Journal of Intellectual Property and Information Technology Law (JIPIT)
ISSN: 2788-6727 – Volume 5, Issue 1 (2025) p.179-225
DOI: https:doi.org/10.52907/jipit.v5i1.520

Authorship, Ownership, and Ethical Issues in AI-generated Research: Implications for Nigerian Academia

Oluchi C. Maduka, Temiloluwa M. Oyundoyin,** & Adebayo O. Adejumo****

ABSTRACT

As generative Artificial Intelligence (AI) systems continue to transform academic research, debates over their appropriateness within the academic community continue to garner global attention. These debates are exacerbated in the Global South, where limited access to AI infrastructure and slow adoption of ethical AI guidelines heighten vulnerabilities. Previous studies in Nigeria have largely examined the use of AI in academia from an empirical perspective, focusing on assessing students' and academics' levels of awareness, attitudes, and perceptions toward tools such as ChatGPT. While these studies provide valuable insights into patterns of use and acceptance, they pay little attention to the doctrinal interpretation of authorship and ownership under copyright law, issues that become increasingly complex when research outputs are generated with or by AI. Drawing on global contexts, this paper aims to fill this gap by critically analyzing how existing copyright principles of authorship and ownership apply to AI-generated academic works in the Nigerian context. The paper finds that Nigerian copyright law remains human-centric, recognizing only works demonstrating human creativity and originality. A distinction is emerging between AI-generated and AI-assisted works: while wholly AI-produced outputs lack protection, those involving meaningful human input—

* Solicitor and Advocate of the Supreme Court of Nigeria and a lecturer at the Faculty of Law, University of Ibadan. She holds a PhD. in law and an MSc in Bioethics. Her research interests span intellectual property law, data governance, medical law, and research ethics. Email: oc.maduka@ui.edu.ng

** PhD. student in Bioethics and Medical Humanities with a background in Philosophy. Her research interests include the ethics of AI in healthcare, scientific integrity, intellectual property, and disability ethics. Email: temiloluwaoyundoyin@gmail.com

*** Professor of Health Psychology and Bioethics. He was a pioneer member of Nigeria's National Health Research Ethics Committee and presently chairs the Social Sciences and Humanities Research Ethics Committee at the University of Ibadan, Nigeria. Email: bayoethics@gmail.com

such as prompting or creative direction—may attract authorship and by extension ownership. Thus, students or researchers who apply intellectual effort in using AI tools can still be deemed authors. Ultimately, the challenge is not whether AI belongs in academia, but how to shape its presence in ways that uphold human creativity, accountability, and justice. Therefore, Nigerian universities and regulators must develop codes of conduct, establish AI ethics committees, and align with global authorship standards to ensure ethical use of AI while promoting equitable access to AI infrastructure.

Keywords: AI-generated research, authorship, ethics, ownership, Nigeria

TABLE OF CONTENTS

I. INTRODUCTION

Artificial Intelligence (AI) technologies have become increasingly embedded in academia, offering tools that automate routine tasks, improve grammatical accuracy, and streamline time-intensive aspects of manuscript preparation, such as citation management and formatting (Huff, 2024). While the capacity of AI in academia holds clear advantages, particularly in places like Nigeria where academic resources may be limited, it also raises significant legal and ethical challenges (Hosseini, Rasmussen, et al., 2023; Hosseini, Resnik, et al., 2023; Maluleke, 2025).

Generative AI systems, such as the Large Language Models (LLMs), are transforming the way academic work is conceived, produced, and evaluated. LLMs such as ChatGPT, Claude, Llama, and Gemini can generate extended, human-like text in response to prompts, moving beyond support functions like citation management or grammar correction into full-scale content creation, such as drafting literature reviews, summarizing articles, generating ideas for experimental design, and even producing complete manuscripts (Hemachandran et al., 2022). This shift disrupts foundational assumptions about ownership and authorship of such works, as well as integrity—the core principles on which the credibility of academic research rests (Chubb et al., 2022; Dwivedi et al., 2021). The introduction of LLMs intensifies existing debates about authorship. Traditionally, authorship is recognized as the result of a person's intellectual and creative contribution, with clear accountability for the credibility, validity, and originality of the work produced (Silva & Tsigaris, 2023). However, when an LLM generates substantial portions of research work, the boundaries of legitimate authorship become blurred (Coombe, 1998; Lu, 2021; Manolakev, 2017; Zemer, 2017).

Related to this is the concept of ownership: as LLMs significantly contribute to the generation of research work, a sig-

nificant challenge lies in identifying the ownership boundaries of the resulting work. Moreover, training LLMs often involves processing vast amounts of text data, some of which may contain copyrighted material.

The ethical dimensions further exacerbate these concerns. The use of LLMs in academic work raises crucial questions about accountability and the overall trustworthiness of academic work. Academic integrity embodies a researcher's moral commitment to intellectual honesty and personal responsibility (Butterworth, 2003). Thus, a student or researcher (collectively 'researcher') must exemplify intellectual honesty in proposing, performing, and reporting research, as well as accuracy in representing contributions to research proposals and papers (National Research Council, 2002). However, some LLMs have been reported to sometimes hallucinate, producing inaccurate responses, fabricating citations, and providing factually incorrect information (Ahmad et al., 2023; Emsley, 2023; Metze et al., 2024; Walters & Wilder, 2023). Such errors are particularly problematic in academic contexts, where students and researchers present these outputs as their own (Morocco-Clarke et al., 2024). Khairuidin et al. (2022) argued that it is unethical to place a person's name as an author of an academic publication where the person did not author it. Consequently, academic integrity is jeopardized when research work generated by AI is presented as the work of a researcher. This not only threatens individual academic integrity but may also undermine the credibility of the institutions that award degrees and, by extension, the broader academic community that relies on the integrity of such works (Makena, 2023; Silva et al., 2023).

This digital evolution in academia raises several questions. For example, aside from enabling a new form of plagiarism and intellectual property theft, can ownership claim in this instance become defensible in situations where a substantial part of the generated output is protected by copyright? (Abdikhakimov, 2023; Adaka & Olubiyi, 2022; AlZaabi et al., 2023; Lucchi, 2024;

Naithani, 2022; Silva et al., 2023; Smits & Borghuis, 2022). Other important questions that this issue raises include: if a degree is awarded based on work substantially generated by AI—possibly using copyrighted datasets—is the credential a fair reflection of the student's ability? Can institutions maintain trust in their scholarly record under such conditions? And can an institution legitimately lay claim to the rights of a work substantially produced by an LLM where a student claims to have authored it?

While the implications of LLMs for research are global, they are amplified in the Global South, where weaker regulatory frameworks, digital inequality, and slow legal adaptation heighten vulnerabilities (Association of African Universities, 2023). In these contexts, AI adoption occurs against a backdrop of scarce academic resources, limited institutional safeguards, and uneven awareness of ethical standards, making it easier for integrity breaches to occur undetected.

Nigeria offers a particularly relevant case study. The Nigerian academic sector is marked by a growing interest in the use of AI tools and systems, including LLMs. This happens despite a lack of clear policy guidance within academic institutions on how to ethically use these tools. The National AI strategy, which came into effect in August 2024, holds enormous promise as it aims to ensure responsible and ethical AI development through a clear and comprehensive set of ethical principles that address issues such as fairness, transparency, accountability, and privacy (National AI Strategy, 2024). Regrettably, it does not speak directly to how AI can be used in universities and research institutions, particularly the challenges posed by some generative LLMs. This omission is significant given the increasing reliance of researchers on LLMs in Nigerian universities, often in ways that raise questions of academic integrity, authorship, and responsible use (Goodman, 2025). Thus, while the national framework provides a valuable foundation, there remains a pressing need for sector-specific guidelines to govern AI use in Nigerian academic institutions. A similar trend is emerging across Afri-

ca, with Kenya and South Africa topping the chart (Davis, 2025; Uzuegbunam & Bosch, 2023; Tarisayi, 2024). A Streamline report shows that forty-two per cent of students in Kenya used ChatGPT in July 2025 (Streamline Official, 2025). This highlights the growing prevalence of AI use among African students.

Generally, while incorporating AI offers notable benefits in improving research quality and efficiency, addressing the accompanying ethical and practical challenges remains crucial to fully realize its potential in the academic environment fully. The Association of African Universities has opined that although AI plays a growing role in higher education across Africa, if unchecked, AI use in African institutions can weaken institutions' credibility, signal a lack of awareness for responsible AI use, undermining African institutions among its peers (Association of African Universities, 2023; Tang & Eaton, 2023). While these challenges confront the academic community, the extant provisions of copyright laws on originality and the approaches different jurisdictions have taken in interpreting them further complicate the challenge. This is because the academic community may have to grapple with delineating the blurry line between AI-generated work and AI-assisted work. These challenges necessitate a re-evaluation of existing frameworks so that acceptable AI use is not necessarily restricted.

This paper is a contribution to ongoing debates on the challenges posed by the use of LLMs in the academic environment, with a specific focus on Nigeria. While the ethical and legal questions surrounding AI-generated research affect all categories of academic authors, this study focuses primarily on students, researchers, and faculty. This focus is justified because they represent the group most likely to rely on AI tools for writing and research assistance, and their work directly determines the academic credibility of higher institutions through assessed submissions and degrees awarded.

This paper is divided into eight parts. Part I introduces the central thesis, situating AI's disruption of authorship, own-

ership, and integrity within the Nigerian and broader Global South context. Part II sets out the conceptual foundations, distinguishing between AI-generated and AI-assisted work, while also clarifying notions of authorship, ownership, and academic integrity. Part III examines ownership and authorship dilemmas in the age of AI, including key debates of agency, personhood, and copyrightability of AI-generated works. Part IV provides comparative legal perspectives, reviewing case law and doctrinal approaches from other jurisdictions. Part V analyzes the Nigerian legal framework, identifying gaps and challenges in copyright law and institutional policy. Part VI explores the ethical implications of AI use in academic research, including disclosure, inequity, and justice. Part VII considers institutional and policy responses before providing recommendations on how Nigeria can adapt AI within a sound ethical and legal framework. Part VIII is the conclusion.

II. CONCEPTUAL FOUNDATIONS

A. The Use of AI in Education

Globally, AI is widely adopted across all aspects of life, including research. Kelly (2024) presents a report of a survey conducted by the Digital Education Council, a global alliance of universities and industry representatives focused on educational innovation. Out of the three thousand, eight hundred and thirty-nine responses that were gathered from bachelor's, master's, and doctoral students across sixteen countries, eighty-six percent of students reported using AI in their studies. Among them, twenty-four percent indicated they used AI daily, while fifty-four percent used it either daily or weekly, and the other fifty-four percent utilized it at least once a week. On average, students reported using AI tools for their courses, with ChatGPT being the most popular tool, used by sixty-six percent of respondents, followed by Grammarly and Copilot each at twenty-five percent. The most frequent reasons for using the writing tools included:

searching for information (sixty-nine percent), checking grammar (forty-two percent), summarizing documents (thirty-three percent), paraphrasing documents (twenty-eight percent), as well as creating a first draft (twenty-four percent) (Kelly, 2024).

Across Africa, AI tools like ChatGPT are equally gaining traction in universities, accounting for around five percent of global users by early 2025, with Nigeria, South Africa, Kenya, and Morocco leading the uptake (Hagan, 2023). A Chegg.org (2023) survey—spanning fifteen countries and representing two African countries (Kenya and South Africa), where out of over eleven thousand university students, Kenya recorded the highest global use of generative AI in studies (sixty-three percent of five hundred and ten students surveyed), while South Africa reported thirty-three percent, both showing significant engagement compared to other regions. In another study, Kenya was reported to be leading the world with forty-two percent ChatGPT adoption (Streamline Official, 2025).

A 2025 study by Ojubanire et al (2025) examined the extent of awareness of ChatGPT in higher education among three African institutions and found that the level of exposure and familiarity that individuals have with ChatGPT as an emerging educational tool was highest in Morocco (seventy-eight percent), followed by Nigeria (seventy-two percent) and Tanzania (sixty-one percent). Adoption levels followed a similar pattern, with Morocco (sixty-five percent), Nigeria (fifty-eight percent), and Tanzania (forty-nine percent).

On July 6, 2025, a Nigerian Professor based in the U.S. raised an alarm about a fake AI-generated paper that cited him, even though he had never written the book cited (Kperogi, 2025). Several studies, including those of Ezurike and Akinsulire (2024), Fasola (2024), Nnaemeka and Ogunbadejo (2024), Oladokun and Waziri (2024), Sarfo et al. (2024), Suleman et al. (2025), and Shittu et al. (2025), have examined the extent of the awareness and use of generative AI in Nigerian higher institutions. The findings consistently indicate that students demonstrate a

high level of awareness—understood here as familiarity, recognition, exposure, and knowledge of such tools—and actively use them, largely because they perceive it as beneficial in enhancing their research skills.

The implications of this for the research community are two-pronged. One, there may be a shift in research priorities toward exploring the ethical implications of AI use in academic institutions, particularly the extent to which it may be used in scholarly research and the enforcement of regulations and policies governing that use. Two, research and educational institutes may need to adapt their curricula to include more courses on AI, machine learning, and data analysis, thereby preparing students for careers in an increasingly automated job market.

B. AI-generated Vs. AI-assisted Research Output

While the phrases AI-generated and AI-assisted involve the use of AI tools, they differ significantly in terms of authorship, agency, and creative control. AI-generated work refers to content produced autonomously by an AI system with minimal or no human interaction during the generative process. In contrast, AI-assisted involves a collaboration between the AI system and humans (Fritz, 2025; Gliha, 2020; Thambaiya et al., 2025). In this case, humans retain primary control and direction using AI tools to support, enhance, or refine their contributions (Borger et al., 2023; Xie et al., 2024).

Clarifying this distinction is essential not only for understanding the nature of the work produced but also for ethical considerations, credit attribution, and evaluation standards in both academic and creative contexts. This distinction is equally significant if one considers the approach that the courts have taken in interpreting several copyright laws. The human intuitive approach to interpreting copyright laws favors AI-assisted, not AI-generated, works. AI-generated work lacks copyright protection because the AI performs the entire creation. Conversely, AI-assisted works may be subject to copyright.

While this distinction has not been settled among scholars in general intellectual property (IP) discussions, the lines are further blurred in discussions of integrity in academic writing. The need for tangible human guidance or involvement seems to be the crucial factor in distinguishing between AI-generated and AI-assisted. However, the level of interpretation required to give meaning to the term' material human involvement' is not well defined (Gilha, 2020). This paper furthers this discussion in the following sub-sections and under Part IV of this study.

C. Distinguishing Authorship from Ownership

1. Authorship

In academic research, authorship is recognition of contributions and public acceptance of responsibility for the research work (Wager, 2009). Traditionally, being an author meant that a person played an active intellectual role in the research work and could be held accountable for the result. Leading international standards, such as the CrediT, International Committee of Medical Journal Editors (ICMJE), and Committee on Publication Ethics (COPE), require that authors demonstrate active involvement in the research and be accountable for its outcome (Ivanis et al., 2008).

In Nigeria, universities and research bodies such as the National Universities Commission (NUC) and Tertiary Education Trust Fund (TETFund) generally follow these international guidelines. However, most current policies were developed before the era of generative AI. For instance, Section 108 of the Nigerian Copyright Act (2022) conceives an 'author' strictly as a person, and this personhood is defined in relation to the category of creative work. Thus, the Act attributes authorship of an audiovisual work to the individual who arranged its production, of a collective work to the person responsible for its selection and arrangement, of a photographic work to the photographer, of a sound recording to the arranger of its making, and of a broadcast to the person responsible for its transmission.

2. Ownership

The ancient concept of ownership, as cited in Padmanabhan & Wadsworth (2024), holds that whoever possessed a thing owned it and could exclude all others from it; and whoever possessed a thing first held a superior title to whoever possessed it afterwards. This principle is the bedrock of property law and has remained so for generations.

Within the context of academic work, ownership means having the right to royalties, the authority to make binding decisions regarding publication or commercial exploitation, the legal authority to build upon the work or make improvements, and accountability for the integrity of the paper (Dreyfuss, 2000). Ownership confers control, rights, and responsibility over the outputs of scholarly work (Bowrey et al., 2024). This foundational understanding of ownership is essential for evaluating the challenges posed by AI-generated research. Since AI lacks agency and personhood, it cannot possess or transfer ownership rights; consequently, questions arise as to whether the human user, developer, or institution should hold ownership of AI-generated academic outputs.

The difference between authorship and ownership is that, in traditional academic contexts, authorship refers to the person(s) credited with creating a work. In contrast, ownership refers to the legal rights over that work (Bozkurt, 2024). These concepts often overlap but are not identical. For example, a student who writes a thesis typically holds both authorship and initial ownership—unless a policy transfers them to a university. In AI-assisted research, however, the distinctions are unclear. If a student uses generative AI to create substantial portions of their work, they may still be listed as the author in academic terms. But the legal ownership question becomes trickier. This becomes further complicated when the author of the work may not have disclosed the extent to which an LLM was used so that ownership claims are honest and defensible.

Consequently, ownership debates in academia within the context of generative AI are about protecting the integrity of academic research and ensuring that the rights to scholarly work remain clearly and fairly assigned (Bozkurt, 2024). Without more explicit legal guidance and agreed-upon academic norms, the boundaries of ownership in AI-generated research will remain contested.

D. Academic Integrity

Academic integrity refers to the commitment to honesty, rigor, accountability, and transparency in the research process (Macfarlane et al., 2014). It entails accurate data collection and reporting, acknowledgement of authorship contributions, respect for ethical standards such as informed consent, and avoidance of practices such as plagiarism or data fabrication (Bretag, 2018).

Academic integrity not only embodies the moral integrity of an individual researcher but equally ensures that a learning institution creates an atmosphere that promotes and embraces standards of excellence and integrity in academic writing (Butterworth, 2003). Therefore, a researcher must exemplify intellectual honesty in proposing, performing, and reporting research, as well as accuracy in representing contributions to research proposals and papers.

Academic integrity can be assessed through compliance with recognized ethical guidelines (such as COPE, APA, and ICMJE standards), institutional codes of conduct, peer review processes, and accountability mechanisms such as authorship contribution statements and conflict of interest disclosures. Together, these benchmarks ensure that research outputs remain credible and trustworthy. The core question, therefore, becomes what happens to ownership, authorship rights, and academic integrity when a non-human entity contributes significantly to research output?

In summary, the emergence of AI tools in research—and the important distinction between wholly AI-generated outputs and AI-assisted works that reflect meaningful human input—challenge the traditional notions of authorship, ownership, and academic integrity. These conceptual challenges set the stage for a deeper inquiry into ownership, that is, the legal and ethical dilemma of who holds rights and accountability when AI contributes significantly to research outputs. It is to this question that the next part of this paper now turns.

III. RESEARCH OWNERSHIP IN THE AGE OF AI

A. Ownership Question as a Conceptual and Legal Dilemma

The question of who owns research generated with the assistance of generative AI is not straightforward. Conceptually, ownership in academia has long been tied to the idea of a direct link between human creativity and intellectual output (Eshraghian, 2020). This link presumes intentionality, originality, and personal intellectual labor—qualities traditionally seen as uniquely human. Legally, under most copyright laws, including those of Nigeria, only human works can hold ownership rights. With the growing use of generative AI to produce research, the question of ownership has become less clear. AI systems, in themselves, lack legal personality, cannot be copyright owners, nor can they transfer rights.

This interplay between the conceptual and legal dimensions creates a two-fold dilemma. On the conceptual side, academic culture must grapple with whether 'ownership' can be meaningfully claimed when part of the intellectual labor is automated. On the legal side, current statutes may either fail to protect such works or assign ownership in ways that conflict with researchers' expectations. In practice, these tensions can influence authorship credit, institutional policies, and even academics' willingness to disclose AI use in their research.

B. Traditional IP Laws and the Legal Vacuum

As mentioned earlier, IP laws, including Nigeria's Copyright Act of 2022, presume that creativity is attached solely to humans and, by extension, to legal persons. Protection, therefore, is granted to original works, the product of intellectual effort, and capable of being attributed to a legal person. Under the Nigerian Copyright Act, the first ownership of copyright vests in the author. Where a work is created under a contract of service, or in the course of employment by a government, ministry, department, or agency of government, or by a prescribed international or inter-governmental organization, the copyright in such a work automatically vests in that government body or organization. The work-for-hire provision under section 28 of the Nigerian Copyright Act presumes a human author whose rights may vest in an employer or institution.

The power of AI to generate substantial research work with minimal or no human input challenges this presumption. Since AI systems are neither natural nor legal persons, they cannot own copyright nor be treated as 'authors' under existing law. This creates a legal vacuum—works produced wholly or substantially by AI may fall outside copyright protection, leaving them in a grey zone where ownership is uncertain, and enforcement is problematic.

This legal vacuum has two main implications. First, it can discourage investment and innovation, since developers, users, and institutions remain uncertain about who holds the rights to use or profit from AI-generated works. Second, it increases the risk of misuse and appropriation, as creations without clear ownership may be freely copied or commercialized without accountability. The lack of legal recognition for AI-generated works unsettles the balance that copyright law aims to strike between rewarding creativity and ensuring public access to knowledge.

C. Key Debates in AI and IP

1. AI and moral agency

Moral agency refers to an individual or entity's capacity to make ethical decisions, be held accountable for actions, and understand the consequences of those actions (Moll et al., 2007). Parthemore & Whitby (2013) described it as the capacity for self-reflection. According to Immanuel Kant's (1998) *Groundwork*, an individual is referred to as a 'moral agent' when they possess moral consciousness: such individuals can evaluate actions as either legitimate or illegitimate, possess the ability to reason, reflect, and make choices in relation to the well-being of human society. Also, moral agency is the capacity to act in line with one's better judgment. This includes understanding concepts like right and wrong, as well as the ability to empathize with others (McDermott, 2007).

For AI to be considered a moral agent, it would need to exhibit similar capabilities. However, AI technology depends on initial programming and large datasets. It operates based on algorithms and data rather than human-like reasoning or emotional understanding. While AI can analyze vast amounts of information and simulate decision-making processes, it lacks the intrinsic moral compass that humans possess (McDermott, 2007; Okoli & Nnajiofor, 2024; Prabbu & Premraj, 2024). Thus, moral agency is the bedrock upon which accountability is assigned. The absence of moral agency in AI systems means they cannot be held responsible for the outcomes they produce. As a result, the legal implications of AI-generated research often fall back on human actors, whether developers, researchers, or institutions, who possess the capacity for moral agency and can thus be held accountable.

2. AI and legal personhood

Legal personhood, or legal personality, pertains to how the law views or treats an entity (Kurki, 2023). Legal persons are

most often understood as persons that hold rights and or duties, or at least can hold rights, under some legal system (Kurki, 2023). Personhood itself is a concept as old as time. According to ancient Roman law, to say that each human being is a person is referred to as *persona est sui juris et alteri incommunicabilis*, meaning that 'a person is a being which belongs to itself, and which does not share its being with another' (Crosby, 1996). Or, according to Immanuel Kant (1998), as 'an end in itself'. In a broad sense, personhood is the status of being recognized as a person, typically in a legal or philosophical context.

In law, the term' legal person' is broader than the natural human person and extends to artificial entities such as incorporated companies, corporate sole with perpetual succession, trade unions, partnerships, and friendly societies as recognized by Nigerian courts (*Multichoice Nig. Ltd. v. Musical Copyright Society of Nigeria Ltd. (Gte.)*, 2020). These are recognized as juridical persons capable of holding rights and duties.

This clarification is necessary because it highlights that a fundamental tenet of legal personhood is that it is determined by law, regardless of whether the actor is human or not (Dewey, 1925; Dyschkant, 2015; Flynn, 2021; Laski, 1916; Wise, 2010). In the past, women, enslaved people, fetuses, and persons considered as less-than-human battled with whether they possessed legal personhood (Dewey, 1925). Within the last decade, advances in generative AI have shifted the spotlight to AI (Cerka et al., 2017). Questions as to whether AI, given its complex capabilities, should be granted legal personhood status have dominated academic discourse (Cerka et al., 2017; Chesterman, 2020; Dremliuga et al., 2019; Talimonchik, 2021; Turner & Turner, 2019). A key question in this discourse is whether AI should be granted legal rights and responsibilities akin to those of human beings or corporations. The answer to the question is not so straightforward.

This paper earlier established that AI lacks moral agency and is therefore incapable of taking responsibility. However,

do the commercial, political, and social circumstances of society warrant granting AI legal personhood? The status of legal personality has been granted to the Crown, traditional stools, churches, and, more recently, companies. In the celebrated case of *Salomon v. Salomon & Co Ltd* (1897), the House of Lords held that the rationale for a company's legal personality is that, once incorporated, it exists as a separate legal entity distinct from its founders. The law recognized this corporate creation as capable of acting like a natural person. Over the past century, the notion of corporate personality has transformed business practices and corporate governance.

Historically, whether an individual or entity was granted legal personality has depended on the political, economic, and social contexts of the time, reflecting society's intentions and needs. While a corporation lacks a physical form, the law designates human directors to act on its behalf. As such, while the company has legal rights and responsibilities, its directors are responsible for fulfilling them. Similarly, as society considers the implications of granting legal personhood to AI, it may be possible to assign legal responsibilities to the programmers, designers, or users involved, depending on the context.

Legal personality is a product of law, which makes it quite feasible to establish. In 2017, a New Zealand court recognized the Whanganui River, vital to the Māori people, as a legal person (Kramm, 2020). Similarly, in 2017, Saudi Arabia granted citizenship to Sophia, a humanoid robot (Weller, 2017), who also became the first non-human to hold the title of 'Innovation Champion' from the United Nations Development Program (Anon, 2018). While these recognitions do not amount to complete legal personhood in the doctrinal sense, they illustrate a growing willingness of legal and governance institutions to symbolically and selectively extend personhood-like attributes to non-human entities. This development supports the argument that, if AI systems can autonomously generate creative works, the attribution of limited legal personhood for specific legal functions—such as

authorship or ownership—cannot be dismissed as conceptually incoherent, given that legal personhood itself is a creation of law.

3. Can AI-generated outputs be copyrighted?

Copyright is a form of intellectual property law that gives authors, artists, and creators the exclusive right to reproduce, distribute, perform, display, and create derivative works based on their original creations (Goldstein et al., 1989; Ola, 2015). This legal protection arises automatically upon the creation of an eligible work, provided that the work is original and fixed in a tangible medium (Chafee, 1945; Liu, 2002). The foundation for copyright protection rests on human authorship and originality (Abrams, 1992). What this means is that the work must have been created by a legal person (natural or artificial) and possessed some degree of ingenuity (Lavik & Van Gompel, 2012). The question of whether AI-generated output can be copyrighted remains controversial, as jurisdictions apply varying standards. The following comparative legal analysis will explore how selected countries are adapting (or failing to adapt) their IP regimes to AI-generated creation, with a view to drawing lessons for Nigerian academia.

IV. COMPARATIVE LEGAL PERSPECTIVES ON COPYRIGHTABILITY OF AI-GENERATED WORKS

This section provides a comparative legal foundation for understanding how different jurisdictions treat authorship and ownership of AI-generated works. By outlining the limits of copyright recognition for non-human creators, it sets the stage for the subsequent discussion on research ethics and integrity, where similar questions of authorship, credit, and accountability arise in the academic context.

A. The Position in the United States of America

The United States' response to clamor for the recognition of computer programs as copyrightable officially began with the Final Report of the Committee on New Technological Uses of Copyrighted Works (CONTU), submitted to the U.S. government on July 31, 1978 (National Commission on New Technological Uses of Copyrighted Works, 1981). The commission recommended that the copyright law be amended to make it explicit that computer programs, to the extent that they embody an author's original creation, be subject to copyright (CONTU, 1981).

While this recommendation has become part of U.S. Copyright Law by virtue of 17 U.S.C. § 117 (2023), the case of computer programs, though novel, was not difficult to dissect. Computer programs do not create themselves but are the creative works of humans. Therefore, it was easy to recommend that those programs be subject to copyright. However, subsequent opinions from the U.S. Copyright Office and the courts indicate that there is a thin line between computer programs and AI-generated works. First, by virtue of (17 U.S.C. § 102, 2023), copyright protection subsists in original works of authorship. Although the Copyright Act did not define authorship, two cases – *Burrow-Giles Lithographic Co v. Sarony* (1884) and *Goldstein v California* 412 US 546 (1973) provide context. The court ruled that an author is an 'originator' or 'maker' to whom a work owes its origin. In a landmark judgment in *Feist Publications, Inc. v Rural Telephone Service Company, Inc.,* decided in 1991, the Supreme Court concluded that copyright protection is conditioned on the author's originality and creativity.

While the above cases emphasize the role of human involvement in copyright, the court has gone further to state that copyright cannot be conferred to works created solely by AI. In 2018, Mr. Stephen Thaler, the CEO of Imagination Engines, a neural network firm, filed a copyright application with the US Register of Copyrights. Stephen Thaler had indicated '*creativity*

machine' as the sole creator of the artwork he sought to be registered. Upon the denial by the Copyright Office on the grounds that the work had no human involvement, Stephen Thaler filed a lawsuit in *Thaler v. Perlmutter (2023)*, contesting the decision on the grounds that his creativity machine should be acknowledged as the author if it met the originality criterion. That ownership be vested in him as the machine's owner. In addition, he sought clarification from the court on whether a work generated solely by AI falls within the protection of U.S. copyright law. The court agreed with the Copyright Office that the United States Copyright Law protects only works of human creation. In this case, the U.S. District Court for the District of Columbia held that works created solely by an AI system without human involvement are not eligible for copyright protection (Naughton, 2023; Tagarao, 2023). The court held that copyright law protects only original works of authorship that display a minimal degree of creativity, and that copyright law will only protect 'the fruits of intellectual labor' that 'are found in the creative powers of the mind'.

The decision in *Thaler v. Perlmutter* (2023) concerned AI-generated works in which no human creativity was involved. The court's refusal to grant copyright underscores the U.S. position that authorship must be human. However, this does not automatically extend to AI-assisted works, where a human provides creative input and direction. In such cases, copyright may still subsist in human contributions, provided they meet the threshold of originality. Thus, the ruling clarifies that while AI-generated works fall outside copyright protection, AI-assisted works may remain within the human authorship framework. This distinction directly supports the central argument of this paper—that attribution, whether in law or academic research, must correspond to the extent of human intellectual contribution. Recognizing this distinction reinforces ethical accountability and helps prevent misattribution of AI-generated outputs to human authors.

B. The Position in the United Kingdom (UK)

The UK approach to authorship aligns with the statutory definitions found in various jurisdictions, that is, copyright applies 'only in relation to a subject-matter which is original in the sense that it is the author's own intellectual creation' (*Eva-Maria Painer v. Standard Verlags Gmbh, 2011*). This equally corresponds to the fact that the author had to exert sufficient skill, labor, and or judgment in the creation of the work. To constitute an original work, the content needs to reflect 'human personality', result from 'free and creative choices', and the 'author's personal touch' (Laddie et al., 2018). Section 9 of the Copyright, Designs and Patents Act 1988 (UK Act) defines an actor as a person who creates a work and to whom copyright is granted. Interestingly, Section 178 of the UK Act provides that 'computer-generated', in relation to a work, means that the work is generated by computer in circumstances such that there is no human author of the work. This definition aligns with the meaning of 'AI-generated', which refers to the generation of an output by AI without human intervention.

Section 9(3) of the UK Act provides that in the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken. Section 178, when read together with Section 9(3), presents challenges to determining authorship in 'computer-generated' work. Although Section 178 of the UK Act defines 'computer-generated' as works produced without human intervention, it lacks guidance on enforcement due to a lack of originality standards and an uncertain application to autonomous AI systems. Yet, it assigns computer-generated works an authorship criterion in Section 9(3) by stating that in the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken. An author, according to Section 9, is a person who creates a work.

Therefore, if an author is defined as the person who creates a work and to whom copyright is granted, the concept of computer-generated works, described as works created without human input, presents a conflict.

Another way of making sense of the two provisions may be to argue that an author, with respect to computer-generated works, is not synonymous with the person who undertakes the arrangements necessary for the creation of the work. While the former applies to literary works of human persons, the latter applies to computer-generated works (Kretschmer et al., 2022). In determining originality, the court may rely on a different originality test (Guadamuz, 2024). In *Nova Productions v. Mazooma Games* (2010), the Plaintiff, as the game's programmer, sued the player for copying the game's screen. In Judge Jacob's view, although the programmer only participated in the initial game programming and did not preset the subsequent game images, the programmer made 'necessary arrangements' for the completion of the work and thus obtained the copyright. This approach aligns with this paper's core thesis that authorship, whether in copyright law or in academic research, should correspond to demonstrable human intellectual effort. The UK's recognition of the programmer's role in arranging the creative process supports the ethical argument that attribution must reflect meaningful human input rather than mere technological facilitation.

C. The Position in the People's Republic of China

The Copyright Law of the People's Republic of China (National People's Congress of the People's Republic of China, 2020) grants protection to authors, including works by Chinese citizens, legal entities, and other organizations. By virtue of Article 11, the copyright in a work belongs to an author, and an author is defined as a citizen who has created such a work, in this case, referring to a human. Notably, the law provides a foundation to the effect that further regulations for the protection of computer software be established separately by the State Council (Article

45). So far, no such regulation has been enacted, but the courts have provided context through the 2018 Beijing High People's Court Guidelines for the Trial of Copyright Infringement Cases. Article 2.1 of the Guidelines made two interesting provisions: (i) In investigating whether the object of copyright claimed by the Plaintiff constitutes a work, the court shall generally take into consideration whether it is a creation made by a natural person in the field of literature, art and science, and (ii) whether it possesses originality (Beijing High People's Court, 2018, Article 2.1). To determine originality, Article 2.2 provides that the court will consider whether the expression was independently created by the author, as well as whether the arrangement of the expression manifests the author's selection and judgment (Beijing High People's Court, 2018, Article 2.2). These requirements reflect the legislative purpose of China's Copyright Law, which is to encourage and reward human intellectual creation. Consequently, contents generated purely by AI, lacking direct human authorship, cannot constitute works protected by copyright law. This reasoning was further exemplified in Beijing *Feilin Law Firm v. Beijing Baidu Netcom Science & Technology Co. (2019)*, where the Beijing court denied copyright protection for AI-generated works (Chen, 2019).

However, this position took a slightly different turn in 2019 in *Tencent Shenzhen v. Shanghai Yingxin,* where the court ruled that AI-generated work met the originality and creativity criteria under the Copyright Act. The court affirmed that the work (Dreamwriter—an AI software which was used to generate over three hundred thousand articles) was practically created by the Plaintiff's internal team, and 'Dreamwriter' was only applied as the writing tool. Since the work met the Act's copyright criteria, the court also held that the copyright belonged to *Tencent* as a legal entity.

The above reasoning was further emphasized in the recent case of *Li Yunkai v. Liu Yuanchun* (2023). In this case, the Plaintiff generated an image by entering prompts into open-source

image-generation software and shared it on his social media account. The defendant used these images in an article published on another social media platform, removing the Plaintiff's watermark. The Plaintiff claimed an infringement of his copyright. The Beijing Internet Court held that the disputed AI-generated image constituted a work under Chinese copyright law. The court held that the process of generating the image reflected the Plaintiff's aesthetic choices and personal judgment. From conception to final selection, the Plaintiff invested intellectual effort in creating the image. Therefore, the image was deemed original and represented the author's intellectual achievements.

These decisions reinforce the argument that human intellectual input remains central to authorship and ownership claims. By recognizing the Plaintiff's creative control through the use of prompts, the Chinese court in *Li Yunkai v. Liu Yuanchun* (2023) aligns with the central thesis of this paper: that legal and ethical accountability in AI-generated works must ultimately trace back to identifiable human agency. Such reasoning supports the position that while AI may facilitate creativity, it cannot replace the human element that grounds authorship, integrity, and responsibility.

D. Differing Doctrinal Approaches: Strict Human-Authorship Requirement Vs. Emerging Flexibility.

From the above discussions, purely AI-generated works fall outside copyright protection, while AI-assisted works may qualify, provided the human contribution is 'sufficiently creative' and not merely mechanical. China has shown a willingness to protect certain AI-generated works if human involvement is significant enough to meet originality requirements. However, while the *Tencent v. Shanghai* and *Li Yunkai v. Liu Yuanchun* cases drew global attention to the copyrightability of AI-generated works in China, it is essential to recognize that the outcome may have differed if the court had not established that Tencent's employees

and the Plaintiff in *Li Yunkai* were directly involved in the key aspects of the work such as processing, selection, writing styles, training, and algorithm verification. If this involvement had not been proven, the court might have aligned more closely with the *Feilin v. Baidu* case. In other words, the court in Beijing recognized that although the output was generated autonomously by AI, it was the employees who issued the prompts, demonstrating their creativity and aesthetic judgment.

In Nigeria, there is currently no judicial decision directly addressing the copyrightability of AI-generated works, as seen in the U.S., UK, and China. However, several Nigerian scholars and commentators have begun to explore this issue, reflecting growing awareness of its legal and practical implications. The following section discusses the implications for Nigeria.

V. OWNERSHIP OF AI RESEARCH WORKS UNDER NIGERIAN LAW

Major international copyright conventions and African intellectual property frameworks shape the Nigerian IP Framework. Internationally, treaties such as the Berne Convention for the Protection of Literary and Artistic Works (1886, acceded by Nigeria in 1993) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS, 1994, effective in Nigeria via World Trade Organization membership in 1995), the Paris Convention for the Protection of Industrial Property (acceded by Nigeria in 1963), establish core standards for copyright protection, including minimum terms and moral rights as well as entrenching key principles like national treatment and priority rights for intellectual property, including patents, trademarks, and industrial designs respectively. On the regional level, the African Regional Intellectual Property Organization (ARIPO) Model Law on Copyright and Related Rights (2016), the Protocol on Intellectual Property Rights under the African Continental Free Trade Area (AfCFTA, adopted 2023), which Nigeria supports as

a signatory to AfCFTA, influenced the Nigerian Copyright Act's stronger anti-piracy measures and online content regulations aligning with the continent's goals for trade and innovation.

Presently, IP, defined as creations of the mind and intellect, is protected by several laws in Nigeria, including the Copyright Act, amended in 2022, the Patents and Designs Act of 2004, and the Trademarks Act of 2004. These protections cover works such as literary and artistic works; inventions; designs and symbols, as well as names and images used in commerce. These IP rights traditionally apply to works created by humans, granting creators exclusive rights to their works for a defined period (Adaka & Olubiyi, 2022; Drahos, 1999; Vaver, 2001). These include copyright for literary and artistic works, patent for inventions, and trademark for brand identifiers (Adaka & Olubiyi, 2022; Afolayan, 2022; Ofili, 2014). These rights were designed to protect creators' interests by allowing them to control the use and distribution of their work and to benefit financially from their creations (Adaka & Olubiyi, 2022). Intellectual property laws in Nigeria, like those in other countries, were designed to protect these rights.

The Copyright Act, recently amended in 2022, regulates literary and artistic works. Section 1 of the Copyright Act outlines the Act's key objectives: to protect the rights of authors, to balance rights and ensure public access to creative works, to comply with international standards, and to strengthen the Copyright Commission. Section 2 outlines the scope of copyright protection in the country. It specifies the types of works that are eligible for copyright protection. However, for a literary, musical, or artistic work to be eligible for copyright, it must meet two criteria: originality and fixation (Oriakhogba, 2018).

The foundation of all IP protection in Nigeria is grounded in the concept of human authorship. This principle holds that original creations, whether literary works, inventions, music, or artistic expressions, result from human creativity and intellectual effort. Section 108 of the Copyright Act suggests that works el-

igible for copyright are works that present an original character. Scholars have explored the concept of originality in IP, and the prevailing view is that the work must be the result of a creator's intellectual effort rather than a direct copy of existing works. The work must be independently created by an author and possess a minimal degree of creativity, even if that innovation is subtle (Abrams, 1992; Dworkin, 1959; Nordell, 2001). Works that meet this criterion are protected by law, and unauthorized use amounts to infringement. Originality in this sense means that a certain degree of creativity, skill, and intellectual effort was put into the work, and not necessarily that the work needs to be novel or unique. An original work must therefore originate from the author and must involve the 'product of skill, labor, and judgment' (Dreier & Karnell, 1991).

Sections 28, 36, 44, and 108 of the Nigerian Copyright Act show that the Act is built on a person-based conception of authorship. Section 108 defines an 'author' as the person who creates a work and further specifies authorship according to the nature of the work; for example, the writer of a literary work, the composer of a musical work, or the person who took a photograph. This definitional framework underscores the Act's design's central role of human agency. In line with this, Section 28 vests first ownership of copyright in the author, subject to statutory exceptions, such as works created in the course of employment or pursuant to a contract for services, in which case rights may vest in the employer or commissioning party under Section 28(2).

The Act also establishes a comprehensive liability regime for infringement. Section 36 provides that infringement occurs where any person, without authorization, performs acts reserved to the copyright owner, whether in relation to the whole work or a substantial part, in its original or derivative form. Liability extends beyond individuals: Section 44 makes criminal liability applicable to both natural and corporate persons engaged in willful infringement. Taken together, the definitional rules on authorship, the framework for ownership, and the provisions

on infringement all presuppose a human creator at the heart of copyright protection. The absence of express recognition of non-human or autonomous creative processes creates a legal gap in AI-generated works, leaving unresolved questions about how authorship, ownership, and liability should be determined under Nigerian law.

Recently, Nigerian scholars have begun interrogating the intersection of AI, authorship, and intellectual property, underscoring both ownership concerns and questions of research integrity. Adaka and Olubiyi (2022) argue that Nigerian copyright and patent laws remain anchored in a human-centered conception of authorship and inventorship, thereby excluding AI from legal recognition and creating ambiguities in ownership where AI significantly contributes to a work. Similarly, Yohanna and Suleiman (2024) highlight that while AI can stimulate creativity and innovation, it also complicates the attribution of rights and risks of ethical misrepresentation when AI outputs are presented as purely human-authored. Bassey (2024) further notes that such works fall into a 'legal vacuum' under current Nigerian law, emphasizing that any reform should ensure human oversight remains central to innovation governance. Oloko (2025) advances this debate by identifying doctrinal gaps in Nigerian copyright, patent, and design law and calling for context-sensitive reforms to clarify ownership of AI-generated works.

Given the above, it may be safe to conclude that human-centric Copyright Laws will likely not recognize AI-generated works as copyrightable unless courts are progressive and align with the decisions of the Beijing Internet Court. However, if it can be shown that the output involves a certain level of creativity, the Nigerian courts may find it protectable. As this paper discusses the implications of generative AI within Nigerian academic institutions, these rulings have stark implications. Where a researcher makes a substantial contribution, even if the researcher used generative AI to produce the output, the researcher may be categorized as the author. However, when it is generated au-

tonomously by the AI, researchers may not claim copyright over such works. The positions in the above cases highlight the lack of a global consensus on the potential legal role of AI in creative processes. Consequently, there is an urgent need for continued dialogue and research in this area.

VI. ETHICS OF AI USE IN ACADEMIC RESEARCH

The discussion on academic research cannot be separated from the growing reliance of researchers on AI tools. The widespread use of LLMs by researchers highlights the tension between fostering research integrity among scholars and the use of machine-generated assistance. Thus, the challenges identified in researchers' engagement with AI, such as authorship, ownership, and academic integrity, directly shape current debates on the future of academic research.

Academic research is the cornerstone of intellectual inquiry and rigorous scholarship. It demands thorough research, data-driven arguments, and logical reasoning. While AI systems can generate structured arguments and produce references that appear credible, academic credibility ultimately depends on human judgment, that is, the ability to assess the reliability of sources, justify methodological choices, and assume responsibility for the integrity of the research process (Christou, 2023). In other words, credibility in scholarship is not achieved merely through well-structured output but through accountable authorship.

An academic author is an individual who contributes significantly to the creation of a scholarly work, such as a research paper, article, book, or thesis, and is recognized for their intellectual input. In the academic community, authorship conveys significant privileges, responsibilities, and legal rights, and serves as the basis for rewards and career advancement. Authorship confers credit and has important academic, social, and financial implications. Authorship also implies responsibility and accountability for published work.

Several bodies, including the COPE, the World Association of Medical Editors (WAME), the Council of Science Editors (CSE), the National Institutes of Health (NIH), the European Code of Conduct for Research Integrity (ALLEA, 2017), the ICMJE and the Publication Manual of the American Psychological Association (7th edition) have similar standards on what authorship in academic writing should be. Some of these criteria include that the person must have made a substantial intellectual contribution, be accountable for the integrity of the work, and be transparent in reporting contributions.

The Contributor Roles Taxonomy (CRediT) is a framework for describing human contributions to research. Now adopted by several publishing bodies, including APA (Holcombe, 2021), CRediT lists distinct roles authors can play in research, including conceptualization, formal analysis, software development, investigation, writing the original draft, writing the review, and editing. The implication of this is that a person must exercise some level of originality, creativity, and skill before attribution of authorship.

Some scholars, including Sharifzadeh (2024), Saito and Tsukiyama (2024), Yildiz (2023), Sikander et al. (2023), and Miao et al. (2024) contend that advanced AI models can play a significant role in the creative process, contributing ideas and generating text to a degree that might justify co-authorship. Interestingly, on the one hand, a 2023 case study found that GPT-3 met the ICMJE co-authorship criteria, including conception, drafting, and accountability (Osmanovic-Thunstrom & Steingrimsson, 2023). On the other hand, a study by Kandeel and Eldakak (2024) shows that LLMs like ChatGPT lack authenticity, as they may sometimes generate inconsistent responses to the same question, thereby compromising academic integrity and methodology and violating the long-held notion that researchers are expected to achieve consistent results using the same methods.

However, it is challenging to envision a situation in which AI

independently conceives an idea for academic writing or drafts a manuscript that produces significant intellectual content without significant human involvement. While generative AI can propose ideas, it cannot critically evaluate them by integrating diverse arguments and sources, a fundamental skill in academic work. The case study by Osmanovic-Thunstrom and Steingrimsson (2023) revealed that, while ChatGPT accepted consent to participate in the writing process and helped generate research topics, it produced fictitious references. This highlights that, in fields where accurate citations are essential to publication validity, tools like ChatGPT must still be approached with caution. Ultimately, academic credibility depends not only on what is cited but on how and why those sources are chosen, judgments that require human discernment and scholarly responsibility (Panjaitan et al., 2024). Additionally, OpenAI, the company behind ChatGPT, indicates that the AI cannot hold licenses or rights, making the claim that ChatGPT can take responsibility for errors in published works unfounded (OpenAI, 2025).

While LLMs may significantly support research work, they do not meet the CRediT criteria for authorship. Given that they cannot be held accountable for research integrity or be held accountable for errors, they fall outside the scope of that envisaged by CRediT. Notwithstanding, transparency in academic writing requires that the extent of the use of AI tools be disclosed, particularly when they have assisted in generating text, analyzing data, or refining language.

Several publishers now recommend or mandate such disclosures in acknowledgements or in a dedicated statement on the use of generative AI. Moreso, several universities and academic institutions have begun to accept that the use of AI may be permissible under certain conditions. For instance, the University of Oxford, Stanford, and the Massachusetts Institute of Technology permit the use of AI on the condition that students disclose it and follow their respective institutional guidelines on AI use (MIT, 2025; Oxford, 2025; Stanford, 2025). Disclosure is import-

ant for establishing academic integrity and for reviewers to monitor that authors review and validate all information provided by the AI tool (Hutson, 2018; Hosseini et al., 2023).

The publishing group of the American Association for the Advancement of Science presently permits authors to include AI-generated text and figures in their papers, provided that the use of the technology is acknowledged and explained. This approach ensures clarity about the role of AI in the research process while preserving authorship and accountability as exclusively human responsibilities.

Nonetheless, the principle of justice, understood as fairness and equity in access to educational and research opportunities, remains relevant to the use of AI in academic work. Although reliance on AI should be approached with caution due to risks of undermining academic integrity, its growing presence in scholarly writing raises questions of fairness. While some AI tools are freely available, many of the most advanced models and features are paywalled, offering users in privileged settings enhanced efficiency and writing support (Kuzmina et al., 2024). This is ethically significant not because all students and researchers must use AI, but because the normalization of AI-assisted productivity may inadvertently disadvantage those who lack access (Sonja, 2024). Justice, therefore, requires reflection on how institutional and structural inequalities shape who benefits from AI in academia, and whether such reliance aligns with the broader values of fairness, merit, and genuine intellectual engagement.

VII. INSTITUTIONAL AND POLICY RESPONSES

A. Responses in Nigeria

At the institutional level in Nigeria, a few universities have begun developing policies to guide the ethical and responsible use of AI in education. Delta State University, Abraka (DELSU), a university in the Eastern part of Nigeria, is widely rec-

ognized as the first university in the country to establish a comprehensive AI Policy for higher education (The Pointer, 2024). The policy emerged from a high-level international workshop. It was designed to address issues of responsible use, infrastructure development, and misuse prevention, while also promoting AI capacity development in teaching, research, and community engagement (The Pointer, 2024). Similarly, the University of Lagos (UNILAG) has initiated the process of crafting a policy on the ethical use of AI within academia. The draft policy, developed in collaboration with ethics and technology experts, is intended to preserve academic integrity by ensuring that AI supports rather than replaces critical thinking. The policy document is currently undergoing internal consultations and is expected to be presented before the university Senate (Ileyemi, 2025).

At the national level, UNESCO-ICHEI, in partnership with the National Universities Commission (NUC), the National Information Technology Development Agency (NITDA), and other regulatory bodies, convened a dialogue in 2024 to develop a consensus framework on AI in higher education. The dialogue emphasized the ethical, equitable, and context-sensitive deployment of AI in Nigerian universities. It underscored the need for a comprehensive national AI policy to support curriculum reform, research innovation, and digital infrastructure (Developing Consensus, 2024). Stakeholders across higher institutions have continued to advocate for such a policy, highlighting the risks of unregulated AI use and the opportunity for Nigeria to leverage AI to improve the quality and competitiveness of its educational system (Ebiringa, O. T. et al., 2025; Sheme, 2025; Ileyemi, 2025). Yet, considering that Nigeria has about two hundred and eighty-three universities, inclusive of federal, state, and private institutions, the fact that only a handful have publicly taken concrete steps toward institutional AI policies underscores how limited the progress has been and highlights the urgent need for a more coordinated national framework. The national AI strategy represents a step in the right direction; however, it does not

sufficiently address the specific challenges within the academic community.

A forward-looking response must therefore begin at the institutional level. Encouragingly, many universities have already adopted tools such as Turnitin to monitor plagiarism. This measure has proven effective in regulating the extent of students' reliance on unoriginal or AI-generated content. Universities should establish dedicated AI Ethics Committees to oversee policy development, monitor compliance, and provide training on responsible use. Clear codes of conduct—covering disclosure requirements, attribution standards, and acceptable levels of AI assistance—are essential to preserving academic integrity. At the national level, the NUC and the Federal Ministry of Education should issue baseline guidelines applicable to all higher institutions, ensuring coherence across the sector.

A total ban on AI use is neither realistic nor consistent with Nigeria's drive toward digital transformation in higher education. Ethical adaptation, rather than rejection, enables universities to regulate use responsibly, promote integrity, and harness AI's benefits in line with national and academic development priorities.

However, equity considerations must remain central to these reforms. Equitable policy enforcement requires parallel investment in institutional infrastructure, such as libraries and research centers that provide access to AI resources, so that compliance does not inadvertently widen existing disparities between well-resourced and under-resourced universities (Ahmed, 2024).

B. Recommendations and Lessons for Nigeria

1. Development of codes and guidelines on responsible AI use

For the ethical and responsible academic use of AI in Nigeria, research institutions need to develop codes of use. This will help address issues such as uneven access to AI, risks of academ-

ic misconduct, gaps in digital literacy, and the absence of clear national regulatory guidance. If properly developed, it may ensure that AI integration supports equitable learning, preserves academic values, and protects vulnerable groups of students and researchers. Interestingly, the Mohammed VI Polytechnic University (UM6P) in Morocco made a landmark move by deploying ChatGPT Edu, officially integrating the AI tool into its academic and administrative operations. This is the first from an African university to formally embrace ChatGPT in this way, a move described as a proactive, policy-based approach rather than resistance (Sawahel, 2024).

2. Equipment of university libraries to ensure equal access to AI tools

Universities should prioritize equipping libraries and research centers with access to basic AI tools, not simply to provide convenience, but to ensure equitable participation in research and scholarship. By centralizing access, institutions can mitigate the effects of socioeconomic disparities, prevent the normalization of AI as an exclusive privilege for well-resourced students and researchers, and uphold the principles of justice and academic integrity that underpin credible knowledge production.

3. Establishment of AI research ethics committees in academic institutions

While research ethics committees traditionally originated with a focus on biomedical conduct, their mandate has evolved to encompass the ethical implications of all research involving human subjects and data, including the use of AI tools. Therefore, their template can be adopted to create an AI ethics committee that will provide oversight of the use of AI tools in research institutions. The AI ethics committees will play a crucial role in ensuring that AI is used ethically in research conducted in academic and research-related institutions.

VIII. CONCLUSION

This paper argues that generative AI is transforming academic research and unsettling long-standing assumptions about ownership, authorship, and academic integrity. While these debates are unfolding globally, they take on sharper urgency in the Global South, where weak regulation, widening digital divides, and legal inertia heighten the risks. Nigeria, taken as a focused case study, exemplifies both these conceptual challenges and the practical vulnerabilities.

The rise of AI-generated and AI-assisted content forces a rethinking of traditional categories. Questions of whether AI is merely a tool or a co-creator, and whether originality and accountability can survive non-human contributions, lie at the heart of the ownership and authorship dilemma. Comparative case law shows starkly divergent approaches, from the rigid human-authorship requirement in the United States to the more flexible interpretations emerging in China. Yet, no jurisdiction has reached a stable consensus, leaving Nigeria to navigate an unsettled terrain. Nigeria's Copyright Act (2022) remains firmly human-centric, creating a legal vacuum for AI-generated works.

Although a few universities have begun developing institutional policies on the ethical use of AI, these initiatives remain limited given the number of higher education institutions in Nigeria. Moreover, while the National AI Strategy provides a national framework, it does not specifically address the governance of AI use within academic and research contexts, leaving a regulatory gap at both institutional and sectoral levels. Ethical challenges, including fabricated citations, disclosure, and inequitable access, further complicate the landscape. Without disclosure and accountability, AI use in academic research risks undermining both scholarly integrity and intellectual property protections.

The way forward lies not in rejecting AI, but in adapting institutions and laws to its realities. Nigerian universities and regulators must develop codes of conduct, establish AI ethics

committees, and align with global authorship standards while considering local contexts. At the national level, policy frameworks should both protect integrity and ensure equitable access to AI tools. For Nigeria and other countries in the Global South, striking this balance is urgent: it will determine whether AI deepens existing vulnerabilities or becomes a catalyst for innovation, fairness, and integrity in knowledge production. Ultimately, the challenge is not whether AI belongs in academia, but how to shape its presence in ways that uphold human creativity, accountability, and justice.

REFERENCES

Abdikhakimov, I. (2023). Unraveling the Copyright Conundrum: Exploring AI-Generated Content and Its Implications for Intellectual Property Rights. International Conference on Legal Sciences,

Abrams, H. B. (1992). Originality and creativity in copyright law. *Law & Contemp. Probs.*, *55*, 3.

Adaka, E. E., & Olubiyi, I. A. (2022). Lessons for Nigeria: determining authorship and inventorship of artificial intelligence generated works. *J. Intell. Prop. & Info. Tech. L.*, *2*, 15.

Afolayan, O. T. (2022). Intellectual Property Rights Protection in Nigeria: Issues and Perspectives. *Information Impact: Journal of Information and Knowledge Management*, *13*(1), 1-9.

Ahmad, Z., Kaiser, W., & Rahim, S. (2023). Hallucinations in ChatGPT: An unreliable tool for learning. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, *15*(4), 12.

Ahmed, F. (2024). The digital divide and AI in education: Addressing equity and accessibility. *Journal of AI Integration in Education*, *1*(2), 12-23.

AlZaabi, A., ALamri, A., Albalushi, H., Aljabri, R., & AalAbdulsalam, A. (2023). ChatGPT applications in academic research: A review of benefits, concerns, and recommendations. *bioRxiv*, 2023.2008. 2017.553688.

Anon. (2018). Robot Sophia, UN's First Innovation Champion, Visited Armenia.

Association of African Universities (2023). Artificial Intelligence in African Higher Education: Celebrating the 2023 African Universities' Day: Concept Paper. https://blog.aau.org/wp-content/uploads/2023/10/ENGLISH_-CONCEPT-NOTE-AU-DAY-2023.pdf

Bassey, A. I. (2024). Artificial Intelligence and Intellectual Property Rights Protection: An Appraisal. *IRLJ*, *6*, 75.

Beijing Feilin Law Firm v. Beijing Baidu Netcom Science Technology Co. (2019). (Beijing Internet Court Civil Judgment No. 239). https://english.bjinternetcourt.gov.cn/2019-05/28/c_168.htm

Beijing High People's Court. (2018). Beijing High People's Court Guidelines for the Trial of Copyright Infringement Cases (Section 2.1 & 2.2). LawInfoChina. https://www.lawinfochina.com/display.aspx?id=33877&lib=law

Borger, J. G., Ng, A. P., Anderton, H., Ashdown, G. W., Auld, M., Blewitt, M. E., Brown, D. V., Call, M. J., Collins, P., & Freytag, S. (2023). Artificial intelligence takes center stage: exploring the capabilities and implications of ChatGPT and other AI□assisted technologies in scientific research and education. *Immunology and cell biology*, *101*(10), 923-935.

Bowrey, K., Cochrane, T., Hadley, M., McKeough, J., Pappalardo, K., & Weatherall, K. (2024). Managing ownership of copyright in research publications to increase the public benefits from research. *Federal Law Review*, *52*(1), 3-33.

Bozkurt, A. (2024). GenAI et al.: Cocreation, Authorship, Ownership, Academic Ethics and Integrity in a Time of Generative AI. *Open Praxis*. https://doi.org/10.55982/openpraxis.16.1.654

Bretag, T. (2018). Academic integrity. In *Oxford Research Encyclopedia of Business and Management*.

Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53 (1884)

Butterworth, J. (2003). Integrity in Scientific Research: Creating an Environment That Promotes Responsible Conduct. *International Anesthesia Research Society*, *97*(4), 1209-1210. https://journals.lww.com/anesthesia-analgesia/fulltext/2003/10000/integrity_in_scientific_research__creating_an.85.aspx

Čerka, P., Grigienė, J., & Sirbikytė, G. (2017). Is it possible to grant legal personality to artificial intelligence software systems? *Computer Law & Security Review*, *33*(5), 685-699.

Chafee Jr, Z. (1945). Reflections on the Law of Copyright: I. *Colum. L. Rev.*, *45*, 503.

Chegg.org. (2023). Global Student Survey 2023: A survey of the lives, hopes and concerns of undergraduate students across 15 countries. Chegg.org. https://www.chegg.org/global-student-survey-2023?

Chen, M. (2019). Beijing Internet Court denies copyright to works created solely by artificial intelligence. *Journal of Intellectual Property Law & Practice*, *14*(8), 593-594.

Chesterman, S. (2020). Artificial intelligence and the limits of legal personality. *International & Comparative Law Quarterly*, *69*(4), 819-844.

Christou, P. A. (2023). How to use artificial intelligence (AI) as a resource, methodological and analysis tool in qualitative research? *Qualitative Report*, *28*(7).

Chubb, J., Cowling, P., & Reed, D. (2022). Speeding up to keep up: exploring the use of AI in the research process. *AI & SOCIETY*, *37*(4), 1439-1457.

Coombe, R. J. (1998). *The cultural life of intellectual properties: Authorship, appropriation, and the law*. Duke University Press.

Copyright Act, 2022, Act No. 8 (2022) (Nigeria). WIPO Lex. https://www.wipo.int/wipolex/en/text/586899? Crosby, J. F. (1996). *The selfhood of the human person*. CUA Press.

Davis, R. (2025). CheatGPT crisis – SA universities faced with a burgeoning degree of AI-written academic assignments. https://www.dailymaverick.co.za/article/2025-04-05-cheatgpt-crisis-sa-universities-faced-with-a-burgeoning-degree-of-ai-written-academic-assignments/

The Pointer (2024). DELSU Develops Nigeria's First AI Policy For Varsity Education. (2024, February 13) The Pointer News Online. https://www.thepointersnewsonline.com/delsu-develops-nigerias-first-ai-policy-for-varsity-education/

Developing consensus framework for AI's use in Nigerian higher education. (2024, August 16) *TheGuardian*. https://guardian.ng/opinion/developing-consensus-framework-for-ais-use-in-nigerian-higher-education/

Dewey, J. (1925). The historic background of corporate legal personality. *Yale LJ*, *35*, 655.

Drahos, P. (1999). The universality of intellectual property rights: origins and development. *Intellectual Property and Human Rights. Geneva: World Intellectual Property Organization*, 13-41.

Dreier, T., & Karnell, G. W. (1991). Originality of the copyrighted work: a European Perspective. *J. Copyright Soc'y USA*, *39*, 289.

Dremliuga, R., Kuznetcov, P., & Mamychev, A. (2019). Criteria for Recognition of AI as a Legal Person. *J. Pol. & L.*, *12*, 105.

Dreyfuss, R. C. (2000). Collaborative research: Conflicts on authorship, ownership, and accountability. *VAnD. l. reV.*, *53*, 1159.

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., & Eirug, A. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International journal of information management*, *57*, 101994.

Dworkin, A. T. (1959). Originality in the law of copyright. *Copyright Law Symposium (No. 11)*, 45–72. Columbia University Press.

Dyschkant, A. (2015). Legal personhood: how we are getting it wrong. *U. Ill. L. Rev.*, 2075.

Ebiringa, O. T., Ikerionwu, C. O., Erike, A. I., & Asiegbu, B. C. (2025). Generative AI Adoption in Nigerian Higher Education: Benefits, Challenges, and Opportunities. *African Journal of Humanities and Contemporary Education Research*, *20*(1), 285-304. https://doi.org/10.62154/ajhcer.2025.020.01028

Emsley, R. (2023). ChatGPT: these are not hallucinations–they're fabrications and falsifications. *Schizophrenia*, *9*(1), 52.

Eshraghian, J. (2020). Human ownership of artificial creativity. *Nature Machine Intelligence*, *2*, 157-160. https://doi.org/10.1038/s42256-020-0161-x

Ezurike, N., & Akinsulire, T. (2024). Investigating the Awareness and Adoption of ChatGPT as a Learning Tool among Undergraduates in Lagos State Nigeria. *International Journal of Education, Learning and Development*, *12*, 134-154. https://doi.org/10.37745/ijeld.2013/vol12n9134154

Fasola, O. S. (2024). Awareness, perception and use of artificial intelligence tools by LIS educators in Nigerian higher institutions. *Cybrarians Journal*(72), 1-20.

Feist Publications, Inc. v. Rural Telephone Service Co., Inc., 499 U.S. 340 (1991).

Flynn, E. (2021). Law, language and personhood: disrupting definitions of legal capacity. *Griffith Law Review*, *30*(3), 374-394. https://doi.org/10.1080/10383441.2022.2035947

Fritz, J. (2025). Understanding authorship in Artificial Intelligence-assisted works. *Journal of Intellectual Property Law and Practice*, jpae119.

Gliha, D. (2020). Artificial Intelligence and Intellectual Property Right. WIPO Conversation on Intellectual Property and Artificial Intelligence Geneva.

Goldstein v. California, 412 U.S. 546 (1973)

Goldstein, P., Lillick, S. W., & Lillick, I. S. (1989). *Copyright: principles, law, and practice* (Vol. 1). Little, Brown Boston, MA.

Goodman, F. (2025). "If not for ChatGPT, where would I be?": How Nigerian university students are using AI. https://techcabal.com/2025/04/10/how-nigerian-students-are-using-ai

Guadamuz, A. (2024). A scanner darkly: Copyright liability and exceptions in artificial intelligence inputs and outputs. *GRUR International*, *73*(2), 111-127.

Hagan, W. (2023). Kenya, South Africa tops Africa in AI usage in schools - survey. https://globalsouthworld.com/article/kenya-south-africa-tops-africa-in-ai-usage-in-schools-survey?

Hemachandran, K., Verma, P., Pareek, P., Arora, N., Rajesh Kumar, K. V., Ahanger, T. A., Pise, A. A., & Ratna, R. (2022). Artificial Intelligence: A Universal Virtual Tool to Augment Tutoring in Higher Education. *Computational Intelligence and Neuroscience*, *2022*(1), 1410448. https://doi.org/https://doi.org/10.1155/2022/1410448

Holcombe, A. (2021) Authorship: Giving credit where it's due. https://www.apa.org/pubs/journals/resources/publishing-tips/giving-credit?

Hosseini, M., Rasmussen, L. M., & Resnik, D. B. (2023). Using AI to write scholarly publications. In (pp. 1-9): Taylor & Francis.

Hosseini, M., Resnik, D. B., & Holmes, K. (2023). The ethics of disclosing the use of artificial intelligence tools in writing scholarly manuscripts. *Research Ethics*, *19*(4), 449-465.

Huff, C. (2024). The promise and perils of using AI for research and writing. Hutson, M. (2018). Artificial intelligence faces reproducibility crisis. *Science*, *359 6377*, 725-726. https://doi.org/10.1126/science.359.6377.725

Ileyemi, M. (2025). UNILAG develops policy on ethical use of AI in academia. *Premium Times*. https://www.premiumtimesng.com/education/771167-unilag-develops-policy-on-ethical-use-of-ai-in-academia.html

Ivanis, A., Hren, D., Sambunjak, D., Marusić, M., & Marusić, A. (2008). Quantification of authors' contributions and eligibility for authorship: randomized study in a general medical journal. *J Gen Intern Med*, *23*(9), 1303-1310. https://doi.org/10.1007/s11606-008-0599-8

Kandeel, M. E., & Eldakak, A. (2024). Legal dangers of using ChatGPT as a co-author according to academic research regulations. *Journal of Governance and Regulation / Volume*, *13*(1).

Kant, I. (1998). Groundwork of the metaphysics of morals (M. Gregor, Trans.). Cambridge University Press. Retrieved from https://cpb-us-w2.wpmucdn.com/blog.nus.edu.sg/dist/c/1868/files/2012/12/Kant-Groundwork-ng0pby.pdf

Kelly, R. (2024, June 28). Survey: 86% of Students Already Use AI in Their Studies. https://campustechnology.com/articles/2024/08/28/survey-86-of-students-already-use-ai-in-their-studies.aspx

Khairuldin, W. M. F. W., Nor Anas, W. N. I., Umar, R., Kamarudin, M. K. A., & Embong, A. H. (2022). Ethical issues in academic authorship: A study on group writing. Academic Journal of Interdisciplinary Studies, 11(1), 226–236. https://doi.org/10.36941/ajis-2022-0020

Kperogi, F. (2025). *Fake AI-Generated Article Cited My Book from the Future!* https://www.farooqkperogi.com/2025/07/fake-ai-generated-article-cited-my-book.html

Kramm, M. (2020). When a River Becomes a Person. *Journal of Human Development and Capabilities*, *21*(4), 307-319. https://doi.org/10.1080/19452829.2020.1801610

Kretschmer, M., Meletti, B., & Porangaba, L. H. (2022). Artificial intelligence and intellectual property: copyright and patents—a response by the CREATe Centre to the UK Intellectual Property Office's open consultation. *Journal of Intellectual Property Law & Practice*, *17*. https://doi.org/10.1093/jiplp/jpac013

Kurki, V. A. J. (2023). *Legal Personhood*. Cambridge University Press. https://doi.org/Doi: 10.1017/9781009025614

Kuzmina, T., Podbiralina, G., & Baburina, O. (2024). Impact of artificial intelligence on sustainable development in African countries. *E3S Web of Conferences, 583*, 08005. https://doi.org/10.1051/e3sconf/202458308005

Laddie, H., Prescott, P. S., & Vitoria, M. (2018). *The modern law of copyright*. LexisNexis.Laski, H. J. (1916). The personality of associations. *Harvard Law Review*, *29*(4), 404-426.

Lavik, E., & Van Gompel, S. (2012). On the prospects of raising the originality requirement in copyright law: Perspectives from the Humanities. *J. Copyright Soc'y USA*, *60*, 387.

Li Yunkai v. Liu Yuanchun, (2023) Jing 0491 Min Chu No. 11279 (Beijing Internet Court). *Beijing Internet Court* https://www.chinajusticeobserver.com/a/landmark-ruling-china%27s-court-upholds-copyright-for-ai-generated-images?

Liu, J. P. (2002). Copyright and time: A proposal. *Michigan Law Review*, *101*(2), 409-481.

Lu, B. (2021). A theory of 'authorship transfer' and its application to the context of Artificial Intelligence creations. *Queen Mary Journal of Intellectual Property*, *11*(1), 2-24.

Lucchi, N. (2024). ChatGPT: a case study on copyright challenges for generative

artificial intelligence systems. *European Journal of Risk Regulation*, *15*(3), 602-624.

Macfarlane, B., Zhang, J., & Pun, A. (2014). Academic integrity: A review of the literature. *Studies in higher education*, *39*(2), 339-358.

Makena, C. (2023). Intellectual Property & Artificial Intelligence: Chat GPT – A Battle Against Plagiarism in the Realm of Academic Essays. https://cipit.org/intellectual-property-artificial-intelligence-chat-gpt-a-battle-against-plagiarism-in-the-realm-of-academic-essays/

Maluleke, A. F. (2025). AI adoption in African higher education: A systematic review of benefits and ethical implications. *Interdisciplinary Journal of Education Research*, *7*(2), a05. https://doi.org/10.38140/ijer-2025.vol7.2.05

Manolakev, P. H. (2017). Artificial intelligence and the law: Works generated by AI – How artificial intelligence challenges our perceptions of authorship (Master's thesis). Tilburg University Law School, Tilburg, the Netherlands. https://arno.uvt.nl/show.cgi?fid=143870

McDermott, D. (2007). Artificial intelligence and consciousness. *The Cambridge handbook of consciousness*, 117-150.

Metze, K., Morandin-Reis, R. C., Lorand-Metze, I., & Florindo, J. B. (2024). Bibliographic research with ChatGPT may be misleading: the problem of hallucination. *Journal of pediatric surgery*, *59*(1), 158.

Miao, J., Thongprayoon, C., Suppadungsuk, S., Garcia Valencia, O. A., Qureshi, F., & Cheungpasitporn, W. (2024). Ethical Dilemmas in Using AI for Academic Writing and an Example Framework for Peer Review in Nephrology Academia: A Narrative Review. *Clinics and Practice*, *14*(1), 89-105. https://www.mdpi.com/2039-7283/14/1/8

MIT. (2025). *Guidance for use of Generative AI tools*. Massachsetts Institute of Technology. https://ist.mit.edu/ai-guidance

Moll, J., Oliveira-Souza, R. d., Garrido, G. J., Bramati, I. E., Caparelli-Daquer, E. M., Paiva, M. L., Zahn, R., & Grafman, J. (2007). The self as a moral agent: linking the neural bases of social agency and moral sensitivity. *Social neuroscience*, *2*(3-4), 336-352.

Morocco-Clarke, A., Sodangi, F. A., & Momodu, F. (2024). The implications and effects of ChatGPT on academic scholarship and authorship: a death knell for original academic publications? *Information & Communications Technology Law*, *33*(1), 21-41.

Multichoice (Nig.) Ltd. v. Musical Copyright Society of Nigeria Ltd. (Gte.), (2020) 13 Nigerian Weekly Law Reports (Pt. 1742) 415 (CA).

Naithani, P. (2022). Issues of authorship and ownership in work created by artificial intelligence-Indian copyright law perspective. *NTUT Journal of Intellectual Property Law and Management*, *11*(1), 1-12.

National Artificial Intelligence Strategy, (2024). https://ncair.nitda.gov.ng/wp-content/uploads/2024/08/National-AI-Strategy_01082024-copy.pdf

National Commission on New Technological Uses of Copyrighted Works. (1981). *Final report on the National Commission on New Technological Uses of Copyrighted Works. Computer/Law Journal, 3*(1), 53–61. https://repository.law.uic.edu/jitpl/vol3/iss1/3/

National Research Council, I. o. M. (2002). Integrity in Scientific Research: Creating an Environment That Promotes Responsible Conduct. In. National Academies Press (U.S.)

Naughton, J. (2023). 'Can AI-generated Art Be Copyrighted? A US Judge Says Not, but It's Just a Matter of Time' https://www.theguardian.com/commentisfree/2023/aug/26/ai-generated-art-copyright-law-recent-entrance-paradise-creativity-machine

Nnaemeke, F., & Ogunbadejo, I. (2024). Awareness, knowledge, and perception of Chat-GPT among undergraduates of Nnamdi Azikiwe University, Awka, Anambra State, Nigeria. *International Journal of Research and Scientific Innovation*, *11*(3).

Nordell, P. J. (2001). The Notion of Originality–Redundant or not? *Stockholm Institute for Scandianvian Law*, 97-111.

Nova Productions Ltd. v. Mazooma Games Ltd., 624 F.3d 1310 (9th Cir. 2010)

Ofili, O. U. (2014). Intellectual property rights protection and economic development: the case of Nigeria. *European Scientific Journal*, 1-145.

Ojubanire, O., Olaleye, S., Marhraoui, M. A., Kamihanda, M. W., Oke, O., & Ojubanire, O. (2025). Awareness, perception, and adoption of ChatGPT in African HEIs: A multi-dimensional analysis. *The Internet and Higher Education*, *65*, 100999. https://doi.org/10.1016/j.iheduc.2025.100999

Okoli, I. K., & Nnajiofor, O. G. (2024). The nature of consciousness in the context of artificial intelligence: Redefining human-technology relationships. *UJAH: Unizik Journal of Arts and Humanities*, *25*(1), 1-30.

Ola, K. (2015). Evolution and future trends of copyright in Nigeria. In *Copyright perspectives: Past, present and prospect* (pp. 97-124). Springer.

Oladokun, B. D., Dogara, K., & Waziri, M. Y. (2024). Students' attitudes and experiences with ChatGPT as a reference service tool in a Nigerian University: a comprehensive analysis of user perceptions. *Gamification and Augmented Reality*, *2*, 16.

Oloko, T. O. (2025). Artificial intelligence and intellectual property rights in Nigeria: A legal discourse of the challenges and prospects. *Nnamdi Azikiwe University Journal of International Law and Jurisprudence*, *16*(1), 140-162.

OpenAI. (2025). *OpenAI Services Agreement*. OpenAI. Retrieved October 30 from https://openai.com/policies/services-agreement/

Oriakhogba, D. (2018). The scope and standard of originality and fixation in Nigerian and South African copyright law. *African Journal of Intellectual Property (2018)*, *2*(2), 119-135.

Osmanovic-Thunström, A., & Steingrimsson, S. (2023). Does GPT-3 qualify as a co-author of a scientific paper publishable in peer-review journals according to the ICMJE criteria? A case study. *Discover Artificial Intelligence*, *3*. https://doi.org/10.1007/s44163-023-00055-7

Oxford. (2025). *Use of generative AI tools to support learning*. The University of Oxford. Retrieved July 4 from https://www.ox.ac.uk/students/academic/guidance/skills/ai-study

Padmanabhan, A., & Wadsworth, T. J. (2024). A common law theory of ownership for AI-created properties. *J. Pat. & Trademark Off. Soc'y*, *104*, 155.

Painer v. Standard Verlags GmbH, C-145/10, ECLI:EU:C:2011:798 (Court of Justice of the European Union, 2011).

Panjaitan, A. O., Novelyn, S., & Angreni, F. (2024). The impact of proper citation on academic integrity and scholarship. *Asian Journal of Advanced Research and Reports*, *18*(10), 192-201.

Parthemore, J., & Whitby, B. (2013). What makes any agent a moral agent? Reflections on machine consciousness and moral agency. *International Journal of machine consciousness*, *5*(02), 105-129.

Prabhu, M., & Premraj, J. A. (2024). Artificial consciousness in AI: a posthuman fallacy. *AI & SOCIETY*, 1-14. Saito, H., & Tsukiyama, T. (2024). Use of Artificial Intelligence in Manuscript Preparation-AI as a Co-Author. *Int J Periodontics Restorative Dent*, *0*(0), 1-12. https://doi.org/10.11607/prd.7022

Salomon v. Salomon & Co Ltd, [1897] AC 22 (Appeal Cases 1897).

Sarfo, J. O., Tachie-Donkor, G., Aggrey, E. K., & Mordi, P. (2024). Attitudes, Perceptions, and Challenges Towards Artificial Intelligence Adoption in Ghana and Nigeria: A Systematic Review with a Narrative Synthesis Attitudes, Perceptions, and Challenges Towards Artificial Intelligence. *International Journal of Media and Information Literacy*, *9*(2), 437-452.

Sawahel, W. (2024). *University takes lead in Africa as it deploys new AI tool*. U. W. News. https://www.universityworldnews.com/post.php?story=20241113091916888

Sharifzadeh, R. (2024). ChatGPT as Co-Author? AI and Research Ethics. *ETHICS IN PROGRESS*, *15*, 155-173. https://doi.org/10.14746/eip.2024.1.8

Sheme, I. (2025, February 25). Higher institutions want law on comprehensive national AI policy in Nigeria. National Open University of Nigeria News. https://nounnews.nou.edu.ng/index.php/article/higher-institutions-want-law-comprehensive-national-ai-policy-nigeria?

Shenzhen Tencent Computer System Co., Ltd. v. Shanghai Yingxun Technology Co., Ltd., Case No. Y0305MC No. 14010 (Shenzhen Nanshan Dist. People's Ct. Dec. 24, 2019).

Shittu, O. I., Busari, D. A., & Olanade, O. Y. (2025). Knowledge, Attitude, and Perception of Learners Towards the Use of ChatGPT in the University of Ibadan, Nigeria. *RISE*, *14*(2), 146-168.

Sikander, B., Baker, J., Deveci, C., Lund, L., & Rosenberg, J. (2023). ChatGPT-4 and Human Researchers Are Equal in Writing Scientific Introduction Sections: A Blinded, Randomised, Non-inferiority Controlled Study. *Cureus*, *15*. https://doi.org/10.7759/cureus.49019

Silva, J., & Tsigaris, P. (2023). Human and AI□based authorship: Principles and ethics. *Learned Publishing*, *36*. https://doi.org/10.1002/leap.1547

Silva, T. P., Ocampo, T. S., Alencar-Palha, C., Oliveira-Santos, C., Takeshita, W. M., & Oliveira, M. L. (2023). ChatGPT: a tool for scientific writing or a threat to integrity? *Br J Radiol*, *96*(1152), 20230430.

Smits, J., & Borghuis, T. (2022). Generative AI and intellectual property rights. In *Law and artificial intelligence: regulating AI and applying AI in legal practice* (pp. 323-344). Springer.

Stanford. (2025). *Course Policies on Generative AI Use*. Stanford University. Retrieved July 4 from https://tlhub.stanford.edu/docs/course-policies-on-generative-ai-use/

Streamline Official. (2025). Kenya Leads World With 42 Percent ChatGPT Adoption. https://streamlinefeed.co.ke/news/kenya-leads-chatgpt-adoption-42-percent

Suleman, T. A., Okimiji, O. P., Atoro, T. K., & Adejo, J. E. (2025). Deployment of ChatGPT in Nigerian Universities: Addressing Research Challenges and Ethical Considerations. *LASU Journal of Environmental Sciences*, *1*(1), 338-363.

Tagarao, L. K. (2023). U.S. District Court Rules Art Created Solely by Artificial Intelligence ineligible for Copyright Protection. https://www.rennerotto.com/resources/blog/us-district-court-rules-art-created-solely-by-artificial-intelligence-ineligible-for-copyright-protectionnbsp

Talimonchik, V. P. (2021). The Prospects for the Recognition of the International Legal Personality of Artificial Intelligence. *Laws*, *10*(4), 85.

Tang, G., & Eaton, S. (2023). *A Rapid Investigation of Artificial Intelligence Generated Content Footprints in Scholarly Publications*. https://doi.org/10.21203/rs.3.rs-3253789/v1

Tarisayi, K. S. (2024). ChatGPT use in universities in South Africa through a socio-technical lens. *Cogent Education*, *11*(1), 2295654. https://doi.org/10.1080/2331186X.2023.2295654

Tencent Shenzhen v. Shanghai Yingxin, (Nanshan District Court 2020).

Thaler v. Perlmutter, No. 22-1499, 75 F.4th 543 (6th Cir. 2023).

Thambaiya, N., Kariyawasam, K., & Talagala, C. (2025). Copyright law in the age of AI: analysing the AI-generated works and copyright challenges in Australia. *International Review of Law, Computers & Technology*, 1-26.

Turner, J., & Turner, J. (2019). Legal personality for AI. *Robot Rules: Regulating Artificial Intelligence*, 173-205.

Uzuegbunam, C., & Bosch, T. (2023). *South African university students use AI to help them understand - not to avoid work*. https://doi.org/10.13140/

RG.2.2.23354.98246

Vaver, D. (2001). Intellectual property: the state of the art. *Victoria U. Wellington L. Rev.*, *32*, 1. Wager, E. (2009). Recognition, reward and responsibility: why the authorship of scientific papers matters. *Maturitas*, *62*(2), 109-112.

Walters, W. H., & Wilder, E. I. (2023). Fabrication and errors in the bibliographic citations generated by ChatGPT. *Scientific Reports*, *13*(1), 14045.

Weller, C. (2017, October 26). A robot has just been granted citizenship of Saudi Arabia. World Economic Forum. https://www.weforum.org/stories/2017/10/a-robot-has-just-been-granted-citizenship-of-saudi-arabia/ Wise, S. M. (2010). Legal personhood and the nonhuman rights project. *Animal L.*, *17*, 1.

Xie, Y., Qi, T., Yi, J., Yang, X., Whalen, R., Huang, J., Ding, Q., Xie, Y., Xie, X., & Wu, F. (2024). Measuring human contribution in AI-assisted content generation. *arXiv preprint arXiv:2408.14792*.

Yildiz, A. (2023). AI as a Co-Author? We Should Also Ask Philosophical (and Ethical) Questions. *European Journal of Therapeutics*, *29*. https://doi.org/10.58600/eurjther1723

Yohanna, F., & Suleiman, S. I. (2024). The impact of artificial intelligence on creativity, innovation and intellectual property rights in Nigeria. *Imam Ja'afar Al-Sadiq University Journal of Legal Studies*, *4*(2), 6.

Zemer, L. (2017). *The idea of authorship in copyright*. Routledge.