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# Artificial Intelligence in Copyright Fiduciary Supervision: Strengthening Legal Certainty in Intellectual Property Financing

**Hardi Fardiansyah[1*], Nanda Dwi Rizkia[2]**
[1]Faculty of Law Universitas Sehati Indonesia, Karawang, Indonesia, hardifardiansyah@usindo.ac.id
[2]Faculty of Law, Universitas Nasional, Jakarta, Indonesia, nanda.dwi.rizkia@civitas.unas.ac.id

[*]Corresponding Author: hardifardiansyah@usindo.ac.id

**Abstract:** Government Regulation No. 24/2022 permits copyright to function as fiduciary collateral; nonetheless, it fails to implement a cohesive oversight system during the fiduciary term. Prior research has predominantly concentrated on copyright valuation and intellectual property finance methods, whereas scant attention has been directed towards the ongoing oversight of copyright as fiduciary collateral, especially through the application of Artificial Intelligence (AI). The absence of legislative and academic clarity engenders legal ambiguity, as the economic worth and legal standing of copyright are fluid, shaped by royalties, licensing, commercialization, and possible infringement. This study seeks to evaluate the regulatory framework governing the supervision of copyright as a fiduciary asset within the Indonesian legal system and to investigate the application of Artificial Intelligence (AI) as an auxiliary tool for copyright fiduciary oversight to enhance legal certainty in intellectual property-based financing. The study utilizes a normative legal methodology incorporating statutory, conceptual, and comparative techniques. Legal materials were acquired from rules pertaining to copyright, fiduciary security, and financing based on intellectual property, together with pertinent legal theories and academic literature. The findings reveal that while the current legislative framework offers a legal foundation for copyright-based fiduciary financing, it has not implemented a supervisory mechanism to oversee alterations in the legal status and economic worth of copyright during the financing duration. This study introduces the concept of AI-Based Copyright Fiduciary Supervision, an AI-assisted supervisory model comprising six key monitoring components: ownership status, licensing agreements, royalty income, commercialization activities, indications of copyright infringement, and fluctuations in the economic value of copyrighted works. This concept aims to enhance legal oversight, bolster legal clarity, reduce financing risks, and augment the efficacy of intellectual property-based financing in Indonesia.

**Keywords:** Artificial Intelligence, Copyright, Fiduciary Security, Copyright Fiduciary Supervision, Intellectual Property-Based Financing.

## INTRODUCTION

National economic growth is no longer reliant solely on the manufacturing sector and natural resources, but is increasingly shifting toward an economy based on creativity, innovation, and technology. (Kusumastuti et al., 2026). This shift positions the creative economy sector as one of the drivers of national development, as it is capable of creating added value, expanding employment opportunities, and enhancing Indonesia’s economic competitiveness. Within the creative economy ecosystem, intellectual property is no longer viewed merely as a form of legal protection for creative works, but has evolved into an economic asset with commercial value that can be utilized as a financing instrument. Copyright, as a form of intellectual property, derives economic value through mechanisms such as royalties, licensing, digital distribution, content monetization, and other forms of commercialization, thereby having the potential to serve as a source of financing for creative economy actors. (Suprapto & Rohman, 2025).

At the global level, the United Nations Commission on International Trade Law (UNCITRAL) has promoted the use of intellectual property as collateral via the UNCITRAL Legislative Guide on Secured Transactions, which acknowledges intellectual property rights as valuable movable assets that can facilitate access to financing. This framework has emerged as a significant reference for numerous jurisdictions in formulating secured transactions related to intellectual property and has impacted subsequent legal policy advancements, including Indonesia's acknowledgment of copyright as a subject of fiduciary security. In Indonesia, this policy is implemented via Article 16, paragraph (3) of Law Number 28 of 2014 regarding Copyright, which stipulates that copyright may function as an object of fiduciary security. This provision was later strengthened by Government Regulation Number 24 of 2022, which pertains to the Implementing Regulations of Law Number 24 of 2019 regarding the Creative Economy, and introduced financing schemes based on intellectual property as a tool for advancing the national creative economy. The implementation of Government Regulation Number 24 of 2022 marks a change in legal policy, redefining copyright as both a subject of legal protection and a productive asset that enhances finance access for creative economy participants.

The enhancement of intellectual property-based financing policy via Government Regulation Number 24 of 2022 signifies a progressive initiative by the government to broaden financing access for creative economy participants by utilizing the economic value of copyright as a fiduciary security asset. The effective execution of this strategy relies not only on the normative acknowledgment of copyright as a financial asset but also on the presence of a conducive ecosystem. Financing based on intellectual property necessitates proficient intellectual property appraisers, standardized valuation criteria, integration of intellectual property data, assessment platforms, financing documentation systems, digital collective management systems, and institutional backing to guarantee the efficient implementation of the financing process. Consequently, financing based on intellectual property necessitates not only regulatory development but also the integration of legal, institutional, and technological dimensions to effectively fulfill the objectives of Government Regulation Number 24 of 2022 (Rochadiningsih et al., 2023).

Nonetheless, the execution of these regulations continues to encounter numerous challenges. Regulations regarding guarantee mechanisms, valuation standards, appraisal institutions, execution procedures, and inter-agency data integration remain inadequately established, resulting in a disparity between the normative acknowledgment of copyright as a fiduciary security and its application in financing practices (Subrianty, 2024). The execution of Government Regulation Number 24 of 2022 is hindered by the lack of technical implementation guidelines, inadequate access to intellectual property data for financial institutions, the absence of standardized valuation criteria, and ambiguity surrounding execution procedures in cases of debtor default. Financial institutions express concerns about the volatility of intellectual property value, the lack of a secondary market, and the absence of a system to track alterations in the legal status and economic value of copyright throughout the financing period. These factors suggest that legislative enhancement alone is inadequate to ensure legal certainty in copyright-based funding and must be supplemented by appropriate supervision and risk reduction methods (Rafli et al., 2023).

These concerns are likewise evident in the implementation of intellectual property-based funding across many nations. Countries including Singapore, South Korea, the United States, and China have established intellectual property financing ecosystems bolstered by valuation institutions, assessment platforms, insurance mechanisms, secondary markets, and specialized entities responsible for the management and recovery of intellectual property assets in cases of default. These experiences illustrate that the efficacy of intellectual property-based financing hinges not solely on the legal acknowledgment of copyright as a fiduciary security asset, but also on the existence of a system that guarantees legal certainty, precise valuation, risk mitigation, and ongoing oversight of alterations in the legal status and economic value of the collateral asset. The primary challenge in executing Government Regulation Number 24 of 2022 is not the normative acknowledgment of copyright as a fiduciary security object, but the absence of a supervisory mechanism that can effectively integrate the legal and economic dimensions of copyright during the financing period. (Wulandari et al., 2024).

This prerequisite is also evident in the execution of Government Regulation Number 24 of 2022. Despite the regulation of the intellectual property-based financing scheme, encompassing financing application prerequisites, evaluation methods, collateral types, and financing registration, its execution continues to encounter numerous challenges. The obstacles comprise the absence of comprehensive technical implementation guidelines, the inadequate performance of intellectual property appraisal institutions, the lack of integrated access to intellectual property data for financial institutions, the nonexistence of uniform valuation standards, and the ambiguity surrounding execution mechanisms in cases of debtor default. Furthermore, financial institutions express concerns about the volatility of intellectual property's economic value, the lack of a secondary market, and the absence of a monitoring system to track changes in the legal status and economic value of collateral during the financing period. The conditions suggest that the execution of copyright-based financing necessitates both regulatory and institutional enhancement, as well as a supervisory framework capable of delivering ongoing legal and economic information to mitigate risks for financial institutions.

Recent global trends suggest that Artificial Intelligence (AI) is being employed to enhance regulatory compliance and supervisory functions within the financial sector. Artificial intelligence is acknowledged as a decision-support technology that enhances supervisory efficacy via continuous monitoring, anomaly detection, risk assessment, regulatory reporting, and fraud identification. Instead of supplanting human decision-makers, AI assists regulators and financial institutions by delivering timely and cohesive information to enhance the precision of supervisory judgments while preserving human oversight. These advancements indicate that AI has progressed from mere operational automation to a governance tool that can improve regulatory compliance and legal certainty in financial systems. (Vasista, 2021).

Prior research has investigated the utilization of Artificial Intelligence (AI) in diverse legal domains like fiduciary oversight and copyright administration. (Wazin et al., 2025) Investigated the enhancement of AI in fiduciary oversight systems through the lens of Islamic legal norms, highlighting institutional governance, Sharia compliance, and strategic elements affecting AI deployment. Simultaneously, Hong suggested employing Generative AI as a copyright manager within copyright trust frameworks to enhance copyright valuation, licensing, infringement detection, and commercialization. While these works illustrate the significant potential of AI in fiduciary governance and copyright management, they are conceptually separate from the legal challenges examined in this paper. Neither study investigates copyright as a subject of fiduciary security within the context of intellectual property-based financing, nor do they provide a supervisory mechanism to regularly check the legal status and economic value of copyright during the financing period. Thus, the legal ramifications of using AI for overseeing copyright as fiduciary collateral are inadequately examined, resulting in a substantial study void in the current literature.

This paper addresses the existing research gap by presenting the concept of Artificial Intelligence-Based Copyright Fiduciary Supervision as an innovative legal supervisory framework for copyright encumbered as fiduciary security. This study integrates artificial intelligence into the ongoing legal and economic oversight of copyrighted works over the funding period, in contrast to prior research that concentrates solely on AI governance in fiduciary institutions or AI-assisted copyright management. The suggested model operates as a decision-support system that monitors ownership status, licensing agreements, royalty income, commercialization activities, indicators of copyright infringement, and fluctuations in the economic worth of copyrighted works. Integrating these supervisory components is anticipated to enhance legal certainty, mitigate financing risks, and facilitate the effective execution of intellectual property-based financing in accordance with Government Regulation Number 24 of 2022.

This study intends to examine the legal framework regulating the oversight of copyright as a fiduciary security asset and to develop an Artificial Intelligence-Based Copyright Fiduciary Supervision model to enhance legal certainty and risk management in intellectual property financing in Indonesia.

## METHOD

This research utilizes a normative legal methodology with a descriptive-analytical framework. This method was chosen because the research aims to analyze the legal norms regulating copyright as a fiduciary security object in intellectual property financing and assess their sufficiency in responding to current legal advancements. The analysis involves examining laws, legal doctrines, legal principles, and scholarly literature to evaluate the alignment between the current regulatory framework and the practical necessity for a supervisory mechanism. (Ali, 2021).

The study employs three complementary methodologies: the statutory approach, the conceptual approach, and the comparative approach. The statutory approach is utilized to analyze legislation related to copyright, fiduciary security, and financing based on intellectual property, including Law Number 42 of 1999 on Fiduciary Security, Law Number 28 of 2014 on Copyright, Law Number 24 of 2019 on the Creative Economy, and Government Regulation Number 24 of 2022. The conceptual framework is employed to examine legal concepts related to fiduciary security, legal certainty, copyright protection, and the suggested notion of Artificial Intelligence-Based Copyright Fiduciary Oversight. The comparative analysis examines intellectual property-based financing processes in Singapore, South Korea, the United States, and China, since these regions have established increasingly sophisticated ecosystems for intellectual property financing. The analysis centres on four criteria: the legal acknowledgment of intellectual property as collateral, valuation methodologies, oversight frameworks during the financing phase, and institutional assistance for intellectual property finance. These jurisdictions were chosen due to their relatively advanced intellectual property financing systems, offering pertinent comparative insights for the Indonesian legal framework.

The legal materials encompass basic legal materials, such as legislation and official regulations; secondary legal materials, including books, scholarly journal articles, research reports, and legal theories; and tertiary legal materials. Legal materials were gathered by literature review and analyzed qualitatively, employing statutory interpretation, conceptual interpretation, and comparative legal analysis. Statutory interpretation was utilized to elucidate legal provisions about copyright and fiduciary security; conceptual interpretation was applied to scrutinize legal doctrines and theoretical constructs underpinning the proposed supervisory model, whereas comparative legal analysis was conducted to ascertain best practices and assess their applicability to Indonesia. The analytical process comprised four stages: identifying the current regulatory framework, analyzing regulatory deficiencies related to copyright oversight during the fiduciary period, comparing international practices, and developing the Artificial Intelligence-Based Copyright Fiduciary Supervision model as a legal recommendation to enhance legal certainty and mitigate financing risks in Indonesia.

## RESULTS AND DISCUSSION

### Legal Framework for Copyright as the Subject of a Security Interest in Intellectual Property-Based Financing

Article 16, paragraph (3) of Law Number 28 of 2014 about Copyright specifically stipulates that copyright may function as an item of fiduciary security. This law signifies that the legislature acknowledges copyright as an intangible movable asset with economic worth that can be employed as a financing instrument. This acknowledgment was further solidified by Law Number 24 of 2019 about the Creative Economy and Government Regulation Number 24 of 2022, which establish a legal framework for the execution of funding based on intellectual property. This sequence of rules has normatively legitimized the use of copyright as a fiduciary security in intellectual property-based finance.

Nonetheless, although explicitly governed by legislation, intellectual property assets have not yet been recognized as collateral in banking practice (Mulyani, 2014). A primary reason is the lack of sufficient legal support, either through particular legislation regarding the use of intellectual property rights as collateral or the harmonization of banking sector standards. The situation is exacerbated by the lack of modifications to Bank Indonesia Regulation Number 9/6/PBI/2007, which pertains to the Second Amendment of Bank Indonesia Regulation Number 7/2/PBI/2005 regarding the Evaluation of Commercial Bank Asset Quality, and continues to serve as the benchmark for collateral quality assessment. (Wawointana, 2013).

The inconsistency in these regulations is apparent in the stipulations on the forms of collateral permissible in banks' financing activities. Bank Indonesia Regulation Number 9/6/PBI/2007 exclusively identifies securities, shares, real estate, machinery, aircraft, vessels, motor vehicles, inventory, and warehouse receipts as collateral assets permissible for evaluating bank asset quality. (Sudjana, 2012). The exclusion of intellectual property rights as collateral results in banking institutions encountering legal ambiguity when accepting copyright as fiduciary security. Therefore, if a bank accepts copyright as collateral without a sufficient regulatory foundation, the principles of legal certainty and protection for the parties may not be upheld in the event of a future dispute (Fanny Kusumaningtyas, 2016).

In addition to the challenge of regulatory harmonization, legal certainty is further compromised by the lack of legislation governing the procedure of legal due diligence for copyright as a fiduciary security asset. Legal due diligence is an evaluative process designed to verify the validity of both the subject and the object of intellectual property rights intended for use as collateral. (Yuris Azmi, 2016). Currently, there are no regulations defining the attributes of copyright that can function as collateral, nor the criteria for their evaluation. Prior to a copyright being recognized as a fiduciary security, an evaluation of ownership legality and economic value is necessary to provide financial institutions with an objective foundation for assessing financing eligibility.

Another concern pertains to the nature of intellectual property rights, which possess a finite duration of protection. According to Article 58, paragraph (2) of Law Number 28 of 2014 about Copyright, copyright protection endures for the lifetime of the author and extends for 70 years following the author's demise. Concurrently, patent protection endures for a mere 20 years. The disparity in protection durations may create issues if the financing term surpasses the validity time of the intellectual property rights utilized as collateral. Consequently, the length of protection is a critical consideration that must be taken into account to achieve legal certainty and safeguard the parties involved (Christy, 2020).

Another issue is specifically related to the characteristic of copyright that aligns with the declarative principle. Copyright is immediately conferred upon the expression of a work in a tangible medium, independent of any registration procedure. Conversely, the fiduciary security system underscores the necessity of assurance concerning the identity of the collateral object via a registration method. The varying qualities may lead to ownership verification challenges when copyright serves as a fiduciary security object. Consequently, while registration is not essential for the existence of copyright, it is obligatory for ensuring legal certainty when copyright is employed as an object of fiduciary security. (Sari, 2023).

Besides legal considerations, copyright is characterized as an intangible asset with fluctuating economic worth. The economic worth of copyright is determined by royalty revenue, licensing contracts, degrees of commercialization, market trends, and the risk of copyright violation. In contrast to tangible transportable property, which is rather simple to appraise, such alterations may transpire within the financing period. Currently, there are no regulations governing revaluation procedures or the oversight of alterations in the economic value of copyright burdened by fiduciary security. Consequently, financial institutions have not achieved clarity over the quality of the collateral asset during the lending duration. (Marsella et al., 2025).

The preceding explanation indicates that the legal framework regarding copyright as an object of fiduciary security has established a legal foundation for its application in financing based on intellectual property. Nonetheless, these regulations have not completely ensured legal certainty for financial institutions, owing to persistent regulatory discord, the lack of legal due diligence standards, the absence of standardized valuation methods, the declarative nature of copyright, and the lack of provisions for monitoring changes in the legal status and economic value of copyright throughout the financing period. The primary concern now pertains not to the acknowledgment of copyright as a subject of fiduciary security, but to the sufficiency of the legal framework in ensuring legal certainty for financial institutions.

The preceding explanation indicates that the legal framework seeing copyright as a fiduciary asset, has established a legal foundation for the use of copyright in financing based on intellectual property. Nevertheless, these regulations have not adequately addressed the issue of legal certainty due to regulatory inconsistencies, the lack of legal due diligence standards, the absence of standardized valuation methods, and the failure to establish provisions for monitoring changes in the legal status and economic value of copyright throughout the financing period. Consequently, the primary concern is no longer the acknowledgment of copyright as a subject of fiduciary security, but rather the sufficiency of the legislative framework in ensuring legal certainty for financial institutions.

Jan Michiel Otto asserts that legal certainty is attained when legal standards are unequivocal, coherent, practicable, and rigorously enforced. From this viewpoint, Government Regulation Number 24 of 2022 has satisfied the initial criterion by acknowledging copyright as fiduciary collateral. Nonetheless, the outstanding parts remain unaddressed due to the absence of a supervisory system to monitor changes in ownership, licensing, royalty income, commercialization activities, or copyright infringement during the funding period. Consequently, despite copyright receiving explicit legal acknowledgment as fiduciary collateral, financial institutions nonetheless encounter legal ambiguity in evaluating the quality of collateral throughout the financing period. This illustrates that legal certainty necessitates both normative acknowledgment and an efficient regulatory system to guarantee the ongoing dependability of copyright as fiduciary security.

**Artificial Intelligence-Based Copyright Fiduciary Supervision as a Legal Supervisory Model for Copyright as an Object of Fiduciary Security**

The prior explanation illustrates that the regulations regarding copyright as a fiduciary security have established a legal foundation for the use of copyright in financing based on intellectual property. Nonetheless, these policies continue to focus on the normative acknowledgment of copyright as a collateral asset, lacking a sufficient oversight mechanism throughout the financing phase. Copyright, as an intangible movable asset, has qualities that distinguish it from traditional tangible collateral goods. The economic value is subject to alteration at any moment due to variations in royalty income, modifications in licensing agreements, transfers of rights, ownership conflicts, digital piracy, and market dynamics. (Santoso & Sujatmiko, 2017). These dynamics directly influence the quality of the collateral asset and the degree of risk encountered by financial institutions. Consequently, legal certainty in intellectual property-based financing can no longer be sufficiently attained solely through regulations governing the creation of fiduciary security; it also necessitates a supervisory mechanism that can perpetually uphold the legality and economic value of copyright.

The advancement of Artificial Intelligence (AI) has instigated a paradigm shift in copyright regulation in the digital age. AI is now perceived not only as a subject requiring regulation due to its potential for copyright infringement but also as a tool that facilitates the enforcement of legal oversight on the usage of copyrighted materials. In this context, Jurcys and Fenwick formulated the notion of Supervised Agentic Governance, a governance paradigm that amalgamates legal regulations, technical protocols, and human oversight to regulate AI operations in accordance with copyright protection goals. This notion illustrates that AI can serve as a governance instrument that enhances monitoring, verification, and oversight processes, provided its use remains under human oversight and does not supplant legal decision-making authority. (Jurcys & Fenwick, 2026).

The notion of Supervised Agentic Governance is pertinent to the advancement of the intellectual property-based finance framework in Indonesia. The primary concern is no longer the acknowledgment of copyright as a subject of fiduciary security, but rather the absence of a method to monitor the continued validity and economic worth of copyright once it has been encumbered with fiduciary security. (Kurshan et al., 2025). Throughout the financing time, financial institutions necessitate consistently updated information concerning copyright ownership status, the presence of licenses, alterations in royalty receipts, commercialization endeavours, and any disputes that may impact the quality of the collateral asset (Sabijanto, 2024). As of now, these requirements have not been addressed in Government Regulation Number 24 of 2022 or any other implementing regulations, resulting in supervision being performed manually, partially, and reactively.

This study does not fully embrace the concept of Supervised Agentic Governance; instead, it evolves it into an Artificial Intelligence-Based Copyright Fiduciary Supervision model designed specifically for the legal oversight of copyright as a fiduciary security asset. Unlike the framework established by Jurcys and Fenwick, which focuses on the governance of copyrighted works within the digital ecosystem, the model presented in this study aims to enhance legal certainty and mitigate risks in intellectual property-based financing. AI serves as a decision-support system that aids financial institutions in the ongoing oversight of the legal and economic dimensions of copyright, without taking the ability to make legal decisions.

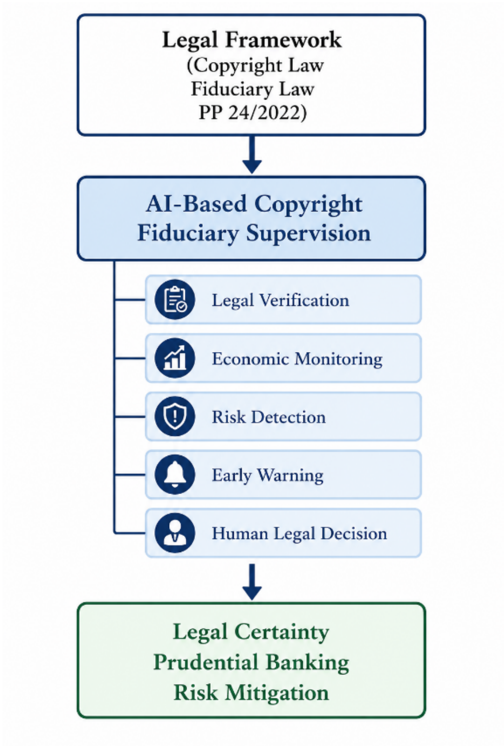


**Figure 1. Conceptual Framework of Artificial Intelligence-Based Copyright Fiduciary Supervision**

Figure 1 depicts the basic framework of the proposed Artificial Intelligence-Based Copyright Fiduciary Supervision paradigm. The framework illustrates that legal oversight commences with the current legislative structure regulating copyright and fiduciary security, which is then implemented via an AI-assisted supervisory approach. The strategy incorporates ongoing legal and economic surveillance while preserving human control in legal adjudication. The anticipated results include enhanced legal certainty, the execution of the prudential banking principle, and improved financing risk mitigation.

The suggested supervisory model, based on the conceptual framework depicted in Figure 1, functions through a systematic and ongoing monitoring process during the funding term. The methodology does not restrict monitoring to the initial registration and valuation of copyright as fiduciary collateral; instead, it perpetually assesses both legal and economic characteristics that could affect the quality of the collateral. The operating mechanism of the proposed approach has five interconnected steps, each aimed at ensuring legal clarity, mitigating financing risks, and promoting cautious lending practices. The paradigm for Artificial Intelligence-Based Copyright Fiduciary Supervision is constructed through five interconnected stages. The initial phase involves legal verification, including the assessment of copyright legality by integrating data from the Directorate General of Intellectual Property to confirm registration status, rights holder identification, transfer history, license existence, and potential challenges. The second stage involves economic monitoring, including the ongoing assessment of copyright-related economic data, including royalty income, commercialization efforts, license utilization, and market trends that influence its economic value. The third step is risk detection, namely the identification of diverse legal hazards by AI and machine learning analysis, encompassing changes in ownership, copyright infringement, digital piracy, license expiration, and substantial losses in economic worth. The fourth level involves an early warning system that automatically notifies financial institutions upon detecting changes in legal or economic variables that may diminish the quality of the collateral asset. The concluding phase involves human legal adjudication, specifically the legal decision-making process executed by bank officials or financial organizations, predicated on the analytical outcomes produced by the AI system.

**Table 1. Operational Components of the Artificial Intelligence-Based Copyright Fiduciary Supervision Model**

| Stage | Input | AI Process | Output | Legal Impact |
|---|---|---|---|---|
| **Legal Verification** | DGIP database | Ownership verification | Legal status | Legal certainty |
| **Economic Monitoring** | Royalty & licensing data | Data analytics | Economic trend | Collateral quality |
| **Risk Detection** | Market & infringement data | Machine learning | Risk identification | Risk mitigation |
| **Early Warning** | Monitoring indicators | Automated alerts | Notification | Preventive supervision |
| **Human Legal Decision** | AI analysis report | Legal assessment | Financing decision | Prudential banking |

Table 1 illustrates that each operational step executes a specific supervisory role while maintaining interconnection across the finance lifecycle. In contrast to the existing regulatory framework, which predominantly emphasizes the creation of fiduciary security at the onset of the financing relationship, the proposed model implements ongoing oversight of legal validity and economic performance until the financing obligation is entirely fulfilled. As a result, financial institutions obtain current legal and commercial information that enhances the precision of financing decisions, bolsters legal certainty, and fortifies the execution of prudent risk management.

The suggested model further strengthens the application of the prudential banking concept by allowing financial institutions to do ongoing assessments of collateral quality during the funding period. Traditional intellectual property finance typically depends on the initial assessment of copyright at the time the financing agreement is established. The legal status and economic value of copyright may undergo substantial changes due to license agreements, commercialization efforts, ownership transfers, variations in royalties, or copyright violations. AI-assisted supervision enables financial institutions to detect significant changes promptly, ensuring that financing decisions align with prudent lending principles, legal clarity, and effective credit risk management.

The proposed model can be operationalized via an integrated digital supervisory dashboard that links the Directorate General of Intellectual Property database, royalty reports from Collective Management Organizations, licensing records, commercialization activities, and AI-generated legal risk indicators. The dashboard serves not only as a monitoring platform but also delivers real-time supervisory data and early warning alerts regarding substantial legal or economic alterations that may diminish the validity of copyright as fiduciary collateral. As a result, financial institutions can proactively address issues prior to the emergence of legal problems or financing failures.

The viability of implementing this supervisory model can also be evaluated through comparative analyses of various jurisdictions that have established intellectual property finance structures.

Multiple adjacent nations have established institutional frameworks that enhance intellectual property financing via cohesive oversight and valuation systems. In 2014, Singapore launched the Intellectual Property Financing Scheme (IPFS) under the aegis of the Intellectual Property Office of Singapore (IPOS), whereas Malaysia established a comparable scheme via the Intellectual Property Corporation of Malaysia (MyIPO) and Malaysian Debt

Ventures (MDV). Both nations perceive intellectual property as a financially valuable asset, underpinned by uniform valuation, specialized organizations, and government-supported funding methods.

In contrast to Indonesia, where copyright can legally function as fiduciary collateral but lacks an effective oversight mechanism, Singapore has developed a cohesive national ecosystem that includes accredited IP valuation specialists, collaborating financial institutions, and government risk-sharing programs. Banks assess loan eligibility using standardized intellectual property valuations performed exclusively by government-sanctioned corporations, while the Singapore Government mitigates a portion of the financing risk alongside participating financial institutions to bolster confidence in intellectual property-backed lending.

Malaysia employs a similar strategy by integrating institutional oversight with standardized intellectual property assessment. The Malaysian model employs the Intellectual Property Valuation Model (IPVM), collaboratively established by MyIPO, financial institutions, venture capital firms, and the Ministry of Finance, with financing bolstered by government-backed credit guarantees and discounted interest rates. The valuation approach adheres to globally acknowledged norms, including International Financial Reporting Standards (IFRS), International Valuation Standards (IVS), and ISO, hence enhancing legal clarity and lender assurance. (Marditia & Candini, 2023).

These divergent methods demonstrate that successful intellectual property financing does not solely depend on the legal recognition of copyright as fiduciary collateral. A unified governance framework is required, encompassing standardized valuation, institutional control, financial risk management, and continuous monitoring throughout the funding lifecycle. Indonesia currently lacks a unified regulatory framework, despite recognizing copyright as fiduciary collateral under Article 16, paragraph (3) of the Copyright Law.

The proposed Artificial Intelligence-Based Copyright Fiduciary Supervision model improves Indonesia's existing legal framework by instituting continuous digital oversight rather than only facilitating collateral registration. Singapore emphasizes government-certified valuation, while Malaysia focuses on regulated monetization methods. The suggested Indonesian approach improves current methodologies by employing artificial intelligence to monitor copyright ownership, licensing status, royalty generation, commercialization efforts, fiduciary compliance, and any legal issues in real time. Thus, the proposed framework is an institutional enhancement that strengthens the prudential principle in banking and fortifies legal certainty for copyright-based fiduciary funding.

The concept functions through three tiers of oversight to guarantee that AI usage adheres to legal standards. The initial layer (legal-institutional layer) guarantees that all supervisory processes adhere to the Copyright Law, the Fiduciary Security Law, the Creative Economy Law, Government Regulation Number 24 of 2022, and the prudential principle. The second layer (technical-operational layer) regulates the application of AI in verification, monitoring, digital auditing, and risk detection procedures via a system that is transparent, documented, and auditable. The third layer, known as the meta-governance layer, guarantees that all AI analytical outcomes are subject to oversight by regulators and financial institutions, ensuring that legal determinations are ultimately made by humans. (Hong, 2024b). Consequently, AI serves as a tool that improves the quality of legal analysis, supervisory efficiency, and risk mitigation, without supplanting the legal reasoning capabilities of authorized personnel.

This study proposes an Artificial Intelligence-Based Copyright Fiduciary Supervision model, introducing a conceptual novelty in Indonesia's intellectual property financing system. Although the existing legislation primarily emphasizes the creation of fiduciary security ties, this model broadens the supervisory framework to include the whole funding cycle via ongoing legal and economic oversight mechanisms. The approach not only fortifies legal certainty for financial institutions but also improves the efficacy of risk mitigation and guides the formulation of intellectual property-based financing policies that are more responsive to digital transformation.

The proposed Artificial Intelligence-Based Copyright Fiduciary Supervision model represents a conceptual advancement in Indonesia's intellectual property financing framework. The proposed model enhances the existing regulatory framework, which mainly emphasizes fiduciary security, by incorporating continuous monitoring of legal and economic indicators through Artificial Intelligence, while maintaining human legal oversight throughout the financing period. The proposed model reconciles the normative acknowledgment of copyright as fiduciary collateral with the practical necessity for ongoing oversight, thereby enhancing legal certainty, facilitating the application of the prudential banking principle, improving financing risk mitigation, and aiding the future evolution of adaptive regulations for intellectual property-based financing in Indonesia.

Notwithstanding its benefits, the suggested Artificial Intelligence-Based Copyright Fiduciary Supervision model faces numerous legal and technical constraints. The efficacy of AI is contingent upon the accessibility, precision, comprehensiveness, and interoperability of copyright-related legal and commercial data. Inaccurate or inadequate datasets can produce algorithmic bias and diminish the credibility of risk evaluations. Secondly, AI-driven analysis is limited by the "black box" phenomenon, wherein the rationale behind AI-generated results is frequently challenging to elucidate or validate, hence possibly diminishing openness and accountability in legal oversight. Gudkov elucidates that the intricacy of AI systems may hinder users from comprehending the derivation of results, necessitating substantial human oversight in critical legal determinations. Third, ongoing oversight of copyright ownership, licensing, royalty transactions, and commercialization endeavours must adhere to personal data protection and cybersecurity protocols to avert unwanted access or exploitation of sensitive information. Ultimately, AI ought to operate solely as a decision-support system rather than an independent legal decision-maker. Financial institutions and competent legal authorities must retain legal responsibility for funding decisions, supervisory activities, and adherence to fiduciary and copyright legislation, as fiduciary accountability ultimately lies with human actors rather than AI systems. (Gudkov, 2020).

The proposed Artificial Intelligence-Based Copyright Fiduciary Supervision model represents a conceptual advancement in Indonesia's intellectual property financing framework. The proposed model enhances the existing legal framework by extending oversight throughout the financing lifecycle, incorporating continuous monitoring of legal and economic indicators through Artificial Intelligence, while maintaining human legal supervision. Thus, the suggested paradigm addresses the regulatory gap between the legal acknowledgment of copyright as fiduciary collateral and the necessity for ongoing oversight. The model enhances legal certainty, facilitates the application of the prudential banking principle, increases financing risk reduction, and establishes a basis for formulating adaptive legal policies for intellectual property-based finance in Indonesia.

## CONCLUSION

Article 16, paragraph (3), of Law Number 28 of 2014 regarding Copyright, in conjunction with Law Number 24 of 2019 pertaining to the Creative Economy and Government Regulation Number 24 of 2022, acknowledges copyright as a fiduciary security. The existing regulatory framework lacks sufficient legal certainty for intellectual property-based financing due to the absence of harmonization with banking regulations, standardized legal due diligence and copyright valuation mechanisms, and ongoing oversight of changes in copyright legal status and economic value during financing. The primary legal difficulty is the absence of a cohesive regulatory framework to safeguard the legal integrity of copyright for the whole duration of funding, rather than its normative acknowledgment as fiduciary collateral.

This study introduces Artificial Intelligence-Based Copyright Fiduciary Supervision as an innovative legal supervisory model to enhance the existing framework. The proposed model incorporates legal verification, economic monitoring, legal risk identification, early warning systems, and human legal oversight into a continuous decision-support framework, offering supervision throughout the financing period, in contrast to the existing legal framework that emphasizes fiduciary security. This technique enhances legal clarity, fosters conservative banking practices, and reduces financing risk while safeguarding the legal decision-making authority of financial institutions and regulators.

The findings indicate a need for the enhancement of institutional and regulatory frameworks. The Directorate General of Intellectual Property should establish a comprehensive digital copyright database for ongoing monitoring and legal validation. The Financial Services Authority (OJK) supervisory requirements for copyright-based financing must encompass risk management and oversight for intellectual property employed as fiduciary collateral. Bank Indonesia may promote digital financial infrastructure and interoperability standards that facilitate secure information sharing among financial institutions. Continuous oversight, regular copyright reassessment, legal due diligence criteria, and the incorporation of AI as a decision-support instrument in intellectual property financing should be included in Government Regulation Number 24 of 2022.

This paper exclusively examines normative legislation and conceptualizes an AI-assisted supervisory framework. Empirical studies may be required with financial institutions, the Directorate General of Intellectual Property, collective management organizations, and stakeholders in the creative industry to evaluate the practical implementation, institutional preparedness, technological viability, and regulatory ramifications of AI-Based Copyright Fiduciary Supervision within Indonesia's intellectual property financing ecosystem.

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