COPYRIGHT PROTECTION OF MADURESE BATIK IN BANGKALAN REGENCY FROM ARTIFICIAL INTELLIGENCE (AI) REPLICATION: A POSITIVE LAW AND ISLAMIC LAW PERSPECTIVE

Aisyah Dwi Cahaya Arindy[a,b]
Agustina Kumala Dewi Sholihah[a]
[a] Trunojoyo University Madura
[b] cahayaarindy@gmail.com

Abstract

Madura Batik, as an expression of traditional culture and a vital economic source for artisans in Bangkalan Regency. The sophistication of artificial intelligence that is able to imitate, modify, and replicate motifs accurately and quickly in a short time has the potential to eliminate the authentic identity and rich cultural meaning inherent in batik motifs that have been maintained by artisans in Bangkalan Regency. This study aims to analyze the copyright protection of Madura batik from the dual perspective of positive law and Islamic law, using an empirical juridical approach with a comparative perspective. Data was collected through a literature study on laws and regulations and interviews with written batik artisans and related government agencies in Bangkalan Regency. The research data then analyzed descriptively-interpretively. The main findings reveal the existence of legal loopholes in Law No. 28 of 2014, which render Madura batik vulnerable to digital exploitation. In contrast, Islamic law, through the principle of hifz al-mal, provides a solid ethical-normative foundation to prohibit such exploitation. Through the synthesis of the two legal frameworks, this study formulated a hybrid protection model specifically designed to fortify the integrity and sustainability of the cultural heritage of Madura batik in the midst of a landscape of technological disruption.

Keywords **:** *Artificial Intelligence, Madura Batik, Copyright, Positive Law, Islamic Law.*

INTRODUCTION

Batik is a cultural work of the Indonesian nation that has been rooted in people's lives for centuries. Batik not only represents aesthetic values, but also contains philosophical, symbolic, and historical meanings that reflect the nation's cultural identity(Suminto, 2015). Therefore, the existence of batik has an important position as a national cultural heritage that must be preserved. The world's recognition of batik was further strengthened when UNESCO in 2009 designated Indonesian batik as an Intangible Cultural Heritage of Humanity. This determination is not only a matter of pride, but also a great responsibility to maintain the authenticity and sustainability of batik in the midst of globalization(Jones, 2020).

Bangkalan Regency is an area on Madura Island that has an important role in maintaining the existence of batik. Bangkalan batik is known for its distinctive patterns and motifs, which are different from other regional batik(Suminto, 2015). The motif not only highlights aesthetics, but also reflects the local wisdom of the Madura people (Rachma & Amrullah, 2024). Bangkalan Batik has become a regional identity as well as a source of economic livelihood for the community, especially for the artisans of Bangkalan Regency. Thus, the

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protection of Bangkalan batik is not only related to cultural aspects, but also concerns the economic interests of the local community.

According to Syafrinaldi, in his seminar. technological disruption leads to a loss of distance between creators and users due to the technology's ability to distribute, transform, and duplicate works quickly and at scale; This makes the impact of IPR violations greater and more comprehensive. Although there is a formal mechanism for protection through IPR registration, current regulations and implementation are not adaptive enough to deal with the reality where digital works or digitally replicated works (including batik motifs) can be disseminated or reproduced indefinitely, this can pose serious potential for misuse and infringement of Intellectual Property Rights (IPR).

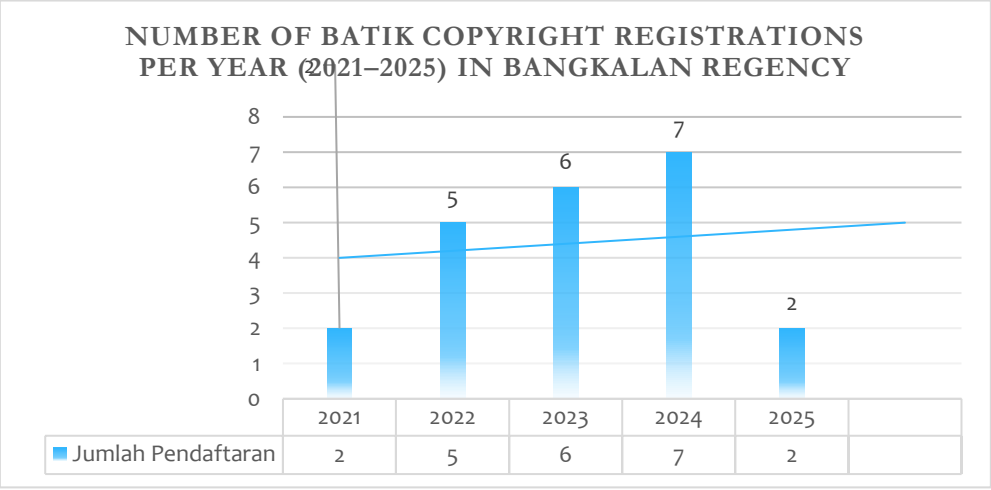
The rapid advancements in Artificial Intelligence (AI) technology have opened up new capabilities that are both admirable, as well as alarming (Saputra, 2025). One of the capabilities of AI is that it can perform deep learning on visual data, which allows it to analyze, learn, and then replicate or even modify Madura Batik motifs with a very high level of accuracy in a short period of time (Sultani, 2018). This phenomenon of replication by AI poses a serious threat(Darwance, 2025), namely the duplication of motifs without permission that can degrade the economic value and authenticity of the craftsmen's work. This creates an urgency to reformulate the existing Intellectual Property protection framework.

This problem creates a complex legal vacuum(Nauval Fadillah, 2023), if analyzed from the two legal systems that apply in Indonesia. From a positive legal perspective, Law Number 28 of 2014 concerning Copyright protects personal and original creations of a creator. However, this law is designed in the paradigm of the creator as the subject of human law. The birth of AI-generated "works" raises the fundamental question, Who is the creator? Is it the source code of AI, the AI user, or the AI itself? Then to what extent is the reasonable limit of artificial intelligence in exceeding ethical reasonableness? This ambiguity makes conventional copyright protection dull when dealing with the replication of motives by non-human entities(Bratajaya, 2024).

The following is the data of batik artisan motive centers recorded in the IPR center in Bangkalan Regency

Table 1

Number of Copyright Registrations for Batik Motifs in Bangkalan Regency



Source : IPR Center in Bangkalan Regency

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The 2025 data was recorded in August before the period ended, this condition directly threatens the business continuity of the 22 artisan batik motifs who have initiated to register their motifs at the Bangkalan IPR center, their efforts to comply with the positive legal system will be in vain if the system itself has not optimally protected them from the threat of new technology.

On the other hand, from the perspective of Islamic law, Islamic law strongly protects one's work and hard work from unfair exploitation (Ismatul Aula, Rina Widayanti, 2024). In the Fiqh of Muamalah (Islamic transaction law), the protection of property rights (hifz al-mal), including intellectual property rights, is one of the five main purposes of sharia (maqashid asy-shari'ah). Principles such as the prohibition of taking the rights of others without permission (ghasab), the necessity of being honest (amanah) in doing business, and justice ('adl) are the ethical and juridical foundations (Habibullah, 2024). The use of AI to imitate or duplicate batik motifs without rights can be analogous to a form of violation of these principles(Roslia Puspita, 2024). Therefore, it is important to explore how Islamic law with its conceptual apparatus can provide ethical answers and solutions to these modern problems, which may not be fully reached by positive law alone.

Therefore, this study aims to analyze in depth the effectiveness and relevance of Madura Batik copyright protection in Bangkalan Regency in facing the threat of motif replication by AI. Using a juridical-normative approach, this study will dissect the weaknesses in Indonesia's positive law and explore the principles in Islamic law to formulate a comprehensive and adaptive legal protection framework. The urgency of this research lies in the need to provide legal certainty for batik artisans, maintain the sustainability of cultural heritage, and ensure that technological innovation goes hand in hand with the protection of the fundamental rights of traditional creators.

LITERATURE REVIEW

A. Copyright and Traditional Cultural Expression

The intellectual property system in Indonesia, through Law No. 28 of 2014 concerning copyright, has built a protection ecosystem for artworks such as batik. This framework comprehensively accommodates two types of works, namely new motifs that are original protected through copyright inherent to the individual creator, while the heritage of hereditary motifs is protected as traditional cultural expressions (NRE) whose ownership is held by the state. In theory, this ecosystem forms a defensive fortress to maintain the authenticity and economic value of batik from conventional iteration practices.

However, this bastion of legal defense now faces the threat of fundamental disruption from artificial intelligence (AI) technology. Unlike human imitators, AI is not just copying, but has the ability to learn, analyze, and replicate thousands of batik motifs to then generate new works in a similar style in a short time. It is this ability to generate that creates a void of hukym, because it undermines the most basic assumptions that underpin the Copyright Law.

This is in line with research(Nauval Fadillah, 2023), works created by AI have not been explicitly regulated in the Copyright Law, which leads to a legal vacuum. This will lead to a deep debate about who should be recognized as the creator (AI, programmer or user), to how to ensure that AI-generated works do not infringe on existing copyrights. This legal vacuum is causing uncertainty that will become a serious problem in the future as AI advances in producing works of art resembling human creations.

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This legal vacuum is manifested in several crucial issues:

a. Authorship Issue: The Copyright Law states that the "Creator" is a living being. The law becomes stuttering in determining who makes the new batik motif that is very similar to the Madura style. Is AI itself a non-human entity, a user who gives commands, or an AI programmer? The ownership status of the work becomes unclear due to this ambiguity.
b. Infringement Issue: Who should be held legally liable if AI replicates batik motifs that have been registered as copyright? The current legal system prosecutes the perpetrators, i.e. individuals or legal entities, not technology.
c. Enforcement Issues: Conventional law enforcement mechanisms are ineffective due to the number and speed of AI replication. A slow litigation process will not be able to catch up with AI replication work in a borderless digital world.

Therefore, the analyst's focus is no longer on how to protect NRE from individual claims, but on how the entire IPR system can adapt to deal with a technology that operates outside the current legal paradigm.

B. Characteristics of Madura Batik as a Copyright Object

Madura batik is one of the coastal batik heritage that highlights its uniqueness with the use of striking colors(Suminto, 2015). And it can be classified as a copyright object because it has its main characteristic is in contrasting color combinations that give the appearance of bright colors such as, red, yellow, green and blue. In addition, images of flowers, leaves, birds or fish are depicted simply but with expression. All of these characteristics, both colors and motifs, make Madura batik easier to recognize and very different from other batik.

According to (Rachma & Amrullah, 2024), Madura batik has a philosophical meaning that is closely related to the cultural identity of the surrounding community. This batik also has aesthetic value as well as functions as a cultural symbol. With its uniqueness reflected in its colors and motifs, it becomes a valuable cultural heritage, as well as playing an important role as the main source of income for batik artisans in Bangkalan and its surroundings.

At this moment, according to the copyright law, exclusive rights are automatically attached to the work without the need for registration. Thus, each piece of Madura deaf batik cloth is inherently an original copyright object, vesting moral and economic rights to batik as its creation.

C. Artificial Intelligence (AI)

The protection of IPR for Madura batik is not only aimed at protecting works of art from imitators, but has the purpose of maintaining the authenticity of cultural heritage so that it is eroded by modernization. According to Diah Imaningrum in e-journal.unair.ac.id (Susanti, 2022), l The protection of IPR often makes local products vulnerable to commercialization by irresponsible parties, which can then reduce their historical and artistic value.

The presence of AI technology and other digital tools allows motif replication to be done easily and quickly ((Peng & Yu, 2025). Therefore, the active role of the Bangkalan government is very much needed to facilitate IPR registration and provide legal education to craftsmen, so that the authenticity of Madura batik is maintained and at the same time the craftsmen can benefit their finances.

D. Protection Framework in Positive Law

The primary legal protection framework for intellectual works in Indonesia is Law Number 28 of 2014 concerning Copyright, which is a positive legal foundation intended to

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provide certainty and legal protection for creators and intellectual works. Philosophically, this law recognizes that copyright is a strategic intellectual property that must be protected to help the progress and prosperity of the country.

The main principle embraced by this Law is the declarative principle, The declarative principle states that copyright arises automatically when the work is realized in real form, is the main basis of this law. This shows that batik makers do not need to register their new motifs to get protection because these rights have existed since the motif was completed. Registration at the Directorate General of Intellectual Property (DJKI) functions more as evidence in the event of a dispute in the future.

According to Law No. 28 of 2014, creators have two types of exclusive rights: Moral Rights: Eternal rights granted to creators, including the right to name their work and the right to reject changes that damage their reputation or honor. This right is non-transferable as long as the creator is alive. Economic Rights: The right to obtain economic benefits for the work, such as the right to reproduce, distribute, adapt, and publish the work. This right is most vulnerable to infringement, especially in the digital age.

Specifically, this law recognizes batik as one of the protected works in the category of fine arts. This recognition gives artisans a clear legal basis to demand their rights. Nonetheless, the main premise of this legal construction is that the subject is an identifiable legal entity or individual. When the legal system deals with non-human entities such as artificial intelligence, which was never anticipated when these laws were made, this assumption is a critical weak point.

E. Protection Framework in Islamic Law

In the view of Islamic law, copyright is part of property rights (al-milk), which must be respected and protected. Copyright is the product of thought, innovation, and skill that has value and can generate economic benefits. Therefore, copyright is seen as a property (mall) that has a property value and should not be taken or used without the owner's permission

In contemporary fatwas, for example the fatwa of the Indonesian Ulema Council (MUI) No.1 of 2003 concerning copyright (Roslia Puspita, 2024), it is stated that copyright is a protected right and the law is the same as property rights. Therefore, copyright infringement in Islam is seen as an act of property rights infringement that has a sinful impact, as well as can cause positive moral and legal sanctions(Roslia Puspita, 2024).

The Islamic legal framework provides a solid ethical and juridical foundation to protect it through also with the maqasid sharia approach. This concept refers to the noble goals or "soul" of the sharia, which are the basis for the establishment of laws to answer the challenges of the times, including those brought about by technology. Maqāṣid al-Syarī'ah not only provides a reason for protecting copyright, but also provides a moral framework that can be adjusted. As a foundation for making adaptive laws to deal with technological disruptions, ensuring that innovations such as artificial intelligence do not exploit individual rights, and upholding the principles of common good and justice.

Thus, the study of Islamic legal theory is able to provide a normative basis for maintaining copyright, including the copyright of Madura batik. The form of the responsibility section is to protect individual rights and preserve community traditions. This can be a positive legal complement in dealing with problems arising from technology such as artificial intelligence.

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RESEARCH METHODS

This study uses a qualitative approach with a juridical-empirical approach that combines the analysis of legal norms (Law dan Fatwa) with data from the field (interviews). And research is carried out through several stages as follows:

a. Identification of the urgency of protecting the intellectual property rights of Madura batik
   The researcher examines the importance of copyright protection for Madura batik motifs by obtaining data through literature studies and supported by secondary data from the IPR center
b. Analysis of positive legal regulations and Islamic law related to IPR protection
   The researcher analyzed the provisions in Law Number 28 of 2014 concerning ak cipta, as well as the principles of sharia maqasid that are relevant to protection in the era of artificial intelligence.
c. Identify practices and challenges in the field
   The researcher will explore how the implementation of batik IPR registration in Bangkalan Regency, including the low participation of artisans.
d. Comparative analysis of protection effectiveness
   The researcher compares how positive law and Islamic law provide the basis for the protection of batik's IPR, this is done to evaluate the effectiveness of protection against batik motifs in the era of artificial intelligence.

The research location was carried out in the city of Bangkalan whose focus point was on batik artisans in the city of Bangkalan, the Bangkalan Micro Business and Trade Cooperative Office and the Bangkalan IPR Center.The source of the researcher's data was obtained as follows:

a. Primary data: collected through interviews with batik artisans, the government in charge of IPR, and serta akademisi hukum.
b. Secondary data: obtained through literature studies which include laws and regulations, books, scientific journals, research articles, and official documents regarding IPR and legal policies.

Data collection techniques include the following:

a. Interview
   In this study, the researcher will conduct interviews with batik artisans, government officials in charge of IPR, and legal academics to obtain information about the protection of IPR of Madura batik.
b. Literature studies
   This study was conducted by examining laws and regulations, literature, journals, and previous research that is relevant to the research theme.
c. Documentation
   Documentation is carried out by collecting official data and documentation related to IPR registration, including statistical data from the Bangkalan IPR center

In this study, data will be analyzed using qualitative descriptive analysis to provide a systematic, factual and accurate picture of the copyright protection of Madura batik in the

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perspective of positive law and Islamic law in facing the era of artificial intelligence (AI). Researchers will compare findings in the field with relevant theories. Conclusions will be drawn to answer the research question, namely how relevant is positive law and Islamic law in providing protection for Madura batik motifs in the AI era. This analysis will also identify potential legal conflicts and formulate policy recommendations.

RESULTS AND DISCUSSION

A. The protection conditions of intellectual property of Madura batik in Bangkalan City

In the midst of the richness of Madura Batik motifs is hidden a paradox in the protection of Intellectual Property Rights (IPR). Artisans in Bangkalan are actually aware of the existence of legal protection mechanisms, but this understanding is defeated by deeply rooted communal norms. This reveals that the local batik world operates under unwritten rules or commonly called pakem. This is stated by Informant 1 as follows *"All batik makers here have only one hand: follow the traditional pakem. That's all that has been our main guideline so far."*

With this statement, it can be identified that the ownership of the motive is seen as a common inheritance and not an exclusive or individual right. This awareness becomes more complex for informant 2 who has tried to register his work but his efforts always meet with a dead end and create frustration and confusion with the existing system. The low registration of IPR is not caused by reluctance or cost factors but by an awareness of patent rights from ancestors built by systems and cultures. Informant 2's experience became clear evidence when his efforts were rejected by government agencies for surprising reasons. Here is the statement:

"You can't. If the motive cannot be patented... Because it will eliminate the characteristics of the region, especially the Bangkalan area."

This policy, which initially aimed to protect the batik ecosystem, actually hinders protection for individual creators. This rejection is in line with the communal view that if one motif is patented, other craftsmen will lose their source of livelihood.

This dilemmatic condition is justified by the local government which admits that the rigid application of IPR law will actually have the potential to trigger horizontal conflicts between artisans. These craftsmen prioritized common norms over formal law. Because of this, craftsmen have considered it normal and it is not a problem and do not even give a reprimand to competitors. This was expressed by informna 1 as follows: *"I have just innovated with Madura batik, the design has been imitated. Quality is the difference."* This failure to protect IPR reflects the fragility of the legal system as a whole. In substance, Indonesia has an adequate Copyright Law. However, the enforcement structure, in this case, local government institutions actually function as barriers, not facilitators.

This obstacle is not just an administrative problem but a fundamental clash of legal principles. An IPR law expert has analyzed that the declarative-constitutive legal regime in Indonesia requires clarity on specific legal subjects, something that is difficult to fulfill by the

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communal structure of Madura batik. This was confirmed by informant 3 as follows: *"Our laws are indeed rigid, even though Madura's work is collective. Without flexible regulations, this work automatically becomes public domain that has no legal protection."*

This analysis reinforces the fact that the incompatibility between the formal requirements of the law and the sociological reality of society is at the root of the failure of these protections. The dominance of the communal legal culture is a determining factor where the idea of individual ownership is considered foreign and contrary to the spirit of togetherness. So far, protection has been carried out informally through reputation and quality of workmanship. Thus, the main differentiator in the batik design of each craftsman is not the motif, but the skill of the batik hand. This is stated by Informna 1 as follows: *"The results are good and whether or not it depends on the hands of the batik itself."*

This traditional protection system that relies on the reputation and uniqueness of hand touch is now on the brink of crisis. The emergence of technologies such as artificial intelligence (AI) and digital printing threatens to break down these informal defenses. When motifs can be perfectly imitated and mass-produced at a low cost, the value of the craftsmanship of the human hand will be degraded (Satria & Putra, 2025). Thus, the failure of the formal legal system to adapt is no longer just a bureaucratic problem, but has turned into an existential threat to the economic and intellectual sustainability of written batik artisans in Bangkalan. In fiqh muamalah, copyright is recognized as a form of mal property that must be protected (hifz al-mal). This has inadvertently ignored the creator's economic rights to his work, which is prohibited in Islam. Islamic law requires a system of individual property rights to protect property rights while preventing harmful monopolies.

It can be concluded that IPR protection for Bangkalan batik artisans is ineffective because it is hindered by communal norms and government policies. As a result, their reputation-based informal protection systems now face serious threats from modern technologies, AI, and digital print, which could threaten the economic future of artisans.

B. Identification of Artificial Intelligence (AI) Threats to Madura Batik IPR

In the midst of the creative process of batik artisans in Bangkalan, there is an invisible new threat lurking such as the existence of Artificial Intelligence (AI). Unlike manual imitation, AI is able to absorb thousands of batik motifs from the internet without permission, then create derivative works that are very similar in an instant. However, this massive threat has not been felt at the grassroots level. The artisans are still focused on traditional production and consider advanced technology to have not touched them. Informant 1 stated: *"Meanwhile, it seems that there is still no such thing in Bangkalan. It's still manual, but it still doesn't use such advanced technology."*

Even when the concept of imitation by AI is explained by the author in depth, the response that emerges is actually a surprising permissive attitude as expressed by informant 2: *"When it comes to imitating motives, I don't have a problem. In Madura, it's normal, we are free to use any design without anyone prohibiting it or feeling disadvantaged."* This ignorant attitude towards AI threats

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turns out to be firmly rooted in communal culture and imitation practices that have been considered natural in Madura. Plagiarism of motives between craftsmen is not seen as theft, but part of normal business dynamics.

This philosophy is reinforced by the statement from informant 1: *"In the Madura Batik tradition, there is no concept of copyright. So, anyone can and is free to copy the existing design."*
Ironically, this communal culture is also supported by local government policies. An artisan's attempt to register Intellectual Property Rights (IPR) for his motive was rejected by the relevant agency on the grounds that the motive is a collective characteristic that should not be monopolized. This was stated by informant 2: *"From the past, when applying in the province, it cannot be patented if the motive. Because it will remove the characteristics of the area... if it is changed to a personal name."*

This permissive culture is the perfect loophole for exploitation by AI on a global scale. If imitating a neighbor's motives is considered commonplace, then the retrieval of motif data by machines around the world becomes an inevitable consequence. The biggest danger is the devaluation of value and unfair competition. AI can generate thousands of derivative designs at a very low cost, which is then mass-printed and potentially destroys the original written batik market that has high art value. Ultimately, artisans will be forced to produce faster and cheaper, sacrificing quality in order to survive amid the onslaught of AI derivatives products. In the end, Madura Batik artisans are in a legally vulnerable position. Without recognition of individual ownership rights for the motives they create, they have no evidence to counter digital replication by AI.

This absence of evidence is explained more technically by legal experts as a loss of legal standing for craftsmen. According to him, without proof of legal ownership, the state will result in any amount of economic loss due to the actions of AI that cannot be processed in court. This was conveyed by informant 3 as follows: *"The main problem is not the sophistication of AI, but we do not have legal standing. Since the unregistered motive is considered public property, AI is free to retrieve data without being considered legally theft."* This view confirms that the danger of AI is exponential not only because of its technology but also because of the weak bargaining position of artisans in the face of positive law. How could they possibly sue a global entity for theft of motives, if their own local system did not recognize the existence of ownership. The absence of this law enforcement mechanism. When asked about sanctions for local impersonators, informant 2 only responded:*"No. It didn't stop there. Not here."*

The combination of a communal culture that rejects individual IPR and the government's failure to facilitate protection makes this cultural heritage an easy target for global technological exploitation. In Islamic law, the use of other people's works or thoughts without permission and without providing fair compensation can be analogized to an act of infringement of property rights (ghasab).

It can be concluded that Bangkalan batik artisans are particularly vulnerable to AI exploitation due to a permissive communal culture of imitation and local policies that reject individual IPR. Without legal protection, they are powerless against mass replication and devaluation of batik value by AI-derived products in the global market.

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C. Analysis of the weaknesses of the current IPR legal policy

The legal framework of Intellectual Property Rights (IPR) in Indonesia has been paralyzed when faced with new threats from generative artificial intelligence (AI) (Aldo H. B. Wendur, 2024) An in-depth analysis found that existing laws designed in the AI era have completely failed to protect the authentic motifs of Madura Batik from massive digital replication. Rules built on the assumption of a human creator and clear geographical boundaries are now obsolete, creating a legal vacuum and putting artisans in a very vulnerable position.

The most fundamental weakness lies in the Copyright Law, which only recognizes humans as Creators (Wasiska *et al.*, 2025) This creates legal confusion if AI produces motifs that mimic the typical Madurese style and only the developers and users or the AI itself will be responsible.

The vacuum of this norm was conveyed by experts who said that the Copyright Law is currently experiencing a regulatory lag. He highlighted that the definition of the Creator in Article 1 number 1 of Law No. 28 of 2014 is very anthropocentric and human-centered and fails to reach non-human entities. This was conveyed by informant 3 as follows *"Our law runs conventional and only recognizes human works. When AI makes something, the human element is lost and there is no article that regulates it. This is the biggest blind spot in the current IPR system."*

The expert's statement validates that Indonesia's current positive law does not have an instrument to filter or crack down on the duplication of motives carried out by computer algorithms. On the other hand, the standard of originality has become blurred because AI is capable of generating countless derivative works. This attitude of local wisdom is exploited by technology that can flood the market and degrade the value of human handiwork. Ironically, the communal philosophy of the artisans has actually backfired. As revealed by informant 2 as follows: *"The government's rules feel useless. For us there is no copyright term, so people are free to copy."*

Communal protection efforts through Traditional Cultural Expressions and Geographical Indications have also proven ineffective. NRE protection has become paralyzed due to the absence of formal institutions that accommodate artisans to enforce their rights. *"We as craftsmen have also not formed a community or a structured association for batik artists"*

The expression of informant 2 above highlights the absence of a legal entity that can act. Meanwhile, the Geographical Indication only protects the name "Batik Madura" not the motif. This means that other parties can use AI to imitate their visual style and then mass-produce it and sell it without the label "Madura Batik" so that they can profit from cultural heritage without violating the law.

In the end, the Madura Batik artisans are trapped in a tragic dilemma. They are faced with an individualistic modern IPR system that they consider to be damaging to their creative ecosystem. Informant 2 emphatically stated, *"If the motive cannot be patented, ma'am... Because it will remove the characteristics of the Bangkalan area."* The statement of informant 2 confirms how the

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system that is supposed to protect actually clashes with their cultural values. Without adaptive policy intervention, this priceless heritage is at risk of being exploited by non-human entities while the custodians of their traditions are left without legal weapons to defend themselves.

It can be concluded that Indonesia's IPR law is inadequate to prevent the exploitation of Madura Batik by AI due to the weakness of the Copyright Law, the ineffectiveness of communal protection and the clash with the collective values of artisans. This creates a legal vacuum that makes cultural heritage vulnerable to being replicated without protection.

D. The concept of reformulation of legal policies for the protection of IPR

The current Intellectual Property Rights (IPR) Law is not able to protect the communal wealth of Madura Batik from modern technological threats, especially replication by artificial intelligence (AI). This problem is complicated by the views of the craftsmen themselves who are communal and consider imitation to be natural. As revealed by an informant 2 *"So it doesn't have to be because this is mine and then I have the copyright and then other people can't imitate it, there is no such thing if it is made of Madura batik."* This traditional attitude, although firmly rooted in culture, has become a dangerous loophole that can be exploited en masse in this digital era, so a new legal protection model is needed.

The solution offered is to change the total paradigm of protection from prohibiting imitation to regulating utilization for the common good. This is realized through two main steps: first, revising the Copyright Law to regulate the status of AI-generated works. Second, forming a special protection system in the form of a digital database of traditional Madura batik motifs. This database managed by the local government will serve as proof of communal ownership. Anyone who wants to use the motifs of this database for commercial purposes is included as AI training data and is required through a licensing scheme aimed at profit sharing with the artisan community.

This reformulation also demands a change in the structural role of local governments (Pemda) which has often been considered to be only on the side of big businessmen. This is supported by the statement from informant 2, which states: *"... The batik craftsmen who are partnered with are the big ones, the ones who have a name, that's all."* To rebuild the trust of craftsmen in the local government, it is proposed to act as a trustee for the craftsmen. His new role is to manage digital databases so that he can become a negotiator in the licensing scheme and distribute the results transparently for the empowerment of the artisan community in Bangkalan.

In the end, this policy change is not just a technical response but a partisan one for justice and the preservation of cultural heritage. A massive digital literacy program is also needed because many artisans are not yet aware of the risks of AI. This is supported by the expression of informant 2 which states:*"If it's a motive, maybe I don't have a problem."* bridging the communal spirit and the need for economic protection, this model ensures that technological innovation does not sacrifice the well-being of the artisans who have nurtured this culture for centuries.

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It can be concluded that the Protection of Madura Batik from AI demands a fundamental change in the law from an individual to a communal basis. The trick is to revise the Copyright Law to accommodate AI works and build *database* licensed digital motifs managed by the local government with a profit-sharing system. This success requires the government to act as a fair trustee and craftsmen equipped with digital literacy to understand the threat while protecting their communal economic value.

Discussion

A. The protection conditions of intellectual property of Madura batik in Bangkalan City

The results of this study revealed a negative correlation related to the formal IPR Law that failed to protect Bangkalan batik artisans because it was contrary to communal norms that considered the motive of common ownership. As a result, their informal protection systems are now threatened by AI technology and digital printing that erode the uniqueness of handicrafts and create an economic crisis for artisans.

Thus, it can be concluded that the protection of IPR for batik artisans in Bangkalan experiences a fundamental paradox where formal law is unable to operate due to strong communal norms that view motive as a shared heritage. This failure is exacerbated by the role of government agencies that actually hinder the registration of individual rights on the grounds of preserving regional characteristics, forcing artisans to rely on an informal protection system based on reputation and quality of handicrafts. But these traditional defense systems now face an existential threat from technological advances such as AI and digital printing that have the potential to deprive the unique value of handicrafts and put the economic and intellectual future of artisans in serious crisis.

The results of this study are in line with the research ((Wheeler, 20023) who found that the modern IPR system is basically not optimal to protect cultural heritage that is collective, dynamic and hereditary.

Identification of artificial intelligence (AI) threats to the IPR of Madura batik

The results of this study concluded that there is a negative correlation because the vulnerability of Bangkalan batik artisans to AI exploitation is actually sourced from internal factors. Permissive communal culture of imitation and regional policies that reject individual IPR ironically create an ideal legal loophole, leaving them powerless against the replication of work by AI on a global scale.

It can be concluded that batik artisans in Bangkalan face the threat of digital exploitation by Artificial Intelligence (AI) in very vulnerable conditions. This vulnerability is not only caused by ignorance of technology but is also rooted in a communal culture that is permissive to imitation of motives and reinforced by local government policies that reject the registration of individual IPRs in order to preserve regional characteristics. This collective attitude of viewing motives as shared property and the absence of local legal sanction mechanisms ironically creates a perfect security loophole for AI to replicate and devalue such cultural heritage on a global scale. As a result, without a legal basis to claim this ownership, artisans have no power to fight

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the potential destruction of the market and the value of written batik art by AI-derived products that can be mass-produced.

This research is in line with (Couldry & Mejias, 2023) which argues that big tech companies are currently engaging in a new form of colonization by extracting data from everyday life as raw materials.

B. Analysis of the weaknesses of the current IPR legal policy

The results of this study show a negative correlation because the vulnerability of Bangkalan batik artisans to exploitation is actually sourced from internal factors. Permissive communal culture of imitation and regional policies that indirectly reject individual IPR have created an ideal legal loophole that renders them powerless against the replication of work by AI on a global scale.

Based on this analysis, it can be concluded that Indonesia's current IPR legal framework is inadequate to protect Madura Batik from the threat of exploitation carried out by AI, thus creating a dangerous legal vacuum. These systemic failures include the Copyright Act that does not recognize non-human entities as creators as well as communal protection mechanisms such as Traditional Cultural Expressions and Geographical Indications that have proven ineffective due to the absence of representative institutions and the scope of protection limited to names and not motives. This condition is exacerbated by the clash between the individualistic IPR system and the communal philosophy of artisans who reject private ownership on motives. As a result, artisans are stuck in a defenseless position where their cultural heritage is an easy target for massive digital replication by AI without any legal tools capable of preventing it.

This research is in line with (October *et al.*, 2025) who argue that communal protection mechanisms that exist on paper often fail in practice due to a lack of strong institutional representation or because their protection scope is too narrow to counter modern threats such as digital replication.

C. The Concept of Reformulation of Legal Policies for IPR Protection

Based on the results of the study, a negative correlation was found due to the existence of a void in communal copyright law and the low digital literacy of artisans as the main gap in the exploitation of Madura Batik motifs by AI. This proves that the individual protection model is obsolete, so communal solutions in the digital era are urgent.

It can be concluded that to protect Madura Batik from the exploitation of AI, a legal reformulation is needed that moves from individual prohibition to communal utilization management. This solution rests on two main pillars, namely the revision of the Copyright Law to accommodate AI works and the establishment of a digital motive database managed by the Regional Government through a profit-sharing license scheme. This model demands a change in the role of the government to a transparent trustee to rebuild trust and ensure technological benefits are distributed equitably. The success of this model depends on strong policy interventions in digital literacy programs that aim to make artisans aware of new threats so that the communal spirit can be aligned with economic protection in this digital era.

This research is in line with (Island) *et al.*, 2022) who view cultural heritage not as private property or free commodities but as a shared asset that needs to be managed collectively. Your proposal to place Local Government as a trustee is a practical application of the theory of

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resource management in which an entity is tasked with protecting assets for the benefit of the community.

CONCLUSION

A. Conclusions and Suggestions

This study examines the threat of exploitation of Madura Batik motifs by Artificial Intelligence (AI) in the midst of a legal vacuum caused by the clash between the modern individualistic Intellectual Property Rights (IPR) system and the communal culture of artisans in Bangkalan. The results of the study show that the Copyright Law No. 28 of 2014 is not effective in protecting batik because it only recognizes humans as the subject of creators and does not accommodate joint ownership. This vulnerability is exacerbated by the permissive culture of artisans against imitation of motives that are considered reasonable and local government policies that actually hinder the registration of individual IPR in order to maintain collective characteristics. As a solution, this research formulated a new legal protection model that shifted from individual prohibition to communal utilization management by recommending a revision of the Copyright Law for AI works and the establishment of a government-managed digital motive database through a profit-sharing licensing scheme.

Although it provides a comprehensive solution model, this study has limitations due to its scope focused on artisans in Bangkalan Regency, so its generalization to other regions requires further study. In addition, the proposed database and licensing model is still conceptual and has not tested its technical and financial feasibility in depth. Therefore, further research is recommended to extend the analysis to other batik centers to validate similar findings. Future research may also focus on designing concrete technical prototypes and business models for the implementation of communal databases which includes formulating draft policies that are ready to be advocated to the government. There is a need for further deepening of how the principles of Islamic law can be practically integrated into licensing and profit-sharing mechanisms to enrich a fair protection framework for artisans in the city of Bangkalan.

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