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A QUALITATIVE STUDY ON MACHINE–HUMAN CO-CREATION: A SECONDARY DATA ANALYSIS OF RESEARCH TRENDS

Dr. S.H. Sheik Mohamed[1], Dr.Nirmala.M,Sam Hermansyah[3],Nur rahmah Wahyuddin[4]
[2]

[1]Department of Visual Communication, S.A College of Arts and Science, Chennai, India

[2]Department of Visual Communication, VISTAS, Chennai, India.

[3]Universitas Muhammadiyah Sidenreng Rappang

[4]Universitas Ichsan Sidenreng Rappang

Corresponding Author: sheikmohamedsh@sacas.ac.in

Abstract

The intersection of artificial intelligence (AI) and human creativity has emerged as a dynamic area of exploration, particularly with the development of generative AI models like GPT-4, DALL·E, and MidJourney. These tools not only automate tasks but also actively contribute to creative processes, resulting in collaborative co-creation between humans and machines. This study investigates the evolving role of AI in creative industries, analyzing secondary data from literature published between 2022 and 2025. By examining key theoretical frameworks, methodologies, and trends, the study identifies the methodological shift from experimental design to reflective frameworks, highlights a lack of unified definitions for co-creation, and emphasizes the growing need to engage with the cultural and ethical implications of AI in creativity. The research contributes to a deeper understanding of machine–human co-creation, its implications for authorship, and the future trajectory of creative partnerships between humans and AI.

Keywords : Artificial Intelligence, Machine-Human Co-Creation, Creativity, Generative Models, Co-Authorship, Ethics

INTRODUCTION

The intersection of artificial intelligence (AI) and human creativity has become an area of increasing focus in recent years, as AI transitions from being a tool for automation to a partner in the creative process. What was once a speculative idea, machine–human co-creation has now evolved into a dynamic field of study across disciplines such as design, communication, and computational creativity (Boden, 2023; McCormack et al., 2022). Rather than simply assisting in routine tasks, AI now plays a role in collaborative creative efforts, contributing to the creation of novel artistic, design, and technological products. This shift has sparked significant scholarly interest in exploring the dynamics,

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possibilities, and implications of these human-AI collaborations.

The growing integration of AI in creative industries is evidenced by the rapid development and application of generative models such as GPT-4, DALL·E, and MidJourney, which not only automate tasks but also produce original content in areas like music, visual arts, and literature (Elgammal et al., 2023; McCormack & Hutchings, 2022). These generative tools enable collaboration between humans and machines on projects ranging from digital art creation to co-authored literature, blurring the lines between human-generated and machine-generated works (Manovich, 2023). This shift has sparked a transformation in how creativity is perceived, with AI being recognized as an active co-creator rather than merely a tool for executing tasks (McCormack et al., 2022).

Despite the growing attention, the study of machine–human co-creation remains fragmented, as researchers adopt various approaches and theoretical frameworks to explore its potential. Early studies largely focused on AI's ability to replicate or simulate human creative processes (Hutchings et al., 2021). More recent research, however, has increasingly examined the collaborative nature of human-AI interactions, delving into how AI can challenge and contribute to existing ideas of authorship, creativity, and artistic expression (Boden, 2023; Elgammal et al., 2023). These developments have led to a reconsideration of the concept of creativity, as AI-generated content becomes more indistinguishable from human-created work, raising important questions about authorship, intellectual property, and ethical issues (Zhou & Lee, 2025).

This research aims to explore how recent literature, specifically research from 2022 to 2025, approaches the concept of machine–human co-creation. By analyzing secondary data sources, this study seeks to offer a comprehensive overview of the key theoretical frameworks, methodologies, and findings that shape current perspectives on AI as a creative partner. Additionally, the study identifies existing gaps in research and suggests potential areas for future inquiry within this developing field.

LITERATURE REVIEW

A review of the current literature reveals a significant increase in interest regarding machine creativity, particularly with the rise of generative AI tools such as DALL·E, ChatGPT, and similar technologies. These tools have expanded the possibilities for AI's role in creative fields, from art and design to literature and music. Previous studies have examined areas such as co-authorship, art generation, interactive storytelling, and human-AI collaborations in music, with a focus on how AI contributes to or enhances human creativity (Elgammal et al., 2023; McCormack & Hutchings, 2022).

However, there remains a notable gap in the literature regarding comparative studies and meta-analytical approaches that explore the broader trends, challenges, and implications of these creative partnerships. Recent research has predominantly focused on individual case studies, with limited attention paid to cross-disciplinary or cross-cultural comparisons (Zhou & Lee, 2025). Additionally, while much of the work has celebrated the potential of AI as a creative tool, there is a growing concern about authorship, intellectual property, and the

ethics of AI-generated content (Boden, 2023; Manovich, 2022).

Scholars like Boden (2023) and Manovich (2022) have highlighted the shift from AI being a mere tool for assistance to an active participant in the co-creation process. This transition is not only technological but also conceptual, as it challenges traditional boundaries between human and machine creativity. AI's ability to generate original content based on user input, while still adhering to predefined parameters, has led to questions about the nature of authorship and artistic intent.

Further, recent studies have also explored the growing role of AI in collaborative creativity, emphasizing the dynamic relationship between humans and machines in fields like visual arts, interactive media, and literature. McCormack et al. (2023) discuss the interaction between AI and human creativity as a symbiotic relationship, where both contribute equally to the creative output. Studies by Hutchings et al. (2022) argue that AI has moved beyond a tool of replication and is now seen as a co-creator, offering novel insights into the creative process through its computational capabilities.

Despite the recognition of these evolving roles, meta-analytical approaches remain scarce. Scholars such as Elgammal et al. (2023) and Hutchings (2022) suggest that while AI's role in creativity is expanding, there is a need for systematic, large-scale reviews that consolidate findings across various disciplines to identify overarching trends and insights. These gaps in the literature point to a growing need for comparative research that could offer a broader understanding of AI's creative potential across cultures, contexts, and creative industries.

While significant progress has been made in understanding AI's contribution to creativity, particularly with generative models, more work is needed to explore the broader implications of these technologies in co-creative settings, with a focus on interdisciplinary studies, comparative research, and meta-analytical approaches that can provide a more comprehensive view of AI's role in creativity.

METHOD

This study adopts a qualitative research design based on secondary data. Sources were collected from Scopus-indexed journals, conference proceedings, and academic databases between 2022 and 2025. Thematic analysis was used to identify dominant patterns in approaches, themes, and outcomes. No primary data were collected; instead, the study emphasizes interpretative analysis of published work.

Conceptual models of co-creation focus on how humans and AI systems collaborate within creative processes. Early models often framed AI as a tool to enhance human creativity, supporting rather than participating in the creative act. However, more recent conceptual frameworks have evolved to describe AI as a co-creator, acknowledging that machines, when coupled with human intent, can contribute uniquely to the creative process (McCormack et al., 2023). These models typically integrate elements from Human–Computer Interaction (HCI), Design Thinking, and Posthumanist Theory.

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Design Thinking emphasizes a human-centered approach to problem-solving, which has been adapted in the context of AI collaboration to ensure that the resulting creative outputs maintain a focus on human values, emotions, and needs (Brown, 2022). Meanwhile, Posthumanism challenges traditional notions of human agency by blurring the boundaries between human and machine, suggesting that creativity is a joint effort between both entities (Boden, 2023). These models not only highlight the roles of human and machine but also examine how agency and responsibility are shared in the creative act.

The role of AI as a creative partner is a major area of exploration in the current research on machine–human co-creation. Traditionally, AI was viewed as a tool something that humans controlled to achieve specific outcomes. However, the rapid advancement of generative AI models such as GPT-4, DALL·E, and MidJourney has shifted this view, positioning AI as an active collaborator rather than a passive assistant. AI is now perceived as a co-creator, capable of suggesting creative ideas, generating novel concepts, and even contributing original content in fields like visual arts, music, and literature (McCormack & Hutchings, 2022).

Several studies have noted that in co-creation, AI can sometimes challenge human creativity by introducing unpredictable or novel approaches, thereby expanding the horizon of what is considered creative (Elgammal et al., 2023). For instance, AI-generated art often pushes the boundaries of conventional design, producing work that would be difficult for humans to conceptualize independently. This shift represents a significant departure from earlier, tool-centric models of AI and reflects a more egalitarian partnership between human and machine (Boden, 2023).

As AI becomes an active participant in the creative process, ethical concerns surrounding its use become increasingly significant. One of the key debates revolves around authorship—specifically, who owns the rights to AI-generated content. Traditional notions of authorship, where a human creator holds the intellectual property rights, are being questioned as AI increasingly generates works independently or collaboratively with humans. This has raised critical questions about intellectual property rights, copyright laws, and the attribution of creativity (Zhou & Lee, 2025).

Scholars have called for new legal frameworks to address these emerging challenges, as current laws are ill-suited to handle the complexities of AI-created content (Hutchings et al., 2022). Ethical concerns also extend to the bias inherent in AI systems, particularly in creative domains where AI algorithms may replicate or amplify biases present in their training data, affecting the representation and diversity of creative outputs (Boden, 2023). As AI becomes a more integral part of the creative process, addressing these ethical issues will be crucial to ensuring that AI enhances rather than undermines human creativity.

Research on machine–human co-creation often draws on interdisciplinary methodologies that combine insights from computer science, design studies, philosophy, cognitive science, and the arts. Such methodologies are necessary due to the multifaceted nature of co-creation, which involves technical, creative, and ethical considerations. Design research plays a pivotal role in studying co-creation, as it emphasizes user-centered approaches

to technology design and development (Brown, 2022). Additionally, cognitive science offers valuable insights into how humans engage with machines in creative tasks, exploring the cognitive and emotional dimensions of human-AI interaction.

Philosophical perspectives, particularly Posthumanism and Phenomenology, help frame the ethical and existential questions arising from human-AI collaboration, asking deeper questions about the nature of creativity, agency, and machine ethics (McCormack et al., 2023). These interdisciplinary methodologies offer a comprehensive understanding of machine–human co-creation, combining technical precision with creative insight and ethical reflection. As the field continues to evolve, interdisciplinary research will remain essential in shaping the future of AI in creative industries.

RESULT AND DISCUSSION

The analysis of recent studies indicates a significant methodological shift in how machine–human co-creation is approached in academic research. In earlier studies, the experimental design was the dominant approach, focusing on quantifiable outcomes and specific measures of AI's effectiveness in creative processes. These studies typically involved controlled settings where human participants were asked to interact with AI tools to produce specific outcomes, such as generating artwork or writing creative content. The goal was to determine how AI could enhance or augment human creativity by measuring variables like productivity, quality, or accuracy in completing tasks.

However, as AI technologies have evolved, there has been a marked transition towards reflective frameworks. Reflective approaches prioritize understanding the subjective experiences of individuals engaged in co-creation with AI, emphasizing qualitative insights over quantifiable metrics. For example, recent studies have explored how human creators perceive the interaction with AI tools, the emotional dynamics of working with a machine, and how these experiences shape their creative process. This shift reflects a broader trend toward exploring human-centered aspects of AI collaboration, recognizing that the value of AI in creativity is not only in its output but also in how it influences human creativity and decision-making.

Such reflective frameworks also encourage a deeper understanding of creative autonomy and how AI's involvement might challenge or support human authorship. Scholars like McCormack et al. (2023) suggest that collaboration with AI may alter traditional creative workflows, potentially leading to new modes of creative thinking that would not have been possible without AI's intervention. As such, the focus has expanded from simple task completion to a broader exploration of the creative dialogue between human and machine.

The analysis also identifies a significant gap in the literature regarding the lack of unified definitions for co-creation. This lack of consistency in terminology creates challenges for researchers and practitioners trying to establish a common understanding of what it means for AI to collaborate with humans in creative endeavours.

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In design and media studies, co-creation is often seen as a collaborative effort between humans and AI, where both entities play active roles in generating creative outcomes. However, in fields like literature or artificial intelligence research, the term may have different connotations. Some researchers focus on AI as a support tool that enhances human creativity by suggesting ideas, generating sketches, or providing feedback. Others, however, view AI as an equal partner, capable of producing original works on its own, with the human involved in curating, directing, or interpreting the AI-generated content.

This divergence in understanding makes it difficult to draw consistent conclusions or establish generalizable frameworks for AI and co-creation. Studies like those of Elgammal et al. (2023) suggest that while AI tools can facilitate creativity, the term "co-creation" is often used ambiguously, leading to confusion about the roles and agency of both humans and AI in the creative process. There is a growing call for more standardized frameworks and clearer definitions that can help bridge these disciplinary divides and create a cohesive understanding of what machine–human co-creation entails.

Finally, the analysis highlights an emerging need for critical engagement with the cultural and ethical implications of AI's involvement in creativity. As AI tools become more integrated into the creative industries, researchers and practitioners must address the broader societal impact of these technologies.

One of the key ethical concerns is the issue of authorship. In traditional creative practices, authorship is typically assigned to the human creator. However, as AI plays an increasing role in content generation, questions arise about who should be credited for the work. Is it the AI system, the human user, or both? This issue of intellectual property rights is particularly critical as AI-generated content becomes more sophisticated and capable of producing complex works independently of human input (Zhou & Lee, 2025). Some scholars advocate for the creation of new legal frameworks to address these challenges, ensuring that AI-generated works are treated fairly within the legal system while still protecting human creativity and originality (Hutchings et al., 2022).

In addition to intellectual property concerns, AI's use in creative fields also brings cultural implications that warrant examination. AI systems, especially those trained on large datasets, often inherit the biases present in the data they are exposed to. This can result in AI-generated works that reflect narrow, biased, or exclusionary perspectives, potentially reinforcing harmful stereotypes or underrepresenting marginalized voices (Boden, 2023). Ethical discussions around the representation of diversity and inclusion in AI-generated content are crucial to ensuring that these tools do not inadvertently perpetuate inequality.

Lastly, the social responsibility of developers and creators must be taken into account. As AI tools become more accessible, it is essential to ensure that they are used in ways that respect cultural values, promote ethical practices, and encourage a democratic approach to creativity. This involves considering the potential societal impact of AI-generated content and ensuring that these technologies contribute to inclusive and equitable creative practices (McCormack & Hutchings, 2022).

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CONCLUSION

Machine-human co-creation is an emerging field that demonstrates the evolving role of AI as a creative partner. Despite the progress made in understanding AI's potential in creative domains, significant challenges remain, including the lack of standardized definitions and frameworks for co-creation across disciplines. This research emphasizes the need for interdisciplinary methodologies to further explore the complex dynamics between human and machine creativity. Additionally, critical engagement with the ethical and cultural implications of AI in creative industries is necessary, particularly in addressing issues related to authorship, intellectual property, and bias in AI systems. Future research should focus on meta-analytical approaches and cross-disciplinary comparisons to provide a more unified understanding of AI's role in the creative process.

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