ORIGINALITY, AUTHORSHIP, AND GENERATIVE AI: RETHINKING INDONESIAN COPYRIGHT LAW

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Abstract

Generative Artificial Intelligence (Generative AI) has fundamentally transformed the landscape of creative production by enabling the rapid generation of texts, images, music, and other expressive works. This development poses significant challenges to the traditional foundations of Indonesian copyright law, particularly under Law Number 28 of 2014 concerning Copyright, which is grounded in an anthropocentric understanding of authorship and originality. This research examines how Indonesian copyright doctrine addresses the originality of AI-generated works, the legal status of their creators, and the broader implications of such works for the intellectual property system and the creative economy. Using doctrinal legal research, the study applies statutory, conceptual, and comparative approaches. It analyzes relevant provisions of Indonesian copyright law, explores core concepts such as independent creation, the minimum modicum of creativity, derivative works, and public domain status, and compares regulatory developments in the United States, the European Union, and the United Kingdom. The study finds that AI-generated outputs, in their raw and autonomous form, generally fail to satisfy the originality requirement because they do not sufficiently reflect human intellectual choice and creative judgment. In the Indonesian legal context, AI cannot be recognized as a legal subject or author, since copyright law grants moral and economic rights exclusively to human creators. This research argues that copyright protection should remain grounded in meaningful human creative contribution. Accordingly, outputs generated entirely by AI without substantial human modification should be placed in the public domain, while protection may only attach to human-authored post-production elements or highly creative, iterative forms of prompting. The study also emphasizes the urgency of adaptive regulation through disclosure obligations, AIGC labeling, and digital watermarking to ensure legal certainty and transparency. Ultimately, maintaining the human-centered philosophy of copyright while accommodating technological innovation offers the most coherent framework for protecting creativity and sustaining the Indonesian creative economy in the age of Generative AI.

Keywords: *Generative AI; Indonesian Copyright Law; Originality of Works; Human Creativity; Creative Technology Regulation.*

A. Introduction

The rise of generative artificial intelligence (Generative AI) technology has sparked a revolution in digital creation, enabling the production of works at unprecedented volumes and

speeds.[1] As this innovation develops, the fundamental principles of Indonesian copyright law, specifically Law Number 28 of 2014 concerning Copyright (UUHC), face considerable legal challenges.[2] The UUHC is human-centered and presumes that creative works are always the product of human intellect. However, generative AI complicates this assumption by generating complex outputs from programmatic language inputs (prompts) or by functioning autonomously. This creates a definitional gap within the Indonesian legal system, particularly regarding the two core pillars of copyright protection: "creator" as the legal subject and "originality" as a key requirement for protection.

Indonesian copyright law only recognizes "a person or several people" as creators. AI, as a non-human entity, cannot become a legal subject under the UUHC because the UUHC only recognizes humans as creators. This raises a fundamental question about the legal certainty of AI-generated works: If a work lacks a legitimate creator, can its intellectual property rights be protected?[3] Originality requires that a work reflect at least a modicum of creativity stemming from the creator's intellectual choices and considerations. The UUHC specifies that works must possess a "distinctive and personal" character. However, when AI synthesizes millions of data patterns through computation, the process differs fundamentally from human mental effort. Whether human input (such as a prompt or parameters) is sufficient to confer originality to the final AI output presents is a major doctrinal loophole that must be addressed.

To contextualize this research, it is important to review previous studies on the intersection of AI and copyright law. Thomas Margoni and Martin Kretschmer's[4] earlier research analyzed the

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1 Sebastian Krakowski, "Human-AI Agency in the Age of Generative AI," *Information and Organization* 35, no. 1 (2025): 100560, https://doi.org/10.1016/j.infoandorg.2025.100560; Dominik K. Kanbach et al., "The GenAI Is Out of the Bottle: Generative Artificial Intelligence from a Business Model Innovation Perspective," *Review of Managerial Science* 18, no. 4 (2024): 1189–220, https://doi.org/10.1007/s11846-023-00696-z; Ran He et al., "Generative Artificial Intelligence: A Historical Perspective," *National Science Review* 12, no. 5 (2025): nwaf050, https://doi.org/10.1093/nsr/nwaf050.

2 Laurensia Andrini, "Redesigning Indonesia Copyright Act to Accommodate Autonomous Intelligent System: Status Quo and Room for Improvement," *Asian Journal of Law and Economics* 9, no. 3 (2018): 20180013, https://doi.org/doi:10.1515/ajle-2018-0013; Dwi Tatak Subagiyo and Hari Wibisono, "The Urgency of Artificial Intelligence Regulation from a Joint Authorship Perspective on Copyright Infringement," *Indonesia Private Law Review* 5, no. 2 (2024): 135–56, https://doi.org/10.25041/iplr.v5i2.3962; Chrisna Bagus Edhita Praja et al., "Authorship and Ownership of AI-Generated Works in Indonesia: A Doctrinal and Comparative Review," *Jurnal Media Hukum* 32, no. 1 (2025): 151–70, https://doi.org/10.18196/jmh.v32i1.25383.

3 Sapta Nur Fallah, "Perlindungan Hukum Kepemilikan Dan Hak Cipta Atas Konten Digital Di Era Ekonomi Kreatif," *Prosiding Seminar Nasional Indonesia* 3, no. 2 (2025): 148–57. https://sociohum.net/index.php/PROSIDINGNASIOANAL/article/view/113

4 Thomas Margoni and Martin Kretschmer, "A Deeper Look into the EU Text and Data Mining Exceptions: Harmonisation, Data Ownership, and the Future of Technology," *GRUR International* 71, no. 8 (2022): 685–701, https://doi.org/10.1093/grurint/ikac054.

use of text and data mining (TDM). They argued that applying fair use to the use of copyrighted works as AI training data is legitimate for research or educational purposes. However, they also suggested that permission from the creator is required for other uses. However, they also suggested that permission is neither required nor constitutes a violation for using creations derived from public information. Kalpana Tyalgi's[5] research discussed the originality of AI-generated works and the use of TDM on others' works, striking a balance between creators' innovation and fair compensation amid AI development. Furthermore, M. Imam Ahnaf''s[6] research on the legal status of copyright ownership concluded that works generated by AI do not meet the formal legal requirements for copyrighted works due to the absence of direct human creativity. However, his study did not analyze the originality of AI creative works or the role of human intervention in their creation. Similar research by Ahmad Arifin et al. [7] concluded that AI-generated works cannot be considered AI creations and require human creative involvement to qualify for copyright protection, and Michael Phrigyan Hartanto's[8] research focused on the importance of adaptive copyright policy to accommodate technological developments and ensure that human innovation continues to be adequately protected in the AI era. Unlike these studies, this research integrates the analysis of the two core intellectual property pillars, originality and creator status, to formulate a comprehensive juridical solution framework for creative work output..

This vacuum and ambiguity create legal uncertainty that affects not only the commercial value of works but also the integrity of the IP system as a whole. This research critically analyzes the position of Indonesian copyright doctrine in facing the challenges of Generative AI and proposes a predictive legal framework. This study will discuss how the originality of Generative AI's resulting work and the concept of the Creator of AI creations fit within the framework of Indonesian Copyright Law, and how the legal status of AI-generated works should be regulated to ensure legal certainty for Intellectual Property in Indonesia. This research is expected to contribute to legal certainty by analyzing the creation of AI-generated works and rethinking the identification

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5 Kalpana Tyagi, "Copyright, Text & Data Mining and the Innovation Dimension of Generative AI," *Journal of Intellectual Property Law and Practice* 19, no. 7 (2024): 557–70, https://doi.org/10.1093/jiplp/jpae028.

6 M. Imam Ahnaf, "Status Hukum Kepemilikan Hak Cipta Atas Karya Yang Diciptakan Oleh AI Berdasarkan UU Hak Cipta," in *Thesis* (Universitas Islam Negeri Maulana Malik Ibrahim Malang, 2025). http://etheses.uin-malang.ac.id/76660/

7 Ahmad Arifin et al., "Analisis Yuridis Hak Cipta Kepada User Atas Karya Hasil Generative Artificial Intelligence Di Indonesia," *At-Tanwir Law Review* 5, no. 2 (2025): 412–27. http://dx.doi.org/10.31314/atlarev.v5i2.4504

8 Michael Phrigyan Hartanto et al., "Perdebatan Hak Cipta Atas Karya Kecerdasan Buatan (AI): Menuju Kerangka Hukum Adaptif Yang Mendukung Inovasi Teknologi," *PERAHU (Penerangan Hukum) Jurnal Ilmu Hukum* 13, no. 1 (2025): 198–204, https://doi.org/10.51826/perahu.v13i1.

of the human role in their creation. Through this approach, it is also hoped that an adaptive policy can serve as a balance between copyright protection and technological progress.

This research employs doctrinal legal research, which focuses on the analysis of legal doctrines, principles, and the harmonization of statutory regulations. It applies statutory, conceptual, and comparative approaches. The statutory approach examines Law Number 28 of 2014 concerning Copyright (UUHC), with particular attention to Article 1 on creators and creative works, Article 5 on moral rights, and Article 43 on copyright limitations. The conceptual approach analyzes key concepts such as the minimum modicum of creativity, derivative works, joint ownership, and public domain status in the context of AI-generated creations. The comparative approach evaluates the legal positions of major jurisdictions, such as the United States, which does not recognize AI copyright, and the European Union, which emphasizes transparency in Text and Data Mining (TDM), providing a basis for formulating doctrinal recommendations for Indonesia.

The data for this study are obtained from secondary sources. Primary legal materials include the UUHC, secondary legal materials consist of relevant legal journals and intellectual property textbooks, and tertiary legal materials include dictionaries and legal encyclopedias. Data collection is conducted through a literature review, followed by qualitative analysis. This analysis involves a thorough examination of the legal materials to synthesize research findings and support the drawing of conclusions.

B. Legal Review of the Originality of Generative Artificial Intelligence Creations in the Indonesian Copyright Law System

The material form of a creation needs to be identified to determine if it is a copyright-protected work.[9] Referring to the UUHC in Indonesia, this is generally categorized by: the tangible expression of an idea, the completion of the work, the presence of creativity, and originality.[10] The

[9] Vicenc Feliu, "Our Brains Beguil'd: Copyright Protection for AI Created Works," *Intellectual Property and Technology Law Journal* 25 (2020): 105–26, https://scholars.nova.edu/en/publications/our-brains-beguild-copyright-protection-for-ai-created-works/; Ansagan Aronov and Sara Idrysheva, "Copyright Protection on Works Generated by Artificial Intelligence," *Science and Innovation* 21, no. 1 (2025): 112–24, https://doi.org/10.15407/scine21.01.112; Niloufer Selvadurai and Rita Matulionyte, "Reconsidering Creativity: Copyright Protection for Works Generated Using Artificial Intelligence," *Journal of Intellectual Property Law & Practice* 15, no. 7 (2020): 536–43, https://doi.org/10.1093/jiplp/jpaa062.

[10] Syufa'at, "Pembajakan Karya Di Bidang Hak Cipta: Telaah Integratif Hukum Islam Dan Undang-Undang RI Nomor 28 Tahun 2014 Tentang Hak Cipta," *Al-Manahij: Jurnal Kajian Hukum Islam* 13, no. 1 (2019): 49–63, https://doi.org/10.24090/mnh.v0i1.2215; Hulman Panjaitan et al., "Music Copyright Protection in the Digital Era: Legal Framework and Strategies for Enforcement," *Jurnal Hukum Unissula* 40, no. 2 (2024): 235–57, https://doi.org/10.26532/jh.v40i2.40525.

expression of an idea or notion becomes the material form of a copyright-protected object; in this sense, copyright does not protect ideas, notions, or specific facts. This is known as the tangible form principle or the idea-expression principle. Furthermore, as stipulated in Article 1, paragraph 1 of the UUHC, "copyright is the creator's exclusive right that emerges automatically on a declarative basis," meaning copyright can be obtained automatically upon the completion of the work.[11]

AI is capable of generating works that fall within the scope of copyright protection, encompassing science, art, and literature. This is evident in AI works, such as the advertising project using AI technology that generated the painting "The Next Project Rembrandt"[12] which scanned 346 paintings by the famous European artist Rembrandt Harmenszoon van Rijn, taking 18 months to predict a painting that Rembrandt might have painted if he were still alive: a man aged 30-40 wearing a black outfit and wear a hat.[13] Another example is the predictive Harry Potter novel by J.K. Rowling, created using an AI system called Botnik: Human Machine Entertainment, which analyzed all seven J.K. Rowling novels and successfully created the novel *Harry Potter: and the Patriot of What Looked Like a Large Pile of Ash*. A further example, also categorized as a copyright protection object, is music, with the AI system named Aiva, the first non-human composer capable of creating music. To date, no other artist has laid claim to the instrumentals, implying that Aiva's work did not infringe on others copyrights.[14]

Originality is the fundamental requirement (*conditio sine qua non*) for Copyright protection in Indonesia. This principle is explicitly implied in Article 1 paragraph 1 of Law Number 28 of 2014 concerning Copyright (UUHC), which defines "Creation" as the Creator's work that demonstrates authenticity in every idea, process, result, or realization. In this context, originality not being a replication traditionally must satisfy two cumulative elements: Independent

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[11] Arnold Rezon et al., "Studi Komparasi Hak Cipta Atas Proses Data Scrapping AI Di Indonesia, Uni Eropa, Dan Amerika," *Anthology: Inside Intellectual Property Rights* 3, no. 1 (2025): 249. https://ojs.uph.edu/index.php/Anthology/article/view/9815

[12] Andres Guadamuz, "Do Androids Dream of Electric Copyright?: Comparative Analysis of Originality in Artificial Intelligence Generated Works," in *Artificial Intelligence and Intellectual Property*, ed. Jyh-An Lee et al. (Oxford University Press, 2021), https://doi.org/10.1093/oso/9780198870944.003.0008.

[13] Shlomit Yanisky-Ravid, "Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in The 3A Era-The Human-Like Authors Are Already Here-A New Model," *Michigan State Law Review*, no. 659 (2017): 659-726. https://ir.lawnet.fordham.edu/faculty_scholarship/956/

[14] Nicolle Lamerichs, "The Next Wave in Participatory Culture: Mixing Human and Nonhuman Entities in Creative Practices and Fandom, In The Future of Fandom," *Transformative Works and Cultures* Special 10, no. 28 (2018), https://doi.org/10.3983/twc.2018.1501.

Creation (created by oneself) and Minimum Modicum of Creativity (a minimal level of creativity).[15]

The first element, independent creation and the rejection of plagiarism, requires that a work must result from the creator's own effort and must not constitute a substantial reproduction of an existing work. Although the UUHC does not explicitly use the term "independent creation," it incorporates the concept of authenticity and prohibits acts such as replication, which effectively denies protection to works that are mere copies or imitations without any new creative contribution. In the context of AI, the challenge is not traditional plagiarism, since AI lacks intent, but rather the issue of vicarious or indirect infringement, raising questions about whether AI—trained on trillions of data points—can produce works that are coincidentally or statistically highly similar to other copyrighted material. Nevertheless, the more pressing challenge posed by AI relates to the second element: the level of creativity.[16]

The second element, the minimum modicum of creativity and the anthropocentric principle, establishes that originality does not require novelty or uniqueness but only a minimal level of creativity stemming from human intellectual input. Indonesian legal doctrine, heavily influenced by the European Civil Law tradition and aligned with the Berne Convention, implicitly rejects the "sweat of the brow" approach, which recognizes protection based solely on effort or expenditure and was historically accepted in some other jurisdictions. This principle was internationally affirmed by the U.S. Supreme Court in the landmark case *Feist Publications, Inc. v. Rural Telephone Service Co.* (1991), which held that factual works are protectable only if they involve an element of original selection and arrangement.[17]

This minimal level of creativity is deeply rooted in the anthropocentric principle of copyright law, where a work must be the result of creative choices made by the human mind. Article 1, paragraph 1 of the UUHC definitively limits "Creation" only to the work of the creator (who is a person, as regulated in Article 1, paragraph 2). Creativity is understood as a manifestation of aesthetic considerations, which include choices of color, composition, perspective; intellectual

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[15] Kyungsuk Kim, "Korean Copyright Issues in Text Data Mining for Generative AI," *Journal of AI Law and Regulation* 1, no. 1 (2024): 64–76, https://doi.org/10.21552/aire/2024/1/8.

[16] Jessica L. Gillotte, "Copyright Infringement in AI-Generated Artworks," *UC Davis Law Review* 53, no. 5 (2020): 2655–92. https://lawreview.law.ucdavis.edu/archives/53/5/copyright-infringement-ai-generated-artworks

[17] Ibid.

considerations such as the selection of narrative, structure, or plot; and maximal effort (mental effort) as the struggle and decisions made by an artist or writer in the creative process.[18]

Generative AI creations have brought about an AI crisis of originality. Generative AI directly challenges this anthropocentric principle. When a user provides a simple prompt like "create an image of a flying dragon against a sunset background," the majority of the creative process—the selection of millions of sizes, styles, and compositions is carried out by the AI algorithm.[19] The AI process is probabilistic computation and statistical modeling, fundamentally different from the mental effort involving human struggle and decision.[20] Given this reality, the biggest current challenge is how to measure human effort (once measured by Sweat of the Brow) when most of that 'sweat' is now 'electricity' and 'computation time.' If originality is expressed in human creativity, and the AI output is the computation of algorithms based on data, then the AI output, in its raw form, must be doctrinally deemed lacking in originality because it does not reflect sufficient human 'choice and consideration' to meet the minimal standard.[21]

This crisis forces the legal system to choose whether to lower the standard of originality to merely 'minimal input effort' (the prompt) or to maintain the high standard at the risk of denying Copyright protection to most AI works and placing them in the public domain. This research argues that maintaining a strict standard of originality is vital for preserving the foundational philosophy of Copyright as an incentive for genuine human creativity.

C. The Challenge of Generative Artificial Intelligence to the Concept of Originality

In facing the originality crisis brought about by Generative AI, the focus of legal debate shifts from analyzing the outputof the work itself to analyzing the human input, namely the prompt (input command) provided by the user (prompter).[22] The prompt is considered the only potential locus (place) where the element of human creativity can be found and tested. However,

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[18] Jenny Quang, "Does Training AI Violate Copyright Law?," *Berkeley Technology Law Journal* 36, no. 4 (2021): 1407–36. https://doi.org/10.15779/Z38XW47X3K

[19] Manuel B. Garcia, "The Paradox of Artificial Creativity: Challenges and Opportunities of Generative AI Artistry," *Creativity Research Journal* 37, no. 4 (2025): 755–68, https://doi.org/10.1080/10400419.2024.2354622.

[20] Victor M. Palace, "What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law," *Florida Law Review* 71, no. 1 (2019): 217–41. https://scholarship.law.ufl.edu/flr/vol71/iss1/5/

[21] Alifah Nurjannah, "Legal Regulation of Copyright of Works Created by Artificial Intelligence Creative Economy Actors," *Annual Review of Legal Studies* 1, no. 3 (2024): 641–62. https://doi.org/10.15294/arls.vol1i3.4084

[22] Francesca Mazzi, "Authorship in Artificial Intelligence-Generated Works: Exploring Originality in Text Prompts and Artificial Intelligence Outputs Through Philosophical Foundations of Copyright and Collage Protection," *The Journal of World Intellectual Property* 27, no. 3 (2024): 410–27, https://doi.org/10.1111/jwip.12310; Anthi Gaidartzi and Irini Stamatoudi, "Authorship and Ownership Issues Raised by AI-Generated Works: A Comparative Analysis," *Laws* 14, no. 4 (2025): 57, https://doi.org/10.3390/laws14040057.

this testing requires a very strict framework to differentiate between functional instructions and original creative choices.[23]

A Three-Tier originality test framework for prompts is essential to evaluate whether a prompt satisfies the minimum threshold of creativity. This framework categorizes prompts into three levels based on the specificity and particularity of the instructions provided. The first level, Functional Descriptive Prompts (Low Tier), encompasses prompts that offer only general descriptions or basic instructions, such as "a photo of a cat wearing a birthday hat." At this level, the AI output is primarily driven by computation, with the prompter acting merely as a trigger rather than as the author of the work. In line with legal doctrine, elements that are necessary or common (scènes à faire) and simple ideas do not qualify for intellectual property protection; therefore, prompts at this tier cannot claim originality, and the resulting work would be unprotected by copyright. The second level, Creative Specification Prompts (Mid Tier), involves prompts that reflect deliberate and specific artistic choices, such as "an 1890s surrealism-style oil painting, showing a woman reading a book in a park under the late afternoon sun, with a dominant monochrome blue sapphire color palette." Here, the prompter demonstrates identifiable creative decisions regarding medium, style, subject, and color palette, signaling a level of originality. Finally, the third level, Interactive and Iterative Prompts (High Tier), consists of prompts shaped through continuous refinement. The user generates an initial output, analyzes it, and provides detailed corrections or modifications, a process that mirrors the traditional artistic cycle of conceptualization and revision. This sustained interaction and iterative refinement exemplify a higher degree of intellectual effort and may satisfy the standard of originality.[24]

The originality of prompts in categories 2) and 3), if doctrinally analyzed against originality in the selection and arrangement of creative works, heavily relies on the legal analogy to compilation works (Article 43 UUHC). In a compilation (e.g., a database), creativity lies in the selection and arrangement of non-original elements. A highly specific prompt could be considered an original selection and arrangement of instructions, which the AI then transforms into a visual expression. However, the criticism is that the prompt is only an instruction, and the

[23] Ari Juliano Gema, "Masalah Penggunaan Ciptaan Sebagai Data Masukan Dalam Pengembangan Artificial Intelligence Di Indonesia," *Technology and Economics Law Journal* 1, no. 1 (2022): 1–18, https://doi.org/10.21143/telj.vol1.no1.1000.

[24] Matthew Sag, "Copyright Safety for Generative AI," *Houston Law Review* 61, no. 2 (2023): 295–348. https://houstonlawreview.org/article/92126-copyright-safety-for-generative-ai

final expression is entirely created by the algorithm. If the AI significantly deviates from the prompt, the human contribution becomes increasingly blurred.[25]

The Pragmatic Approach Focusing on Post-Production Contribution: Testing the prompt alone proves highly difficult and prone to subjectivity. Therefore, the most pragmatic approach, consistent with Copyright doctrine, is to shift the focus of originality to human contributions post-production. Originality is not granted to the raw AI output but to the modifications, editing, and creative additions made by humans after the AI generates the work. These post-production contributions include, but are not limited to, adjusting light intensity, re-coloring, artistic cropping, digital over-painting, or adding new elements. This approach classifies the modified AI work as a Derivative Work.[26] Its doctrinal advantage is that IP protection will only attach to the new elements added by human effort, while the underlying AI output remains unprotected by copyright and enters the public domain. This provides a clear line of demarcation for the Directorate General of Intellectual Property (DJKI) in the future process of recording creations.

The Indonesian UUHC adopts a strict Creator Personality principle, where only humans have the right to be recognized (Moral Rights) and to gain economic benefits (Economic Rights). Based on Article 1 paragraph 3 of the UUHC, AI cannot be recognized as a Creator. This rejection aligns with the guidance from the US Copyright Office and court decisions that deny copyright registration for works created purely by AI.[27]

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[25] Nathan Seth Lowell, "AI Create: The Brave New World and Copyright Implications of AI-Generated Artwork," *Virginia Journal of Law & Technology* 28, no. 1 (2024): 1–50. https://static1.squarespace.com/static/5e793709295d7b60295b2d29/t/679d6a7b662a284dafdb8e62/1738369672329/28+Va.+J.L.+%26+Tech+2+%282025%29+Final

[26] Indra Budi Jaya and Riska Rahmawati, "Perlindungan Hukum Karya Cipta Derivtaif Yang Dibuat Dengan Artificial Inteligence (AI)," *Jurnal Rechten : Riset Hukum Dan Hak Asasi Manusia* 6, no. 3 (2024): 23–32, https://doi.org/10.52005/rechten.v6i3.209.

[27] Raihani Latifatunnisa et al., "Pemanfaatan Musik Buatan AI Melalui Deepfake: Studi Hukum Komparatif Indonesia Dan Amerika Serikat," *JIPRO : Journal of Intellectual Property* 7, no. 2 (2024): 188–211, https://doi.org/10.20885/jipro.vol7.iss2.art5.

There are four main legal options regarding the determination of the IP subject for AI works:

Table 1. Evaluation of Copyright Ownership Options for AI-Generated Works

Option	Party Acquiring Copyright	Doctrinal Criticism
1. User (Prompter)	If human creative intervention is considered dominant	Risks protectiong minimal (less original) input and ignoring the role of technology
2. AI Developer	The owner and creator of the algorithm code	The developer creates the tool, not the specific work. They do not have direct control over the specific output generated by users
3. AI as a Legal Subject	AI is recognized as an IP subject (electronic person)	Contradicts the anthropocentric principle of the UUHC and international conventions
4. Public Domain	No copyright exist; the work is free for anyone to use	The doctrinally safest option, but removes the incentives for AI innovation and prompt-based creativity.

Source: author's analysis results

The most fundamental legal vacuum created by Generative AI lies in the status of the legal subject (author).[28] Indonesian Copyright Law is founded upon the philosophy of anthropocentrism, the view that places humanity as the center and sole source of protected intellectual creation.[29] The concept of excluding AI from recognition as a Creator under the Indonesian UUHC is reflected in two primary dimensions. First, the law explicitly restricts the definition of a legal subject, or *rechtspersoon*. Article 1, paragraph 3, of the UUHC confines the term "Creator" to a person or a group of people responsible for producing a Creation. Within civil law, the term "person" encompasses both natural and legal persons, while AI, as a non-biological and non-legal entity, does not meet this criterion. This limitation is not merely procedural; it is fundamentally rooted in the doctrine of moral rights. Article 5 of the UUHC grants these rights to human Creators, including the entitlement to attribution and the protection of the integrity of their work. Moral rights are inherently personal, tied to the human soul, reputation, and dignity—qualities that AI does not possess. Consequently, as long as the UUHC continues to uphold moral rights, AI cannot be acknowledged as a Creator.

[28] Jian Li et al., "Legal Regulation of Generative AI: A Multidimensional Construction," *International Journal of Legal Discourse* 8, no. 2 (2023): 365–88, https://doi.org/doi:10.1515/ijld-2023-2017; Ezieddin Elmahjub, "The Algorithmic Muse and the Public Domain: Why Copyright's Legal Philosophy Precludes Protection for Generative AI Outputs," *Computer Law & Security Review* 58 (September 2025): 106170, https://doi.org/10.1016/j.clsr.2025.106170.

[29] Yonathan Ariel Alexander Tambunan and Dewa Ayu Dian Sawitri, "Implikasi Kekosongan Hukum Terhadap Kecerdasan Buatan Sebagai Pelanggar Kekayaan Intelektual Terhadap Karya Digital," *Jurnal Kertha Wicara* 15, no. 04 (2025): 191–204. https://ejournal4.unud.ac.id/index.php/wicara/article/view/40

Second, Indonesia's stance aligns with the international consensus, reflecting a consistent anthropocentric approach. Key jurisdictions, such as the United States and the European Union, similarly deny copyright protection for works created solely by machines, emphasizing that human authorship is a prerequisite. The Berne Convention, which guides the UUHC and to which Indonesia is a party, has historically recognized only humans as Creators. Any attempt to confer Creator status to AI domestically would therefore create inconsistencies with global standards. [30]

Given that AI cannot be considered the Creator, ownership of AI-generated outputs must reside with a human party. This research critically evaluates the four potential ownership options and finds Options A, B, and C untenable. Option A, assigning ownership to the user or prompter, is problematic when the prompt is minimal or functional, as granting copyright in such cases would dilute originality standards and flood the intellectual property system with unprotectable works.[31] Option B, attributing authorship to the AI developer, is an inaccurate analogy because developers create the algorithmic tool, not the specific output, much like granting copyright over every photograph to a camera manufacturer. Additionally, developers lack creative control over the work generated by millions of users. Option C, recognizing AI as a legal subject, may appear administratively clean but would require radical reforms of Indonesian civil law and carry far-reaching implications for criminal, contract, and civil liability law. Collectively, these considerations reinforce that human authorship remains the necessary and legally coherent foundation for copyright under the UUHC. [32]

The rejection of these options that attempt to 'humanize' AI works leads to the inevitable doctrinal conclusion: when no human Creator can be legitimately identified under the UUHC, the work automatically falls into the unprotected status of the public domain.[33]

Given the difficulty in testing human intervention, the cleanest doctrinal solution is to default to stating that works generated by AI without significant human creative modification must fall into the Public Domain (Option D). This approach has two advantages. First: it maintains the integrity of the UUHC by not needing to change the definition of "Creator" or lower the standard

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[30] Rezon et al., "Studi Komparasi Hak Cipta Atas Proses Data Scrapping AI Di Indonesia, Uni Eropa, Dan Amerika."

[31] Michael D. Murray, "Tools Do Not Create: Human Authorship In the Use of Generative Artificial Intelligence," *Case Western Reserve Journal of Law, Technology and the Internet* 15, no. 1 (2024): 76–105. https://scholarlycommons.law.case.edu/jolti/vol15/iss1/3/

[32] Ayelet Gordon-Tapiero, "Unreal and Unjust: An Enrichment-Based Approach to the Deepfake Dilemma," *Journal of Tort Law* 18, no. 2 (2025): 493–513, https://doi.org/doi:10.1515/jtl-2025-0031.

[33] Ryan Abbott and Elizabeth Rothman, "Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence," *Florida Law Review* 75, no. 6 (2023): 1141–202. https://www.floridalawreview.com/article/91299-disrupting-creativity-copyright-law-in-the-age-of-generative-artificial-intelligence

of originality. Second: it encourages human contribution; the copyright incentive is only granted to Creators who perform genuine creative transformation, thereby encouraging the quality and depth of creation rather than the mass production of raw AI output.

D. Reconstructing the Concept of Originality in Copyright Law in the Era of Generative Artificial Intelligence

The rapid development of Generative Artificial Intelligence (Generative AI) has introduced significant conceptual challenges to the doctrine of originality in copyright law.[34] Traditionally, originality has been understood as one of the fundamental requirements for a work to obtain legal protection.[35] In many legal systems around the world, originality is generally interpreted as the presence of creative expression originating from a human author and not merely the result of copying from another work.[36] However, the emergence of technologies capable of generating content automatically through computational processes raises a fundamental question as to whether the conventional definition of originality remains adequate to address these technological developments.[37] Within the framework of classical copyright law, originality has not been interpreted as absolute novelty in the same sense as novelty in patent law. Instead, originality emphasizes the existence of an independent creative contribution by the author.[38] Consequently, a work may be considered original as long as it is produced through a process of creation involving human creativity, even if similarities with pre-existing works may exist. This understanding is

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[34] Saliltorn Thongmeensuk, "Rethinking Copyright Exceptions in the Era of Generative AI: Balancing Innovation and Intellectual Property Protection," *The Journal of World Intellectual Property* 27, no. 2 (2024): 278–95, https://doi.org/10.1111/jwip.12301; Mark Fenwick and Paulius Jurcys, "Originality and the Future of Copyright in an Age of Generative AI," *Computer Law & Security Review* 51 (November 2023): 105892, https://doi.org/10.1016/j.clsr.2023.105892; Nicola Lucchi, "ChatGPT: A Case Study on Copyright Challenges for Generative Artificial Intelligence Systems," *European Journal of Risk Regulation* 15, no. 3 (2024): 602–24, Cambridge Core, https://doi.org/10.1017/err.2023.59.

[35] Eleonora Rosati, "Originality as a Policy Tool: Shaping the Breadth of Protection: Full Harmonization Through Case Law," in *Originality in EU Copyright : Full Harmonization through Case Law* (Edward Elgar Publishing, 2013), https://doi.org/10.4337/9781782548942.00012; Vincenzo Iaia, "The Elephant in the Room of EU Copyright Originality: Time to Unpack and Harmonize the Essential Requirement of Copyright," *The Journal of World Intellectual Property* 28, no. 2 (2025): 471–90, https://doi.org/10.1111/jwip.12343.

[36] Adil S. Al-Busaidi et al., "Redefining Boundaries in Innovation and Knowledge Domains: Investigating the Impact of Generative Artificial Intelligence on Copyright and Intellectual Property Rights," *Journal of Innovation and Knowledge* 9, no. 4 (2024): 1–28, https://doi.org/10.1016/j.jik.2024.100630.

[37] Veda C. Storey et al., "Generative Artificial Intelligence: Evolving Technology, Growing Societal Impact, and Opportunities for Information Systems Research," *Information Systems Frontiers* 27, no. 5 (2025): 2081–102, https://doi.org/10.1007/s10796-025-10581-7; Fernando A. Ramos-Zaga, "Reconceptualizing Human Authorship in the Age of Generative AI: A Normative Framework for Copyright Thresholds," *Laws* 14, no. 6 (2025): 84, https://doi.org/10.3390/laws14060084.

[38] Jane C. Ginsburg and Luke Ali Budiardjo, "Authors and Machines," *Berkeley Technology Law Journal* 34, no. 2 (2019): 343–86, https://doi.org/10.2139/ssrn.3233885.

reflected in various doctrines of copyright law, including the principles of independent creation and the requirement of a minimum modicum of creativity.

However, when Generative AI is used to produce a work, the process of creation no longer depends entirely on human creativity. AI systems operate by processing vast amounts of training data and employing machine learning algorithms to generate outputs that statistically resemble patterns contained within the data.[39] In this context, AI-generated outputs often appear to possess aesthetic qualities or structural characteristics similar to those found in human-created works, even though they are produced through computational processes fundamentally different from human creative processes.[40] This situation raises important questions regarding whether AI-generated outputs can be considered to satisfy the requirement of originality under copyright law. If originality is interpreted merely as the existence of a work that does not directly copy another work, AI-generated outputs may arguably satisfy such a requirement. However, if originality is understood as the manifestation of human creativity, then works produced entirely by AI without meaningful human creative intervention should not qualify as original works within the meaning of copyright law.

In contemporary copyright scholarship, debates regarding originality in the context of artificial intelligence generally revolve around three principal approaches.[41] The first approach maintains the traditional concept of originality by emphasizing the central role of human authorship in the creation of copyrighted works.[42] Under this perspective, works generated entirely by AI are considered incapable of meeting the originality requirement because they do not involve human creative processes. Consequently, such works are not eligible for copyright protection and are typically regarded as falling within the public domain. The second approach seeks to expand the interpretation of originality by incorporating the role of human involvement in the process of using AI systems. Within this framework, originality is not assessed solely based on the direct production of a work, but also on the human contribution involved in designing, directing, or

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[39] Maryna Manteghi, "Can Text and Data Mining Exceptions and Synthetic Data Training Mitigate Copyright-Related Concerns in Generative AI?," *Law, Innovation and Technology* 16, no. 2 (2024): 663–86, https://doi.org/10.1080/17579961.2024.2392928.

[40] Lowell, "AI Create: The Brave New World and Copyright Implications of AI-Generated Artwork."

[41] Sitti Fatimah Maddusila et al., "AI Revolution: The Legal Battle Between Indonesia and the European Union to Protect Copyright from Artificial Intelligence," *Hasanuddin Law Review* 11, no. 3 (2025): 366–90, https://doi.org/10.20956/halrev.v11i3.6499; Hafiz Gaffar and Saleh Albarashdi, "Copyright Protection for AI-Generated Works: Exploring Originality and Ownership in a Digital Landscape," *Asian Journal of International Law* 15, no. 1 (2025): 23–46, https://doi.org/10.1017/S2044251323000735.

[42] Andrés Guadamuz, "Artificial Intelligence and Copyright," *WIPO Magazine*, 2017. https://www.wipo.int/en/web/wipo-magazine/articles/artificial-intelligence-and-copyright-40141

controlling the AI system that generates the output.[43] For example, an individual who formulates complex prompts or performs substantial curation of AI-generated outputs may be regarded as providing sufficient creative contribution to meet the threshold of originality. The third approach adopts a more radical perspective by proposing that legal systems should recognize the possibility of granting protection to works generated autonomously by artificial intelligence. This approach is grounded in the argument that technological developments have reached a level at which AI systems are capable of producing works that possess significant artistic and economic value.[44] Accordingly, proponents of this view argue that legal systems should adapt by protecting such works even when they are not produced directly by human creators.

These three approaches demonstrate the ongoing tension between the traditional anthropocentric foundations of copyright law and the rapidly evolving capabilities of artificial intelligence technologies. On the one hand, maintaining a strictly human-centered conception of originality preserves the normative justification of copyright as a legal mechanism designed to reward and incentivize human creativity. On the other hand, the increasing sophistication of generative AI systems challenges the practical applicability of such a rigid framework, particularly when AI-generated outputs exhibit levels of complexity and aesthetic value comparable to human-created works. As a result, the central issue is no longer merely whether AI-generated works should be protected, but rather how copyright law can maintain its foundational principles while remaining sufficiently flexible to accommodate technological transformation. In this regard, the debate surrounding originality reflects a broader challenge faced by contemporary intellectual property law: balancing the protection of human creativity with the need to adapt legal doctrines to emerging technological realities.[45]

Although the third approach may appear attractive in light of rapid technological advancement, many legal scholars argue that it risks obscuring the fundamental objectives of the copyright system. Copyright law is primarily designed to provide incentives for human creators to

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[43] P. Bernt Hugenholtz and Pedro João Quintais, "Copyright and Artificial Creation : Does EU Copyright Law Protect AI-Assisted Output ?," *IIC International Review of Intellectual Property and Competition Law* 52 (2021): 1190–216, https://doi.org/10.1007/s40319-021-01115-0.

[44] Shlomit Yanisky-Ravid and Luis Antonio Velez- Hernandez, "Copyrightability of Artworks Produced by Creative Robots and Originality: The Formality-Objective Model," *Minnesota Journal of Law, Science and Technology* 19, no. 1 (2018): 1–52. https://scholarship.law.umn.edu/mjlst/vol19/iss1/1/

[45] Mohsin Ali Farhad and Muhammad Hamza Zakir, "Adapting Legal Horizons in Reshaping Intellectual Property Law for the Artificial Intelligence Revolution," *AI and Ethics* 5, no. 3 (2025): 2307–21, https://doi.org/10.1007/s43681-024-00555-x.

continue producing new works.[46] If copyright protection were extended to works generated by machines, the relevance of such incentives could be undermined, as human creativity would no longer serve as the primary prerequisite for obtaining legal protection. Furthermore, recognizing copyright protection for AI-generated works raises complex questions regarding authorship and ownership. It remains unclear who should be recognized as the rightful holder of copyright in such works. Possible candidates include the developer of the AI system, the user who operates the system, or other parties involved in the production process. This ambiguity has the potential to generate significant legal complexities that may ultimately undermine legal certainty in copyright practice.

In this context, reconstructing the concept of originality becomes essential to ensure that copyright law remains relevant in the face of technological change without compromising its foundational principles. One possible approach is to reaffirm that originality in copyright law should remain rooted in human creativity.[47] ccordingly, works generated entirely by AI without meaningful human creative contribution should not be granted copyright protection. Nevertheless, this approach does not imply that the use of AI within creative processes should be entirely excluded from copyright protection. In many instances, AI functions as a tool that enables humans to expand their creative capacities. In such situations, human contribution may still provide a sufficient basis for recognizing the originality of a work.

Therefore, the reconstruction of the concept of originality may be achieved by emphasizing the degree of human creative involvement in the production of works utilizing AI technology.[48] The greater the role of human agency in determining the concept, structure, and final expression of a work, the more likely the work is to satisfy the originality requirement under copyright law. This approach allows the legal system to accommodate technological developments while preserving the anthropocentric principles that have long served as the foundation of copyright law. By maintaining human creativity at the center of the creative process, copyright law can continue to function as an incentive mechanism for human creativity while simultaneously allowing technology to serve as a supporting tool in the process of creative production.

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[46] Nirogini Thambaiya et al., "Copyright Law in the Age of AI: Analysing the AI-Generated Works and Copyright Challenges in Australia," *International Review of Law, Computers & Technology* 39, no. 3 (2025): 448–73, https://doi.org/10.1080/13600869.2025.2486893; Jason K. Eshraghian, "Human Ownership of Artificial Creativity," *Nature Machine Intelligence* 2, no. 3 (2020): 157–60, https://doi.org/10.1038/s42256-020-0161-x.

[47] Sag, "Copyright Safety for Generative AI."

[48] Pamela Samuelson, "Allocating Ownership Rights in Computer-Generated Works," *University of Pittsburgh Law Review* 47 (1986): 1185–228. https://lawcat.berkeley.edu/record/1112407?v=pdf

Moreover, reconstructing the concept of originality must also take into account the importance of transparency in the use of AI technologies. In this regard, a requirement to disclose whether a work has been created with the assistance of AI may serve as an important instrument for maintaining the integrity of the copyright system.[49] Such transparency would not only provide the public with information about the process through which a work is created but would also assist legal authorities in determining whether a particular work satisfies the requirement of originality.[50] Thus, the reconstruction of the concept of originality in the era of Generative Artificial Intelligence is not merely a matter of redefining legal concepts, but also involves broader efforts to maintain a balance between technological innovation and the protection of human creativity. Copyright law must evolve adaptively in order to address the new challenges emerging from digital technological developments while preserving its primary objective as an instrument for promoting the advancement of science, art, and culture.

Furthermore, the reconstruction of the concept of originality does not only carry theoretical implications for the development of copyright doctrine, but also produces practical consequences for the dynamics of the creative economy. The emergence of Generative Artificial Intelligence technologies has transformed the ways in which creative works are produced while simultaneously influencing the position of creative economy actors within the copyright ecosystem. It is therefore important to further examine how these technological developments reshape the structure of the creative economy and the relationships between technology, creators, and the market for digital works.

E. The Implications of Generative Artificial Intelligence on the Creative Economy Ecosystem

The development of Generative Artificial Intelligence (Generative AI) not only presents conceptual challenges to the doctrine of originality in copyright law, but also generates broader implications for the structure of the creative economy and the ecosystem of intellectual production as a whole.[51] The ability of AI technologies to generate text, images, music, and other forms of

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[49] Jane C. Ginsburg, "People Not Machines: Authorship and What It Means in International Copyright Law," in *Across Intellectual Property: Essays in Honour of Sam Ricketson*, ed. Graeme W. Austin et al. (Cambridge University Press, 2020), https://doi.org/10.1017/9781108750066.009.

[50] Jane C. Ginsburg, "People Not Machines: Authorship and What It Means in the Berne Convention," *IIC International Review of Intellectual Property and Competition Law* 49, no. 2 (2018): 131–35, https://doi.org/10.1007/s40319-018-0670-x.

[51] Simon Chesterman, "Good Models Borrow, Great Models Steal: Intellectual Property Rights and Generative AI," *Policy and Society* 44, no. 1 (2025): 23–37, https://doi.org/10.1093/polsoc/puae006.

creative expression within a short period of time has significantly transformed the dynamics of creative production, which previously relied on relatively longer and more complex human creative processes. In this context, discussions surrounding originality cannot be separated from their impact on creative economy actors as the primary subjects within the copyright protection system.

The creative economy is fundamentally built upon the assumption that human creativity constitutes the primary source of economic value embedded in creative works. Copyright systems are therefore designed to provide incentives for creators by granting exclusive rights over the exploitation of their works.[52] However, the emergence of Generative AI raises fundamental questions regarding whether this incentive mechanism remains relevant when technology is capable of producing works that visually and structurally resemble human creations without undergoing the same creative process.[53]

For actors within the creative economy such as writers, illustrators, musicians, graphic designers, and digital content creators Generative AI can be perceived as an ambivalent technology. On the one hand, it has the potential to enhance productivity by enabling creators to generate variations of ideas or concepts more rapidly.[54] AI may function as a creative assistance tool that supports the exploration of ideas, visual experimentation, or the drafting of preliminary concepts for creative works. On the other hand, this technology also introduces economic uncertainty for human creators. When AI systems are capable of producing large volumes of creative outputs at significantly lower costs, the economic value of human-generated works may decline. Companies or individuals that previously relied on professional illustrators or writers may instead choose to utilize AI systems to produce content more efficiently. This phenomenon may create economic pressure on human creators and potentially reshape the market structure within creative industries.[55]

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[52] Gema Bangsawan, "Kebijakan Akselerasi Transformasi Digital Di Indonesia: Peluang Dan Tantangan Untuk Pengembangan Ekonomi Kreatif," *Jurnal Studi Kebijakan Publik* 2, no. 1 (2023): 27–40, https://doi.org/10.21787/jskp.2.2023.27-40.

[53] Wei Liu and Weijie Huang, "Authorship in Human-AI Collaborative Creation: A Creative Control Theory Perspective," *Computer Law & Security Review* 57, no. April (2025): 106139, https://doi.org/10.1016/j.clsr.2025.106139.

[54] Hanifa et al., "Peran AI Terhadap Industri Kreatif Indonesia," *Journal of Comprehensive Science* 2, no. 7 (2023): 2159–70. https://doi.org/10.59188/jcs.v2i7.446

[55] Peter S. Menell, "Governance of Intellectual Resources and Disintegration of Intellectual Property in the Digital Age," *Berkeley Technology Law Journal* 26, no. 4 (2011): 1523–59. https://www.law.berkeley.edu/center-article/governance-of-intellectual-resources-and-disintegration-of-intellectual-property-in-the-digital-age/

Another issue that arises concerns the use of copyrighted works as training data for AI systems. Most Generative AI models are trained using extremely large datasets that often include works protected by copyright. This training process is commonly referred to as Text and Data Mining (TDM), which involves computational analysis of large quantities of data in order to identify specific statistical patterns. Although the process is technical in nature and does not necessarily result in direct reproduction of the original works, the use of copyrighted materials in AI training processes has sparked debate regarding whether such practices infringe upon the exclusive rights of creators.[56]

For participants in the creative economy, the use of their works as training data without authorization may be perceived as a form of exploitation of human creativity. Even though AI systems do not directly copy those works, their ability to generate outputs that imitate particular artistic styles raises concerns regarding the loss of creators' control over their creative identity.[57] For instance, an illustrator with a distinctive visual style may find that AI systems are capable of generating images resembling that style without the involvement or compensation of the original creator. This situation raises important questions about whether copyright law should provide additional protection for artistic styles or individual creative identities.[58] Traditionally, copyright law does not protect artistic styles or methods, but only the concrete expression of an idea. However, in the context of Generative AI, the boundary between inspiration and reproduction becomes increasingly blurred, as algorithms are capable of replicating particular visual or structural characteristics with a high level of precision.

In addition, the development of AI presents challenges to the market structure of the creative industries. If AI-generated outputs produced automatically were granted the same level of copyright protection as human-created works, there would be a risk that the copyright system could create monopolies over works that are not produced through human creative processes. Such a development could potentially undermine the primary objective of copyright law, which is to provide incentives for human creativity.[59] For this reason, several scholars argue that AI-generated outputs that do not involve significant human creative intervention should not be granted copyright

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[56] Tyagi, "Copyright, Text & Data Mining and the Innovation Dimension of Generative AI."

[57] Christian Mammen et al., "Creativity, Artificial Intelligence, and the Requirement of Human Authors and Inventors in Copyright and Patent Law," University of Oxford, July 5, 2024, https://ora.ox.ac.uk/objects/uuid:fe716d1e-e0bd-4b64-95b8-af149f040caa.

[58] Guadamuz, "Do Androids Dream of Electric Copyright?: Comparative Analysis of Originality in Artificial Intelligence Generated Works."

[59] Al-Busaidi et al., "Redefining Boundaries in Innovation and Knowledge Domains: Investigating the Impact of Generative Artificial Intelligence on Copyright and Intellectual Property Rights."

protection. This approach aims to maintain a balance between technological development and the protection of human creativity. By placing fully autonomous AI-generated outputs within the public domain, legal systems can prevent monopolization over works that do not reflect genuine human creative effort.[60] Moreover, this approach may also provide broader benefits for the innovation ecosystem. Works that fall within the public domain can be freely used by society to create new works, thereby encouraging a more open process of innovation. In this sense, AI-generated outputs may be viewed as a source of inspiration or as raw creative material that can be utilized by human creators to produce works with greater artistic and intellectual value.

Therefore, the implications of Generative AI for the creative economy extend beyond technological issues alone; they also involve the delicate balance between legal protection, economic fairness, and the sustainability of human creativity ecosystems.[61] Copyright law must carefully consider how this technology should be regulated in order to prevent the erosion of the position of human creators as the central actors within the creative process.

From a broader policy perspective, the emergence of Generative Artificial Intelligence also raises fundamental questions regarding the future configuration of intellectual property systems within digital economies. Copyright law has historically operated on the assumption that creative production is scarce, costly, and primarily dependent on human intellectual labor. Generative AI challenges this assumption by enabling the large-scale production of creative outputs at unprecedented speed and minimal cost. As a result, the traditional balance between incentives for creators and public access to knowledge may require reconsideration. If legal protection is extended too broadly to AI-generated outputs, the copyright system risks creating excessive barriers to access and innovation by concentrating control over vast quantities of automatically generated content. Conversely, if AI-generated works receive no legal recognition at all, questions may arise regarding the distribution of economic benefits derived from AI-assisted creative production. These competing considerations illustrate the need for a carefully calibrated regulatory framework that preserves the central role of human creativity while ensuring that technological innovation continues to contribute positively to the development of cultural and creative industries.

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[60] Roger Clarke, "Principles for the Responsible Application of Generative AI," *Computer Law & Security Review* 57, no. May (2025): 106131, https://doi.org/10.1016/j.clsr.2025.106131.

[61] Mousa Al-kfairy et al., "Ethical Challenges and Solutions of Generative AI: An Interdisciplinary Perspective," *Informatics* 11, no. 3 (2024): 58, https://doi.org/10.3390/informatics11030058; Giancarlo Frosio, "Should We Ban Generative AI, Incentivize It or Make It a Medium for Inclusive Creativity?," in *A Research Agenda for EU Copyright Law* (Edward Elgar Publishing, 2025), https://doi.org/10.4337/9781803927329.00010.

The complexity of the implications of Generative Artificial Intelligence for the creative ecosystem has prompted many countries to begin developing different legal approaches to regulating AI-generated content (AIGC). These differing approaches indicate that, to date, there is no global consensus regarding the legal status of AI-generated works. Consequently, comparative legal analysis becomes essential for understanding the various regulatory models emerging across different jurisdictions and for identifying approaches that may be most relevant to the Indonesian legal system.

F. Artificial Intelligence Generated Content Regulation Models from an International Comparative Perspective

The rapid development of Generative Artificial Intelligence has compelled many jurisdictions around the world to reconsider their legal approaches to the protection of works produced through such technologies.[62] Although there is currently no global consensus regarding the legal status of Artificial Intelligence Generated Content (AIGC), various countries have begun to develop regulatory approaches that reflect their respective legal philosophies and public policy priorities. In this context, comparative legal analysis becomes particularly important in providing a broader perspective on potential regulatory models that may be adopted within the Indonesian legal system.

One jurisdiction that has explicitly rejected the granting of copyright protection to works generated by artificial intelligence is the United States. In several administrative decisions issued by the United States Copyright Office, it has been emphasized that copyright protection may only be granted to works that contain elements of human creativity.[63] This principle is commonly referred to as the human authorship requirement, which stipulates that copyright applies only to works created by human authors. In the case of *Thaler v. Perlmutter*, for example, the court rejected the registration of copyright for a work that had been entirely generated by an AI system because no human author could be identified.[64] This approach is based on the interpretation that copyright law is fundamentally intended to protect human intellectual expression. Consequently,

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[62] Xukang Wang and Ying Cheng Wu, "Balancing Innovation and Regulation in the Age of Generative Artificial Intelligence," *Journal of Information Policy* 14 (July 2024): 385–416, https://doi.org/10.5325/jinfopoli.14.2024.0012; Airlie Hilliard et al., "Artificial Intelligence Policy Worldwide: A Comparative Analysis," *Royal Society Open Science* 13, no. 2 (2026): 242234, https://doi.org/10.1098/rsos.242234.

[63] United States and Copyright Office, *Copyright and Artificial Intelligence*, no. may (2025).

[64] *Thaler v. Perlmutter No. 1:22-Cv-01564 (D.D.C. 2023).* (2025).

works generated automatically by machines without human creative intervention are considered ineligible for copyright protection. Nevertheless, the United States legal system continues to recognize the possibility of copyright protection where a significant human creative contribution can be demonstrated in the creation of a work.

In contrast to the United States, the European Union tends to adopt a regulatory approach that focuses more on the governance of data usage and transparency in AI technologies.[65] hrough policies such as the AI Act and provisions related to Text and Data Mining (TDM) within the Directive on Copyright in the Digital Single Market,[66] the European Union seeks to establish a balance between copyright protection and the development of AI technologies. One important aspect of the EU approach is the requirement of transparency regarding the use of copyrighted works as training data for AI systems.[67] Within this framework, developers of AI systems are required to disclose information about the sources of data used in the training of AI models. The objective of this policy is to ensure that the use of copyrighted materials during AI training does not infringe upon the exclusive rights of creators, while also providing copyright holders with the opportunity to determine whether their works may be included within training datasets.

Beyond the United States and the European Union, several other jurisdictions have begun to develop distinct legal approaches toward AI-generated works. In the United Kingdom, for example, the Copyright, Designs and Patents Actprovides protection for works generated by computers in situations where no human author can be directly identified (chapter 48, section 9 (3)).[68] Section 9(3) of the Act stipulates that in such cases the author of the work shall be the person who makes the necessary arrangements for the creation of the work. This approach is commonly referred to as the doctrine of computer-generated works, which allows the legal system to grant copyright protection to works produced through technological processes.[69] However, this approach has also been subject to criticism because it may grant monopoly rights over works that do not genuinely reflect human creativity.

A comparative examination of these regulatory approaches reveals that different jurisdictions adopt distinct normative priorities in responding to the challenges posed by AI-generated content. The United States tends to prioritize the preservation of the traditional human-

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65 Artificial Intelligence Act European Parliament, 1 (2024).
66 Directive (EU) 2019/790 on Copyright and Related Rights in the Digital Single Market, 2019 92 (2019).
67 Proposal for a Regulation of the European Parliament and of the Council, 0106 1 (2021).
68 Copyright, Designs and Patents Act 1988 (1988).
69 Ibid.

centered foundations of copyright law by strictly maintaining the human authorship requirement. In contrast, the European Union places greater emphasis on regulating the technological ecosystem surrounding AI, particularly through transparency obligations and governance of training data. Meanwhile, the United Kingdom represents a more pragmatic approach by providing a legal framework for computer-generated works that allows copyright protection even in the absence of direct human authorship. These divergent approaches demonstrate that the regulation of AI-generated content is not solely a matter of legal doctrine, but also reflects broader policy choices regarding innovation, economic development, and the protection of human creativity. As such, comparative analysis highlights the importance of identifying a regulatory model that is capable of balancing technological advancement with the normative objectives of copyright law, particularly in jurisdictions such as Indonesia, where the creative economy constitutes an increasingly significant component of national development.

Within the Indonesian context, the approach that appears most consistent with the philosophical foundations of copyright law is the maintenance of the anthropocentric principle, which places human beings at the center of the creative process. Law Number 28 of 2014 concerning Copyright explicitly defines an author as a person or several persons who individually or jointly produce a creative work. This definition indicates that the Indonesian legal system conceptually does not provide space for non-human entities to be recognized as authors.

Nevertheless, the rapid development of AI technologies requires certain policy adjustments in order to provide legal certainty for participants in the creative industries.[70] One potential approach that may be considered is the adoption of a principle that copyright protection should only be granted to creative elements that are demonstrably produced by human authors, while AI-generated outputs that are produced automatically without human intervention should be placed within the public domain. This approach would allow the legal system to maintain consistency with the fundamental principles of copyright while still accommodating technological development.[71]

In addition, supplementary regulatory mechanisms—such as mandatory labeling of AIGC (Artificial Intelligence Generated Content) and the implementation of digital watermarking

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[70] Philip Schlesinger, "Whither the Creative Economy? Some Reflections on the European Case," in *Research Handbook on Intellectual Property and Creative Industries* (Edward Elgar Publishing, 2018), https://doi.org/10.4337/9781786431172.00009.

[71] Yiheng Lu, "Reforming Copyright Law for AI-Generated Content: Copyright Protection, Authorship and Ownership," *Technology and Regulation* 2025 (2025): 81–95, https://doi.org/10.71265/chkr8w30.

technologies—could help enhance transparency within the ecosystem of digital content production. Such measures may assist both regulators and the public in distinguishing between human-created works and AI-generated outputs. Through adaptive regulatory approaches grounded in the fundamental principles of copyright law, the Indonesian legal system may be able to accommodate the development of Generative Artificial Intelligence without undermining the primary objective of copyright protection, namely to encourage human creativity and to ensure fairness in the distribution of economic benefits derived from intellectual works.

The various regulatory approaches emerging across different jurisdictions demonstrate that the legal governance of AIGC remains in an early stage of development. Nevertheless, the experiences of different countries may serve as valuable references for Indonesia in formulating legal policies that are responsive to technological change. Accordingly, further analysis is required to examine how the principles of Indonesian copyright law may be interpreted or developed to accommodate the growing phenomenon of Generative Artificial Intelligence.

G. AIGC Labeling and Watermarking of Creations as Legal Certainty for Intellectual Property Rights

As AI outputs become increasingly sophisticated and difficult to distinguish from human works, transparency regarding Artificial Intelligence Generative Content (AIGC)-based creations is necessary as a crucial pillar for maintaining the anthropocentric principle and originality standard in the UUHC. Beyond ethical honesty, this is a vital issue that needs to be doctrinally accommodated to ensure the IP system functions.

Transparency aims to address the devaluation of human creativity. If the market is flooded with AIGC content claimed to be genuine human work, the monetary and artistic value of maximal human effort will be eroded.[72] Transparency serves as a proactive legal tool to restore legal certainty by: providing a clear line of demarcation for consumers, competitors, and regulators; and supporting a selective public domain—without mandatory labeling, it will be difficult for the DJKI and courts to effectively apply the Originality criterion and selectively consign raw AI outputs to the public domain.

The obligation for transparency should be implemented through an approach that combines legal (declaration) and technical (watermarking) methods. Explicit Labeling (Explanatory

[72] Zeynep Ülkü Kahveci, "Attribution Problem of Generative AI: A View from US Copyright Law," *Journal of Intellectual Property Law & Practice* 18, no. 11 (2023): 796–807, https://doi.org/10.1093/jiplp/jpad076.

Disclosure) is the most fundamental legal-administrative requirement. It mandates users or applicants for creation recording to include a clear and easily accessible declaration (either on the work itself or in the metadata) stating the level of AI involvement. The declaration should at least include: The identity of the AI model used; The Level of AI Involvement (e.g., "Image 85% generated by ChatGPT"); and an honest statement regarding the elements excluded from the Copyright claim (e.g., "Copyright is only claimed on the post-editing coloring and cropping"). Following the US Copyright Office's approach, applicants are required to explicitly disclaim purely AI-generated material from the registration claim. Dishonesty in disclosing AI use should be considered a misrepresentation of a material fact in the application, which may lead to the revocation of the granted Copyright protection.[73]

Digital Watermarking (Technical Identification) is a technical solution where AI systems should embed digital markers into the output. This can facilitate forensic identification of the creation; in case of a copyright infringement dispute, this marker can be used to prove that the work originated from AI, reversing the burden of proof onto the party claiming human Originality. This is crucial in the content market, where explicit labeling is easily removed. As exemplified in the EU AI Act (2024), the obligation to provide robust watermarking infrastructure should be placed on the providers of Generative AI systems, not solely on the end-user. Mandatory transparency will fundamentally change how the DJKI and courts process and view copyright claims. A copyright recording usually grants a prima facie presumption that the applicant is the legitimate Creator. With AIGC Labeling, this assumption becomes the basis for consideration: if a work is labeled AIGC, the prima facie presumptionrequires the applicant to provide evidence showing adequate human creative intervention. Transparency protects end-users and the market from works that claim human originality but are AI-generated. This is important from the aspect of legal justice, ensuring that works bought or used by the public have an accurate Copyright status.[74]

Digital watermarks are vulnerable to removal (stripping) using third-party technologies (compression, resizing, filters). Therefore, regulations must encourage the development of robust watermarks (resistant to common manipulation) and perceptible ones (visible, minimally as declarations in hard-to-delete metadata). A clear threshold needs to be established

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[73] Natalia I. Shumakova et al., "Towards Legal Regulations of Generative AI in the Creative Industry," *Journal of Digital Technologies and Law* 1, no. 4 (2023): 880–908, https://doi.org/10.21202/jdtiL2023.38.

[74] Fan Li et al., "Nudging Perceived Credibility: The Impact of AIGC Labeling on User Distinction of AI-Generated Content," *Emerging Media* 3, no. 2 (2025): 275–304, https://doi.org/10.1177/27523543251317572.

regarding "substantial use" of AI that mandates labeling. The DJKI needs to issue guidelines distinguishing between AI as the primary creative tool (mandatory label) and AI as a passive technical aid (non-mandatory label). This need for transparency also requires regulatory steps from the DJKI, such as updating the registration forms by adding a mandatory field that explicitly asks about the role of AI in the work's creation, and if necessary, requiring the submission of promptevidence or creation logs if a claim of 100% human originality is made. The DJKI must consistently reject the registration of works labeled AIGC that are not accompanied by a clear claim of human modification elements, or reject records detected with an AI watermark but claimed to be 100% human original. [75]

Thus, the obligation for transparency is not merely a formality but a doctrinal instrument that enables the Indonesian Copyright legal system to navigate the new creation landscape without sacrificing the core principles of protecting human creativity.

H. Conclusion

The rapid development of Generative Artificial Intelligence has introduced profound challenges to the traditional foundations of copyright law, particularly concerning the concept of originality and the structure of the creative economy. As AI technologies become increasingly capable of generating texts, images, music, and other forms of creative expression, longstanding assumptions about the role of human creativity in the production of intellectual works are being fundamentally reconsidered. This development has triggered complex legal debates regarding whether AI-generated outputs can satisfy the originality requirement and, consequently, whether such works should be eligible for copyright protection.

This article has demonstrated that the debate surrounding originality in the context of Generative Artificial Intelligence generally revolves around three principal approaches: maintaining the traditional human-centered concept of originality, expanding the interpretation of originality to include human contributions in AI-assisted creativity, and recognizing the possibility of protecting works generated autonomously by AI systems. While the third approach reflects the rapid advancement of technology, it raises significant concerns regarding the potential erosion of

[75] Lisa Löbling et al., "Navigating the Legal Landscape: Technical Implementation of Copyright Reservations for Text and Data Mining in the Era of AI Language Models," *Journal of Intellectual Property, Information Technology and E-Commerce Law (JIPITEC)* 14, no. 4 (2024): 499–509, https://www.jipitec.eu/jipitec/article/view/16.

the fundamental objectives of copyright law, which are primarily designed to incentivize human creativity.

Furthermore, the emergence of Generative AI also carries broader implications for the creative economy ecosystem. The ability of AI systems to produce large quantities of creative outputs at relatively low cost may alter the economic dynamics of creative industries and create new challenges for human creators. Issues related to the use of copyrighted works as training data, the imitation of artistic styles, and the potential concentration of economic power in AI technologies illustrate the need for a carefully balanced regulatory framework.

Comparative analysis of regulatory developments in jurisdictions such as the United States, the European Union, and the United Kingdom reveals that different legal systems adopt diverse approaches in addressing the legal status of AI-generated content. These variations demonstrate that the regulation of AIGC remains an evolving area of law, shaped by differing policy priorities regarding innovation, technological governance, and the protection of human creativity.

In the Indonesian context, maintaining the anthropocentric foundation of copyright law appears to be the most consistent approach with the existing legal framework. Nevertheless, adaptive regulatory measures are necessary to address the challenges posed by Generative AI. Such measures may include emphasizing human creative contribution as the basis of originality, placing fully autonomous AI-generated outputs within the public domain, and introducing transparency mechanisms such as labeling requirements for AI-generated content. Through a balanced and adaptive legal approach, copyright law can continue to fulfill its primary objective of encouraging human creativity while simultaneously accommodating technological innovation in the digital era.

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