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GENERATED WORKS AND COPYRIGHT PROTECTION IN PAKISTAN: A DOCTRINAL AND COMPARATIVE ANALYSIS OF AUTHORSHIP AND OWNERSHIP UNDER THE COPYRIGHT ORDINANCE, 1962

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Abstract

The rapid development of generative artificial intelligence (AI) has raised important questions about authorship, originality, ownership and copyright protection. These questions are more difficult in countries where copyright laws were made before the development of modern AI. Pakistan is one such Country. The Copyright Ordinance 1962 is the main law governing copyright in Pakistan. However, it does not clearly explain the legal status of AI-generated and AI-assisted works. There are different types of research and studies that have discussed AI and copyright issues in Pakistan. Soomro et al. and Mushtaq et al. in 2024 and Ahmed and Abdul Manab in 2026 have examined different legal and policy issues related to AI and copyright. These studies discuss matters such as authorship, ownership, originality, infringement and AI training. Not only these but other researchers, including Mazzi in 2024 and Ghaffar and Albarashdi in 2025, have also examined human creativity, originality and ownership in AI-generated work. In this context, this article relies on qualitative, doctrinal and comparative legal research methods. It examines relevant provisions of the Copyright Ordinance 1962. These include section 2(d), which deals with the meaning of an author; section 3, which defines the meaning of copyright; section 10, which deals with works in which copyright subsists; and section 13, which deals with the first owner of copyright. This article also compares Pakistan's legal framework with other legal approaches in the United States and United Kingdom to assess how human creative contribution influences copyright eligibility and ownership. This article argues that Pakistan requires clearer legislative and interpretive guidance to distinguish between works created mainly by AI and works created with the help of AI. Human creative contribution should be an important factor in this distinction, which is why the article suggests a human-contribution-based approach. Clearer rules can help reduce uncertainty and balance the interests of creators, AI users and technological development.

1. INTRODUCTION

1.1 Background and Context

The development of artificial intelligence (AI) has been quite fast. In particular, it concerns generative AI systems that have completely changed the process of creating literary, artistic, musical and other creative products. Through these systems, users can now create expressive elements, such as a narrative, from a simple cue or directive. Meanwhile, there are new opportunities for economic activity, innovation & creativity. But generative AI poses a dilemma to copyright laws. These principles are indeed historical and are directed towards an authorship of humans, their intellectual labour and their expressions of creativity.

The nature and extent of human involvement in AI-assisted creation may vary considerably. For example, in one case, the person himself/herself makes decisions about prompts, the generation process, assessment and modification of outputs. In a second scenario, the work is created by an artificial intelligence system, and contributions by humans are minimal. So, summarising all of the works related to AI in a single category may be confusing because it's important to recognise one thing: Therefore, grouping all AI-related works into a single category can be misleading, as it neglects to mention one crucial point: This issue relates to the distinction between AI-assisted works and AI-generated works.

But this distinction was quite clear for modern copyright studies. Samuelson (1986) analysed the allocation of ownership rights in computer-generated works. It was one of the first attempts to analyse non-traditional forms of authorship. Guadamuz (2017) examined the application of originality principles to works generated through artificial intelligence. Ginsburg and Budiardjo (2019) analysed the relationship between authorship and machine-generated expression. More recent works concentrate on generative AI systems. For instance, Kahveci (2023) examines the issue of attribution in the context of United States copyright law. Mazzi (2024) discusses prompt and human creativity as a factor in the originality of works. Lastly, Gaffar and Albarashdi (2025) discuss issues of originality and ownership of AI-produced creations. They highlight that identifying the human contribution that is relevant to the law is an ongoing challenge.

Thus, the issue is not just about AI's capacity to produce artistic expression, but also about how it interacts with the person and their intentions. The key issues are the authorship of the AI-generated work, namely, who can be considered an author of this work, if any. Another question concerns the fulfilment of the originality requirement. Finally, it is required to determine the copyright holder. This is a very significant problem for the jurisdictions that have copyright law before generations of AI.

1.2 The Pakistani Legal Framework

The Copyright Ordinance, 1962 is the chief source of law for the protection of creative works in Pakistan. The Ordinance provides a legal framework regarding copyrightable works, authorship, the existence of copyright and the initial ownership of copyright. As for its content, however, it was passed decades before the advent of modern artificial intelligence and does not expressly spell out provisions for regulating works created with AI or with AI assistance.

Since there is no direct statutory regulation on generative AI, the legal situation needs to be analysed by considering the existing framework textually and structurally. These provisions are of special interest to this inquiry. The term “author” is defined in Section 2(d); Section 3 defines the meaning of copyright; Section 10 identifies the categories of works in which copyright subsists; Section 13 establishes the general rule concerning the First ownership of copyright. These provisions are interrelated since authorship and ownership are related, but legally different concepts.

The main distinction between author and ownership is that the author is the party legally recognised as the creator or source of the protected work, while the owner is the party that has the legal rights to control, use, or otherwise deal with the copyright. This is especially relevant in contexts involving AI systems where there are different relationships between the system's operation, creation, employer, and commissioner with the outcome. The presence of a prompt, or even the use of an AI tool, should not therefore be a sign of copyright ownership.

There is no automatic copyright protection of AI-assisted outputs, nor is every AI-assisted work automatically excluded from copyright protection, because of the statutory silence of the Copyright Ordinance, 1962. But the legal status of a specific work must be determined by considering the statutory requirements, the level of human creation, the nature of the expression created, and the principles of copyright law.

These questions are gaining significance in Pakistan, as seen in recent scholarship. Soomro et al. (2024) discuss the current state of copyright issues concerning AI, and Mushtaq et al. (2024) compare the protection of AI-generated content creators in Pakistan and the EU. Khan, Ali, and Nawaz (2024) also discuss the evolution of fair use doctrine for artificial intelligence (AI) generated content in Pakistan's copyright law. Collectively, these studies indicate that AI-generated content is creating new challenges for the interpretation and application of traditional copyright principles in Pakistan.

1.3 Authorship, Originality and Ownership

This study focuses on three interrelated but separate legal concepts: authorship, originality and ownership.

Their separate consideration is necessary to determine whether, and to what extent, AI-generated and AI-assisted works may qualify for copyright protection under Pakistan law.

First, authorship relates to the question of who can be considered the author of a given work; who is entitled to be called the author of a literary work? When considering AI-generated works, the issue of who is the author should be whether the human operator has provided enough intellectual or creative effort to claim authorship. To constitute authorship, the mere presence of a person in a prompt is not enough; the degree, nature and quality of the person's creative contribution must be considered.

Second, originality relates to the meeting of the jurisdictional standard for copyright protection. AI can be used to create original or unoriginal works. Humans may make creative choices to select, arrange, modify, edit or combine AI-generated content to create original expression. On the other hand, an output which is produced with very little human involvement could evoke a much different query about human creative authorship. The legal analysis needs therefore to separate the technological from the human. The legal analysis should thus be separated between the technological out and the human in, or the human in the final output.

Thirdly, the ownership issue relates to those rights that are legally recognised as a result of copyright. Potential claimants can be the user of the AI system, the developer or provider of the AI system, the employer, or the person who commissioned the work. Ownership of the system, however, is not automatically granted when someone has paid for or given the prompt to an AI system. Statutory provisions and the facts in which the work was created should be considered.

These differences are important and have been previously established by recent scholarship. More specifically, Wang (2024) discusses the requirements for human authorship with respect to works with AI-generated content, and Mazzi (2024) outlines the connections between prompts, originality and the contribution of the human author. In an analysis of the allocation of economic rights in AI-generated literary works in Pakistan, Rukhma Ahmed (2026) investigates the copyright law surrounding this new, emerging trend. The studies suggest that the issue of AI copyright is not a straightforward one that can be solved simply by pinpointing who used the technology, but also takes into account the legal implications of the human element.

Therefore, this article does not consider all AI-generated works to be legally equal. It separates works created with the help of AI and works created by a human, where the human is an important part in the process and makes conventionally identifiable creative choices, and works created autonomously by the AI, where the human component may not be sufficient to constitute conventional authorship. This distinction is the basis for the doctrinal and comparative analysis that follows.

1.4 Comparative Legal Perspectives

The comparative analysis of the U.S. and U.K. legal frameworks offers valuable insights into the

current state of Pakistani law regarding AI-generated content.

In the U.S., authorship continues to be an essential element of copyright. The idea was upheld again in Thaler v. Perlmutter, where the United States Court of Appeals for the District of Columbia Circuit ruled that a work created by an AI system without human input cannot be deemed to be created by the human user of the system. The United States Copyright Office has also drawn a line between works created by machines and those in which the human author played a sufficiently creative part to ensure expression. A focus is on recognising human creative contribution, which is clearly identifiable.

The United Kingdom follows a different statutory model. Section 9(3) of the Copyright, Designs and Patents Act 1988 specifically applies to computer-generated works: the term author is defined to mean the person who "undertakes the arrangements necessary for the creation" of the computer-generated work. Section 178 defines a “computer-generated” work as a work produced by a computer in situations where there is no human author. It is therefore important that there should be a statutory mechanism in the UK for allocating authorship when there is no obvious case of human authorship.

These various methods are important today as evidenced by recent comparative scholarship. Kahveci (2023) briefly discusses copyright's attribution issues in the United States, and Gaffar and Albarashdi (2025) explore the wider questions of originality and ownership in works created with AI. How copyright regimes can adapt to the age of generative AI without compromising other human-rights issues is addressed by Geiger (2024). The jurisdictions thus reflect two different approaches to regulation: one in which the human author is paramount and human creative contribution is highly valued, as in the United States, and another in which computer-generated works are granted a statutory protection, as in the United Kingdom. None of these can be directly implemented in Pakistan without taking into account the structure and policy aim of the Pakistani copyright legislation. However, it does offer some helpful pointers for finding possible interpretive and legislative solutions.

1.5 Research Problem and Contribution

The main issue discussed in this study is the application of Pakistan's existing copyright laws to works created using AI and works created without AI. It's not just the lack of a clear, express statutory mention of AI. It has to do with the way existing copyright principles of authorship, originality and ownership apply to computational systems when they are major contributors to creation.

Some aspects of this new problem have already been tackled by the existing Pakistani scholarship. Soomro et al. (2024) highlight the legal challenges surrounding AI and copyright issues, while Mushtaq et al. (2024) compare Pakistan's legal landscape with that of the European Union and explore the different approaches. Khan, Ali and Nawaz (2024) discuss concerns about the concept of 'fair use'. Ahmed and Abdul Manap (2026) explore moral rights and the training of AI generators under the Pakistani Copyright Ordinance, 1962, and Noor, Mushtaq and Safdar (2026) discuss copyright literacy, gaps in institutions and legal reforms in the case of Pakistan's digital knowledge economy. Rukhma Ahmed (2026) is a specific case on the ownership of literary works created by autonomous AI.

Overall, the contributions show that the issue of copyright in the context of AI is gaining traction in Pakistan's scholarly discourse. There is still further analysis that needs to be done in order to tie together the statutory questions of authorship, copyright eligibility and first ownership in one doctrinal structure. A closer examination of the relationship between sections 2(d), 10 and 13 of the Copyright Ordinance, 1962 is warranted when considering the possibility and extent to which works created with the help of AI can be entitled to copyright protection.

It is thus not the case that AI and copyright have not been studied in Pakistan, but rather a doctrinal analysis that focuses on the interaction between authorship, originality and first ownership in AI-generated and assisted works. The study builds on this analysis in two specific ways. First, it examines the legal approaches of the United States and the United Kingdom in a targeted comparison. Second, it examines the ties

between the two approaches and the three areas of analysis identified above.

The last question that the article considers is whether the current Copyright Ordinance, 1962 would suffice if the work has varying levels of human involvement or if there is a need for specific legislative changes. On this basis, it suggests a human-contribution-based method that can differentiate between those works which are truly human-made but created with the help of AI and those made with little or no meaningful contribution from human creativity.

1.6 The structure and scope of the article.

The article begins with a review of existing literature concerning artificial intelligence, copyright protection, authorship, originality and ownership. It then examines the statutory framework of the Copyright Ordinance, 1962, with particular attention to section 2(d), concerning authorship; section 3, concerning the meaning of copyright; section 10, concerning the categories of works in which copyright subsists; and section 13, concerning the first ownership of copyright.

Following the examination of Pakistani law, the article undertakes a comparative analysis of the approaches adopted in the United States and the United Kingdom concerning AI-generated and computer-generated works. The United States framework is examined through the human-authorship requirement and relevant judicial and administrative developments, while the United Kingdom framework is analysed with reference to the statutory treatment of computer-generated works.

Building on the doctrinal and comparative analysis, the article identifies uncertainties in Pakistan's existing copyright framework and considers possible interpretive and legislative responses. It proposes an approach based on the nature and extent of human creative contribution, with the objective of providing greater legal clarity to creators, AI users, businesses and technology developers while maintaining the underlying objectives of copyright protection.

The scope of this study is deliberately limited to the questions of authorship, copyright subsistence and first ownership in AI-generated and AI-assisted works under Pakistani copyright law. Although related issues may arise, they do not form the central subject of this research. These include the copyright status of training data, potential infringement arising from the use of protected works in AI training, patent protection and trademark concerns. Such matters are considered only where necessary to explain the wider legal context. This delimitation enables the study to maintain a focused examination of the application and possible reform of Pakistan's copyright framework.

2. Literature Review

2.1 Introduction to the Literature

The harmony between AI and copyright has become a hot topic in legal circles. The current academic literature categorises three key thematic areas – the legality of incorporating copyrighted materials into the training set of AI models, the copyrightability of the outputs of AI and the allocation of authorship and ownership rights in the use of AI in the creative process. These issues are interconnected, but each has specific legal concerns which should be considered separately.

This study will consider the third pillar alone, namely whether the AI-generated works, and those created with the assistance of AI, are eligible for copyright protection and who should be regarded as the holder of the copyright. This analytical distinction is important, because the legal boundaries within which data mining can be used to build AI training systems do not imply that the results of such data mining are automatically subject to the copyright rights of any copyright owners or that the underlying economic rights are.

The key behind traditional copyright theory is the assumption that a person is engaged in original intellectual and creative effort. Authorship, as a concept, sets up the juridical link between the author and the work, but it does not determine the right to exploit the economic value of the work. Authorship is a concept that defines the juridical link between the author and the work, but does not define the right to exploit the economic value of the work. Generative AI will change this by bringing algorithmic systems which create expressive content using computational processing. In some cases, human users have a

significant degree of creative control over the resulting content; in others, users give few natural language instructions, and the algorithm makes most of the creative decisions.

Thus, the key question is "Should the law be applied uniformly to all machine-generated products, or should they be judged according to the extent of human involvement?" If copyright protection were granted without any discrimination based on human creative work, it would give up fundamental copyright principles. On the other hand, granting copyright protection to works created with AI tools without also protecting the original works of humans using these tools would be discriminatory. Therefore, the theoretical framework of classical author writing jurisprudence becomes vital for analysing the creations made by AI in the context of the Copyright Ordinance, 1962 (PCO), Islamabad, Pakistan.

2.2 The United States Approach

The case of the United States is instructive because of the emphasis that has been placed in both the court and the statute on human authorship. In Thaler vs. Perlmutter, the District Court examined an application for copyright registration of a visual artwork created entirely by an AI system without any human creative involvement, and determined that human authorship is an indispensable precondition to the legal protection of copyright.

Additionally, the United States Copyright Office has clearly defined the line between works that are not subject to copyright protection by AI and expressions that are generated by human authors using AI. The Office clarified in its regulatory guidance and reports that copyright protection does extend to the human-authored portions of a work that involves the use of AI, if there is sufficient human creative input. Important, however, is that the use of an AI tool is not a defence for a copyrightable human expression.

This jurisprudential landscape is especially significant for Pakistan in the sense that it shows the importance of copyright doctrines as they are foundational to AI-assisted creativity without giving a copyright to the machine. This can, however, only be realised in a textual and structural analysis of the Copyright Ordinance, 1962 within the context of the domestic legal order of Pakistan.

2.3 The United Kingdom Approach

There is a unique legislative structure in the United Kingdom: The Copyright, Designs and Patents Act 1988 (CDPA). Section 9(3) expressly refers to authorship of computer-generated literary, dramatic, musical and artistic works as the "person by whom the arrangements necessary for the creation of the work are undertaken". Section 178, in turn, provides a definition of a computer-generated work as a work produced by a computer in circumstances in which the person who has control over the operation of the computer normally doesn't possess a traditional author.

It is clear from this statutory provision that a legal system can accommodate the computer-made creation without relying on traditional human acts of creation. But the UK provision does not eliminate all the legal uncertainties - what is the threshold of originality, who is the legal owner, what is protected and who is the "person making the necessary arrangements" in the case of intricate generative AI algorithms?

For Pakistan, the UK system is a basic policy question of whether it will continue to follow traditional legal principles (judicial interpretation of the Copyright Ordinance, 1962) or whether it will make specific amendments to the Copyright Ordinance, 1962, which would clearly set out rules for computer-generated works.

2.4 Pakistani and International Scholarship on Artificial Intelligence and Copyright

The discursive link between AI systems and the use of copyright-protected works has been a focus of recent scholarship dealing with artificial intelligence and copyright, and has been examined in a variety of different ways. Pakistani scholarship has started to tackle these challenges through doctrinal, comparative and policy-oriented research. These studies focus on different aspects, which is why it is important to separate out research which focuses on AI training and infringement from research which focuses on the copyrightability and ownership of AI-generated outputs.

In a study titled "Legal Challenges of Artificial Intelligence and Copyright Infringement in Pakistan" (2024), Soomro, Shah, Sajjad and Fatima analyse the shortcomings of the current legal landscape to meet the emerging copyright challenges posed by the advent of AI. Their work offers a domestic context for examining whether the Copyright Ordinance 1962 is adequate to deal with technological developments. However, a doctrinal analysis that integrates these three doctrines into a single blend is needed to determine the relationship between statutory authorship, copyright subsistence under Section 10, and first ownership under Section 13.

Does Pakistan's Copyright and Antitrust Law Protect Creators of AI-Generated Content? (2024) contends that Pakistan's copyright and antitrust laws are inadequate to safeguard creators of AI-generated content. A Comparative Study with European Union Jurisdictions will compare the copyright regime in Pakistan with the approaches of the European Union. They also recognise the gaps in the current legal framework addressing AI-generated content and explore potential consequences for creators and digital markets. The discussion carried forward by the present study is somewhat narrower, focusing on the statutory association of authorship with originality and with the first ownership in Pakistan's Copyright Ordinance, 1962.

Khan, Ali, and Nawaz (2024), in the article 'Developing a Fair Use Framework Suited to Pakistan's Legal and Socio-Economic Context', explore the potential for creating a new framework for fair use for AI-generated content in Pakistan's copyright law. Their study is relevant because it illustrates the importance of addressing copyright issues in relation to the use of AI based on domestic legal principles and not without adaptation of foreign principles. In contrast, the question of whether the AI-generated output is protected by copyright law and who owns it is generally different from the question of fair use and the legality of the use of copyrighted materials in training the AI.

In Moral Rights and Generative AI Training under the Pakistani Copyright Ordinance 1962: A Comparative Analysis, Ahmed and Abdul Manap (2026) discuss the issue of moral rights and generative AI training within the framework of the Pakistani Copyright Ordinance 1962. Their study exposes the challenges of adapting the current moral rights approach to new AI systems. While the broader copyright issue is relevant to the present study, this study focuses on a distinct issue of the law: whether an AI-assisted or AI-generated output is a work of copyright and, if so, from whom copyright protection ought to be attributed and to whom, and what would be the implications for the determination of "first ownership"?

In Copyright Literacy and Compliance in Pakistan's Digital Knowledge Economy: AI Authorship, Institutional Gaps and the Case for Legal Reform, Noor, Mushtaq, and Safdar (2026) analyse copyright literacy and compliance, as well as institutional gaps in the digital environment in Pakistan. Their research takes the discussion of statutory interpretation further, examining the institutional consequences of copyright uncertainty surrounding AI. The present research builds on this by creating a more specific doctrinal analysis of the statutory requirements for authorship, copyright subsistence and first ownership.

Another contribution is that of Ahmed (2026) entitled Ownership of the Algorithmic Voice: Allocating Economic Rights in Autonomous AI-Generated Literary Works under Pakistani Copyright Law. The difficulty of allocating ownership first is an explicit aspect of this research, where an autonomous AI-created work of literature is without an identifiable human author. It suggests a different statutory economic-rights approach to some outputs which are not adequately human. This argument is especially relevant to the current study as it shows that the question of ownership cannot be answered just by making an identification of who is using an AI system. The present article, however, focuses differently, by asking whether the current statutory doctrines are able to incorporate human-AI hybrid works and whether a new scale for copyright eligibility based on the human contribution can be developed.

International scholarship supplies extra theoretical and comparative views. In Authorship in Artificial Intelligence-Generated Works: Exploring Originality in Text Prompts and

Artificial Intelligence Outputs through Philosophical Foundations of Copyright and Collage Protection, Mazzi (2024) examines the relationship between prompt formulation, originality and the output. Her talk is applicable to the difference between idea or instruction and protected expression. In the case of Pakistan, this distinction implies that unless the significance of the prompt is established in conjunction with the human contribution that is evident in the resulting output, it cannot be said that it is sufficient to establish the output's authorship.

Gaffar and Albarashdi (2024), in Copyright Protection for AI-Generated Works: Exploring Originality and Ownership in a Digital Landscape, review copyright principles with respect to authorship, ownership and originality from an international perspective. Their study lays the conceptual groundwork for separating the issue of whether there is an original output from the question of whether there is a legally recognised author. The distinction is important to the present inquiry as it is a distinction between copyright eligibility and first ownership, which are both separate legal issues.

Attribution Problem of Generative AI: A View from US Copyright Law is a paper by Kahveci (2023) that focuses on attribution challenges posed by generative AI. The study is useful to understand why other contributors to the work are not automatically equal to user contributions, or the developer's contribution. It is the comparative relevance that has to do with the human contribution that is legally present in the expression.

In The Copyright Requirement of Human Authorship for Works Containing Artificial Intelligence-Generated Content, Wang (2024) explores the human-authorship requirement in the U.S. context. This research offers a helpful comparative analysis to differentiate human expression from material that is created by AI but not sufficiently by the human creator. In the present scenario, it is very relevant to discuss its applicability in Pakistan and at the same time it is important to bear in mind that international judicial and administrative norms need to be read with reference to the domestic legislation.

In Elaborating a Human Rights-Friendly Copyright Framework for Generative AI, Geiger (2024) explores the connection between copyright protection and other normative issues surrounding generative AI. This contribution is important in the policy aspect of the present research work, as policy change should take into account more than just the interests of creators and rights-holders; it should also reflect the public interest and technological innovation.

They all illustrate that AI and copyright scholarship exists on multiple parallel tracks: AI training, infringement, moral rights, fair use, authorship, originality and ownership. However, the scope and application of Sections 2(d), 10 and 13 of the Copyright Ordinance, 1962 to works created with varying levels of human involvement in the creation of AI-generated works is a separate doctrinal issue. In this article, the present study tackles this question and combines statutory interpretation with a comparative analysis of the United States and United Kingdom approaches.

The present study was designed to evaluate the critical assessment and contribution of the study.

It has been reviewed in the literature that copyright issues related to the use of AI are not new in Pakistan or globally. Previously, copyright infringement, competition law, fair use, moral rights, institutional compliance, and economic rights assignment of autonomy have been discussed in Pakistani studies. Originality, prompts, human authorship, and other models of protection of computer-generated content have been discussed in international research as well.

The present paper is not meant to suggest that these larger issues have not been previously explored. Rather, it is its role to fuse three statutory questions under one doctrinal umbrella – who is an author according to Section 2(d) of the Copyright Ordinance, 1962, copyright subsistence under Section 10, and first ownership under Section 13 of the same.

The study differentiates between autonomously created outputs, works which are created with the help of AI, and works in which both AI-generated and independently produced human expression are included. It looks at whether the categories can be defined by the existing legal language, without the need to attribute every prompt user to the

category of author, and without excluding every work that is assisted by AI.

One contrasting point is provided by the analysis of the United States human-authorship principles and the provision in the United Kingdom concerning computer-generated works under Sections 9(3) and 178 of the Copyright, Designs and Patents Act 1988. The study does not promote one approach over the other, but rather considers their applicability to Pakistan's institutional and statutory structure.

The main contribution is an assessment framework that proposes to be human contribution-based. This framework would focus attention on "identifiable human expression", “creative control”, “selection and arrangement”, “substantive modification”, and “ideas and protectable expression”. It also affirms that ownership must be established following the establishment of the legal basis for copyright subsistence and the application of the first ownership rules.

The study, therefore, provides a doctrinal and comparative study of authorship, originality and original ownership in works involving AI technology from a Pakistani perspective. Its recommendations are designed to offer more legal clarity and maintain the boundaries between humans and substantially independent machines producing content.

3. Research Gap

Despite the escalating global discourse on artificial intelligence and intellectual property, crucial statutory questions persist regarding the applicability of Pakistan’s *Copyright Ordinance, 1962*, to works generated by or with the assistance of computational systems.

First, a rigorous doctrinal examination is required to determine how the Ordinance connects the statutory status of an author with copyright subsistence in AI-assisted outputs. This entails a joint reading of the statutory definition of an author under Section 2(d), the classes of protected works under Section 3, and established originality doctrines to evaluate the interpretative elasticity of existing law across varying degrees of machine-assisted creativity.

Second, authorship and ownership remain legally distinct doctrines. Even where sufficient human creative input satisfies the threshold for copyright protection, the allocation of first ownership depends on specific statutory mechanics and contractual relationships. The competing claims of prompt engineers, software developers, employers, and commissioning parties require systematic analysis rather than assuming that providing a text prompt automatically conveys initial copyright ownership.

Third, foreign jurisprudential models offer contrasting policy frameworks. While the United States strictly enforces a natural human-authorship requirement, the United Kingdom provides a statutory mechanism for computer-generated works. Evaluating whether either model aligns with Pakistan’s legal ecosystem requires analysing domestic statutory constraints and local economic priorities.

Fourth, potential legislative reforms must address complex operational challenges, including establishing evidentiary standards for human creative contribution, determining the legal status of purely autonomous AI outputs, and allocating first ownership in hybrid works.

This article fills key research gaps by formulating a doctrinal and comparative legal framework that reconciles statutory doctrines of authorship, originality, and first ownership with the spectrum of human involvement in AI creation, and by translating this analysis into concrete legislative recommendations. This study establishes the precise boundaries of this legal vacuum through a systematic appraisal of statutory provisions, judicial precedents, regulatory guidance, and scholarly literature.

4. Research Questions

In this study, the following key research questions are asked:

1. Authorship And AI-Generated Works

How should the concept of ‘’author ‘’ under section 2(d) of the Copyright Ordinance, 1962, be interpreted in relation to AI-generated and AI-assisted works?

2. Originality and Subsistence of Copyright:

How does the human creative contribution determine whether an AI-generated or an AI-assisted work is protected by the Copyright Ordinance, 1962, especially regarding the meaning of copyright mentioned under section 3 and the conditions determining works in which copyright subsists under section 10?

3. First Ownership and Rights Allocation:
What is the role of the first owner of the copyright in a work made with the help of artificial intelligence, when several different persons are involved as user, AI provider, employer or commissioning party?

4. Comparative Legal Approach.
How have the USA and the UK dealt with issues of authorship, copyright subsistence and ownership of AI-generated or computer-generated works, in particular concerning Thaler v. Perlmutter and section 9(3) of the UK Copyright, Designs and Patents Act 1988?

5. Legislative Reform
How can there be a legal and policy framework in Pakistan to address authorship, copyright subsistence and copyright ownership of AI-generated works, AI-assisted works, and at the same time, require meaningful human creative contribution?

5. Research Objectives
This study aims to;

1. Examine the existing legal framework.
To examine the existing legal framework (Copyright Ordinance, 1962) in order to analyse the definition of an author (section 2(d)), meaning of copyright (section 3), works in which copyright shall subsist (section 10), and first ownership of copyright (section 13).

2. To distinguish between AI-generated works and AI-assisted Works.
To distinguish between works created using AI systems and works where a clearly identifiable human creative contribution is involved.

3. Assess the Human Creative Contribution and originality.
To explore the impact of human creative intervention in the process of selection, arrangement, editing and modification on the possibility of copyright protection of AI-assisted works.

4. Compare International Legal Approaches.
To examine the practices in the United States and the United Kingdom on authorship and protection of AI-generated and computer-generated works, focusing on recent judicial rulings, Copyright Office policy advice, and the Copyright, Designs and Patents Act 1988.

5. Evaluate Ownership and Practical Implications.
To assess how the use of AI in creative processes affects copyright protection, authorship and ownership, particularly for digital creators, businesses and technology developers operating in Pakistan.

6. Recommendations for legal reform:
To recommend appropriate statutory and administrative measures to define authorship, copyright subsistence and first ownership of AI-generated and AI-assisted works in Pakistani copyright law.

6. Research Methodology
This study adopts a qualitative, doctrinal and comparative legal research methodology. The doctrinal component examines the relevant statutory provisions, judicial precedents and legal principles governing authorship, copyright subsistence and ownership. The comparative component critically analyses the legal approaches adopted in the United States and the United Kingdom to identify relevant legal principles and normative insights that may inform the development of Pakistan's copyright framework.

6.1. Primary and Secondary Sources
Primary Sources
The primary sources examined in this study include the Copyright Ordinance, 1962, particularly its provisions concerning the

definition of an author, copyright subsistence and first ownership, together with relevant amendments. The study also considers other Pakistani intellectual property legislation where directly relevant to the subject. In addition, it examines relevant Pakistani judicial decisions and selected foreign legal authorities, including Thaler v. Perlmutter, the Copyright, Designs and Patents Act 1988 (CDPA) of the United Kingdom, and relevant policy guidance issued by the United States Copyright Office. Statutory provisions and judicial references are examined and verified to ensure the accuracy of the legal analysis.

Secondary Sources

Secondary sources include peer-reviewed journal articles, academic books, legal commentaries, research publications and institutional policy documents addressing artificial intelligence, authorship and copyright ownership. Particular attention is given to contemporary legal scholarship concerning Pakistan to establish the existing state of research, identify gaps in the literature and demonstrate the distinct contribution of this study.

6.2. Justification for Comparative Selection

The United States and the United Kingdom have been selected as comparative jurisdictions because they represent two different approaches to the legal treatment of computer-generated and AI-assisted works.

The United States approach is examined with particular reference to the requirement of human authorship and the extent to which human creative contribution may qualify an AI-assisted work for copyright protection. In contrast, the United Kingdom provides a distinct statutory approach through section 9(3) of the Copyright, Designs and Patents Act 1988, which addresses authorship in relation to computer-generated works.

A comparative examination of these approaches helps identify the legal implications of different levels of human involvement in AI-assisted creation. It also provides a basis for evaluating whether Pakistan's existing copyright framework adequately addresses these developments or requires legislative clarification.

6.3. Taxonomy of AI Creations

For the purposes of this doctrinal analysis, AI-related creative outputs are examined through three conceptual classifications:

1. **Autonomous AI-Generated Works:** Works produced primarily by an AI system without identifiable human creative contribution to the expressive elements of the resulting output.

2. **AI-Assisted Hybrid Works:** Works created through the use of AI tools in which a human user makes identifiable creative contributions through selection, arrangement, prompt refinement, editing, modification or other forms of creative direction.

3. **Combined Human and AI-Generated Works:** Works in which AI-generated elements are combined with independently created human expression to produce a final creative output. In such cases, the human-authored and machine-generated elements may require separate consideration when assessing copyright protection.

These classifications are analytical categories developed for this research and are not presented as expressly recognised statutory categories under Pakistani copyright law. They provide a framework for examining the relationship between human creative contribution, AI-generated material and the possible scope of copyright protection.

6.4. Methodological Delimitations

This study is confined to qualitative, doctrinal and comparative legal research. It does not involve scientific or experimental testing of AI systems, nor does it seek to collect empirical data concerning user behaviour or the socio-economic impact of generative artificial intelligence.

The conclusions are based on the examination of verified statutory provisions, judicial precedents, relevant legal literature and comparative legal materials. The study evaluates the existing legal framework through its statutory text, underlying principles and practical application to AI-generated and AI-assisted creative works.

7. Legal Framework for AI-Generated Works under Pakistani Copyright Law

7.1. The Statutory Architecture of the Copyright Ordinance, 1962

The Copyright Ordinance, 1962 provides the principal statutory framework governing copyright protection for creative works in Pakistan. It establishes the legal structure for identifying authorship, determining the categories of works in which copyright subsists and identifying the first owner of copyright. In particular, section 2(d) defines the term "author", section 10 identifies the categories of works in which copyright subsists, and section 13 provides the general rule concerning the first ownership of copyright. These provisions must be examined in the context of the growing role of artificial intelligence in creative processes.

Under section 10 of the Ordinance, copyright subsists in specified categories of works, including original literary, dramatic, musical and artistic works, as well as cinematographic works and sound recordings, subject to the applicable statutory requirements. The requirement of originality is therefore relevant to the protection of the categories of works for which originality is required. However, the Ordinance does not expressly establish a separate test for determining originality in AI-generated works. This raises an important legal question: whether, and to what extent, human creative contribution in the production of an AI-assisted work is sufficient to support copyright protection under the existing framework.

Furthermore, section 2(d) defines authorship in relation to different categories of works, while section 13 establishes the general principle that the author is the first owner of copyright, subject to applicable statutory exceptions. Authorship and ownership are distinct legal concepts, although the determination of initial ownership is closely connected with the identification of the author under the Ordinance. Accordingly, the central question is whether the existing statutory framework can adequately address works produced through natural-language prompts, algorithmic generation and human-AI collaboration, or whether legislative clarification is necessary.

7.2. Authorship Threshold and AI-Generated Works

Determining authorship becomes particularly challenging when a creative work is produced through an AI system with limited or varying degrees of human involvement. In generative AI processes, human participation may range from providing a short text prompt and selecting one output from several alternatives to actively editing, modifying and structurally reorganising the material generated by the system. These different forms of involvement should not automatically be treated as equivalent for the purpose of determining copyright authorship.

For example, where a user provides a general instruction such as "write a poem about nature" or "generate a story about friendship", the user may exercise limited control over the specific wording, arrangement and expressive form of the resulting work. By contrast, where a user substantially revises the generated material, restructures its content and introduces original expressive elements, the user's creative contribution may be more readily identifiable.

It is therefore necessary to distinguish between passive prompting and active creative direction when assessing authorship. Neither the act of entering a prompt nor the mere use of an AI tool should automatically establish copyright authorship. Similarly, the use of AI should not, by itself, prevent protection of identifiable human-authored expression. The nature, extent and originality of the human contribution must be assessed in light of the relevant provisions of the Copyright Ordinance, 1962.

7.3. The Mechanics of First Ownership under Section 13

Section 13 of the Copyright Ordinance, 1962 establishes the general principle governing the first ownership of copyright, subject to the exceptions and qualifications provided by law. The identification of the first owner therefore depends, in the first instance, on whether a work qualifies for copyright protection and whether a legally recognisable author can be identified. In AI-assisted creative processes, uncertainty concerning the identity and extent of the human author's

contribution may consequently create difficulties in determining initial ownership.

Where a human user makes identifiable and original creative contributions to an AI-assisted work, copyright protection may extend to those contributions, provided that the applicable statutory requirements are satisfied. However, the existence of human contribution does not automatically establish copyright in every element of the resulting output. Material generated autonomously by an AI system should be distinguished from the human-authored expression when determining the scope of any available protection. The user should not automatically be treated as the owner of all machine-generated elements merely because they initiated the generation process.

The relationship between authorship and first ownership under section 13 therefore highlights the need to clarify how copyright ownership should be assessed in works involving human-AI collaboration. In particular, questions may arise concerning the respective positions of the prompt user, software developer, employer and commissioning party. The extent to which section 13 can address these situations under its existing terms, and whether additional legislative guidance is required, forms an important part of this study.

8. Authorship, Originality and Ownership in AI-Generated Works

8.1 The Conceptual Interaction: Authorship, Originality, and Ownership

The issue of who is the "statutory author" of the output created by an AI system is a fundamental concept that must be addressed in the context of copyright law. In the classical copyright theory, it is assumed that a human subject is creating with independent creativity. Generative AI challenges this with the ability to generate highly complex expressive output across literary, visual and musical realms, to the extent of using human input.

The Copyright Ordinance, 1962, provides that an author will be defined by certain items of human creation as per Section 2(d). These statutory definitions were established before the modern computational systems which have entered the picture, and don't specifically refer to hybrid creation of humans and machines.

The actual problem is that humans are involved in a wide range of ways. Autonomous generation is a process in which the user enters a command and gets an output without any further processing. Interactive generation involves the user supplying detailed parameters, making intermediate selections and arranging components, and running large qualitative changes. Both workflows make use of AI, but the legal status of Human agency is very different. Therefore, the deployment of an AI system should not be the only factor to consider when determining copyright eligibility, and whether the human user exercised enough control over the final expression to be considered the statutory author should be the question that is asked.

8.2 Originality Standards in AI-Assisted Creations

Originality is the most important requirement for copyright subsistence as per Section 10 of the Ordinance. In law, originality is a condition in which a work is the product of the original mind of the author rather than having been plagiarised from another source.

This seems to be complicated by the integration of generative AI, because the final result is a combination of algorithmic computation, training data patterns, and user instructions. Minimal human involvement does not mean minimal originality, and the nature, quality and extent of the human creative involvement needs to be assessed.

For example, a person who enters a generic prompt will have little control over the expressive execution that the model creates. On the other hand, a writer who decides on plot, character development, expression and uses AI as a tool to polish or enhance certain parts remains in control of the narrative. In the latter instance, the human input meets the conventional definition of the “assisted” part of AI creation. Pakistani copyright jurisprudence needs to differentiate between the usage of AI as an assisting tool and surrendering the expressive control to an independent algorithm.

8.3 Statutory Implications of Natural Language Prompting

With the ubiquity of natural language prompting, it brings up a key legal matter: does the creation of a prompt give the user a right to be the statutory author of the output?

Prompts are complex and vary in difficulty from a simple conceptual question to more detailed instructions noting tone, stylistic features, structure, and character details. Copyright law, however, makes a sharp distinction between expression and the idea that it represents.

A simple prompt simply states an idea or concept; it doesn't dictate how things will be carried out. The principle of copyright is that communicating an idea to an intermediary does not make the communicator the author of the resulting expression. If a detailed prompt only sets a "parameter" but doesn't do the final "expression," then it is not considered to be "authorial. Prompting is a legal instrument that should not be evaluated by its ability to generate the work but rather by the human expression that is embodied in the final product.

8.4 Categorical Delineation: AI-Generated vs. AI-Assisted Works

It is important to note that there is a difference between AI-generated and AI-assisted works:

AI-generated works: Works in which the expressive elements are created chiefly by the AI system that created them, and in which the expressive elements do not appear to have been revised or edited by the human creator.

AI-Assisted Works: Works in which the AI system is used as an assistive device in the creative process, and the user has provided original expression by means of selection, arrangement, modification or editing of the Works.

It will be beneficial for Pakistani law to differentiate between these two categories separately to ensure it does not breach the underlying principles of copyright. If the human author adds original expression to the work created with the help of an AI tool, the human author's original expression can be protected under normal statutory rules. On the other hand, transferring some of the conventional notions of authorship to AI-generated outputs is problematic because computational systems have no legal personality. It is imperative to bring this conceptual taxonomy into the mechanism of Pakistan's copyright law for legal clarity.

8.5 Legal Disconnect in Statutory Ownership Allocation

Although related to the concept of authorship, it is a different legal doctrine from first ownership under Sections 2(d) and 13 of the Copyright Ordinance, 1962. Usually, the first owner of copyright is determined by the identity of the author, but if there is no identifiable human author, then the initial ownership of the copyright is not clear.

The lack of an initial attribution to the owner and the absence of authorial ownership is a fundamental threat to the statutory framework when it comes to a work produced by a purely autonomous AI system. On the other hand, if technology-assisted works are completely excluded from all legal protection, it may undermine the incentive for commercial investments in the development of digital works.

It further complicates collaborative workflows with multiple human actors, among whom one is responsible for the conceptual framework, another for carrying out the AI interactions, and a third for editing the output. In these cases, Pakistani courts will have to decide if the resulting works are a joint work or a sole work with technical assistance, or an unprotected machine output.

8.6 Addressable Statutory Lacunae in Pakistan

The current copyright law in Pakistan offers some basic rules on authorship, originality and ownership, but lacks a specific mechanism for machine-generated works. In the absence of this, there is considerable legal ambiguity when generative AI technologies evolve.

The lack of this statutory prohibition does not mean that every work in which AI is used is therefore not subject to protection. There are some traditional doctrines which can help identify the human and machine parts. But without the assistance of AI, the judicial interpretation of a pre-digital law can lead to a wide variety of decisions as AI becomes more self-sufficient. The crux of the legal issue is not whether AI systems

have rights in the first place, but how Pakistani law can identify, isolate and protect genuine human creative contribution in the context of AI-facilitated works.

8.7 A Proposed Human-Contribution-Based Standard

To overcome these legislative uncertainties, Pakistan should consider implementing a Human-Contribution-Based Standard. This method provides a qualitative test to determine whether passive AI operators are being used or if a real human is being used to actively form the final expression.

This proposed test would consider the following factors:

1. Specificity and quality of human instruction;
2. How much control the user has over the end product;
3. Degree of selection, curation and structuring by humans;
4. Qualitative effects of later revisions and editing by humans; and
5. The originality of the autonomous human expression in the work.

This standard has two advantages to avoid two extremes of regulation: it does not give copyright protection to a passive prompt buyer, but it does not let everyone who uses AI as a creative tool be denied copyright in their work. Adopting the structure would help maintain the basic connection between copyright protection and human intellectual efforts in Pakistani law.

9. COMPARATIVE LEGAL ANALYSIS: UNITED KINGDOM AND UNITED STATES

9.1 The Comparative Imperative

Pakistan's Copyright Ordinance, 1962 does not have any specific provision on the subject of computer-generated works, so it becomes vital to conduct comparative legal analysis. The United Kingdom provides two different legal solutions to authorship and ownership issues in AI-assisted narratives: Supplementary protection for natural person authors, and an exception for pre-existing materials. The U.K. has two options for authorship and ownership concerns with works aided by AI: An exception for pre-existing material and Supplementary protection for natural person authors. Evaluation of these two systems can give normative guidance to Pakistan. Both models cannot be simply replicated; each jurisdiction demonstrates an approach with a different mix of statutes and cases that cultivate technological creativity and still preserve the need for human creativity.

9.2 The United Kingdom Approach: Statutory Computer-Generated Works

There is a specific statutory framework in the United Kingdom, with the Copyright, Designs and Patents Act 1988 (CDPA). Section 9(1) sets the baseline rule that the author of a work is the one who creates it, but Section 9(3) provides a specific means for computer-generated literary, dramatic, musical or artistic works. As per Section 9(3), the work belongs to the person who makes the "arrangements necessary for the creation of the work. To this end, Section 178 of the law defines the term "computer-generated work" as a work created by a computer in circumstances in which the lack of a human author in the traditional sense is substantiated.

It is a statutory scheme which, rather than trying to give rights to non-human computational tools, shifts the locus of copyright to the party who creates the arrangements.

But, when applied to contemporary GEN AI applications, Section 9(3) presents key challenges for interpretation. When the basic user's instruction is used to produce an expressive effect, this is often quite sophisticated, and the fact of who made the "necessary arrangements" becomes very difficult to establish factually given the emergence of generative AI tools. For collaborative information and communication technologies (ICTs) – where one party provides the model, another designs and/or refines the software, and a third party edits the results – statutory language is ill-suited to clarify who has the primary claim to the initial ownership. In spite of this, it is clear from the UK framework that the jurisdiction can establish its own specific statutory provisions for the automatic transfer of copyright to third parties for machine-generated works from the viewpoint of any classical human authorship.

9.3 The United States approach: A rigorous human authorship requirement

The U.S. approach, however, is based on constitutional principles and interpretation, and is far more rigorous than the UK approach with respect to human authorship. It is not the case in U.S. copyright law that statutory fictions exist for computer-generated outputs or that any user of an automated system becomes the legal author of its output.

In Thaler v. Perlmutter, the judiciary determined that when an AI system acts independently without any human original creative input, the resulting work is not eligible for copyright protection. In Thaler v. Perlmutter, courts across the country found that independently created works by AI that were without original human creative effort were not eligible for copyright. In addition, the United States Copyright Office (USCO) has provided guidance clarifying that only human authors are the copyright owners when it comes to works created by AI. The USCO distinguishes between simple "prompt drifts" and "works of hybrid authorship" between the human and the AI: where a text prompt has no creative input, no work is the result, but where there has been an "original human selection, original structural arrangement, or substantial qualitative editing," the legal definition for copyright subsistence applies.

In the U.S. paradigm, using an AI tool does not render an output incapable of being protected, so long as there is separable original human expression in the output. The model emphasises a qualitative aspect that goes beyond commercial or operational arrangements in human creative exertion.

9.4Comparative assessment and strategic options in Pakistan

There are two opposing models to discuss with regard to the legal treatment of works created or assisted with AI: one for the United Kingdom and another for the United States.

- The UK Statutory Fiction (CDPA Section 9(3)): Establishes commercial certainty elements by naming an initial owner of machine-generated works without a human author. It could however lead to non-problem-solving applications, where minimal creative input is used, having copyright protection, and provide room for interpretative confusion about what constitutes "necessary arrangements" in generative AI scenarios.
- The U.S. Human-Contribution Model: It ensures the principles of copyright remain central: It equates original human creative expression with copyright. It does not cover computer-generated output that is not creative, but it does cover the creative selection, arrangement or modification of AI-generated output.

This will have policy implications for Pakistan.

Presently, Pakistan's Copyright Ordinance, 1962, does not have any provision suitable to the UK's Section 9(3). Yet, there are certain fundamental principles in domestic law that can be applied to assess works produced with AI – namely, Sections 2(d), 10, and 13. Based on the comparative analysis, two strategic directions for the process of statutory reform of Pakistan emerge:

1. Legislative adaptations of the UK model: acts of legislation to create clear requirements to assign ownership to the person or entity that makes the arrangements for machine-generated content.
2. Effective Application of the U.S. Human-Centric Model: Enforcement of copyright while keeping a strong human input requirement as the baseline, and providing clear guidance in legislation or regulation as to how human-AI hybrid works can be protected given the human input.

The second option offers more flexibility to Pakistan and is more in tune with the basic framework of the Copyright Ordinance, 1962. Pakistani copyright law should have a graduated approach to determining eligibility for copyright for AI prompt users, prioritising cases involving substantial human contribution to the work in the case of hybrid works, and clearly delineating the use of AI as an assistive tool from the use of automated AI generation. This ensures the proper connection between original human effort and copyright protection and gives legal security to digital creators, technology providers, and businesses.

10: FINDINGS AND DISCUSSION

The doctrinal and comparative analysis is that the root of the issue which G.A. poses for copyright

jurisprudence will centre on the breakage of the traditional link between human intellect, statutory authorship and primal ownership. Generative AI isn't about breaking new ground in what can be protected, but rather a shift in the way exercises of original creativity relate to computational execution.

10.1In the Pakistani context, statutory ambiguity is In Pakistan.

The legal basis of copyright subsistence and copyright ownership in Pakistan is laid by the Copyright Ordinance 1962. Section 2(d) contains a number of definitions of an 'author', with each specific category of work being governed by its own specific definition. Section 13 incorporates the general doctrine that copyright, unless specifically excluded by statute in each of the different categories, shall be deemed to vest in the first owner of the work.

In particular, the 1962 Ordinance was not based on the assumption of autonomous algorithmic production or human-AI interactive workflows. The statutory definition does not clarify whether a person who trains, prompts, or directs an AI system can be considered a statutory author, and does not specify a minimum level of authorial control to accord protection to a work.

The lack of a legal definition or answer in this area of silence is particularly problematic, given that an output is increasingly likely to be generated primarily by algorithmic processing. Under domestic law, the mere triggering of a command does not meet the requirements for the creation of a work by the author if the user gives a starting signal, but leaves the elaboration of the expression to the computer.

A point of view that views the human contribution as a determining legal standard.

The comparative assessment shows that the qualitative nature of the human contribution is the most important criterion in determining copyright subsistence in works created with the aid of technology. The United States' jurisprudential history complements this view, demonstrating that AI-generated artworks can still be protected by copyright as long as the human being retains the highest level of creative control over the content. On the other hand, a simple natural language question is not enough to qualify as statutory authorship.

A paradigm for Pakistan that is compelling is this human-centric standard. Pakistan's definition of a work created with the help of AI will be protected by copyright only when the human user possesses enough creative control, allowing the state to encourage and incentivise human creativity with the assistance of AI while not introducing the concepts of authorship and property rights for works created by machines.

This legal separation extends to different cases of operation:

AI as an Auxiliary Instrument: When a creator uses an AI model as an auxiliary tool where the creator is actively engaged in directing, editing and fashioning the final product, the work is considered to satisfy the statutory requirement for copyright subsistence.

Passive Output Acceptance: A situation where the user enters a prompt, and it is processed by the machine and generated, with no independent creative contribution by the user in the creation of the product; no copyright subsistence arises legally as a result of the user's contribution.

Domestic legal reform therefore should not accept as such the central idea that the mere promptness of the generation of the final expression signifies the author, but should look at how much creative control the human contributor has exercised in the creation.

10.3 Legal Duality of Natural Language Prompting

One of the most important observations of this study is that natural language prompting is a non-statutory act and should not be equated with the statutory act of writing. A prompt can represent a concept, instructions, or look and feel, and it is the AI model that will make the artistic decisions. This is important to bear in mind because copyright law does not protect the idea itself and only the concrete expression of the idea.

The position mirrors the regulation set forth by the United States Copyright Office, which states that "prompts and suggestions" do not give the author "control" over expression. Where a human user then makes original selection, arrangement, or substantial qualitative change in the machine-

generated material, however, copyright attaches to the human author's selection, arrangement, and in particular to the substantial, qualitative changes, not to the machine-generated elements themselves.

The vision of such nuances should be the approach that Pakistani jurisprudence should take. When a user makes a prompt and then goes away and undertakes considerable creative editing or structural integration, it becomes the user's work, and the user takes ownership of the resulting hybrid piece. In other cases, however, if a machine produces unedited output as a user accepts it as such, the threshold of authorship is not met.

10.4 The United Kingdom Framework and its limitations

An alternative legislative solution is provided under Section 9(3) of the UK Copyright, Designs and Patents Act 1988 (CDPA), in the form of a statutory rule for computer-generated works. Pursuant to Section 9(3), the creator of a computer-generated work is considered to be "the person by whom the arrangements necessary for the creation of the work are undertaken.

This statutory system offers commercial certainty because it imposes a fiction of copyright ownership for a legal entity or person that does not require a human author, but has significant drawbacks for generative AI in the modern era:

1 In the modern AI workflow, where users provide prompts, platform developers shape the AI model, and fine-tuning engineers push its capabilities, there is some ambiguity surrounding who made the "necessary arrangements. In complex generative contexts where the user enters prompts, the platform developer fine-tunes the context, and the fine-tuning engineer affects the capabilities, there is some factual ambiguity regarding the “necessary arrangements.”

2 Over-Inclusivity: The statutory fiction could give a copyright to raw machine outputs with very little creative effort from the user, which would allow “free” to amount to protecting “free” economic monopoly rights.

Thus, it is not advisable to simply copy Section 9(3) of the UK model into Pakistan's legal framework because of the interpretation problems that it presents.

This course explores the distinction between AI-Generated and AI-Assisted Works from the perspective of the Categorical Framework adopted by the Copyright Office.

10.5 Categorical Framework: AI-Generated versus AI-Assisted Works

This research defines the difference between AI-generated works and AI-assisted works:

- • AI-Assisted Works: Works that are created by a human author with the help of an AI system, but in which the final expression is created by the human author. These works are still capable of being copyrighted on an individual basis.
- AI-Generated Works: Works that are created primarily through algorithmic processing and only minimally by the human creator, such as selecting which prompts to use, or merely to presenting and curate the output. These works do not have statutory human authorship and are not under traditional copyright protection.

The legislators should not have a black-and-white approach to protecting or excluding a technology-supported work, but should see if there is any degree of human authorship involved in the work in question.

10.6 Ownership Allocation in the Absence of a Statutory Author

The first ownership principle as stated in Section 13 of the Copyright Ordinance, 1962, is that the first owner of an AI output would be the first owner of the output, thus creating uncertainty in ownership.

Where the work is created mainly through an AI system and has a lack of human creative control, the user cannot be considered a statutory author. Therefore, it is unclear whether it is valid to claim first ownership under Section 13. This disparity needs to be addressed through a robust regulatory framework in Pakistan that explicitly clarifies the rights of human creators who have genuinely used AI in the creation of their work, whereas AI-generated content is clearly differentiated and treated as a separate legal entity.

10.7 Proposed Multi-Factor Assessment Model for Pakistan

In this section, the model of multi-factor evaluation for Pakistan has been proposed.

Pakistan needs to create a dedicated legal regime for assessing AI-involved creations based on a Multi-Factor Assessment Model to address the current gaps in the legislation. Six considerations should be assessed by courts and the regulatory authorities:

1 . Nature of the Input: Knowing the difference between open-ended, conceptual questions and very specific, creatively directed questions.

2. Degree of Creative Control: Assessing if the human user had ongoing creative control over the creation of the final work.

3. Selection and Curation – Evaluating if the human author performed qualitative selection and curation and structural arrangement of AI-generated components.

4. Qualitative Modification: Deciding if the machine product was significantly modified, changed or structured by human intervention.

5. Original Expression: Assessing whether the end product includes the separate, original human expression.

6. Proportion of AI involvement: Indicating the extent to which the AI system was used as an assistive tool or as the main producer of the expressive content.

This all-encompassing test allows Pakistani judges to have a case-by-case analysis without falling into the trap of overly protecting passive users, or excluding the work of the human artist who uses AI.

10.8 Explanation of Overall Findings

Based on the findings of this research, it is concluded that the major legal issue which generative AI poses to the IP system in Pakistan is not whether a computer system is a legal author, but whether a human is actively involved in the creation process to meet the requirements of legislation. The Copyright Ordinance, 1962, lays the groundwork for copyright, but leaves a gap in the statute that needs to be filled, as it does not explicitly cover modern digital tools.

A comparative examination shows that whereas in the UK the computer-generated work is protected by a statutory fiction, in the U.S. the requirement is for human authorship and creative control is the focus. The most promising policy course for Pakistan is to follow the U.S. approach and have a human-centric approach. The Pakistani lawmakers should adopt a multi-factor assessment process model which would protect the real human intellectual effort and would clarify the digital economy rather than adopting a simple statutory rule.

11: RECOMMENDATIONS AND PROPOSED LEGAL REFORM

As per the earlier doctrinal and comparative study, the existing intellectual property IP regime in Pakistan does not adequately safeguard the rights of traditional authors and copyright holders and provides little statutory reference to generative AI. According to the Copyright Ordinance, 1962, all works of human creation and design are presumed to be the copyright of the author and the author is the first owner. With the ability to generate highly expressive and nuanced outputs, however, modern AI systems can challenge the notion of authorship. Based on the findings of this study, it is recommended that the Parliament of Pakistan make specific changes in the existing Copyright Ordinance, 1962, to overcome the unique legal issues of AI-assisted creation. These changes aim to eliminate the wrongful attribution of legal authorship to independent computational systems and create a stable environment for human creators using digital tools.

11.1 The introduction of an AI-Specific Statutory Provision (SSP).

The Copyright Ordinance, 1962 should be changed by adding a specific provision for works created using generative artificial intelligence tools. This statutory addition would create clearer guidelines for eligibility of AI-assisted works and introduce a clear distinction between AI-generated work and works created without human participation.

Legislative clarity will be a godsend for courts, administrative registration organisations, creators and businesses, removing the need for the latter to push the boundaries of pre-digital statutory interpretations. The recognition of computational

tools in the legislative framework will allow Pakistan to establish the right protection frameworks for modern digital processes.

11.2 A Human Creative Contribution Standard

The copyright process must be based on a strenuous Human Creative Contribution Standard for works that include generative AI. This norm applies to attaching copyright protection to separable and human-authored parts which meet traditional statutory requirements.

In determining whether there has been adequate mental effort by a human author, five major factors should be considered:

1. Nature of Human Input: General instructions or high-level prompts do not meet the level of the author's contribution. On the other hand, detailed, multilayered directions, which explicitly influence the storyline or artistry, are relevant evidence of human involvement.
2. Degree of Creative Control: Degree to which the human user had continuous meaningful control over the evolution of the final expressive product.
3. Selection and Arrangement: Assessing the user's ability to choose, organise and pattern AI-generated elements in a structural arrangement.
4. Qualitative Modification: Taking into account how much the human writer has altered the machine-generated text, either by editing or transforming it, rewriting it or structuring it.
5. Emphasise Final expression: Not all prompt generation results in protectable expression, but whether the final product contains original human authored expression.

This standard aligns with current international standards like those provided by the United States Copyright Office, which endorse copyright protection for AI-generated works where human authorship is the source of the necessary expressive elements through creative selection and arrangement.

11.3. Make a categorical distinction between AI-assisted and AI-generated works correctly.

The revised bill should clearly distinguish between works that are created with AI assistance and those that are created largely using AI:

1 AI-Assisted Works: Works created in which the AI system is used as a supplementary tool in a creative process, under the direction and control of humans.

2 Substantially AI-Generated Works: Works that are created by the algorithm with minimal human effort and are mainly expressive of the core elements.

This dichotomy does not deny intellectual property (IP) law the ability to incorporate valuable technological tools, but instead leaves room for the protection of unoriginal outputs of the machine.

11.4 Legal Treatment of Natural Language Prompts

The statutory regime should make it abundantly clear that it is not just the process of creating a prompt itself that is protected by copyright. Though complex, highly creative prompting procedures might assist in the selection and arrangement of machine outputs, simple prompting procedures are unprotectable.

Judicial assessment should take into account the very nature of the prompt as well as later human intervention, which include substantive modification, editing and the co-ordination of the structures. This balanced approach avoids a situation where there would be widespread copyright ownership of substantially machine-generated works with only a minimal amount of involvement.

11.5 Distribution of the Ownership of Human Contributions

If there is enough original human expression within the AI-assisted work that is protected by copyright, it should be presumed to belong to the original human author, as per the ordinary rules of assignment and contract of copyright as provided in Section 13 of the Copyright Ordinance, 1962.

This means that the principles of IP are adhered to while also ensuring that there is no wrong assumption that each and every element of a hybrid form of work is automatically the property of the person using it. In contrast, if the output is entirely or substantially the product of a machine with little or no human expression, the statute should make it clear that such output is in the

public domain and, thus, is not subject to copyright protection.

11.6 Administrative Disclosure and Registration Framework

Therefore, it is important for the IP registry to be transparent, and Pakistan should consider introducing a formal disclosure requirement for copyright registration when generative AI has been materially used in the creation of a work.

Applicants would have to:

1 Share and disclose the usage of generative AI tools;

2. Discern specific parts of the work produced by AI;

3. Explain the kinds and levels of human creative contributions; and

4. Identify with clarity the elements that are being sought for copyright protection.

11.7 Judging on a case-by-case basis, with flexibility.

With generative AI technologies emerging at an impressive pace, statutory provisions must remain sufficiently flexible to cover the technology's evolution. Courts should be able to address copyright disputes flexibly by considering the factual circumstances of each case.

A case-by-case judicial assessment makes it difficult to create rules that are too absolute and could become useless if new computer technologies become available.

The proposed Six Step Legal Test for Pakistan is as follows:

It proposes a six-step legal test for copyright eligibility of AI-generated works to facilitate judicial review and administrative decision-making.

Step 1 — Identify the AI Contribution: Decide which aspects of the final product were created by the AI system.

Step 2 — Identify the Human Contribution: Establish what original expression, selection or arrangement, or qualitative modification was contributed by the human user.

Step 3 — Assess Creative Control: Determine if the expressive delivery of the final product was under meaningful and sustained control of the human user.

Step 4 — Separate Human and Machine Material: If possible, separate protectable human-authored material from unprotectable machine-generated content.

Step 5 — "Determine Authorship" – If each element is the human creative contribution and meets the statutory requirement for originality, they are the author of the work with respect to those elements.

Step 6 — Determine Ownership: If authorship has been determined, initial ownership shall be determined according to the general principles of copyright under Section 13 of the Copyright Ordinance, 1962, with any exceptions.

11.8 An Optimal Legislative Balance

Any legislative change needs to be compatible with technological innovation while still maintaining the integrity of copyrights.

Prospects of significant copyright protection for substantially AI-generated works would lead to unnecessary copyright monopolies and hinder public access. But if the most valuable technology-assisted creation is denied protection in its entirety, it will take the rights of digital creators away. The suggested mechanism is such that it does not go to either extreme: that unprotectable machine output is not subject to monopoly rights, and that genuine human intellectual effort is fully protected.

The proposed measures for Parliament are the following:

To sum up, it is recommended that the Parliament of Pakistan strengthen the Copyright Ordinance 1962 by introducing a specific Statutory provision regarding AI:

1. Distinguishes generative AI from a legal author, only as a tool;

2.Clearly distinguishes between an AI-assisted work and a substantially AI-generated work;

3.Establishes the Human Creative Contribution Standard as the key standard for copyright subsistence;

4.Differentiates between the level of statutory authorship that must be met by having a prompt formulated;

5. Recognises significant contributions from the human selection, structuring and qualitative modification of the text;

6. Confers human copyright ownership on works with human expressions that are covered by copyright; and
8. Provides for the flexibility of interpretation that courts need to keep the rules on technological developments in line.

12. CONCLUSION

The rapid development of generative artificial intelligence has raised important questions concerning authorship, originality, copyright subsistence and ownership. Although AI systems can now produce literary, artistic and other creative outputs, the legal treatment of such works remains uncertain, particularly in jurisdictions whose copyright legislation predates modern generative AI technologies. Pakistan's Copyright Ordinance, 1962 provides the principal legal framework for copyright protection, but it does not expressly address the specific challenges arising from AI-generated and AI-assisted works.

This study has examined the relationship between sections 2(d), 3, 10 and 13 of the Copyright Ordinance, 1962. Section 2(d) provides the statutory definition of an author in relation to different categories of works. Section 3 explains the meaning of copyright and the exclusive rights associated with it. Section 10 identifies the categories of works in which copyright subsists, including original literary, dramatic, musical and artistic works. Section 13 establishes the general rule concerning the first ownership of copyright, subject to the exceptions provided under the Ordinance. Read together, these provisions provide the basis for analysing authorship, copyright subsistence and first ownership in the context of AI-assisted creation.

The findings indicate that the mere use of an AI tool or submission of a prompt should not automatically establish human authorship or copyright ownership. Equally, the use of AI should not automatically exclude a work from copyright protection. The decisive consideration should be whether the final work contains identifiable human creative expression that satisfies the applicable requirements of copyright law. Human selection, arrangement, editing, modification and meaningful creative control may be relevant in assessing the copyright status of AI-assisted works. However, the protection of such contributions should not automatically extend to the elements generated independently by an AI system.

The comparative analysis of the United Kingdom and the United States demonstrates two different approaches. The United Kingdom provides a specific statutory rule for computer-generated works under section 9(3) of the Copyright, Designs and Patents Act 1988, while the United States emphasises human authorship and protects qualifying human contributions to works involving AI. These approaches offer useful guidance for Pakistan, although neither model should be adopted without considering the structure and objectives of the existing Pakistani copyright framework.

Accordingly, this study proposes a human-creative-contribution-based approach for Pakistan. Its proposed multi-factor assessment model considers the nature of human input, degree of creative control, selection and arrangement, qualitative modification, original human expression and the extent of AI involvement. The proposed six-step legal test further provides a structured method for identifying human and AI contributions, assessing authorship and determining first ownership under section 13 where copyright subsists.

The study therefore recommends that Pakistan introduce specific legislative and administrative guidance to distinguish AI-assisted works from substantially AI-generated works. Such guidance should clarify the role of human creative contribution, address the copyright status of independently generated outputs and provide a more transparent framework for determining first ownership. Ultimately, copyright protection should recognise genuine human creativity while avoiding the automatic attribution of authorship or ownership merely because a person has used an AI system. This approach can reduce legal uncertainty, protect legitimate creative contributions and support responsible technological development in Pakistan.

REFRENCES

A. Primary Sources:

1. Legislation and Statutory Instruments

1. Copyright Ordinance, 1962 (Pakistan), Ordinance No. XXXIV of 1962 (as amended).

2. Copyright, Designs and Patents Act 1988 (United Kingdom), c 48.
3. Intellectual Property Organisation of Pakistan Act, 2012 (Pakistan), Act No. XXII of 2012.

2: Judicial Precedents

- Thaler v. Perlmutter, 130 F .4th 1039 (D.C. Cir. 2025).

B. Official Reports and Policy Documents

- Intellectual Property Organisation of Pakistan, National Intellectual Property Strategy (NIPS) (Government of Pakistan, 2024).
- United States Copyright Office, Copyright and Artificial Intelligence, Part 2: Copyrightability (January 2025).

C. Books and Peer-Reviewed Journal Articles

- Ginsburg, Jane C and Luke Ali Budiardjo, 'Authors and Machines' (2019) 34 Berkeley Technology Law Journal 343.
- Guadamuz, Andres, 'Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works' (2017) 2 Intellectual Property Quarterly 169.
- Samuelson, Pamela, 'Allocating Ownership Rights in Computer-Generated Works' (1986) 47 University of Pittsburgh Law Review 1185.
- Kahveci, Zeynep Ülkü, 'Attribution Problem of Generative AI: A View from US Copyright Law' (2023) 18(11) Journal of Intellectual Property Law & Practice 796, doi:10.1093/jiplp/jpad076.
- Mushtaq, Shahzada Aamir, Khurram Baig, Syed Wajdan Rafay Bukhari and Waqas Ahmad, 'Does Pakistan's Copyright and Antitrust Law Protect Creators of AI-Generated Content? A Comparative Study with European Union Jurisdictions' (2024) 4(1) Pakistan Journal of Criminal Justice 55, doi:10.62585/pjcj.v4i1.51.
- Soomro, Abdul Salam, Muhammad Zakir Shah, Muhammad Hassan Sajjad and Sadia Fatima, 'An Evaluation of the Legal Gaps Regarding Artificial Intelligence and Copyright Infringement in the Context of Pakistan' (2024) 2(2) Indus Journal of Social Sciences 592, doi:10.59075/ijss.v2i2.419.
- Khan, Arshad Nawaz, Bahadar Ali and Farwa Nawaz, 'Developing a Fair Use Framework for AI-Generated Content in Pakistani Copyright Law: A Doctrinal Legal Analysis' (2024) 8(2) Journal of Peace, Development and Communication.
- Mazzi, Francesca, 'Authorship in Artificial Intelligence-Generated Works: Exploring Originality in Text Prompts and Artificial Intelligence Outputs through Philosophical Foundations of Copyright and Collage Protection' (2024) 27(3) The Journal of World Intellectual Property 410, doi:10.1111/jwip.12310.
- Gaffar, Hafiz and Saleh Albarashdi, 'Copyright Protection for AI-Generated Works: Exploring Originality and Ownership in a Digital Landscape' (2024) 15(1) Asian Journal of International Law 23, doi:10.1017/S2044251323000735.
- Wang, Ruhuna, 'The Copyright Requirement of Human Authorship for Works Containing Artificial Intelligence-Generated Content' (2024) 13(2) IP Theory 23.
- Geiger, Christophe, 'Elaborating a Human Rights-Friendly Copyright Framework for Generative AI' (2024) 55 IIC – International Review of Intellectual Property and Competition Law 1129, doi:10.1007/s40319-024-01481-5.
- Jamil, Bilal, Amna Imdad and Ali Haider, 'Training Artificial Intelligence on Copyrighted Works in Pakistan: A Doctrinal Analysis and Proposal for a Comprehensive Legal and Policy Framework' (2026) 5(3) ACADEMIA International Journal for Social Sciences 1259, doi:10.63056/academia.5.3.2026.2288.
- Ahmed, Muzamil and Nazura Abdul Manap, 'Moral Rights and Generative AI Training under the Pakistani Copyright Ordinance 1962: A Comparative Analysis' (2026) 11(7) Malaysian Journal of Social Sciences and Humanities, doi:10.47405/mjssh. v11i7.4086.
- Noor, Hamna, Shahzada Aamir Mushtaq and Muhammad Ali Safdar, 'Copyright Literacy and Compliance in Pakistan's Digital Knowledge Economy: AI Authorship, Institutional Gaps, and the Case for Legal Reform' (2026) 4(7) TAMSAAL 414, doi:10.59075/tamsaal. v4i7.114.

- Ahmed, Rukhma, 'Ownership of the Algorithmic Voice: Allocating Economic Rights in Autonomous AI-Generated Literary Works under Pakistani Copyright Law' (2026) 4(3) International Journal of Social Sciences Bulletin 5717.
-

D. Official Online Databases and Repositories

- UK Legislation, 'Copyright, Designs and Patents Act 1988, Section 9' https://www.legislation.gov.uk/ukpga/1988/48/section/9 accessed 18 October 2026.
- United States Copyright Office, 'Copyright and Artificial Intelligence Initiative' https://www.copyright.gov/ai/ accessed 18 October 2026.
- World Intellectual Property Organisation, 'The Copyright Ordinance, 1962' (WIPO Lex) https://www.wipo.int/wipolex/en/legislation/details/3482 accessed 18 October 2026.