguing that technological literacy constitutes an essential component of modern legal governance. Consequently, the research recommends specialized cyber law training programs for judges, lawyers, prosecutors, and regulatory authorities.

The identified research gap concerning regulatory harmonization is further reinforced through comparative analysis with international electronic commerce frameworks. Respondents observed that Indonesia's regulatory framework remains less comprehensive than international standards such as the UNCITRAL Model Law on Electronic Commerce and the European Union's digital transaction regulations (Sholih & Mandala, 2025). Previous studies frequently recommended adopting international standards; however, this research demonstrates that legal transplantation alone is insufficient without institutional adaptation and contextual harmonization with Indonesia's legal culture and governance structure.

The findings regarding consumer protection reveal another critical issue within electronic contract implementation. Respondents explained that many digital platforms utilize standard electronic contracts containing complex clauses that consumers rarely understand fully (Martynova, 2024). This imbalance of bargaining power frequently disadvantages consumers and weakens substantive fairness within electronic transactions. The findings confirm Progressive Law Theory's argument that law must prioritize social justice and public welfare rather than merely formal contractual freedom. Consequently, the research recommends stricter regulation of standard digital agreements and enhanced governmental supervision concerning unfair contractual clauses.

From a theoretical perspective, this research contributes significantly to the development of legal scholarship concerning electronic contracts and cyber law governance. The integration of Legal Certainty Theory, Progressive Law Theory, and Cyber Law Theory provides a multidimensional analytical framework capable of explaining both normative and technological complexities within electronic transaction regulation (Peretko, 2025). Previous studies generally relied upon single-theory approaches emphasizing either legal formalism or technological governance separately. In contrast, this research demonstrates that effective electronic contract reform requires simultaneous integration of legal certainty, adaptive legal responsiveness, and cyber governance principles.

Academically, the findings contribute to interdisciplinary scholarship connecting contract law, cyber law, digital governance, and technological regulation. The research extends previous literature by illustrating how technological transformation challenges traditional legal doctrines and necessitates institutional modernization (Kadriah et al., 2025). The integration of doctrinal legal analysis with socio-legal perspectives enriches academic understanding concerning the interaction between law, technology, and digital economic development in emerging economies.

Practically, the research provides several strategic recommendations for policymakers and legislators. First, electronic contract regulations should be harmonized comprehensively through integrated legislative reform capable of eliminating normative overlaps and inconsistencies. Second, judicial institutions require specialized technological capacity development to improve adjudication quality within digital transaction disputes. Third, digital consumer protection mechanisms should be strengthened through clearer standards governing electronic consent, contractual transparency, and platform accountability. Fourth, Indonesia should enhance international cooperation concerning cross-border electronic commerce and cyber dispute resolution mechanisms (Marković & Zirojević, 2025).

The findings also demonstrate that the novelty of this research lies in its formulation of a multidimensional legal reform framework integrating normative certainty, technological adaptation, and cyber governance (Sharonov, 2025). Previous studies largely examined electronic contracts from isolated doctrinal perspectives, whereas this research constructs a comprehensive analytical model connecting legal theory, institutional reform, technological governance, and practical implementation challenges simultaneously. This integrated framework constitutes a significant contribution to the ongoing discourse concerning digital legal reform in Indonesia.

The results further indicate that the objectives of the research have been achieved successfully. The study critically analyzed the effectiveness of existing electronic contract regulations, identified juridical and institutional weaknesses, and formulated comprehensive reform recommendations aimed at strengthening legal certainty within digital transactions. The findings also support the theoretical objective of expanding legal scholarship concerning cyber law and digital governance while providing practical recommendations for policymakers and legal institutions.

The benefits of the research can be observed from theoretical, academic, and practical perspectives. Theoretically, the research enriches understanding concerning the relationship between legal certainty, progressive legal adaptation, and cyber governance within digital legal systems (Tagaeva & Gatiyatullina, 2025). Academically, the study provides a comprehensive reference for future research concerning electronic commerce, digital contracts, and cyber law reform. Practically, the findings offer policymakers, legislators, and digital business actors strategic guidance for constructing more effective and adaptive electronic transaction regulations.

In conclusion, the research findings demonstrate that electronic contract regulation reform in Indonesia is essential for strengthening legal certainty, institutional effectiveness, and public trust within digital transactions. The principal problems identified include fragmented regulations, technological gaps, inconsistent judicial interpretation, weak consumer protection, and inadequate cross-border governance mechanisms (Daimah, 2025). The integration of Legal Certainty Theory, Progressive Law Theory, and Cyber Law Theory provides a comprehensive analytical foundation for understanding these challenges and constructing appropriate reform strategies. Ultimately, the study

contributes a novel multidimensional framework for reconstructing electronic contract governance capable of supporting sustainable digital economic development in Indonesia while ensuring justice, certainty, and technological responsiveness within contemporary cyberspace transactions.

## CONCLUSION

The conclusion of this research demonstrates that the reform of electronic contract regulations in Indonesia constitutes an essential legal agenda in strengthening legal certainty within digital transactions. The findings and discussion reveal that the existing regulatory framework governing electronic contracts has not yet fully accommodated the rapid development of digital technology, electronic commerce, and cross-border cyber transactions. Although Indonesian legislation has formally recognized the validity of electronic contracts through the Electronic Information and Transactions Law and related regulations, substantial normative and institutional weaknesses continue to undermine the effectiveness of legal protection and transactional certainty in practice. The research confirms that fragmented regulations, inconsistent interpretation of electronic evidence, limited institutional coordination, and inadequate adaptation to technological innovation remain the principal obstacles affecting the implementation of electronic contract governance in Indonesia.

The research findings indicate that one of the most significant problems within the Indonesian electronic contract framework lies in the absence of comprehensive legal harmonization among various statutory instruments regulating digital transactions. Existing regulations remain dispersed across civil law provisions, electronic transaction laws, consumer protection regulations, and sectoral digital policies without sufficient synchronization. This condition has generated interpretative inconsistencies concerning electronic consent, digital authentication, standard contractual clauses, jurisdictional authority, and dispute settlement mechanisms. The findings further demonstrate that legal uncertainty is intensified by differing institutional interpretations among regulators, judicial bodies, and business actors, thereby weakening public trust in electronic commerce and digital contractual systems.

The results of the study also confirm the continuing relevance of Legal Certainty Theory proposed by Hans Kelsen. The research demonstrates that legal certainty in digital transactions cannot be achieved solely through formal statutory recognition of electronic contracts. Instead, effective legal certainty requires coherent legal structures, harmonized regulations, and consistent institutional implementation. The findings reveal that Indonesian electronic contract governance still lacks procedural clarity and integrated regulatory coordination capable of ensuring predictability and stability within digital commercial relationships. Consequently, the study concludes that comprehensive legal reform is necessary to create a more systematic and coherent regulatory framework for electronic transactions.

In addition, the research validates the relevance of Progressive Law Theory developed by Satjipto Rahardjo. The study demonstrates that rigid and conventional legal approaches are no longer adequate to address the dynamic nature of digital technology and cyber transactions. Contemporary electronic contracts increasingly involve automated systems, algorithmic agreements, smart contracts, and blockchain-based transactions that challenge traditional legal doctrines. The findings indicate that Indonesian law frequently functions reactively rather than adaptively in responding to technological developments. Therefore, the research concludes that electronic contract regulation reform must adopt progressive and responsive legal approaches capable of balancing technological innovation with substantive justice, consumer protection, and public accountability.

The findings likewise strengthen the significance of Cyber Law Theory advanced by David R. Johnson and David Post. The research confirms that cyberspace possesses transnational characteristics that cannot be effectively governed solely through conventional territorial legal systems. Electronic contracts frequently involve cross-border interactions, multinational digital platforms, and decentralized technological infrastructures that complicate issues of jurisdiction, enforcement, and applicable law. The study concludes that Indonesia requires a more sophisticated cyber legal framework capable of regulating transnational digital transactions while simultaneously strengthening domestic legal institutions and international cooperation mechanisms.

The discussion within this research further reveals that significant gaps persist between technological development and regulatory adaptation in Indonesia. Digital business practices evolve substantially faster than legislative reform processes, resulting in legal vacuums concerning emerging technologies such as artificial intelligence contracts, smart contracts, and decentralized digital platforms. Previous studies generally emphasized the formal validity of electronic agreements; however, this research demonstrates that the more fundamental issue concerns the absence of adaptive and integrated governance structures capable of addressing contemporary digital realities. Consequently, the study contributes a novel multidimensional perspective by integrating legal certainty, progressive legal adaptation, and cyber governance principles simultaneously within the context of electronic contract reform.

The conclusions drawn from the findings also indicate that institutional reform constitutes an indispensable component of electronic contract governance modernization. Judicial institutions, regulatory authorities, and law enforcement agencies continue to encounter limitations in technological expertise and cyber legal capacity. The research identifies the necessity of strengthening institutional competence through specialized legal training, digital literacy development, and improved inter-agency coordination. Furthermore, the study concludes that consumer protection mechanisms within electronic transactions must be enhanced through clearer contractual transparency standards, stricter supervision of standard electronic clauses, and more accessible dispute resolution procedures.

From a theoretical perspective, this research contributes significantly to the development of cyber law and digital contract scholarship by providing an integrated analytical framework combining Legal Certainty Theory, Progressive Law Theory, and Cyber Law Theory. The research enriches academic discourse by demonstrating that effective digital transaction governance requires simultaneous consideration of normative coherence, technological responsiveness, and transnational cyber regulation. Academically, the study offers a comprehensive reference for future interdisciplinary research concerning electronic commerce, digital governance, and legal modernization in developing countries.

Practically, the conclusions of this research provide strategic implications for policymakers, legislators, judicial institutions, and digital business actors. The study recommends comprehensive harmonization of electronic contract regulations, modernization of judicial evidentiary standards, enhancement of cyber legal capacity, and development of integrated digital governance institutions. These reforms are essential to ensuring stronger legal certainty, increasing investor confidence, protecting consumers, and supporting sustainable digital economic growth in Indonesia.

Ultimately, this research concludes that the reform of electronic contract regulations in Indonesia must move beyond formal legal recognition toward comprehensive institutional and regulatory transformation capable of addressing contemporary technological challenges. Through harmonized legislation, adaptive legal governance, and strengthened cyber legal institutions, Indonesia can establish a more reliable and equitable digital transaction system that promotes legal certainty, economic development, and public trust within the evolving global digital economy.

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