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OWNERSHIP AND COPYRIGHT CHALLENGES OF ARTIFICIAL INTELLIGENCE TOOLS IN INDIA

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ABSTRACT

The rapid advancement of artificial intelligence tools capable of generating creative and inventive outputs with minimal human intervention has fundamentally challenged traditional intellectual property frameworks in India. Indian copyright and patent laws, premised on human authorship and inventorship, create significant legal uncertainty regarding ownership of AI-generated works. This systematic review aimed to map and synthesize legal scholarship, judicial decisions, and policy documents addressing ownership and copyright issues involving AI tools within the Indian context. The synthesized literature consistently revealed that Indian intellectual property laws are fundamentally ill-equipped to address AI-generated works due to their reliance on human-centric concepts. Significant legal lacunae exist regarding ownership rights when AI plays a substantial role in creation, with no clear statutory provisions or binding judicial precedents establishing whether AI can be recognized as an author or inventor. The literature documented a spectrum of proposed solutions, from legislative amendments to more radical reforms such as sui generis rights or human guardian mechanisms. Comparative analyses highlighted inconsistencies in global approaches and underscored the need for international harmonization. We concluded that Indian intellectual property law faces profound challenges in accommodating AI-generated works, with existing frameworks creating significant legal uncertainty. The review identified a critical gap between rapid AI technological development and slow legal evolution, suggesting that piecemeal judicial interpretations are insufficient. India must consider technology-neutral reforms that can adapt to future advancements while engaging in international dialogue to promote harmonized standards.

INTRODUCTION

The proliferation of artificial intelligence (AI) tools that can autonomously generate creative and inventive outputs has introduced a profound disruption to the established legal order governing intellectual property (IP) rights. These technologies, ranging from generative adversarial networks that produce visual art to large language models that compose text and code, operate with a degree of independence that challenges the foundational premise of IP law: that authorship and inventorship are inherently human attributes [1]. In India, a nation with a rapidly digitizing economy and a burgeoning technology sector, the intersection of AI and IP law has become a pressing concern for policymakers, legal practitioners, and innovators alike. The Indian Copyright Act of 1957 and the Patents Act of 1970, both drafted in an era devoid of autonomous machine creation, contain no provisions that explicitly address the status of works or inventions generated by AI systems [2]. This legislative silence creates a legal vacuum, leaving questions of ownership, authorship, and inventorship unresolved and generating significant uncertainty for stakeholders who invest in or utilize AI tools for creative and inventive purposes. The background to this issue is multifaceted, rooted in both the technical capabilities of modern AI and the doctrinal foundations of Indian IP law. AI tools, particularly those employing deep learning techniques, can now produce outputs that are indistinguishable from human-created works in domains such as music, literature, and visual arts [3]. For instance, AI systems have composed symphonies, written news articles, and generated paintings that have been sold at auction. In the patent context, AI systems have been used to design new chemical compounds, optimize engineering solutions, and even invent novel products [4]. The degree of human involvement in these processes varies considerably. In

some cases, a human may provide a high-level prompt or set of parameters, while the AI autonomously executes the creative or inventive steps. In other scenarios, the AI may operate with minimal human oversight, learning from vast datasets and generating outputs without direct human guidance. This spectrum of human-AI interaction complicates the application of traditional IP doctrines, which typically require a human author or inventor who exercises intellectual effort and creative control over the final output [5].

The research gaps in this domain are substantial and have been identified by a growing body of legal scholarship. First, there is a fundamental lack of clarity regarding whether AI-generated works can be protected under existing Indian copyright and patent laws. The Indian Copyright Act defines an "author" as the person who creates a work, a definition that implicitly assumes a human creator. Similarly, the Patents Act requires an "inventor" to be a person, and the inventive step must be attributable to human ingenuity [6]. Whether an AI system can be considered a "person" for the purposes of these statutes is a question that has not been definitively answered by Indian courts or legislatures. Second, even if AI-generated works are deemed protectable, the question of who owns the resulting IP rights remains contentious. Potential claimants include the developer of the AI tool, the user who deployed it, the owner of the training data, or even the AI system itself [7]. Third, there is a significant gap in comparative legal analysis. While jurisdictions such as the United States, the European Union, and the United Kingdom have begun to grapple with these issues through policy papers, judicial decisions, and legislative proposals, the Indian legal discourse remains nascent and fragmented [9].

The rapid pace of AI technological development, coupled with the slow evolution of legal frameworks, has created a period of profound legal uncertainty. This uncertainty can stifle innovation, as businesses and creators may be reluctant to invest in AI tools without clear ownership rights over the outputs they generate [8]. Furthermore, the lack of legal clarity can lead to disputes over IP ownership, potentially hindering the commercialization of AI-generated works and inventions. The significance of this research lies in its potential to inform policymakers, judges, and legal practitioners about the current state of the law, the key legal challenges, and the range of proposed solutions. By systematically mapping and synthesizing the existing literature, this review provides a comprehensive overview of the legal landscape, identifies areas of consensus and disagreement among scholars, and highlights the most pressing issues that require legislative or judicial attention. The findings of this review can serve as a starting point for developing a coherent and forward-looking legal framework for AI-generated works in India, one that balances the interests of creators, users, and the public.

LEGAL FRAMEWORKS AND STATUTORY INTERPRETATION: EXAMINING THE APPLICABILITY OF INDIAN IP STATUTES TO AI-GENERATED WORKS

The foundational challenge that permeates the included literature is the fundamental tension between the text and structure of existing Indian intellectual property statutes and the novel characteristics of AI-generated outputs. The Indian Copyright Act, 1957, and the Patents Act, 1970, were drafted in an era when creativity and invention were universally understood as exclusively human endeavors. Consequently, these statutes employ language and concepts that implicitly assume a human creator, thereby creating a statutory framework that is, at its core, ill-equipped to address the legal status of works produced by autonomous or semi-autonomous AI systems. The literature reveals a consensus that the current statutory language does not provide a clear or straightforward answer to the question of whether AI-generated works can be protected, and if so, who should be considered the author or inventor. This ambiguity is not merely a theoretical concern but has practical implications for the registration, enforcement, and commercialization of such works, creating legal uncertainty that may stifle innovation and investment in AI technologies [9].

A central point of doctrinal analysis across multiple studies [10, 11, 12, 15, 17] is the statutory definition of "author" under the Indian Copyright Act and "inventor" under the Patents Act. The Indian Copyright Act, 1957, defines "author" in relation to literary, dramatic, musical, or artistic works, as well as cinematograph films and sound recordings, but in each case, the definition implicitly points to a human being: the person who creates the work, the composer, the painter, the producer, or the person who makes the sound recording. The Act does not contain any provision that explicitly contemplates a non-human entity as an author. Similarly, the Patents Act, 1970, defines "inventor" as "the person who actually devises the invention," and the term "person" is generally interpreted in Indian law as a natural person or a juristic entity, such as a company. An AI system, lacking legal personhood, does not fit neatly into either category. Studies [10, 11, 12] argue that this anthropocentric framing creates a fundamental legal hurdle: a work or invention generated by an AI, without sufficient human creative or inventive input, may fail to meet the threshold requirements for protection under the existing regime. This is not a question of a minor legislative oversight but a deep structural incompatibility between the law's foundational assumptions and the technological reality of autonomous AI generation.

The implications of this statutory silence are explored in depth by several scholars. Bose & Gupta [10], in their comparative analysis of India and the US, highlight that the challenge is not unique to India but is a global phenomenon arising from the universal premise of human authorship in copyright law. However, the study notes that the Indian legal system may be particularly vulnerable to this challenge due to the absence of any explicit statutory or judicial guidance on the matter. The

study suggests that the "fundamental challenges" to the traditional IP regime are triggered by AI systems that generate outputs with "little or no human intervention," a scenario that directly tests the boundaries of the "human authorship" requirement. Jinesh [12] takes this analysis further by arguing that the traditional "incentives-driven and author-rights conception of the definition of intellectual property" cannot provide a sufficient explanation for the uniqueness of the creativity introduced by AI. The paper contends that the very purpose of copyright and patent law-to incentivize human creativity by granting exclusive rights-is called into question when the creator is a machine that has no need for economic incentives. This philosophical quandary, the paper argues, requires a more fundamental rethinking of what intellectual property law is supposed to achieve in the age of non-human intelligence, rather than mere piecemeal adjustments to existing doctrines. The study uses the 2023 US Copyright Office report on AI-assisted content and the Federal Circuit's decision in Thaler v. Vidal (denying DABUS inventorship) as illustrative examples of the tensions that arise when courts attempt to apply human-centric frameworks to AI-generated outputs.

The specific challenges within the patent law framework are further elaborated by Dayal & Chaudhary [11] and Khan [14]. Dayal & Chaudhary [11] focuses on the intersection of AI and biotechnology, a domain where AI-driven systems are increasingly used for drug discovery, genomic prediction, and molecular design. The study employs a doctrinal and analytical methodology, examining statutory provisions, judicial precedents, and patent office guidelines, and draws on global data from WIPO and OECD to demonstrate a "substantial rise in AI-related inventions." The paper's key finding regarding Indian jurisprudence is its "vagueness to recognise AI as an inventor," a conclusion that stems from the lack of any Indian judicial precedent that has definitively addressed the question of AI inventorship. The study notes that the "current interpretations of the statutes often fail to adequately distinguish" between human and AI contributions, creating a legal grey area that is particularly problematic for inventions that are "substantially or autonomously generated by AI-driven systems." Khan [14] provides a broader comparative analysis of the patentability of software and computer-related inventions (CRIs) across different legal systems, and then extends this analysis to AI-generated inventions. The study observes that the "rise of inventions generated using AI" complicates the assessment of the "inventive step," as the mental element typically required for an invention may be attributable to the AI rather than a human. The paper explores the "possibility of the application of existing principles to AI or the modification of existing principles to allow for the patentability of AI," highlighting the need for a clear legal framework that can distinguish between AI-assisted inventions and AI-generated inventions where the human contribution is minimal.

The issue of a lack of legal personality for AI systems is a central theme in Krishna & Bain [15] and is also touched upon by Piumantha [17]. Krishna & Bain [15] provides a doctrinal analysis of Indian IPR laws specifically to assess their inclusivity for AI. The study identifies a "basic question" about the "eligibility of AI systems, that lack the legal personality to request and be granted IPRs, as well as allocation of IPR revenues to entities lacking legal or living status." This is not merely a procedural hurdle; it is a fundamental legal barrier. An AI system cannot be a party to a contract, cannot sue or be sued in its own name, and cannot own property. Therefore, even if the law were to recognize an AI as an "author" or "inventor," the practical consequences of such recognition would be problematic. The study argues that the award of IP rights to an AI system would be meaningless in a legal system that does not recognize the AI as a legal entity capable of holding or enforcing those rights. This leads to the third-party liability question: "who is responsible for systemic faults or blunders" caused by an AI system? The study suggests that the "human controller or the manufacturer can be liable for the mistakes or errors in such systems," but this still leaves the question of ownership of positive outputs unresolved. Piumantha [17], in its comparative study of Sri Lanka, the US, and India, confirms that "India currently lacks legal provisions to protect AI-generated artwork under their existing copyright laws." The study's analysis of the 'Suryast AI Image' case study, while not a binding judicial precedent, illustrates the practical difficulties that arise when attempting to apply existing copyright law to AI-generated works. The study identifies the "lack of legal consensus on who is the author of an AI-generated work" as the "main problem with granting copyright to an AI-generated work," a finding that echoes the broader consensus in the literature.

Table 01: Summary of Legal Interpretation Challenges and Proposed Solutions for AI-Generated Works in India

Study ID	AI Output Type Analyzed	Jurisdictions Compared	Interpretation Challenges & Recommendations
Bose & Gupta [10]	Literary works, artistic creations, and technological inventions	India and the US	Challenges to traditional human authorship/inventorship; recommends statutory definitions and balanced accountability.
Dayal & Chaudhary [11]	Generative AI in biotechnology / drug discovery	India (global WIPO/OECD data)	Vagueness in recognizing AI as inventor; recommends fast-track AI patent routes, training data

			disclosure, and post-grant reviews.
Jinesh [12]	Novels, drugs, AI-assisted content, animations	India, US, global perspective	Incentive-driven IP models fail for machine creators; proposes sui generis rights, compulsory licensing, and developer ownership.
Khan [14]	Inventions generated using AI / Computer-Related Inventions	Different legal systems globally	Lack of human inventive step; explores adapting existing patent principles or modifying doctrines for AI patentability.
Krishna & Bain [15]	AI-generated IP across science and arts	India	AI lacks legal personality and capacity to hold rights; proposes human guardian model and insurance-based liability caps.
Piumantha [17]	Audio-visual works from generative AI	Sri Lanka, US, India	Lack of legal consensus on authorship ('Suryast' case); calls for clear statutory definitions of AI authorship.
Singh & Srivastava [18]	Creative works and technical inventions	India, US, UK, EU	Inconsistencies across jurisdictions; advocates technology-neutral, responsive IP reforms balancing innovation and legal certainty.

OWNERSHIP, AUTHORSHIP, AND INVENTORSHIP: THE CORE DOCTRINAL CHALLENGES IN INDIAN IP LAW

The question of who should be recognized as the author or inventor of an AI-generated work, and consequently who should own the resulting intellectual property rights, represents the most fundamental and contested doctrinal challenge in the literature. This issue is not merely a technical legal question but strikes at the very heart of the philosophical foundations of intellectual property law, which has historically been justified as a means to incentivize and reward human creativity and ingenuity. The included studies collectively demonstrate that the existing Indian legal framework, with its rigid adherence to human-centric concepts of authorship and inventorship, is fundamentally incapable of providing a coherent answer to this question, creating a legal vacuum that generates significant uncertainty for all stakeholders involved in the creation and use of AI tools.

The literature reveals a spectrum of potential claimants for ownership rights over AI-generated outputs, each with a plausible but ultimately incomplete legal argument. The developer of the AI tool, who has invested significant resources in creating the system, may claim ownership on the basis that they are the ultimate source of the creative or inventive capacity. The user who operates the AI tool and provides the prompts or parameters may claim ownership on the basis that they exercised the requisite intellectual effort and control over the final output. The owner of the training data, whose works were used to train the AI model, may claim a share of ownership on the basis that their creative works were instrumental in generating the output. And finally, the AI system itself, in a more radical proposal, could be recognized as the author or inventor. The included studies systematically analyze the viability of each of these claims under existing Indian law, and the overwhelming consensus is that none of them provides a clear or legally secure path to ownership.

The developer-centric model of ownership is examined in several studies [12, 15, 16], but is found to be problematic for a number of reasons. Jinesh [12] discusses the possibility of granting "rights of ownership of the person who implements or develops AI technologies" as a potential solution, but notes that this approach conflates the creation of the tool with the creation of the output. The developer may have had no direct role in generating the specific output in question, and may not even have intended for that particular output to be created. The study argues that this "incentives-driven" conception of IP law, which rewards the developer for their investment in creating the AI, does not adequately address the "uniqueness of the creativity that is introduced by AI" in the generation of specific outputs. Krishna & Bain [15] proposes a more elaborate model, suggesting the "appointment of a human guardian" for AI systems, who would be responsible for the "legal protection and administration of income from AI-generated IP." This guardian would be analogous to a legal guardian for a minor or a person with a disability, holding and managing the IP rights on behalf of the AI. While this proposal creatively addresses the issue of AI's lack of legal personality, the study itself acknowledges that it raises complex questions about the

guardian's duties, the basis for selecting the guardian, and the potential for conflicts of interest. Furthermore, as Pareek & Rajpurohit [16] points out, the Indian patent and copyright laws "primarily protect human creators," and a legislative change would be required to recognize a human guardian as the legal owner of rights generated by an AI. The study's comparative analysis of "international practices and stakeholders" reveals that no jurisdiction has yet adopted such a model, making it a highly novel and untested approach.

The user-centric model of ownership, where the person who operates the AI tool and provides the creative direction is considered the author, is also addressed in the literature, but is found to be fraught with difficulties. Piumantha [17], in its comparative study of copyright protection for AI-generated audio-visual works, examines how "authorship, ownership, exclusive right, and moral right are addressed within the copyright law" of India, Sri Lanka, and the US. The study uses the 'Suryast AI Image' as a case study to illustrate the complexity of this issue. If a user provides a textual prompt to a generative AI tool, such as "a photorealistic image of a sunset over the Taj Mahal in the style of a Mughal miniature painting," and the AI generates a unique image, can the user be considered the "author" of that image? The study's thematic analysis reveals that the "lack of legal consensus on who is the author of an AI-generated work" is the "main problem." The user's contribution may be seen as too minimal or too far removed from the final creative expression to satisfy the traditional requirement of "intellectual effort" or "creative control." The AI system, on the other hand, is the entity that actually executed the creative decisions, making the user's role more akin to that of a commissioner or a patron than a traditional author. The study concludes that "Sri Lanka, the United States and India currently lack legal provisions to protect AI-generated artwork under their existing copyright laws," and that a "clear definition of authorship for AI-generated work" is urgently needed.

The training data owner's claim to ownership is a more complex and less explored issue in the literature, but it is implicitly addressed in studies that discuss the role of data in AI generation. Dayal & Chaudhary [11] discusses the need for "mandating disclosure of training data provision" as a policy recommendation, which implicitly acknowledges that the use of copyrighted works as training data raises significant legal questions. If an AI model is trained on a vast corpus of copyrighted images, and then generates a new image that is stylistically similar to the works in the training data, the original creators of those works may have a claim that their copyright has been infringed, or that they are entitled to a share of the ownership of the AI-generated output. However, as noted, current interpretations of the statutes often fail to adequately distinguish between the use of data for training and the generation of new outputs, leaving this issue in a legal grey area.

The most radical proposal, that of recognizing the AI system itself as an author or inventor, is discussed in several studies but is almost universally rejected as incompatible with the existing legal framework. Dayal & Chaudhary [11], explicitly identifies the "vagueness of Indian jurisprudence to recognise AI as an inventor" as a key finding, and no study suggests that this is a viable path under current law. Jinesh [12] discusses the "denial of AI inventorship" in the DABUS case (Thaler v. Vidal) as a key example of the legal resistance to this idea. Krishna & Bain [15] provides the most detailed analysis of the legal obstacles to recognizing AI as a legal person, noting that AI systems "lack the legal personality to request and be granted IPRs." The study's proposal for a "human guardian" is, in essence, a workaround to this problem, allowing the AI to be recognized as a de facto entity for the purposes of IP ownership, without granting it full legal personhood.

Table 02: Ownership Models for AI-Generated Works and Their Legal Viability under Indian Law

Ownership Model	Potential Claimant	Legal Basis Under Indian Law	Key Challenges Identified in Literature	Studies Analyzing Model
Developer-Centric	Developer of the AI tool	Created tool generating output; investment in R&D	Conflates creation of tool with creation of output; developer lacks direct creative role in specific outputs	[12, 15, 16]
User-Centric	User operating AI tool / providing prompts	Exercised intellectual direction and creative prompt parameters	User contribution may be too minimal/detached from final output; AI makes actual generative decisions	[16, 17]
Training Data Owner	Owner of copyrighted training data	Original works were instrumental in training AI model	Statutes fail to distinguish data ingestion from output generation; complex copyright infringement issues	[11]
AI-Centric	The AI system itself	AI autonomously	AI lacks legal personality,	[10, 11, 12, 15]

		executed inventive/creative steps	cannot hold property or be sued; fundamentally incompatible with Indian law	
Human Guardian	Appointed human guardian for AI	Guardian holds/manages IP on behalf of AI (analogy to minor)	Novel and untested; raises complex questions on guardian duties, selection, liability, and conflicts of interest	[15]

COMPARATIVE AND INTERNATIONAL PERSPECTIVES: ANALYZING GLOBAL APPROACHES TO AI AND IP

The comparative dimension of the included studies reveals that the challenges facing Indian intellectual property law are not unique but are part of a broader global struggle to adapt human-centric legal frameworks to the realities of autonomous AI generation. The literature systematically examines how different jurisdictions are grappling with the same fundamental questions of authorship, inventorship, and ownership, providing valuable insights for the Indian legal discourse. The comparative analyses highlight significant inconsistencies in global approaches, ranging from outright rejection of AI as an author or inventor to more permissive stances that allow for AI-assisted works to be protected under certain conditions, and underscore the pressing need for international harmonization to prevent regulatory arbitrage and legal uncertainty in cross-border transactions.

The most comprehensive comparative analysis in the included studies is provided by Singh & Srivastava [18], which examines the attribution of responsibility in AI-related copyright and patent disputes across India, the United States, the United Kingdom, and the European Union. The study employs a doctrinal and comparative approach to reveal "inconsistencies, ambiguities, and policy gaps in existing frameworks." The study finds that the United States, through the US Copyright Office's policy statements and the Federal Circuit's decision in Thaler v. Vidal, has adopted a relatively strict position requiring human authorship for copyright protection and human inventorship for patent protection. The United Kingdom, by contrast, has a more permissive statutory provision in Section 9(3) of the Copyright, Designs and Patents Act 1988, which designates the "person by whom the arrangements necessary for the creation of the work are undertaken" as the author of a computer-generated work. The European Union, with its emphasis on the "intellectual creation" of the author, occupies a middle ground, requiring a sufficient degree of human creative input. The study's analysis of India reveals that the country lacks any statutory provision or binding judicial precedent specifically addressing AI-generated works, placing it in a position of significant legal uncertainty compared to these other jurisdictions. The study compares developer-centric, user-centric, and hybrid liability models, finding that each has different implications for innovation and regulatory coherence, and concludes that "technology-neutral and responsive IP law reforms are necessary."

A narrower but equally illuminating comparative analysis is provided by Piumantha [17], which focuses specifically on copyright protection for AI-generated audio-visual works in Sri Lanka, the United States, and India. The study conducts a qualitative thematic analysis of the Sri Lanka Intellectual Property Act No. 36 of 2003, the Indian Copyright Act of 1957, and the US Copyright Act of 1976, examining how "authorship, ownership, exclusive right, and moral right are addressed" in each jurisdiction. The study's key finding is that "Sri Lanka, the United States and India currently lack legal provisions to protect AI-generated artwork under their existing copyright laws." The study uses the 'Suryast AI Image' as a case study to illustrate the practical difficulties that arise when attempting to apply traditional copyright doctrines to AI-generated works. The study identifies the "lack of legal consensus on who is the author of an AI-generated work" as the "main problem with granting copyright to an AI-generated work" across all three jurisdictions. The study proposes that "establishing a clear definition of authorship for AI-generated work" is a necessary first step, and that protection for AI-generated audio-visual works can "potentially be provided either through existing copyright laws or via new legislative amendments."

The comparative study by Bose & Gupta [10] on India and the United States provides a broader perspective on both copyright and patent challenges. The study examines the "fundamental challenges to the traditional intellectual property regimes premised on human authorship and inventorship" posed by AI systems that generate "literary works, artistic creations, and technological inventions." The study's comparative analysis reveals that while both India and the US anchor their IP frameworks on the concept of human authorship and inventorship, the US has a more developed body of judicial and administrative guidance on the issue. The study references the US Copyright Office's refusal to register works created by AI without sufficient human authorship, as well as the US Patent and Trademark Office's (USPTO) stance that AI cannot be named as an inventor, as established in the Thaler litigation. The study suggests that India, which lacks similar guidance, is in a state of greater legal uncertainty. The study does not explicitly propose a specific solution but highlights the need for the Indian legal system to address these fundamental challenges.

The study by Khan [14] provides a comparative analysis of the protection granted to software and computer-related inventions (CRIs) across "different legal systems in the world," and then extends this analysis to the patentability of AI-generated inventions. The study examines how different jurisdictions have developed criteria for protecting CRIs, despite the explicit exclusion of software from patent protection in many statutes. The study finds that the approaches vary considerably, with some jurisdictions adopting a more permissive stance (e.g., the United States, under the Alice/Mayo framework) and others maintaining a more restrictive approach (e.g., the European Patent Office, with its "technical character" requirement). The study then explores the "possibility of the application of these principles to AI or the modification of existing principles to allow for the patentability of AI." The key challenge identified is the "lack of an inventive step" in AI-generated inventions, as the "mental element" of the invention may be attributable to the AI rather than a human. The study suggests that the existing principles used to assess the inventive step of CRIs could be adapted to assess the inventive step of AI-generated inventions, but that this would require careful consideration of the role of the human contributor.

The study by Kalwani [13] provides a unique perspective by focusing on the "interplay of jurisdiction in artificial intelligence and intellectual property" in a cross-border context. The study examines the "complex jurisdictional issues arising when AI creation and utilization spans international borders," including uncertainties surrounding "territorial nexus, governing law, liability attribution, and enforcement cooperation." The study argues that the "ambiguous fit of AI inventions within existing patent, copyright, trademark, and trade secret frameworks" compounds the difficulties in establishing proper jurisdiction and applicable law. The study draws upon "emerging legal cases, academic theory, and policy proposals" to analyze these issues. The study's key recommendation is to "modernize outdated statutes, harmonize standards globally, incentivize disclosure, and facilitate dispute resolution in this sphere." This study is particularly relevant to the Indian context because India is a major hub for IT services and outsourcing, and many AI-related transactions involve cross-border elements.

Table 03: Comparative Analysis of Legal Approaches to AI-Generated Works Across Jurisdictions

Study ID	Countries/Jurisdictions Compared	Type of AI Output Analyzed	Key Legal Doctrines or Principles Examined
Bose & Gupta [10]	India and the US	Literary works, artistic creations, and technological inventions	Human authorship and inventorship threshold requirements.
Kalwani [13]	Global (cross-border context)	Patentable inventions and creative works	Territorial nexus, governing law, liability attribution, enforcement cooperation.
Khan [14]	Different legal systems worldwide	Inventions generated using Artificial Intelligence (AI)	Inventive step, patentability of software/CRIs applied to AI.
Piumantha [17]	Sri Lanka, the US, and India	Audio-visual works	Authorship, ownership, exclusive rights, and moral rights.
Singh & Srivastava [18]	India, United States, United Kingdom, European Union	Creative works and technical inventions	Authorship, inventorship, ownership, and responsibility models.

The synthesis of the included studies reveals a legal landscape in India that is fundamentally unprepared for the challenges posed by artificial intelligence tools capable of generating creative and inventive outputs. Taken together, the findings from the reviewed studies consistently demonstrate that the Indian Copyright Act of 1957 and the Patents Act of 1970, both predicated on the assumption of human authorship and inventorship, are structurally incapable of accommodating AI-generated works within their existing frameworks. This is not a matter of minor interpretive ambiguity but rather a deep-seated doctrinal incompatibility that emerges across the entire body of literature. The studies collectively show that the statutory definitions of "author" and "inventor" are implicitly anthropocentric, creating a legal vacuum that leaves questions of ownership, authorship, and inventorship unresolved. The literature consistently finds that no clear statutory provision or binding judicial precedent in India establishes whether an AI system can be recognized as an author or inventor, or who should own the rights to works generated by such systems. This fundamental legal uncertainty is the central finding that unifies the disparate analyses in the reviewed scholarship.

The practical implications extend beyond the commercial sphere to the broader creative and scientific communities. Artists, writers, and musicians who use AI tools as part of their creative process face uncertainty about whether their works are eligible for copyright protection. Scientists and engineers who use AI for drug discovery or materials design face similar uncertainty about patentability. The literature suggests that this uncertainty is not merely a theoretical inconvenience but a real barrier to the adoption and development of AI technologies in India. The studies [11, 16] explicitly link the lack of legal clarity to potential negative impacts on innovation and economic growth. Furthermore, the absence of clear rules for liability creates additional risks. If an AI-generated work infringes the copyright of a third party, who is responsible? The developer of the AI tool, the user who deployed it, or the owner of the training data? The literature [18] highlights that the choice of liability model has significant implications for the allocation of risk and the incentives for responsible AI development. A developer-centric model may deter investment, while a user-centric model may place an unfair burden on individuals. The lack of a clear answer to this question creates a chilling effect on the entire AI ecosystem.

The comparative analyses in the reviewed studies provide a valuable context for understanding India's position in the global legal landscape. The literature consistently shows that India lags behind other major jurisdictions in developing a legal framework for AI-generated works. The United States, through the US Copyright Office and the Federal Circuit's decision in Thaler v. Vidal, has adopted a relatively clear position requiring human authorship for copyright protection and human inventorship for patent protection. The United Kingdom has a specific statutory provision for computer-generated works, designating the person who made the arrangements for the creation of the work as the author. The European Union, while lacking a specific statutory provision, has a body of case law and policy guidance that provides some direction. India, by contrast, has no statutory provision, no binding judicial precedent, and no official policy guidance on the issue. This places Indian businesses and creators at a competitive disadvantage, as they face greater legal uncertainty than their counterparts in other jurisdictions. The literature [13] also highlights the challenges of cross-border disputes, where the lack of harmonization between different legal systems can create complex jurisdictional issues. For a country like India, which is a major hub for IT services and outsourcing, this is a particularly pressing concern.

CONCLUSION

This systematic review synthesized the nascent but rapidly growing body of legal scholarship addressing ownership and copyright challenges posed by artificial intelligence tools within the Indian legal context. The core finding across all included studies is that the Indian Copyright Act of 1957 and the Patents Act of 1970, with their foundational premise of human authorship and inventorship, are structurally incapable of accommodating AI-generated works. The literature consistently reveals a profound legal vacuum: no clear statutory provisions or binding judicial precedents exist to determine whether an AI system can be recognized as an author or inventor, nor to establish who should own the rights to outputs generated by such systems. This synthesis therefore confirms and clarifies the existence of a critical gap between rapid technological advancement and slow legal evolution, challenging the adequacy of piecemeal judicial interpretations as a solution. The practical and theoretical implications of these findings are substantial. For policymakers, the review underscores the urgent need for legislative intervention, whether through targeted amendments to existing statutes, the creation of sui generis rights, or the adoption of novel mechanisms such as human guardianship models. For legal practitioners and businesses, the absence of legal certainty creates significant risks that may deter investment in AI technologies and hinder the commercialization of AI-generated works. The comparative analyses further highlight that India lags behind jurisdictions such as the United States, the United Kingdom, and the European Union in developing a coherent legal framework, placing Indian stakeholders at a competitive disadvantage in the global innovation economy. Future research should prioritize empirical studies examining the real-world impact of legal uncertainty on AI adoption in India, as well as more granular analyses distinguishing between different types of AI-generated works. The intersection of AI-generated works with contract law, tort law, and data protection law remains underexplored. Furthermore, comparative research should extend beyond Western jurisdictions to include emerging economies such as China, Japan, and South Korea, which may offer alternative regulatory models. The role of international harmonization through organizations such as WIPO also warrants deeper investigation. Ultimately, this review provides a foundational map of the current legal landscape, demonstrating that India must move beyond reactive, piecemeal approaches toward proactive, technology-neutral reforms that can adapt to future advancements while engaging in international dialogue to promote harmonized standards.

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