



The Regulation of Non-Fungible Tokens as Fiduciary Security Objects

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Abstract

Non-fungible tokens (NFTs) have the potential to serve as fiduciary collateral in Indonesia. As a blockchain-based innovation, NFTs enable the unique representation and transfer of digital asset ownership. Under Indonesia's *Fiduciary Security Law*, NFTs qualify as fiduciary collateral objects since they are classified as intangible assets. This study examines copyright protection for NFTs in the context of fiduciary collateral, along with the legal and technical challenges in their implementation. Key obstacles include the lack of specific regulatory frameworks, insufficient blockchain infrastructure, and limited public understanding of NFTs as fiduciary collateral. Consequently, there is a need for comprehensive regulations and the establishment of oversight institutions to ensure transactional legality and security. Such regulatory measures are expected to facilitate the use of NFTs as fiduciary collateral, enhance public trust, and promote the growth of a blockchain-based digital ecosystem in Indonesia.

Keywords: Collateral law, fiduciary security, non-fungible token.

1. Introduction

Security (collateral) law governs the legal relationship between the guarantor—typically the debtor—and the secured party, namely the creditor, arising from the provision of collateral for a specific debt using a certain object or party as a guarantee. Therefore, security law not only regulates the creditor's rights in the settlement of the debt but also encompasses the rights of both debtors and creditors throughout the settlement process (Usman, 2008).

The term *security law* is derived from the translations of *security of law*, *zekerheidstelling*, or *zekerheidsrechten* (Irwanugroho, 2019; Lestari & Sale, 2020). According to Article 1131 of the Indonesian Civil Code (KUH Perdata), "All movable and immovable assets of the debtor, both current and future, shall serve as security for the fulfillment of personal obligations of the debtor." This provision indicates that collateral is closely tied to debt, although the object used as collateral is not intended to transfer ownership to the creditor but rather to serve as a means for debt repayment in accordance with applicable regulations.

There are two types of proprietary security relevant to NFTs as collateral objects, namely *pledge* and *fiduciary transfer*, due to the intangible and movable nature of NFTs. Article 1150 of the Indonesian Civil Code stipulates that a pledge is a right held by the creditor over a movable object delivered by the debtor as security for a debt, granting the creditor preferential rights over other creditors in repayment from that object. A pledge arises from a loan agreement, where the object provided as security functions as an assurance for debt repayment according to the agreed terms.

The term *fiducia* originates from the Latin word *fides* (trust) and has been adapted into Dutch as *Fiduciaire Eigendom Overdracht* and into English as *Fiduciary Transfer of Ownership*. Both languages refer to the transfer of ownership rights based on trust (Annisa, 2023). According to Law No. 42 of 1999 on Fiduciary Security, fiduciary is a security right over movable property – either tangible or intangible – provided to secure the repayment of a debtor's obligation to a creditor (Novia, 2014). In fiduciary security, the fiduciary recipient holds a superior position compared to other creditors.

In the digital era, Non-Fungible Tokens (NFTs) have emerged as a significant innovation in the realm of digital assets (Barua, Golder, Chowdhury, & Sharmeen, 2025; Pradana, Wai Shiang, Abdullah, Saputri, & Nabila, 2025). NFTs, which first gained popularity in 2017 through projects such as CryptoPunks and later CryptoKitties, are now widely used in digital art as a novel means of monetizing creative works. In Indonesia, NFTs attracted public attention in 2022 with the *Ghozali Everyday* collection by Sultan Gustaf Al Ghozali. With a total of 932 items, the value of Ghozali's NFT collection reached billions of rupiah (Rosana, 2022).

Nevertheless, under Indonesian law, the legal status of NFTs as collateral objects remains undefined (Sembiring & Budhiawan, 2023). Issues such as the legality of using NFTs as collateral and the enforcement mechanisms for rights over NFTs continue to raise legal uncertainties. Therefore, research on the regulation of NFTs as collateral within the Indonesian legal framework is vital to develop a clear legal structure that supports the growth of asset-backed digital security systems. This study stems from the legal vacuum observed in this area, due to the absence of specific regulations governing NFTs in Indonesia. As a result, NFT owners may face uncertainty and potential legal risks regarding their digital assets. This research investigates legal systematics, including relevant legislation, in order to understand foundational legal concepts such as legal communities, legal subjects, rights and obligations, legal events, legal relationships, and legal objects (Purbacaraka & Soekanto, 1983). An in-depth analysis of these aspects is expected to provide a strong foundation for future legal regulation of NFTs.

The objective of this research is to explore the evidentiary process in cases of identity card (KTP) misuse and to provide guidance on the legal remedies available to victims of identity misuse in online lending contexts. This study adopts a

normative legal research approach, characterized by legal ambiguity, and employs primary, secondary, and tertiary legal materials.

Accordingly, the central focus of this research is to examine and analyze various legal regulations related to the use of NFTs as collateral in Indonesia. It is expected that the findings of this research will serve as a practical guide for legal practitioners, regulators, and other stakeholders involved in transactions that include NFTs as collateral in Indonesia. For this reason, the author has undertaken this study under the title: "The Regulation of Non-Fungible Tokens as Objects of Fiduciary Collateral."

2. Method

The author employs the normative legal research method, also known as library-based legal research, which focuses on the analysis of library materials or secondary data (Soekanto & Mamudji, 2011). This thesis adopts the normative method because the primary data sources are derived from legal literature, without involving field research. The focus of this study includes the analysis of legal principles, legal systematics, legal synchronization, legal history, and comparative law – all of which aim to explore legal aspects relevant to the issues under examination. This research is prescriptive in nature, meaning that it seeks to provide recommendations or suggestions related to specific legal problems. In this thesis, the researcher aims to offer a prescriptive framework regarding the regulation of NFTs as collateral objects to address the existing legal vacuum. With this prescriptive orientation, the study intends to provide a theoretical solution to the identified legal issue.

The legal material collection technique involves several stages: inventorying and identifying statutory regulations, classifying and systematizing legal materials in accordance with the research problem, and conducting a literature review. The researcher also conducted online searches to obtain additional information related to NFTs as collateral objects. The collected legal materials were then systematically arranged for further analysis. In terms of processing and analyzing the legal materials, the research systematically filters, classifies, and organizes the materials based on relevant categories. The legal analysis is conducted descriptively, which means the researcher presents an overview of the subject and object of the study without offering evaluative judgments on the findings. Through this approach, the research aims to provide a comprehensive understanding of the legal framework governing NFTs as collateral objects in Indonesia.

3. Results and Discussion

3.1 Copyright Protection for Non-Fungible Tokens and Their Relationship to Fiduciary Security

Currently, there is no specific regulation in Indonesia governing Non-Fungible Token (NFT) technology (Alief, Syahputra, & Prananda, 2023). The absence of such regulation poses a significant barrier for creators to fully leverage the potential of NFTs, particularly in the protection of Intellectual Property Rights (IPR). In fact, NFTs offer several advantages that can provide solutions to existing challenges in IPR protection, including data security, transparency, economic growth stimulation, protection of digital works, and other benefits.

Intellectual Property Rights can be understood as any form of work resulting from human intellectual ability and creativity. These works span various fields, including technology, science, art, and literature, and are typically the outcome of prolonged processes, effort, ideas, and specific investments. To recognize and protect these creations, the government grants exclusive rights to creators. Generally, IPR is divided into two main categories: copyright and industrial property rights. Industrial property rights include trademarks, patents, industrial designs, plant varieties, trade secrets, and layout designs of integrated circuits. Among these categories, copyright is the most relevant to the development of technology and the arts in the current era (Winata & S.T. Kansil, 2022).

Copyright is the product of creativity expressed in the fields of art, science, or literature. This right automatically attaches to the creator upon the materialization of the work in a tangible form. It is inherently personal and remains inseparable from the creator during their lifetime. The existence of copyright is based on the principle that each work originates from the unique thought, innovation, and creativity of its creator.

Copyright protection plays a significant role both nationally and globally. It has attracted international attention, such as in the Intellectual Property in Business Briefing held in Geneva in 1990. In that meeting, the concept of TRIPS (Trade-Related Aspects of Intellectual Property Rights) was introduced as part of the post-GATT (General Agreement on Tariffs and Trade) agreements and later became integrated into the framework of the World Trade Organization (WTO). TRIPS aims to regulate various aspects of IPR in more detail (Nainggolan, 2021).

In Indonesia, copyright protection is governed by Law No. 28 of 2014 on Copyright (UUHC). Article 1 paragraph (1) of the UUHC defines copyright as an exclusive right that arises automatically once a work is expressed in a tangible form, without requiring formal registration. The scope of copyright protection is extensive, covering works in the fields of art, science, literature, and even computer programs. These rights are divided into two main categories: moral rights and economic rights.

Moral rights, as stipulated in Article 5 of the UUHC, are rights that permanently attach to the creator and include the following:

- a. The right to have their name included or excluded on copies related to the public use of their creation;
- b. The right to use a pseudonym;
- c. The right to modify their creation in accordance with societal norms;
- d. The right to change the title and subtitle of the work; and
- e. The right to defend their work from distortion, mutilation, modification, or any actions that may harm their honor or reputation, particularly in a networked digital environment.

Moral rights, as described in Article 5 of the UUHC, are permanent and inseparable from the creator. These rights include the right to have the creator's name acknowledged or concealed, to use a pseudonym, to modify the work according to prevailing norms, and to protect the work from harmful alterations. These rights are non-transferable during the creator's lifetime, although they may be exercised by heirs after the creator's death. In cases where the execution of moral rights is transferred, the recipient may waive or refuse the execution of such rights, provided that the waiver or refusal is stated in writing (Isabela, 2022).

Economic rights, as provided in Article 8 of the UUHC, grant the creator or copyright holder the right to obtain financial benefits from their work. In accordance with Article 9 of the UUHC, economic rights include:

- a. The publication of the work;
- b. The reproduction of the work in any form;
- c. The translation of the work;
- d. The adaptation, arrangement, or transformation of the work;
- e. The distribution of the work or its copies;
- f. The performance of the work;
- g. The communication of the work;
- h. The public announcement of the work; and
- i. The rental of the work.

To be protected under copyright, a work must meet the criteria of originality and be expressed in tangible form. Originality indicates that the work is genuinely created by the author, without copying others' works or using public domain materials. However, originality does not require novelty. The principle of novelty in industrial design must be distinguished from the originality principle in copyright law (Rights, 2021).

In the context of the 5.0 technology era—where the boundaries between the physical and digital worlds are increasingly blurred—digital artworks now hold

value equivalent to traditional art. One of the most prominent forms of digital art is the NFT. NFT, or Non-Fungible Token, is a technology that enables representation of ownership over various types of digital assets, including artworks, music, and in-game items. The uniqueness of NFTs lies in the specific information embedded within them, which is stored in a decentralized manner via blockchain technology. This ensures transparency, security, and authenticity of NFT data (Heriani, 2023).

Nevertheless, Indonesia still lacks a dedicated legal framework governing NFTs, resulting in a legal vacuum (Ulfanora & Almaududi, 2023). However, existing regulations may still be applied for their protection. For instance, Article 25 of Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law) states that intellectual creations in electronic systems are protected as part of IPR. Legally, NFTs can be considered IPR products, particularly digital artworks protected under the UUHC.

NFTs essentially represent digital artwork through code and thus fall under the purview of intellectual property and are subject to protection under the UUHC. For example, as NFTs are often represented in image form, they align with the category of artworks protected under the UUHC. Article 40 paragraph (1) item (s) of the UUHC explains:

- (1) The protected works include creations in the fields of science, art, and literature, which consist of:
 - a. Books, pamphlets, published written layouts, and other written works;
 - b. Lectures, addresses, speeches, and similar works;
 - c. Teaching aids created for educational and scientific purposes;
 - d. Songs and/or music with or without lyrics;
 - e. Dramas, musical dramas, dances, choreography, puppetry, and pantomime;
 - f. Visual artworks in all forms, such as paintings, drawings, engravings, calligraphy, sculpture, statues, or collages;
 - g. Applied artworks;
 - h. Architectural works;
 - i. Maps;
 - j. Batik artworks or other motif arts;
 - k. Photographic works;
 - l. Portraits;
 - m. Cinematographic works;
 - n. Translations, interpretations, adaptations, anthologies, databases, arrangements, modifications, and transformed works;
 - o. Translations, adaptations, arrangements, transformations, or modifications of traditional cultural expressions;

- p. Compilations of works or data, whether in computer-readable formats or other media;
- q. Compilations of traditional cultural expressions as long as they constitute original works;
- r. Video games; and
- s. Computer programs.

Article 40 of the UUHC outlines various categories of protected works, including visual arts, computer programs, and other digital creations. Based on the fundamental principles of copyright law, NFTs based on computer programs are legally protectable. Furthermore, the underlying works of NFTs, such as visual art, are already protected under copyright once they are expressed in tangible form or publicly disclosed for the first time.

NFTs also have the potential to serve as fiduciary collateral in Indonesia. Fiduciary security refers to the transfer of ownership rights over an object to a creditor as loan collateral, while the object remains in the debtor's possession. According to Article 1 paragraph (2) of Law No. 42 of 1999 on Fiduciary Security (UUJF), fiduciary security includes movable property, both tangible and intangible (Adibah, Muslim, Azizah, & Amalia, 2021, p. 166).

NFTs meet the criteria for objects that can be subject to fiduciary security for several reasons. First, NFTs can be owned and transferred through creation or sale. Second, NFTs are considered intangible assets due to their digital, non-physical nature. Third, NFTs qualify as movable objects due to their transferability. According to Article 16 paragraph (1) of the UUHC, copyrights – including those associated with NFTs – are categorized as intangible movable property. Therefore, NFTs fulfill the requirements to be classified as fiduciary collateral.

Although specific regulations concerning NFTs are not yet in place, existing legal provisions may serve as a basis for protecting and regulating NFTs, both in the context of IPR and as objects of fiduciary security. This legal protection is expected to provide legal certainty for creators and users of NFTs, while also encouraging the development of this technology in Indonesia. Nevertheless, the formulation of specific regulations remains essential to address future legal complexities, given the substantial potential of NFTs across various sectors.

3.2 Barriers to the Recognition of Non-Fungible Tokens (NFTs) as Fiduciary Collateral Objects in Indonesia

According to Article 1 paragraph 2 of the Fiduciary Security Law (UUJF), fiduciary security is defined as a security right over movable property, whether tangible or intangible, as well as certain immovable property, particularly buildings that cannot be subject to a mortgage as stipulated in Law No. 4 of 1996 on Mortgage Rights. The

collateral object remains under the control of the fiduciary grantor and serves as security for debt repayment, granting priority rights to the fiduciary recipient over other creditors.

In this context, NFTs (Non-Fungible Tokens) may be categorized as intangible movable property and thus have the potential to qualify as fiduciary collateral objects. This is based on the inherent characteristics of NFTs, namely their value, uniqueness, and exclusive ownership (Wijaya, 2022, p. 20).

In 2021, NFTs emerged as a popular topic in the digital and art worlds. NFTs are unique digital assets that cannot be exchanged on a one-to-one basis with other assets, rendering them highly valuable and appealing to buyers, sellers, and investors alike. As one of the countries with the largest number of internet users globally, Indonesia has actively participated in the development of NFTs. Many local creators have marketed their works through global platforms such as OpenSea and Nifty Gateway, as well as local platforms like Nusantics (Winarsi, 2020, p. 25).

However, the use of NFTs also faces challenges, particularly in terms of regulation and legality within the Indonesian legal framework (Eviani, Amaliyah, Fahrezha, & Rahman, 2024). To date, there is no specific regulation governing NFTs, resulting in legal uncertainty for users of this technology. Nevertheless, Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law) and Law No. 19 of 2016 on Copyright can offer legal protection for digital artworks traded as NFTs.

On the other hand, NFTs raise legal concerns (Jia & Yao, 2024), especially regarding ownership, copyrights, and utilization of digital assets (Chalmers, Fisch, Matthews, Quinn, & Recker, 2022; Gultom & Asril, 2023; Jia & Yao, 2024). NFT ownership involves not only the digital file but also the associated code and information stored on the blockchain (Kaisto, Juutilainen, & Kauranen, 2024). Therefore, clear legal regulation is necessary to safeguard the rights of owners and the security of these digital assets.

Several barriers hinder the use of NFTs as fiduciary collateral in Indonesia, including:

- a. Lack of Specific Regulation: There is currently no specific regulation governing the use of NFTs as fiduciary collateral. The government needs to develop a legal framework that defines and regulates digital assets such as NFTs, covering both legal and technical aspects.
- b. Uncertainty in NFT Execution: The absence of clear guidelines on how NFTs should be executed in bankruptcy proceedings creates a legal gap. As of now, bankruptcy law does not provide procedures for the resolution of NFTs as assets.

- c. **Absence of a Supervisory Authority:** A regulatory body responsible for overseeing the use of NFTs as fiduciary collateral is necessary. This institution should have the authority and capacity to ensure compliance with applicable regulations.
- d. **Inadequate Blockchain Infrastructure:** The use of NFTs requires reliable and secure blockchain infrastructure. Collaboration between the government, industry actors, and legal experts is essential to ensure the robustness of this technology.
- e. **Lack of Stakeholder Cooperation:** Synergy among business actors, regulators, and financial institutions is vital for the sustainable implementation of NFTs.
- f. **Limited Public Awareness:** Public outreach and education are required to enhance awareness of the benefits and risks associated with using NFTs as fiduciary collateral.

By addressing these issues, Indonesia can fully leverage the potential of NFTs as digital assets while overcoming the existing legal challenges.

4. Conclusion

Based on the data obtained from the analysis, the conclusion that can be drawn from this study is that copyright protection of Non-Fungible Tokens (NFTs) and their relation to fiduciary security lies in the fact that NFTs essentially represent digital artworks in the form of code. The core of NFTs involves intellectual property products, which are subject to copyright protection as stipulated in the Copyright Law. For instance, NFTs, which often take the form of artworks such as images, must comply with the provisions of the Copyright Law, particularly Article 40 paragraph (1) point (s), which states that computer programs are protected categories. This is relevant considering that NFTs are traded in the form of images or codes within computer programs. NFTs may be associated with fiduciary security, as they meet the criteria to be considered objects of fiduciary collateral under Article 1 paragraph 4 of the Fiduciary Security Law. These criteria include being transferable and ownable, tangible or intangible, registered or unregistered, as well as movable or immovable objects not encumbered by mortgage or security rights.

This study recommends that the government conduct an in-depth assessment of technological developments, especially in relation to NFTs, which currently lack clear regulation, particularly concerning copyright protection and the legal status of NFTs as collateral assets in Indonesia. The formation of a regulatory body and institutional collaboration for NFT development is also strongly advised. The government is expected to establish an authority or institution with the power to regulate and supervise the use of NFTs as secured collateral. In addition, a robust blockchain infrastructure and solid cooperation among business actors, regulators, and financial institutions are essential to support NFT development. Raising public awareness and

understanding of NFT utilization is also of significant importance in the Indonesian context.

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