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Legal Protection of Digital Asset Ownership from the Perspective of Indonesian Civil Law

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ABSTRACT

The rapid advancement of digital technology has created a new form of wealth in the form of digital assets that possess significant economic value. However, these assets have not yet been comprehensively regulated within the Indonesian civil law system. This condition has generated various legal issues concerning ownership status, legal protection, and dispute resolution mechanisms related to digital assets. This study aims to analyze the legal protection of digital asset ownership from the perspective of Indonesian civil law. The research employs a normative juridical method using both the statutory approach and the conceptual approach. The findings indicate that digital assets may be classified as legal objects possessing economic value; however, substantial regulatory gaps remain, preventing the establishment of adequate legal certainty for asset owners. Consequently, Indonesian civil law requires legal reform to provide comprehensive legal protection and stronger legal certainty concerning digital asset ownership in response to the rapid development of the digital economy.

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1. INTRODUCTION

The rapid development of information and communication technology has fundamentally transformed various aspects of human life, including the economic and legal sectors. Digital transformation has not only reshaped patterns of social interaction but has also generated new forms of wealth that were previously unknown within conventional legal systems. One of the most significant developments is the emergence of digital assets, which possess economic value and may be owned, traded, and utilized by both individuals and legal entities. Digital assets encompass a wide range of forms, including cryptocurrencies, digital tokens, blockchain-based assets, economically valuable digital accounts, and other types of digital ownership that continue to evolve within the modern technological ecosystem.

The emergence of digital assets has created complex legal consequences, particularly regarding ownership status, legal protection for asset owners, transfer of ownership rights, and dispute resolution mechanisms when ownership rights are violated. From the perspective of civil law, ownership refers to the legal relationship between a legal subject and an object possessing economic value. The Indonesian Civil Code (Kitab Undang-Undang Hukum Perdata KUHPerdata) regulates property and proprietary rights as part of the legal protection afforded to individual interests. However, the unique characteristics of digital assets being intangible, technology-based, and existing within a borderless digital environment pose significant challenges to the application of traditional civil law concepts, which were originally developed for tangible property. In Indonesia, the development of digital assets has progressed considerably faster than the legal framework governing them. Although the government has enacted several regulations concerning cryptocurrency trading as digital commodities, these regulations primarily focus on commercial transactions and economic supervision rather than comprehensively addressing ownership rights, inheritance, transfer of ownership, civil liability, and legal protection for digital asset owners. This situation highlights the urgent need for a more comprehensive legal analysis of the position of digital assets within the Indonesian civil law system.

The research gap addressed in this study lies in the limited number of studies specifically examining digital assets as objects of ownership from the perspective of Indonesian civil law. Previous studies have predominantly analyzed digital assets from the perspectives of information technology law, cryptocurrency regulation, digital transaction security, or criminal law relating to cybercrime. Meanwhile, legal studies concerning the legal construction of digital asset ownership, the legal relationship between owners and their digital assets, and the forms of civil law protection available to digital asset owners remain relatively underdeveloped. Previous research suggests that technological advancement requires the adaptation of traditional concepts of property and ownership. Studies on cryptocurrency indicate that digital assets possess economic characteristics that enable them to be categorized as valuable legal objects, despite their differences from tangible property recognized under the Indonesian Civil Code. Other studies further emphasize that regulatory ambiguity regarding digital assets creates legal uncertainty, particularly in cases involving loss of access, digital theft, ownership disputes, and complications arising from the transfer of digital assets. Nevertheless, these studies primarily focus on sector-specific regulations and have yet to develop an in-depth analysis regarding the integration of digital asset ownership into Indonesia's national civil law system.

From a theoretical perspective, ownership under civil law grants an individual the authority to use, enjoy, and exercise legal rights over property. Property law theory recognizes that an object may become part of a legal relationship when it possesses economic value and can be controlled by a legal subject. Contemporary legal developments further demonstrate that the concept of property is no longer confined to tangible objects but also encompasses intangible assets possessing measurable economic value. Consequently, digital assets can reasonably be recognized as legal objects requiring formal recognition and protection through an adaptive civil law framework. In addition to ownership theory, this study adopts the concept of legal protection, which emphasizes the state's obligation to ensure legal certainty, justice, and legal utility for society. Legal protection for digital asset owners is essential to guarantee ownership rights, prevent unauthorized use and misuse of digital assets, and provide effective legal remedies in the event of disputes. Accordingly, the civil law approach plays a vital role in establishing a legal framework capable of accommodating technological advancement while preserving the fundamental principles of legal certainty.

The novelty of this study lies in its comprehensive analysis of the legal status of digital assets as objects of ownership within the Indonesian civil law framework and in proposing a legal protection model applicable to digital asset owners. Rather than merely examining digital assets as economic or technological instruments, this study positions them as part of the evolving concept of modern wealth requiring the reconstruction of traditional civil law doctrines. It argues that Indonesian civil law should adapt to technological progress by broadening its interpretation of property, ownership, and proprietary rights within the context of the digital economy. Based on these legal issues, this study aims to analyze the legal status of digital asset ownership within the Indonesian civil law system and to examine the forms of legal protection available to digital asset owners. It also seeks to identify weaknesses in the existing regulatory framework and provide recommendations for legal reform capable of ensuring greater legal certainty regarding digital asset ownership in the future.

Theoretically, this research is expected to contribute to the development of civil law scholarship, particularly concerning the expansion of the concepts of property and ownership in the digital era. Practically, it is intended to serve as a valuable reference for policymakers, legal practitioners, digital industry stakeholders, and the wider public in understanding legal rights and legal protection concerning digital assets. Furthermore, the findings are expected to support the formulation of legal regulations that are more responsive to ongoing technological developments. Based on the theoretical framework and the issues discussed above, the research hypothesis proposes that digital assets possess the characteristics of legal objects eligible for protection under Indonesian civil law. Nevertheless, substantial legal reform remains necessary to establish stronger legal certainty regarding digital asset ownership and the resolution of disputes involving digital assets.

2. RESEARCH METHOD

This study employs a normative juridical research method, utilizing both the statutory approach and the conceptual approach. The normative juridical method was selected to analyze the legal norms governing the protection of digital asset ownership within the framework of Indonesian civil law. The statutory approach was conducted through an examination of the provisions contained in the Indonesian Civil Code (Kitab Undang-Undang Hukum Perdata/KUHPerdata), legislation concerning electronic transactions, and other legal regulations governing the existence and utilization of digital assets in Indonesia. Meanwhile, the conceptual approach was employed to examine the legal concepts of ownership, property, proprietary rights, and legal protection of digital assets based on established legal doctrines and contemporary legal theories. The legal materials used in this study consist of primary legal materials, including statutory regulations; secondary legal materials, comprising scholarly books, scientific journal articles, previous research findings, and opinions of legal scholars; and tertiary legal materials, including legal dictionaries and other supporting references. The collection of legal materials was carried out through an extensive library research approach. Subsequently, all legal materials were analyzed qualitatively using a descriptive-analytical method to provide a comprehensive understanding of the legal status of digital assets and the forms of legal protection that may be applied within the Indonesian civil law system.

3. RESULTS AND DISCUSSIONS

3.1. The Legal Status of Digital Assets as Objects of Ownership from the Perspective of Indonesian Civil Law

The findings of the normative juridical analysis indicate that digital assets possess the essential characteristics of legal property, as they have measurable economic value and may be controlled by legal subjects. Although the Indonesian Civil Code (KUHPerdata) does not explicitly recognize digital assets as a distinct category of property, the general concept of property within Indonesian civil law allows for an interpretative approach whereby legal objects are not necessarily confined to tangible assets but may also include intangible assets possessing economic value and legal utility. The analysis demonstrates that digital assets satisfy several fundamental elements of ownership. First, they possess economic value that can be measured through market transactions or commercial utilization. Second, they are capable of being exclusively controlled by their owners through technological mechanisms. Third, ownership rights may be transferred through legally recognized transactions, whether by sale, inheritance, gift, or other legal acts. These characteristics indicate that digital assets fulfill the substantive requirements generally associated with proprietary rights under civil law.

From the perspective of property rights, ownership of digital assets exhibits similarities to ownership of intangible movable property. Control over digital assets is exercised through technological mechanisms, including private cryptographic keys, authenticated digital accounts, blockchain verification systems, or other secure authentication methods that establish the legal relationship between the owner and the asset. Unlike conventional tangible property, however, ownership of digital assets depends primarily on digital access and technological control rather than physical possession. Nevertheless, the study also identifies several legal challenges arising from the intangible nature of digital assets. Their absence of physical form complicates the application of conventional ownership doctrines, particularly regarding proof of ownership, legal recognition, evidentiary standards, and enforcement of proprietary rights. These characteristics create significant difficulties in applying traditional civil law concepts that were originally designed for tangible objects.

Furthermore, the cross-border nature of many digital assets introduces additional complexities concerning jurisdiction, conflict of laws, and the recognition of ownership rights across different legal systems. Existing civil law provisions have not yet fully accommodated these technological characteristics, resulting in legal uncertainty for digital asset owners. Based on these findings, the first research hypothesis stating that "digital assets possess the characteristics of legal objects that may be categorized as part of an individual's property under the perspective of Indonesian civil law" is accepted. This finding demonstrates that, despite the absence of explicit statutory regulation, digital assets may conceptually be recognized as legal objects possessing both economic and legal value. Consequently, Indonesian civil law provides sufficient theoretical foundations to acknowledge digital assets as objects of ownership, although comprehensive legislative reform remains necessary to ensure stronger legal certainty and more effective protection of ownership rights in the digital era.

3.2. Legal Protection of Digital Asset Owners Based on the Principles of Indonesian Civil Law

The findings indicate that the legal protection afforded to digital asset owners within the Indonesian civil law system remains underdeveloped and has not yet provided an adequate level of legal certainty. Based on the analysis of legal protection principles, digital asset owners fundamentally possess the right to legal protection concerning the ownership, control, use, and enjoyment of their assets. These rights are closely associated with the fundamental principles of legal certainty, justice, and legal utility, which constitute the foundation of the Indonesian legal system. The study reveals that the current legal protection of digital assets is fragmented and dispersed across several sectoral regulations governing electronic transactions, digital asset trading, and consumer protection. Although these regulations provide a certain degree of legal recognition, they do not comprehensively regulate civil law aspects, such as the formal recognition of ownership rights, mechanisms for transferring digital assets, legal remedies for loss of access, or dispute resolution arising from unauthorized use or misappropriation of digital assets. Consequently, significant normative deficiencies remain within the existing legal framework, creating legal uncertainty for digital asset owners.

The analysis further demonstrates that, in the event of disputes involving digital assets, existing civil law principles may still be applied. Legal remedies may be pursued through claims based on breach of contract (wanprestasi), unlawful acts (perbuatan melawan hukum/tort), and evidentiary rules established under Indonesian civil procedural law. Nevertheless, the practical application of these legal principles encounters considerable challenges because digital assets possess characteristics that differ substantially from conventional objects of civil disputes. Ownership is generally established through technological evidence rather than physical possession, requiring courts to interpret digital evidence using legal concepts that were originally developed for tangible property. Another significant issue concerns the absence of standardized evidentiary mechanisms capable of verifying ownership of blockchain-based assets, cryptocurrencies, non-fungible tokens (NFTs), and other forms of digital property. As a result, proving ownership before judicial authorities may become considerably more complex than proving ownership of conventional assets.

Based on these findings, the second research hypothesis stating that "the legal protection of digital asset ownership under Indonesian civil law remains inadequate due to the absence of specific regulations governing the legal status and protection mechanisms of digital assets" is accepted. This finding confirms that Indonesia requires a more adaptive legal framework capable of accommodating technological developments while ensuring effective legal protection and greater legal certainty for digital asset owners.

3.3. Regulatory Challenges in Providing Legal Certainty for Digital Asset Ownership

The findings demonstrate that one of the principal obstacles to protecting digital asset ownership in Indonesia is the absence of a comprehensive legal framework specifically regulating the legal status of digital assets within the national civil law system. The analysis of existing legal materials indicates that current regulations primarily emphasize commercial transactions, regulatory supervision, and digital transaction security rather than ownership rights and proprietary protection. Several significant regulatory challenges were identified. The first concerns the lack of a clear legal classification of digital assets as recognized legal objects under Indonesian civil law. This ambiguity creates uncertainty regarding the legal regime applicable to various forms of digital assets, particularly cryptocurrencies, digital tokens, blockchain-based assets, and other intangible digital property.

The second challenge relates to the limited availability of legal mechanisms for establishing ownership. Unlike conventional property, ownership of digital assets is evidenced through technological credentials such as private cryptographic keys, blockchain transaction records, or digital authentication systems. Existing civil law provisions have not yet fully recognized these technological mechanisms as definitive legal evidence, thereby creating difficulties in proving ownership before judicial institutions. Another regulatory issue concerns the absence of legal provisions governing the inheritance and transfer of digital assets following the death of their owners. Current inheritance law was formulated primarily for tangible property and conventional financial assets, making its application to digital assets legally uncertain. Consequently, heirs may encounter significant legal and practical obstacles when attempting to obtain access to inherited digital property.

Furthermore, the borderless nature of digital assets gives rise to jurisdictional challenges whenever disputes involve parties located in different countries. Digital assets frequently exist within decentralized blockchain networks that operate beyond national territorial boundaries, making the determination of applicable law and competent judicial authority increasingly complex. Existing principles of private international law have not yet been comprehensively adapted to address these technological realities. The study also demonstrates that the traditional orientation of Indonesian civil law toward tangible property has limited its capacity to respond effectively to technological innovation. Therefore, a more progressive legal interpretation is required to expand the concepts of property and ownership so that they accommodate intangible digital assets without compromising the fundamental principles of legal certainty.

Accordingly, the establishment of a comprehensive legal framework specifically governing digital assets has become increasingly necessary. Such legislation should clearly define the legal status of digital assets, establish ownership rights and obligations, regulate transfer and inheritance mechanisms, strengthen evidentiary standards, and provide effective dispute resolution procedures capable of addressing legal issues arising from digital asset ownership. Based on these findings, the third research hypothesis stating that "the lack of regulatory clarity concerning digital assets constitutes the primary factor contributing to weak legal certainty for digital asset owners in Indonesia" is accepted. These findings underscore the urgent need for legal reform to establish a more responsive civil law system capable of providing comprehensive legal protection for digital asset ownership in the era of digital transformation.

3.4. Model for Strengthening the Legal Protection of Digital Asset Ownership in Indonesia

Based on the findings of this study, strengthening the legal protection of digital asset ownership requires a comprehensive civil law reform capable of accommodating the rapid advancement of digital technology. Such reform should not merely respond to technological innovation but should also establish a legal framework that guarantees legal certainty, justice, and effective protection for digital asset owners. Accordingly, the proposed legal protection model emphasizes the integration of digital assets into the Indonesian civil law system through a comprehensive and adaptive regulatory approach. The proposed model consists of several fundamental components. First, digital assets should be formally recognized as legal objects possessing measurable economic value and capable of becoming the subject of proprietary rights. Such recognition would provide a clear legal basis for determining ownership rights, legal responsibilities, and the legal consequences arising from transactions involving digital assets.

Second, Indonesia should establish specific legislation governing digital asset ownership. The regulatory framework should comprehensively address the legal status of digital assets, ownership rights, mechanisms for transferring ownership, inheritance procedures, collateral arrangements, legal liability, and dispute resolution. Comprehensive regulation would significantly reduce legal uncertainty while ensuring consistency in the application of civil law principles to digital property. Third, the legal framework should accommodate the distinctive characteristics of digital assets, including their intangible nature, blockchain-based infrastructure, ownership mechanisms relying on digital authentication and private cryptographic keys, and the possibility of cross-border transactions. Consequently, future legislation should recognize technological evidence as a legitimate means of establishing ownership while developing evidentiary standards appropriate for digital environments.

The study further suggests that legal protection should include preventive as well as repressive mechanisms. Preventive protection may be achieved through regulatory supervision, legal recognition of ownership rights, registration mechanisms where appropriate, and clear contractual standards governing digital asset transactions. Repressive protection, on the other hand, should ensure the availability of effective judicial and alternative dispute resolution mechanisms capable of resolving ownership disputes involving digital assets efficiently and fairly. In addition to regulatory reform, the findings highlight the importance of improving public legal literacy concerning digital assets. Individuals and business entities should possess an adequate understanding of the legal implications of digital asset ownership, transaction risks, cybersecurity practices, inheritance planning, and available legal remedies. Increased legal awareness would not only reduce the likelihood of disputes but also encourage responsible participation in the rapidly expanding digital economy.

Institutional collaboration also constitutes an essential component of the proposed protection model. Government institutions, financial regulators, technology developers, legal practitioners, academics, and digital industry stakeholders should cooperate in developing regulatory standards that remain responsive to continuous technological innovation. Such collaboration would facilitate the formulation of balanced regulations capable of protecting ownership rights without inhibiting innovation and economic growth. Based on these findings, the fourth research hypothesis stating that "strengthening regulatory frameworks and adopting an adaptive civil law approach can enhance the legal protection of digital asset ownership in Indonesia" is accepted. This finding confirms that the transformation of Indonesian civil law has become increasingly necessary to ensure effective legal protection for emerging forms of digital property and to establish greater legal certainty within the evolving digital economy.

4. CONCLUSION

This study concludes that digital assets possess the fundamental characteristics of legal property because they have measurable economic value and are capable of becoming objects of ownership under the principles of Indonesian civil law. Nevertheless, despite their growing economic significance, the current Indonesian civil law system has not yet established a comprehensive legal framework governing the legal status, ownership, transfer, inheritance, and protection of digital assets. This regulatory gap has created considerable legal uncertainty for individuals and legal entities engaging in digital asset ownership and transactions. The results of the hypothesis testing demonstrate that all research hypotheses are supported. First, digital assets may be conceptually categorized as legal objects within the framework of Indonesian civil law. Second, the existing legal protection afforded to digital asset owners remains inadequate due to the absence of comprehensive civil law regulations specifically governing digital assets. Third, regulatory ambiguity constitutes the principal factor contributing to legal uncertainty regarding digital asset ownership in Indonesia. Finally, strengthening the regulatory framework through adaptive civil law reform has the potential to provide more effective legal protection and greater legal certainty for digital asset owners. The principal finding of this research reveals a substantial disparity between the rapid development of digital technology and the capacity of Indonesia's existing civil law framework to provide adequate legal protection for digital asset ownership. This disparity underscores the necessity of modernizing civil law concepts to accommodate emerging forms of digital property while maintaining the fundamental principles of legal certainty, justice, and legal utility. From a theoretical perspective, this study contributes to the development of Indonesian civil law by expanding the traditional concepts of property and ownership to include digital assets as legally protected objects. It further enriches scholarly discussions concerning the evolution of proprietary rights in response to technological transformation. From a practical perspective, the findings provide valuable recommendations for legislators, policymakers, legal practitioners, financial regulators, and participants in the digital economy in formulating legal policies that are more responsive to technological developments. Accordingly, this study recommends that the Indonesian government and legislative authorities undertake comprehensive civil law reform by introducing specific legal provisions governing digital assets. Such legislation should regulate ownership rights, inheritance, transfer of ownership, evidentiary standards, legal liability, and dispute resolution mechanisms while recognizing the unique technological characteristics of digital assets. Furthermore, future research is encouraged to undertake comparative legal analyses involving other jurisdictions and to explore the integration of technological protection mechanisms, particularly blockchain-based legal solutions, to strengthen legal certainty and enhance the protection of digital asset ownership in Indonesia.

REFERENCES

Arief Pratama, Y. (2024). Perlindungan Hukum Terhadap Pemegang Cryptocurrency di Indonesia. Jurnal Sosial dan Sains, 4(1), 7–18.

Carata, C., & Chelaru, A. L. (2024). The Evolution of Digital Inheritance: Legal, Technical, and Practical Dimensions of Cryptocurrency Transfer Through Succession in French-Inspired Legal Systems. Journal of Digital Law and Technology.

Dewangga Putra, K. I., & Priyanto, I. M. D. (2024). Perlindungan Hukum Pelanggan Aset Kripto dalam Transaksi Elektronik Cryptocurrency di Indonesia. Kertha Semaya: Journal Ilmu Hukum, 12(9), 2159–2168.

Fauzi, A., & Ramadhan, M. (2023). Kedudukan Hukum Cryptocurrency sebagai Aset Digital dalam Perspektif Hukum Perdata Indonesia. Jurnal Hukum dan Kenotariatan, 7(2), 155–170.

Hidayat, R., & Sari, N. (2024). Legal Protection of Digital Asset Ownership Through Blockchain Technology in Indonesia. Indonesian Journal of Law Studies, 9(1), 45–60.

Iqbal, I., & Nazar, J. (2025). Bitcoin Inheritance Mechanism as an Intangible Ownership Asset Under Civil Law in Indonesia: Mekanisme Pewarisan Bitcoin Sebagai Aset Kepemilikan Tidak Berwujud Berdasarkan Hukum Perdata di Indonesia. UIR Law Review, 9(2).

Koencoro, T., & Husain, M. A. (2024). Studi Analisis Terhadap Perlindungan Hukum Bagi Pengguna Asset Cryptocurrency. Justicia Journal, 13(1), 112–120.

Kurniawan, D., & Prasetyo, B. (2023). Pengaturan Aset Digital dalam Sistem Hukum Perdata Indonesia: Antara Kepastian Hukum dan Perkembangan Teknologi. Jurnal Rechtsvinding, 12(3), 421–438.

Lee, L. (2024). Examining the Legal Status of Digital Assets as Property: A Comparative Analysis of Jurisdictional Approaches. International Journal of Digital Law.

Marditia, P. P. R., & Kuncoro, R. R. N. (2025). Pengembangan Model Regulasi untuk Pewarisan Digital Aset Kripto: Perspektif Hukum Indonesia. Perspektif Hukum, 25(2), 1–32.

Matheus, J., & Shafira, W. C. (2023). Legal Protection of Crypto Art Copyright As a Digital Asset Intellectual Property. Lex Jurnalica, 20(1), 27–36.

Mubarak, M. A., & Elvany, A. I. (2024). Confiscation of Assets Laundered Through Cryptocurrency Transactions in Indonesia: A Regulatory Framework. Contemporary Issues in Criminal Law, 1(1).

Nugraha, F., & Wijaya, A. (2023). Perlindungan Konsumen terhadap Transaksi Aset Digital melalui Platform Elektronik. Jurnal Ilmu Hukum Legal Opinion, 11(2), 89–104.

Pratama, R., & Sembiring, T. (2025). Digital Asset Ownership and Civil Liability in Indonesian Private Law Perspective. Jurnal Hukum Ius Quia Iustum, 32(1), 75–95.

Putri, I. P. (2025). Kedudukan Hukum Aset Digital (Cryptocurrency dan NFT) sebagai Objek Waris dalam Hukum Perdata Indonesia. Fenomena, 20(1).

Rahman, F., & Abdullah, M. (2024). Blockchain Technology and Legal Protection of Digital Property Rights in Indonesia. Journal of Indonesian Legal Studies, 9(2), 215–230.

Sari, D. P., & Firmansyah, A. (2023). Analisis Yuridis terhadap Kepemilikan Aset Digital dalam Perspektif Hukum Kebendaan Indonesia. Jurnal Hukum Ius Publicum, 4(2), 133–148.

Setiadji, W. E., & Suryono, A. (2025). Analisis Yuridis Kedudukan Hukum Digital Asset (Cryptocurrency) yang Tidak Memiliki Underlying sebagai Jaminan Hutang Berdasarkan KUH Perdata. Indonesian Journal of Law and Justice.

Simanjuntak, R., & Lestari, F. (2024). Kepastian Hukum terhadap Investasi Cryptocurrency sebagai Aset Digital dalam Sistem Hukum Indonesia. Jurnal Legislasi Indonesia, 21(1), 56–72.

Siregar, M. A., & Lubis, H. (2023). Perlindungan Hukum Pemilik Aset Digital dalam Perspektif Hukum Perdata dan Teknologi Informasi. Jurnal Yuridis, 10(2), 101–116.

Wijaya, D., & Gunawan, R. (2024). Cryptocurrency sebagai Benda Tidak Berwujud dalam Perspektif Hukum Kebendaan Indonesia. Jurnal Hukum dan Pembangunan, 54(2), 245–264.

Wulandari, E., & Prakoso, A. (2025). Regulasi Kepemilikan NFT sebagai Aset Digital dan Tantangan Perlindungan Hukum di Indonesia. Jurnal Hukum Bisnis, 14(1), 88–103.

Wyczik, J. (2023). The Property Law of Crypto Tokens. Journal of Digital Property Law.

Yuliana, R., & Mahendra, P. (2024). Perlindungan Hukum terhadap Investor Aset Kripto dalam Sistem Perdagangan Digital Indonesia. Jurnal Hukum Ekonomi Syariah dan Perdata, 8(1), 33–49.

Zulkarnain, A., & Khasanah, U. (2025). Reformulasi Hukum Perdata Indonesia terhadap Pengakuan Aset Digital sebagai Objek Kepemilikan. Jurnal Hukum dan Teknologi, 6(1), 1–18.