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Transformation of Legal Objects in the Digital Age: Challenges and Opportunities

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Abstract

The legal object is an essential component in the modern legal system, serving as the subject of legal relations between the parties involved. Traditionally, legal objects include transferable objects and rights that fulfill the rights of legal subjects. This research uses qualitative methods, mainly through literature review, by analyzing various primary legal sources such as laws and official documents, in addition to secondary sources such as scientific journals and relevant articles. Qualitative data analysis aims to explore the evolving paradigm of legal objects, their practical applications, and the resulting legal implications. The findings show that the concept of legal objects has expanded significantly in response to social, economic, and technological changes. In today's digital age, intangible assets such as intellectual property rights, personal data, and cryptocurrencies have gained prominence, thus requiring corresponding legal recognition. This evolution presents new challenges to the legal system, prompting the need for responsive and adaptive policy development. For example, Indonesia's Personal Data Protection Law establishes a legal framework for managing and protecting personal data as a new legal object, reflecting the need for contemporary legal adaptation.

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INTRODUCTION

Currently, the concept of legal object has undergone a significant transformation in line with technological advances and digitalization in various aspects of life (Ferulano, 2021; Prayitno & Setyowati, 2020; Suryantoro, 2023). This shift not only impacts the form and nature of legal objects, but also raises new challenges in terms of regulation, rights protection, and ethical application. Digitalization has given rise to new legal entities, such as digital assets, smart contracts, and blockchain-based property rights, which require adjustments to the existing legal system (Davis, 2023; Suryantoro, 2023; Suwarti et al., 2022).

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It is therefore crucial to examine how the law is adapting to these changes and how policies can be designed to ensure a balance between innovation and the protection of individual rights and the public interest (Abd Razak, 2020; Coma, 2023; Safiullin et al., 2022).

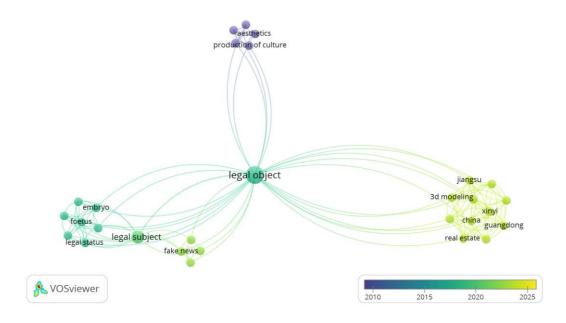


Fig 1. Vosviwer analysis based on scopus

The figure above is a bibliometric mapping that illustrates the relationship between the concept of legal objects and various other topics over a period of time. This visualization shows that research on legal objects is related to aspects such as legal subjects, fake news, aesthetics, cultural production, as well as technological developments such as 3D modeling and real estate in certain regions, especially in China. However, in-depth exploration of the transformation of legal objects in the digital age is lacking, including the impact of artificial intelligence, blockchain technology, and digital assets on the concept of legal objects. This highlights a research gap that can be addressed, emphasizing the growing relevance of the study of how legal frameworks adapt to digital technological advancements. As such, the study on "Transformation of Legal Objects in the Digital Age" makes a novel contribution by analyzing the evolution of legal objects affected by digitalization and its implications for legal regulation and protection in the modern era.

The legal object is a fundamental element in legal relations because it determines the boundaries of the rights and obligations of the parties involved. In the legal system, legal objects include everything that is regulated by law to meet the legal needs and interests of legal subjects (Savelyev, 2017). In the view of classical legal theory, legal objects are often identified with tangible objects that can be owned, transferred, or used by legal subjects. Legal objects include things that can provide benefits to legal subjects, both in the form of physical objects and intangible rights. However, this concept continues to evolve along with the dynamics of modern society (Suryantoro, 2023).

Adding that legal objects are not only limited to physical objects but also include rights that can be a means to fulfill one's legal obligations (Nurisman, 2022). Classic examples of legal objects are land, buildings, and vehicles, while modern examples include copyrights, patents, and other forms of intellectual property. This shows that legal objects are flexible elements that can evolve according to the needs of society. Intellectual property, for example, has become an important form of legal object in the era of globalization due to its role in supporting innovation and the

knowledge-based economy (Anas, 2023).

Along with technological and economic developments, the scope of legal objects has expanded significantly. This transformation is driven by the emergence of new entities that are not physically tangible but have high economic and social value (Aulia, 2023). Examples are digital rights, personal data, and virtual assets such as cryptocurrencies. This phenomenon has challenged the traditional legal framework that focuses more on regulating tangible objects (Hasani, 2022). Personal data, for example, is now considered a valuable asset that requires legal protection. Indonesia's Personal Data Protection Law provides a legal basis for the management and protection of data as a new legal object (Alfitri et al., 2024).

The study of legal objects is becoming increasingly relevant in the context of globalization and digitalization. Globalization has encouraged interaction between countries in trade, investment, and asset management, thus expanding the spectrum of legal objects that must be regulated by international and national law (Nikolas, 2020). Globalization creates new opportunities and challenges in legal asset management, including the need for harmonization of rules across countries. Meanwhile, digitalization has resulted in major changes in the way society interacts with technology, creating new legal objects that require different legal recognition and treatment from traditional physical objects (Angganita & Novitasari, 2024). Personal data, for example, not only has economic value but also contains sensitive information relating to individual privacy. This requires strong legal protection to prevent misuse. For example, invasion of privacy through misuse of personal data has become one of the main issues in digital law in various countries (Disemadi et al., 2023). In addition, cryptocurrency as a form of virtual asset has unique legal challenges, especially regarding transparency, security, and jurisdiction (Sobikhoh et al., 2023).

Therefore, this research aims to dig deeper into the concept and implementation of legal objects from a contemporary legal perspective. This research pays special attention to the transformation of the legal object paradigm in the face of the digital era, where new entities such as virtual assets and digital data become an integral part of legal relationships. This research differs from previous studies that focus more on traditional legal objects, as it places the main focus on how the law must adapt to these changes. By studying this transformation, it is hoped that this research can make a significant contribution to the development of legal theory and the formulation of relevant legal policies in the modern era. Legal adaptation to social and technological change is an important step to maintain the relevance and effectiveness of the legal system (Adinda et al., 2024).

METHODS

The research method used in this research is a qualitative method with a literature review approach (Mahanum, 2021). Used to discuss certain problems or topics sourced from the literature collected as a whole and then select themes that are in accordance with the data needed. After all the author's data has been collected, the next step is to select the data needed according to the issues raised in this research article (Cahyono et al., 2019). By examining books, journals, research reports, magazines, books of hadith and other literature that are in accordance with the discussion studied in this study. In collecting appearing literature studies, the author does two things: first, through literature reviews that are in accordance with the material being studied. Second, after the data is obtained, the author analyzes the data in accordance with the author's understanding in conducting this research (Arifinsyah et al., 2020; Ghasemi, 2023; Snelson, 2016).

RESULT AND DISCUSSION

Definition and Classification of Legal Objects

Legal objects include everything that is the subject of legal relations, both in the form of objects and rights regulated by law to protect the interests of legal subjects (Kheista et al., 2024). In Subekti's view, a legal object is anything that can be utilized by a legal subject to fulfill its rights, either directly or indirectly. This concept provides an important basis for various legal arrangements, because the legal object determines the limits and scope of rights and obligations arising in legal relations between the parties (Sinaga & Zaluchu, 2021).

The classification of legal objects can be divided into three main categories: tangible objects, intangible objects, and digital objects. In the traditional context, tangible objects are the most common type of legal objects, including land, houses, vehicles, and other properties that have a physical form. These objects can be transferred or used as a means to fulfill legal obligations. For example, land and buildings are often the object of sale or lease agreements (Marpaung et al., 2024). Intangibles, on the other hand, include intellectual property rights such as copyrights, patents and trademarks (Darwance et al., 2020). Intangibles have significant economic value in the era of globalization, as intellectual property rights play an important role in fostering innovation and knowledge-based economic growth. In modern legal studies, the regulation of intangible objects is becoming increasingly complex as it involves cross-border legal protection (Pangaribuan, 2024).

Furthermore, with the development of technology, a new category of legal object has emerged, namely digital objects. Digital objects include personal data, cryptocurrencies, and other virtual assets in the form of electronic data (Hapsari et al., 2023). Personal data, for example, has become a very important legal object in the digital era. Indonesia's Personal Data Protection Law provides the legal basis. Digital objects include personal data, cryptocurrencies, and other virtual assets in the form of electronic data (Siregar et al., 2024), to regulate the use and management of personal data as assets that have economic and strategic value (Utami, 2021). Cryptocurrency, on the other hand, is a digital currency based on blockchain technology. It should be noted that cryptocurrencies have created new legal challenges, especially in terms of regulation and jurisdiction, due to their transnational nature and difficulty to monitor (Hasan et al., 2024).

Table 1. Classification of Legal Objects Based on Their Nature

Types of Legal Objects	Example	Information	
Tangible Objects	Land, house	Has a physical form and can be	
		seen	
Intangible Objects	Copyright, patents	Has no physical form	
Digital Objects	Personal data	In the form of electronic data that	
	cryptocurrency	has economic value	

In the contemporary legal context, these three categories are interconnected. For example, physical property transactions (tangible objects) now often involve digital contracts, while intellectual property rights can be protected through digital platforms (Yulia et al., 2022). Recognizing and regulating digital objects as part of the legal system is an important step to ensure fairness and efficiency in modern legal relationships. In addition, Boyatzis (1998) emphasizes that technological developments must be balanced with adaptive legal arrangements to protect the interests of all parties involved (Setiawan & Sudja, 2021).

Thus, the definition and classification of legal objects continue to evolve to reflect social, economic and technological changes. This study shows that a comprehensive understanding of legal objects is key to creating a legal system that is responsive and relevant to the needs of today's society.

Development of the Concept of Legal Objects

The transformation of the concept of legal objects reflects the changing needs of an increasingly complex society, especially in facing the challenges of globalization and digitalization (Siregar et al., 2023). In the traditional view, legal objects are often limited to tangible objects such as land, buildings or vehicles. However, in the digital era, new assets are emerging that are intangible but have significant economic and social value (Ainun et al., 2024). Examples of such assets are personal data and cryptocurrencies, which are now important legal objects in various legal jurisdictions (Hestiandari et al., 2023).

Personal data is information relating to an identifiable individual. This information has economic value as it can be used in various sectors, such as advertising, data analysis and product development (My, 2023). Personal data is also often used to build digital profiles that can direct a company's marketing strategy. Indonesia's Personal Data Protection Law passed in 2020 provides legal recognition and protection to personal data as a legal object that requires special management and treatment (Sautunnida, 2018). This protection also includes prohibitions on unauthorized data processing, data security obligations, and the right of data owners to access or delete their information (Fadli et al., 2024).

However, cryptocurrencies such as Bitcoin, Ethereum, and various other altcoins are blockchain-based digital currencies that are increasingly being used as investment and transaction tools (Hamdi & Junaedi, 2023). These currencies have no physical form, but their economic value and potential in the global financial market is significant. Cryptocurrencies are also attractive instruments due to their decentralized, anonymous and technology-based nature (Afrizal et al., 2021). However, this nature poses new legal challenges due to the difficulty of oversight and regulation in traditional legal contexts. Many countries, including Indonesia, are drafting regulations to ensure that cryptocurrencies can be used safely without opening loopholes for crimes such as money laundering and terrorist financing (Nurisman, 2022).

The transformation of the concept of legal object also reflects a paradigm shift in legal regulation. Legal objects in the contemporary era include not only physical entities, but also virtual entities involving advanced technology. In many cases, legal regulation of digital objects requires a new approach that is responsive to technological dynamics (Yuniasih, 2016). For example, e-commerce transactions that involve personal data as part of the buying and selling process require a legal framework that ensures transparency, security, and fairness for all parties involved. Likewise, digital assets such as NFTs (Non-Fungible Tokens) provide unique ownership of digital works, which also require new legal arrangements to ensure the validity and protection of ownership rights (Prayuti, 2024).

Table 2. Comparison of Traditional and Contemporary Legal Objects

Aspect	Objek Tradisiona	l Objek Kontemporer
Form	In the form of	Intangible
Exanple	Land, vehicles	Digital data, cryptocurrency
Legal Arrangements	KUH Civil	UU ITE, UU PDP

Implications for Legal Practice

The paradigm shift in legal objects has a broad impact on various aspects of law, including contract law, criminal law, and civil law (Supriatna, 2023). This transformation is driven by advances in digital technology that change the way legal relationships are formed, implemented and maintained. For example, disputes related to digital assets often involve cross-border jurisdictions, which makes legal resolution more complex (Fadli, 2021). Misappropriated personal data or stolen cryptocurrencies require legal arrangements capable of spanning traditional jurisdictional boundaries, due to the accessible nature of digital assets from anywhere in the world (Rikmadani, 2021).

In contract law, one significant innovation is the introduction of smart contracts. The regulation of digital transactions such as smart contracts requires a new legal framework that regulates automatic execution mechanisms based on blockchain technology (Sudarmanto et al., 2024). Smart contracts offer efficiency and transparency as all terms and conditions are automatically executed when certain conditions are met. However, they also come with legal risks, including coding errors that can lead to a mismatch between the intended outcome and the actual implementation, as well as a lack of flexibility in changing clauses once the contract is activated. Therefore, the establishment of legal standards for the development and implementation of smart contracts is necessary to protect the rights of the parties (Megawati et al., 2023).

In the context of criminal law, the misuse of personal data and cryptocurrencies creates new challenges. Personal data is often the main target in cyber-attacks, such as identity theft or data manipulation for illegal purposes. This requires strict settings to prevent unauthorized access and protect data integrity (Faizal et al., 2023). Cryptocurrencies also present unique legal challenges. As digital currencies that are not regulated by a central authority, cryptocurrencies are often used in anonymous transactions, making them vulnerable to money laundering and terrorism financing (Hasan et al., 2024). Many countries, including Indonesia, are drafting laws aimed at monitoring and regulating the use of cryptocurrencies without stifling technological innovation (Siboro et al., 2024).

In civil law, courts often face challenges in determining the appropriate jurisdiction to resolve disputes involving digital assets (Ari et al., 2024). The non-geographic nature of digital assets makes the litigation process complicated. For example, in cryptocurrency theft cases, courts must consider the location of the transaction, the identity of the parties involved, and the applicable legal jurisdiction. International courts can play an important role in resolving such disputes through harmonization of legal rules between countries (Wahyudi et al., 2023).

Table 3. Distribution of Cases Related to Digital Objects

Case Types	Number of Cases	Percentage
Data ownership disputes	35	35%
Cryptocurrency disputes	40	40%
Digital rights violations	25	25%
Total	100	100%

The data in the table shows that cryptocurrency disputes have the highest percentage compared to other types of cases. This suggests that the regulation of cryptocurrencies requires greater attention from legal policymakers (Sobikhoh et al., 2023). Development of international standards to regulate digital assets, including cryptocurrencies, to prevent misuse and ensure transaction security. Digital rights violations are also an important issue, especially with the increasing use of technology to access data without authorization or manipulate data (Guntoro & Ratnawati, 2024).

In addition, the changing paradigm of legal objects also opens up opportunities to create more innovative regulations (Adha, 2020). Adaptive legal regulation not only protects individual interests, but also promotes public trust in the legal system. Effective regulations should be able to accommodate the needs of modern technology without neglecting the basic principles of fairness and transparency (Mobolaji et al., 2020). For example, legal regulation of NFTs (Non-Fungible Tokens) as a new form of digital ownership requires an approach that guarantees

legal validity while protecting the rights of owners from duplication or copyright infringement (Sulistianingsih & Kinanti, 2022).

Therefore, the transformation of the concept of legal objects provides both challenges and opportunities for legal development. This study shows that adaptive and responsive regulation is essential to deal with evolving technological and social dynamics (Syahputra, 2024). A modern legal system must be able to protect individual rights, encourage innovation, and create trust in society without ignoring the basic principles of justice and transparency (Edyson et al., 2024). Strong legal arrangements not only protect individual interests but also ensure stability and efficiency in the legal system as a whole (Aziz & Yudhayana, 2024).

CONCLUSION

This research highlights the transformation of the legal object paradigm in the contemporary legal context, with a particular focus on the dynamics of the digital era and globalization. Based on the research conducted, the concept of legal object has evolved from its previous focus on tangible objects towards the recognition of intangible entities, such as personal data and cryptocurrencies. This evolution is triggered by technological advances and social changes that alter the pattern of legal interactions. Intangible objects, including intellectual property rights and digital assets, now have significant strategic and economic value. This research finds that digital objects require more responsive legal regulation to address emerging challenges, such as privacy protection, virtual asset regulation and cross-border dispute resolution. The research also shows that an adaptive legal system is essential to accommodate these changes, to maintain its relevance and effectiveness in protecting the interests of legal subjects. Regulations such as Indonesia's Personal Data Protection Law are examples of the first steps in managing digital objects as part of legal relationships. This study provides an understanding that legal arrangements that are not only oriented towards protecting the rights of individuals, but also encourage technological innovation and transparency are key to creating a fair and efficient legal system. The case distribution analysis shows that cryptocurrency-related disputes and digital rights violations have a high degree of complexity, requiring greater attention from policymakers.

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