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The use and impact of AI in art and creative process
A Scoping Review

ELENI KOKOLIOU

UNIVERSITY OF BORÅS

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Author(s): Eleni Kokoliou

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Abstract: Background: Artificial Intelligence (AI) has emerged in various domains, including art and has transformed the traditional understanding of artistic practices, ownership and creative process in art.

Objectives: The present scoping review aims to examine AI in art for understanding the role of AI in artistic creation by collecting and mapping key concepts related to AI art, listing the identified AI-related tools currently used in artistic practices alongside their possibilities offered, capturing the positive and negative perception of both artists and audience, and, finally, identifying the ethical concerns emerged by AI alongside proposed solutions. Understanding AI generated content and its issues support not only the artistic community but also inform the Information Science (IS) scholarly discourse and practices.

Methods: This rapid scoping review, conducted for 5 months, applied PICo protocol to shape the research questions, Arksey and O'Malley's (2005) framework for a transparent and comprehensive collection and analysis of the evidence, and followed PRISMA-ScR for reporting. The search across "Web of Science", "Scopus" and "EBSCOhost" databases was conducted with some limitations in criteria selection. The inclusion criteria were limited to English-language sources published between 2020 and 2024, focusing on peer-reviewed articles. Data charting was conducted in thematic maps and figures for a broad representation of the current landscape.

Results: The qualitative text analysis in thematic areas of 21 peer-reviewed articles lead to a narrative analysis followed by figures and tables. The initial part of the "General information" results highlights the growing scholarly interest in AI within the domain of art throughout 2024 and the variety of disciplinary fields that demonstrate interest in this topic. Regarding the main part of the results, the review offers a comprehensive overview of the most frequently utilized key concepts relating to AI art and a list of over 50 AI-driven tools with their affordances in creative process. Furthermore, it maps positive and negative perception of both artists and audience and addresses ethical concerns raised along with a few proposed solutions.

Conclusions: A systematic review could follow this scoping review and enrich the assistance of policymakers, artists, and technical developers to revise the existing framework in which they collaborate and ensure that any identified risk will be mitigated. Moreover, this thesis provides the foundation to the field of IS to understand AI-generated content in both scholarly research and professional information environments.

Keywords: Artificial Intelligence, AI art, generative art, artists, AI-related tools, creative processes, ethical concerns, perception, visual art

Contents

List of Tables

List of Figures

1 Introduction

Artificial Intelligence (AI) is one of the many technologies that has prevailed in our world in the past century. By combining advanced algorithms, machine learning and powerful computers, AI is a tool that supports humans in quick and accurate decision-making, from solving e.g. complex problems in the healthcare domain to assisting with everyday tasks such as tagging photos and operating household appliances. AI appears to have a promising future, yet the trajectory of its development is difficult to predict (Chellappa, 2022).

With the advent of AI era, our daily life but also various industries have been affected, including healthcare, finance and technology, without art being an exception (Filimowicz, 2024). Many artists started to explore AI in their artworks and as AI evolves, it continuously reshapes the limits of artistic expression and creativity (Filimowicz, 2024). AI algorithms are now capable of generating new forms of poetry and music, while programmed robots produce sculptures and paintings, highlighting a new era of artistic production.

The widespread adoption of AI in art has drawn the researchers' attention to investigate further how AI impacts the field of art, interacts with the artists and the audiences, and raises complex ethical concerns. In response to this growing interest, the present thesis undertakes to map the current body of knowledge through a rapid five-month scoping review. Given the interdisciplinary and emerging nature of AI in art, this approach offers the necessary breadth to capture diverse perspectives and evolving practices. This review aims to provide a transparent and comprehensive collection and analysis of evidence, guided by four core research questions presented to the next section.

The methodological framework follows Arksey and O'Malley's (2005) six-stage approach for scoping reviews, incorporating the PICo protocol to frame the research questions and the Prisma-ScR checklist to ensure clarity and rigor in reporting (Peters et al., 2022; Stern et al., 2014; Tricco et al., 2018). The focus is on peer-reviewed literature published in English between 2020 and 2024, covering key themes: emerging art-related key concepts, AI-related tools and their impact, the perception of both artists and audience, and the ethical concerns and recommended solutions.

Through qualitative text analysis in thematic areas of 21 selected articles, valuable results, that indicate the current landscape in this field, were classified under main conceptual categories. All findings are presented in a narrative format, supplemented by visualizations and tables. This review might be the initiative for a potential systematic review that could support the policymakers, the artists, the technical developers and other involved parties to create or update existing frameworks which mitigate the identified risks and foster collaboration with each other.

The structure of the review is organized to ensure logical progression from contextual background to methodological approach, findings and final reflections. In the context of scoping review, the thesis prioritizes to map the existing evidence which are collected from the selected studies by integrating literature discussions within thematic analysis and results (Arksey & O'Malley, 2005; Munn et al., 2018). A couple of quantitative statistics were just used to provide a broader understanding of the evidence landscape, verifying the scholarly interest for AI in art in recent years before the presentation of main results (See Chapter 4).

Thus, the thesis is organized into six chapters. **Chapter 1** presents the problem formulation, the aim of the study, the four research questions and how they are formulated. It also discusses the theoretical and practical limitations encountered during the study. **Chapter 2** includes a historical perspective to understand the evolution of the AI art era, and a literature review that provides the necessary background to understand the gaps that this scoping review approaches. **Chapter 3** analyzes the different stages of the research method that was followed to address the research questions. Then, **Chapter 4** narrates and visualizes the results following the order of the research questions. **Chapter 5** summarizes the findings linking them back with the research questions, highlighting important insights and discussing their implications. It ends with a methodological reflection about the quality of the study. Finally, **Chapter 6** provides the conclusions of the study, proposes directions for future research and reflects on how the scoping review's findings add value to the field of Information Science (IS).

1.1 Problem formulation

The rapid integration of AI in the art world has significantly reshaped traditional understandings of artistic practices, ownership, and creative processes (Filimowicz, 2024). Despite growing scholarly interest in AI-generated art from various perspectives, there is still no shared understanding of how to define or categorize the role of AI in artistic creation. Moreover, the absence of a shared conceptual framework does not enable effective communication among artists, researchers, developers, and audiences engaging with AI art (Kreković et al., 2023).

This fragmentation creates confusion around definitions, roles of artists and AI-related tools and provokes various perceptions and ethical concerns. Terms like "AI-generated," "AI-assisted," and "creative autonomy" are often used inconsistently, making it difficult for artists, developers, researchers, and audiences to engage in meaningful dialogue or collaboration.

The literature review reveals that a variety of data collection and analysis methods have been conducted to examine the relationship of AI and art. While many studies rely on literature reviews and interviews as primary data collection techniques, others adopt mixed methods approaches—combining interviews with market transaction analysis or comparative qualitative analysis (Guan et al., 2024; Olgen & Cucuzzella, 2024). Given methodological diversity and the growing scholarly interest in this field, alongside the rapid expansion of AI tools and the intensification of ethical concerns, a scoping review is essential to map the existing findings, offer a comprehensive overview of recent research trends and core issues, and inform future scholarly discourse and practice.

Moreover, much discussion has been conducted about the use of AI in corporate contexts, so it is necessary to view the perception of artists, since they are often pioneers of new technology (Duester, 2024).

These gaps are directly relevant to the field of IS, which is concerned with the classification, management, and ethical stewardship of information in all its forms. Understanding AI-generated content is not just an artistic issue but also an information problem. AI-generated artworks, as complex digital objects, includes issues such as metadata design, intellectual property (IP) management, digital preservation, and ethical information policy that differs from the traditional information infrastructures. The lack of standardized vocabularies and ontologies to describe AI art make difficult not only the scholarly discourse but also the job of taxonomists, digital curators and policy designers in ensuring access, attribution, and long-term curation.

Moreover, IS professionals often play a key role in bridging gaps by developing taxonomies, facilitating knowledge organization, shaping ethical guidelines and creating digital infrastructures that support interdisciplinary collaboration. In this context, this includes collecting and defining concepts and creating a shared framework that will help to dissolve the confusion around the AI art topics.

Thus, although the use of AI in artistic creation is rapidly expanding, the scholarly discourse remains fragmented, with inconsistent terminology, unclear tool classifications, and limited understanding of how AI reshapes traditional notions of creativity, authorship, and audience and artists' perception. This lack of conceptual and structural clarity poses challenges not only for the artistic community, but also for the IS professionals who are responsible for organizing, curating, and ethically managing digital cultural content. There is a clear need to examine existing knowledge for mapping emerging concepts and tools, and exploring the information-related implications of AI-generated art.

Considering these conceptual, ethical and disciplinary gaps, the following section outlines the aim of this scoping review and presents the research questions that guide the study.

1.2 Aim of the study and Research Questions

The aim of this thesis is to collect and map evidence from several studies dated from 2020 to 2024. To achieve this, a scoping review was chosen as the most appropriate methodological approach. This approach provides a rapid and transparent method to examine the range of research activity in this domain, while also presenting and sharing the findings in an accessible and summarized format for better utilization (Arksey & O'Malley, 2005).

The review seeks to identify key concepts that can contribute to the development of a common language. This shared language would help both professional artists and amateurs communicate more effectively, with each other and with the AI tools, during the creation of AI-generated artworks. This shared understanding is essential for fostering meaningful collaboration between humans and intelligent systems in creative contexts. Additionally, this thesis anticipates providing a list of both well-known and lesser-known AI-related tools currently used in artistic practices. Thus, all the parties involved in creative processes will receive valuable insights, understanding at the same time how these tools influence artistic production, from ideation to execution.

Furthermore, understanding how the use of AI in creative processes is perceived by both artists and audience can offer important insights to researchers and theorists to explore how creativity, authorship and aesthetics evolve with AI. A synthesized overview of ethical concerns, along with potential solutions may assist policymakers and institutions in revising IP frameworks and shaping more inclusive cultural funding strategies. Finally, the review may inform technical developers in designing tools that are not only innovative but also aligned with artistic needs and public trust.

The research questions were formulated based on Population-Interest-Context (PICo) guidelines. This framework allows researchers to identify the eligibility criteria and clearly articulate the focus of the review (Peters et al., 2022; Stern et al., 2014).

The population (P) defines the required individuals that should be encompassed and investigated regarding the specific problem statement. This review includes both artists such as digital creators, art designers, and writers, as well audience such as consumers and collectors of AI-generated artwork, who the former represent the key stakeholders engaged in the creation and artistic practices of AI-generated art and the latter perceive the impact of the artwork.

Moreover, PICo enables researchers to specify the phenomena of interest (I) in correlation with the population. For artists the key interests focus to the "Use of AI technologies (tools and purposes) in creative process", "Artists' perceptions of AI's role in creative processes", and "Ethical issues such as ownership and authorship of AI art". For audiences the key interests focus on their "Reactions and perceptions to AI-generated art". These interests indicate how both artists and audience interact with and interpret the role of AI in the creative process.

Additionally, the context (Co) defines the broader thematic scope of the review. This includes areas such as the "Key concepts related to AI art", the "AI-related tools and their implications", the "AI impact on creative processes", and the "Ethical considerations and proposed solutions".

Taking all these factors into account, the review is guided by the following research questions:

> RQ1. What are the key concepts related to the use of AI in art creation identified in literature? How are these concepts used in literature?
>
> RQ2. Which AI-related tools do artists use to create their artworks? Which are the possibilities offered in the creative process?
>
> RQ3. How do artists and their audience perceive the use of AI in the artistic creative process?

RQ4. Which ethical concerns are identified in the literature about the use of AI in the creation of artworks? Does the literature recommend any possible solutions?

This study, to be in line with the exploratory nature of the scoping review, follows a qualitative research strategy, including an inductive approach. Once the aim of the study is to collect and analyze qualitative data (texts and documents) , not for explaining particular events but for identifying and mapping themes and conceptual categories emerging from the existing literature, this approach is considered the most appropriate, as outlined by Clark et al. (2021).

1.3 Limitations

However, the study includes some limitations which are presented here to contextualize the methodological decisions for conducting this scoping review. These limitations concern restrictions on source selection, methodological constraints, language, and cultural considerations.

To make this scoping review more feasible within the time constraints of a thesis, the selection is limited only to peer-reviewed articles, thereby excluding other potential valuable sources such as books, conference proceedings, and gray literature. The limitation is also extended by relying exclusively on the electronic databases skipping other search techniques (e.g. citation tracking) mentioned by Arksey & O'Malley (2005). While these methodological decisions help maintain a manageable scope, they may have resulted in the omission of important or supplementary evidence or even to missing niche studies that could enrich the existing mapping. However, the reliance on peer-reviewed articles mitigates the risk of findings which derive from less reliable sources and enhances the credibility of research.

Moreover, the decision not to use other types of methods like interviewing artists is based on the hypothesis that it would require more time, and it would be risky for meeting the deadlines. Of course, the results of the interviews would possibly make the review more comprehensive including deeper insights, but it creates the opportunity for further future research.

Another notable limitation is the single-reviewer approach for both screening and charting the data. Even if the applied method is aligned to the six-stage framework established by Arksey & O'Malley (2005), the absence of other reviewers may have introduced selection or interpretation bias. While every effort such as repeated reviews and coding consistency checks, was made to ensure transparency and consistency in article selection and data extraction, the criteria and the final decision were ultimately shaped only by the author, which raises the possibility of excluding evidence based on subjective interpretation or unintentional misjudgment.

Additionally, the exclusive selection of articles published in English language introduces the risk of language bias while mitigating inaccuracies arising from misleading translation. Furthermore, excluding literature of other languages may result in the omission of evidence from diverse cultural contexts, which is particularly significant in the global discourse on AI and creativity.

2 Background and Previous Research

This chapter lays the foundational context for the thesis by exploring the historical evolution, theoretical background, and existing research related to the different aspects of AI in art. It begins by tracing the evolution of AI and its impact in art as a phenomenon rooted in years of experimentation, and not just a recent trend. To support a clear understanding of the thesis topic, key concepts such as AI, art and creativity are defined and discussed. It continues by briefly reviewing relevant literature that has examined the adoption and impact of AI-related tools on artistic creative process and how perception and ethical discourse have been shaped. All these sections establish the conceptual and scholarly framework that informs the research questions addressed in the scoping review.

2.1 Evolution of AI in art

For decades, AI has been a subject of interest in the realm of art and design (Ashour & Rashdan, 2024). This is not a recent phenomenon for artists, as we may think. Artists had already begun exploring AI in artistic expression back to the mid-20th century writing computer programs to generate art (Elgammal & Mazzone, 2020). Art-making program AARON written by a British artist, Harold Cohen, was one of most prominent early examples which produced drawings based on set of rules without the use of traditional tools, such as a brush (Elgammal & Mazzone, 2020). Specifically, in 1973, he created the first AI painting with patterns and images created by algorithms (Rani et al., 2024).

However, according to Rani et al. (2024), there were a few early works of AI-generated art throughout the 1950s and 1960s. Simple algorithms were used to generate and display a range of patterns and shapes on screen. An example of such an AI-generated artwork is the 12 works entitled "Matrix Multiplications (Franke 1985)" which was created by German mathematician and scientist, Frieder Nake in 1967 (Rani et al., 2024, p. 6).

Other AI pioneer artists during the 1970s and 1980s were Arthur Elsenaar and Remko Scha, David Cope, Peter Beyls, and Naoko Tosa. In the 1990s and 2000s, artists such as Ken Feingold, Ken Rinaldo, Louis Philippe-Demers, Patrick Tresset, had created some of the contemporary AI art's topics using uncanny robotic works (Wilson, 2002; qtd. in Grba, 2022).

Until 2015, when AI in art was starting to thrive, all previous attempts were guided by the human artist and programmer, eliminating the machine's autonomy in creative process (Barale, 2021).

In 2018, the first artwork that developed and signed by an algorithm using input of centuries of other works, titled "the portrait of Edmond de Bellamy". It was sold for $432,500 at Christie's Auction House and provoked many ethical questions (Barale, 2021; Hakopian, 2024; Isik, 2024; Rani et al., 2024).

The release of ChatGPT in 2022 introduced AI technology to a wider audience for generating text, images and other types of content, including different forms of art. Vast amounts of data were used to train machines or computer systems to synthesize complex data and solve problems, for instance in healthcare and industrial sector. At the same time AI provided the art world with leveraged algorithms to generate art and inspire creativity.

The use of AI in contemporary art was spread rapidly in China during 2023 because of technological maturity and the desire of Chinese artists to embed in their work practices accuracy and convenience (Duester, 2024). Covid-19 pandemic accelerated the digital activities, as well AI, since the online path to create artworks was more feasible (Duester, 2024).

These milestones illustrate the gradual evolution of AI from a tool guided entirely by human instruction to a more autonomous and generative partner in the creative process. Understanding this timeline helps contextualize how art is defined, perceived, and produced, issues that are central to this thesis. For instance, the increasing use of generative tools such as GANs and diffusion models informs the mapping of key AI tools and their capabilities (RQ2). Moreover, tracing artists' early experimentation with AI supports a deeper understanding of how creative autonomy and collaboration with machines are perceived by both creators and audiences (RQ3) and highlights the emerged AI-related concepts such as “AI art” and “AI generated” (RQ1).

2.2 Review of Previous Studies

In the terms of AI evolution, several studies have been conducted to examine different aspects of the use and impact of AI in our daily and professional lives. Chellappa (2022) argues that AI can be considered the most influential technology. AI has started as an academic research tool and has invaded many aspects of our lives, such as commerce, social media, health care and transportation as a tool for societal good, helping humans make decisions more quickly and accurately (Chellappa, 2022). At the same time, as it was mentioned already, AI has emerged into the field of art which the latter has “a complex, symbiotic and continually evolving relationship with the technological capabilities of a culture” (Agüera y Arcas, 2017, p. 1).

2.2.1 Basic Concepts

The literature review reveals that many traditional concepts require deeper clarification, while numerous new concepts have emerged in response to the growing integration of AI in art. Coeckelbergh (2017) highlights the need to reexamine classic definitions of art and creativity in terms of AI influence. This sub section introduces the core terms relevant to the research topic and lays the conceptual groundwork for RQ1 to collect, map and classify additional concepts identified throughout the scoping review (See Section 4.1).

The concept of **AI** is subject to a wide range of interpretations, especially among non-experts (Chellappa, 2022). Chellappa (2022) argues that AI is a complex concept that cannot be related only with the use in household appliances (e.g., personal Assistant like Amazon’s Alexa). Isbell, as cited in Chellappa (2022 p. 7), metaphorically emphasizes that AI can be seen as equivalent to a newborn that needs artificial parents for growing up. A more technical definition describes AI as “the capability of computational systems to perform tasks typically associated with human intelligence, such as learning, reasoning, problem-solving, perception, and decision-making” (Wikipedia contributors, 2025). Likewise, Voigts et al. (2024) discusses AI’s ability to automate processes that enhances the chances for successful results. These foundational definitions are important to understand that the role of AI is not just as a tool but as a potentially creative agent.

Similarly**, art** is a multifaceted concept that is defined in various ways, both as an independent term and in combination with modifiers such as “AI art”, “computer art”, and others. Art has been defined as expression of our emotions derived from an imaginary activity or experience (Collingwood, 1938; qtd in Coeckelbergh, 2017). Since the time of Plato (427–347 BCE), it has been explained as an imitation of life (Croce, 1995; qtd in Ch’ng, 2019). Ch’ng (2019) demonstrates that the definition of art has evolved over time and obtains different criteria that determine something as art. Art also has different forms such as film, photography, plays, novels, and so on. Understanding these nuances, guide us to examine how all the AI-related concepts are conceptualized, create a mapping and classify them thematically in Section 4.1.

The final core concept, **creativity** also faces many interpretations. It is the ability of generate novel, surprising, and valuable ideas—where “ideas” encompass not only concepts and theories but also artistic expressions such as music, literature, and visual artefacts like architecture, sculpture, and paintings (Boden, 2010). She examines the nature of creativity in a wide range of art forms and distinguishes it into combinational, exploratory and transformational creativity. The first related with combination of familiar ideas in new ways, the second with exploration of the possibilities within a conceptual space or style, and the third with the alteration of the constraints of that space to produce fundamentally new structures.

Runco (2023) highlights the need to revise the standard definition of creativity considering AI emergence and provides the distinguish between human and artificial (machine) creativity. According to his study, artificial creativity best describes the output from AI which lacks the authenticity and intentionality that are fundamental to human creativity.

This conceptual framework does not only support RQ1 but also provides insights into how tools are used (RQ2), how their outputs are interpreted (RQ3), and how they are ethically framed (RQ4).

2.2.2 Use and impact of AI-related tools

Over the past five decades, numerous researchers have explored the development of computer programs capable of generative art such as Ashour & Rashdan, (2024), Caramiaux & Fdili Alaoui (2022), Forbes (2020), Milovidov (2024). While some tools, such as GANs, were initially developed for other purposes, are now utilized for art-making (Mazzone & Elgammal, 2019). Mazzone & Elgammal (2019) support that GANs are the most widely used and accepted tool by AI community that has inspired the evolution of AI art. The same study provides a few details of creative process using GAN-like algorithms: “The artist chooses a collection of images to feed the algorithm (precuration). These images are then fed into a generative AI algorithm that tries to imitate these inputs. In the final step the artist sifts through many output images to curate a final collection (post-curation)” (Mazzone & Elgammal, 2019, p. 2).

Although such tools can produce visually compelling results, they also introduce unexpected or flawed outputs, particularly when imitating complex human features such as facial expressions. These limitations reveal both the potential and unpredictability of AI-generated art. As reported by Mazzone & Elgammal (2019), these tools have a positive impact on people as viewers of art. The artists, from their side, often report limited control over the final output, while recent studies, like the one of Duester (2024), indicate that many artists believe that can control the AI tool and keep their role. Moreover, the creative process enables them to rapidly generate large volumes of imagery and explore new avenues for manipulating and disrupting data to produce visual content (Elgammal & Mazzone, 2020).

These discussions are directly relevant to RQ2 of this thesis, which investigates the specific AI tools used in artistic production and the possibilities they offer within the creative process. While several studies mention a few tools and their capabilities, it seems that a comprehensive mapping is required to present a clear picture of technological landscape. Moreover, it is indicated from the review that there is no comprehensive overview of the perspectives of both artists and audience (RQ3).

2.2.3 Perception for AI in art

Already Agüera y Arcas (2017) has predicted that AI “will profoundly affect art” like it had happened with other inventions that influenced art (p. 1). He also discusses the discourse about the willingness of the artists to use the new technology as a new medium or partner or just continue to use the conventional method of artwork production. Many researchers, as Boden (2010), Ch’ng (2019), Schubert et al. (2017) explore whether the artwork derived from AI can be considered and valued equally as artwork created by human artists.

Hong & Curran (2019) indicate that although AI-created artworks and human-created artworks may appear similar at first sight, clear differences become evident when specific evaluative criteria are applied—provided that assessments are not influenced by stereotypes about whether AI is capable of creating art. Accordingly, Schubert et al. (2017), focusing on music, indicate AI’s possibility to mimic pianist sufficiently well. Such a kind of research provides insight into public perceptions of AI in art, but as AI advances and the development of AI-related tools is increased, the attitudes toward AI art need further research and occasional updates.

Recent studies also explore how AI is perceived by artists, as an assistant, a collaborator or even a co-creator, and provide valuable insights about the artists’ concerns about their evolving role in the creative process, as well as audience’s feeling when comparing AI-generated art vs human art (Caramiaux & Fdili Alaoui, 2022; Duan et al., 2024; Fiialka et al., 2024; Garcia, 2024). However, there is no consolidated framework that maps the range of attitudes, both positive and negative (RQ3) held by artists and audience.

2.2.4 Ethical Concerns

Many ethical concerns are raised from the increasing use of AI-related tools, even earlier from the period examined in this thesis. The literature review indicates a few of them such as authorship, authenticity, and ownership that will be analyzed further in Section 4.4.

Schubert et al. (2017) argues that AI may put at risk the role of music artist. Boden (2016) questions the art identification and prompts further debate about the boundaries and definitions of artistic authenticity. For example, Runco (2023) in terms of updating the definition of the creativity term, argues that authenticity is not characteristic of AI artwork.

The materiality of an original artwork emerges also as an important consideration. While machines may eventually produce artworks that surpass those of even the most accomplished human artists in visual appeal, they currently cannot replicate the tangible qualities of human-made art, such as the texture of the canvas, the relief of brushstrokes, and the imperfections that contribute to its authenticity and physical presence (Ch'ng, 2019).

The case of Christie's Belamy auction in 2018 burst out as a catalyst multiple ethical questions surrounding authorship and copyright (Barale, 2021; Hakopian, 2024; Isik, 2024; Rani et al., 2024). The sale sparked debate over these topics: should credit be attributed to the artist, the AI programmer, or even the AI-related tool itself? Ch'ng (2019) discusses already how such cases expose further concerns involving intellectual property (IP), ownership and legal possession.

Although the literature review reveals and discusses ethical concerns that derived from the use of AI in creative processes, there is not a comprehensive categorization that could help to clarify ongoing debates and provide the fundamentals for future legal, artistic and policy-oriented discussions.

2.3 Summary

To sum up, the literature review indicates that AI in art is a widely discussed topic with significant scholarly interest ever before 2020. Existing research has investigated and discussed a few aspects such as the emerging concepts, the use and impact of AI-related tools, the public perception of AI-generated art, and ethical concerns. However, existing research remains fragmented, with inconsistent terminology, limited cross-stakeholder perspectives, and a lack of comprehensive conceptual frameworks. Few studies synthesize artist and audience perceptions in parallel, map the full spectrum of AI tools used in practice, or offer structured approaches to ethical challenges. These gaps justify the adoption of a scoping review to map recent scholarly insights and provide a consolidated review which organizes the existing knowledge, aligned with the study's overall aim.

3 Method

This chapter begins with general details about the scoping review and the reason selected. Afterwards, it is divided into 4 sections that analyze how each step of the Arksey & O'Malley (2005) framework is applied to ensure transparency, relevance and a comprehensive mapping of the current research landscape.

3.1 Study design – Scoping review

The selected method, as already mentioned, is the scoping review that allows broader questions and exploration of the related literature (Moher et al., 2015; qtd. in Peterson et al., 2017). It is also a common method of evidence synthesis used to summarize existing research, to map and explain the evidence based on the review objective, question/s and inclusion criteria (Peters et al., 2022; Munn et al., 2018). Moreover, it is the proper method to identify main concepts, theories, sources and knowledge gaps (Tricco, Zarin, et al., 2018). It is also able to be conducted in a rapid timeframe. It is mainly used for the healthcare domain, but it has been also used for other study areas such as transportation, project management (Tafidis et al., 2022; Pires & Varajão, 2024).

The foundational framework of Arksey & O'Malley (2005) is widely recognized as the starting point for scoping review methodology. It emphasizes the importance of summarizing and reporting results in a descriptive and interpretive manner. Building upon this, Levac et al. (2010) introduced refinements that highlight the need for analytical rigor and thematic organization, particularly when presenting qualitative results.

Importantly, the scoping reviews do not examine the quality of evidence and consequently cannot define whether the findings of the studies are reliable and widely applicable (Arksey & O'Malley, 2005). Instead, their primary value lies in offering a comprehensive overview of existing literature.

This scoping review followed the six-stage framework established by Arksey & O'Malley (2005), excluding the final optional stage. The six stages, as titled by Arksey & O'Malley (2005, pp. 22-23) are:

Stage 1: identifying the research question
Stage 2: identifying relevant studies
Stage 3: study selection
Stage 4: charting the data
Stage 5: collating, summarizing and reporting the results
Stage 6: consultation exercise (optional)

This framework reminds researchers that this process is iterative, demanding from them to approach each phase thoughtfully, revisit and refine earlier steps as needed to ensure the literature is thoroughly examined and yield in-depth and broad results. It is a clear step by step methodology that facilitates the researchers to follow and replicate the process, ensuring consistency and transparency in mapping areas of research.

Other advantages of this framework include the possibility to identify knowledge gaps for future research, the maintenance of clarity in reporting strategy that reassures that the reader can identify the potential bias and the interested parties to make effective use of the findings (Arksey & O'Malley, 2005). Moreover, it has been served as a benchmark for other scoping review methodologies such as the one of Levac et al. (2010) and Peters et al. (2015) who provide some enhancements and clarifications for each stage of the framework.

This scoping review utilizes some of their recommendations such as the PRISMA-ScR protocol for reporting the results that enables consistency in reporting (Peters et al., 2020). To be aligned with this protocol, the checklist and explanation article of Tricco et al., (2018) was used as a guidance, as well as the Prisma website (*Scoping*, n.d.). The PRISMA-ScR checklist consists of 22 fields, two of which are optional. McGowan et al. (2020) encourage researchers to apply PRISMA-ScR to ensure the transparency and the quality of the completed scoping review. In terms of this protocol, the PRISMA flow diagram was also used to illustrate the screening process – stage 3 (Haddaway et al., 2022).

Another recommendation that is used in this scoping review is the qualitative thematic analysis of the data as additional to the data extraction and the consideration of the implications for research, policy and practice (Levac et al., 2010). For example, the RQ4 is answered by using themes that describe the ethical concerns and provide the policy makers with all the required insights to apply the proper policies and practices for the sake of artists and AI art. This approach enhances the credibility of the findings by grounding them in recurring patterns observed across multiple sources, while also supporting confirmability, as the themes were derived inductively from the literature rather than imposed externally (Clark et al., 2021).

Quantitative methods, even if Peterson et al. (2017) argues that could be included in a scoping review, were not used for answering any of the research questions. A couple of quantitative statistics were considered necessary to verify the interest that has emerged in scholarly community about AI in art and the various perspectives (See Figure 2, 3).

For this scoping review, the **first stage** - identifying the research question - was already described in Section 1.2, while the rest of the stages are described in detail in the following sections of this chapter.

3.2 Search Strategy – Identified relevant studies

In this section, the **second stage** of the six-stage framework as established by Arksey & O'Malley (2005), "identifying relevant studies", is applied. According to the authors, a few keywords should be defined for being used in search along with some basic criteria to identify the required studies via different sources (electronic databases – reference lists – hand searching of key journals - existing networks), taking into consideration the practical constraints, the time span, budget and language. Budget for this scoping review is not applicable since it is conducted in terms of thesis and there is no relevant budget.

To search and identify the proper studies for this scoping review, the main databases that support the investigation with fruitful search results were the “Web of Science”, the “Scopus” and the “EBSCOhost” (specifically “Art and Architecture”). LISA, LISTA & Primo were also tested but the results were not satisfying and aligned to the searching process that is described below. The selection of databases was guided by the criterion that they have sources relevant to the art domain to ensure the possibility of getting more information. The other mechanisms for searching, except for databases, were not applied due to the time constraint taking the risk not including valuable resources.

The search strategy involved identifying key terms and systematically combining them to construct queries for all selected databases. The final selection of keywords and queries was derived using a structured approach outlined by Clark et al. (2021). First, a couple of articles that were relevant to the thesis subject were read and some main keywords were noted. Afterwards, different keyword combinations were tested across the databases with a logbook maintained to document the queries and their outcomes. The final queries were refined through slight modifications, incorporating additional synonyms identified during the search process. For example, the terms “art performer” and “generative art” emerged from the preliminary results and were approved valuable for enhancing the effectiveness of the final query.

The second query was modified only for “Scopus”, because it returned zero results in the database. Thus, it was necessary to remove the free-text term “AI tools for art” to generate results. The altered form of query was not used for the other two databases because the results either overlapped the existing ones or were out of scope.

Search queries:

> *("artist" OR "art creator" OR "art performer") AND ("Artificial Intelligence" OR "AI" OR "Machine Learning" OR "ML") AND ("generative art" OR "digital art")*
>
> *“AI in art” OR “AI and creativity” AND "AI tools for art"*

Apart from the use of specific queries, the criteria of Table 1 were used as filters in the databases to eliminate the results and streamline the next stage of the articles’ screening. English was chosen as the primary language for practical reasons, as it can be widely read and understood. Moreover, this selection ensures transparency, allowing others to verify both the content and the screening process. Of course, this decision introduces certain limitations. Important studies and their results have been omitted because are written in other languages such as Chinese and Russian.

The decision to focus on articles published within the last 5 years (2020-2024) was based on the rapid evolution of AI. It was crucial to include the latest research to adequately address the research questions. It was also decided not to collect the articles after 2024 because the research would be conducted in the year 2025 and it was considered that articles published in the same year might not be widely disseminated, peer-reviewed, or indexed in databases at the time of analysis. Moreover, the search was limited to articles, omitting e.g., books, to maintain consistency in the type of material screened, although this may have limited the results.

While the initial inclusion of any article type might appear broad, this approach was intended to avoid an overly narrow result, especially within the given limited timeframe.

Table 1

Inclusion and exclusion criteria used on search.

Inclusion Criteria	Exclusion Criteria
Language: English	All other languages
Articles	No books and any other type of content
Published year: after 2020-2024	All articles before 2020 and after 2024

Note. Criteria that were utilized as filters in the databases to eliminate the results and streamline the next stage of the articles' screening.

3.3 Screening – Study Selection

"Study selection" is the **third stage** of the six-stage framework by Arksey & O'Malley (2005) and refers to the mechanism that support the reviewers to eliminate studies and collect the relevant ones to research questions. Inclusion and exclusion criteria should be adopted such as the type of study, the availability of full text. The presence of two reviewers that follow the same criteria, and method is also considered important for reducing bias.

The initial number of relevant articles that the criteria and queries of step 2 indicated was 146 articles. For the screening process, it was considered beneficial to use a free web and mobile application, "Rayyan", which was identified during my investigation into established methodologies for conducting scoping reviews. Based on Ouzzani et al. (2016), this tool supports the researcher to streamline the review process and reduce screening time, especially in the paid version that includes advanced features with AI embedded.

In this thesis, the free version was used to automatically detect the duplicates by comparing the metadata of the duplicate articles. This process facilitated the final selection, ensuring that the versions with the most enriched metadata were retained. As a result, 37 duplicates records were removed from the sample.

Afterwards, with the same tool, two stages of screening were conducted, both manually. The first stage included a screening of 109 articles based on their title, their abstract and keywords. The decision whether to include or exclude individual articles was conducted by adding labels and adding notes within the screening tool. To support the review process and enhance the study's credibility, a full-text requirement was applied, along with an additional inclusion criterion: only peer-reviewed journal articles were retained at this stage (See Table 2).

The involvement of multiple reviewers is also a common practice to ensure reliability and reduce personal bias (Peters et al., 2015). However, this process was conducted by a single reviewer, the author, which presents a limitation of one's individual perspective regarding the identification and interpretation of themes. This approach is not uncommon in the context of master's thesis and has been applied in other thesis too, such as the one of Beteinaki et al. (n.d.). However, repeated reviews and coding consistency checks were conducted throughout the process to mitigate the risk of the single reviewer.

Table 2

Additional inclusion-exclusion criteria for the screening phase

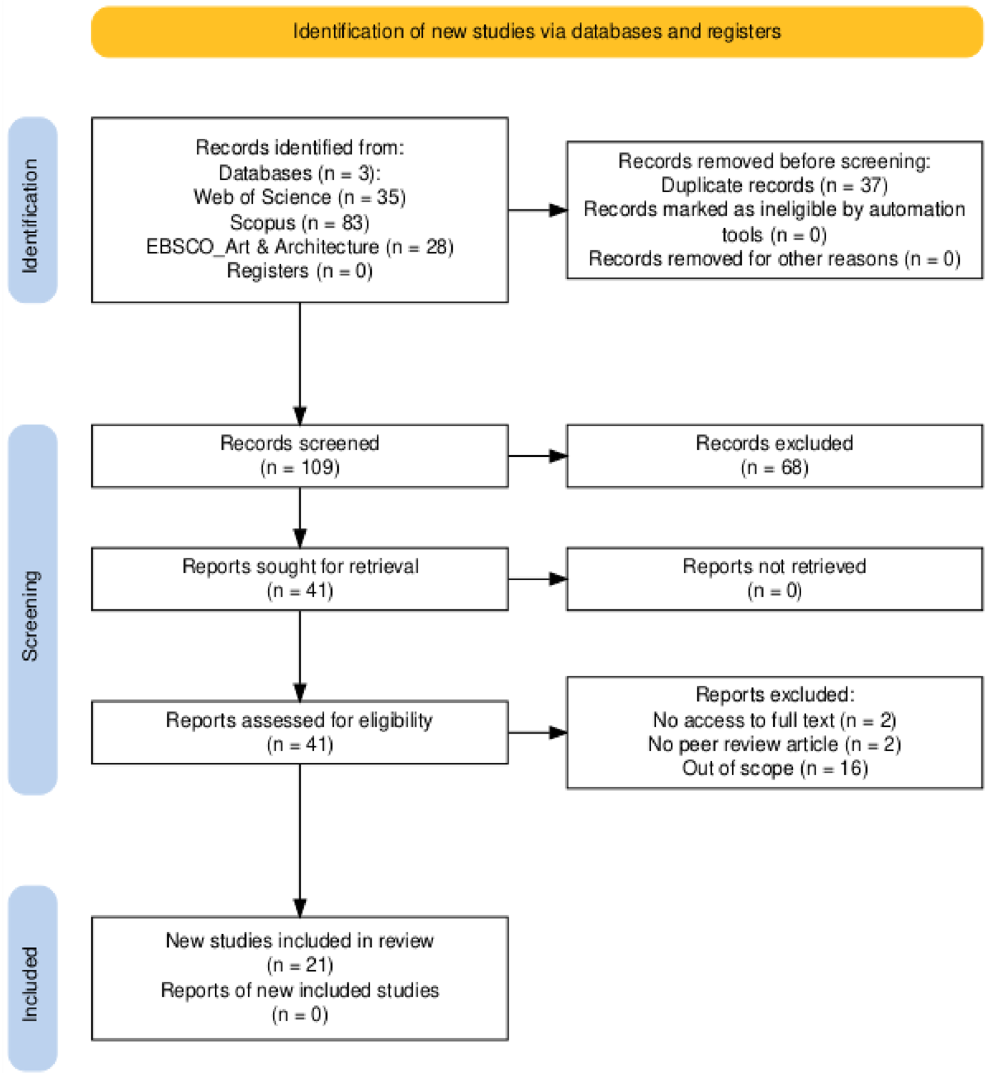
Inclusion Criteria	**Exclusion Criteria**
Articles: only the peer reviewed	No other types of articles
Full text availability	Just abstract

Note. Criteria to facilitate the final selection of the articles and provide credibility.

Thus, 68 articles were removed and 41 remained to streamline the next stage. The second stage required full text screening, taking into consideration all the inclusion criteria and addressing at least one of the research questions. Out of the 41 articles read in full text, 21 were included for the next stage. The entire screening process is displayed in a PRISMA flow diagram (See Figure 1) created with the relevant tool (Haddaway et al., 2022).

Figure 1

PRISMA flow diagram



Note. The flow diagram was created using the site of PRISMA Flow Diagram (https://estech.shinyapps.io/prisma_flowdiagram/)

3.4 Charting the data

Charting the data is the **fourth stage** of the six-stage framework by Arksey & O'Malley (2005) that can be also called "data extraction" borrowing the term from the systematic review which per cases includes specific statistical techniques. Collecting standard information on each study, e.g. author, year of publication and aims of study along with data related to research questions, consists of common practice that is necessary for mapping and interpreting qualitative data. The most common data charting form which is used to provide the studies' data is the well-known program, Excel. More recently, Pollock et al. (2023) provided best-practice recommendations for data extraction and synthesis in scoping reviews, reinforcing the value of narrative and thematic reporting, especially in studies with a conceptual or exploratory focus.

For this scoping review, an excel File was structured based on protocol of Arksey & O'Malley (2005) which includes "General information" about the studies such as "Title", "Author", "Publication year", "Journal", but also more specific information such as "Aim of the study", "Data collection", and "Method of analysis". Additional thematic fields relevant to the research questions were provided to assist in the next Stage, "Data Analysis", as recommended by Pollock et al., (2023). This is also a method to ensure well-supported & valid results. These fields concern the identified "Concepts", "Tools" used in AI art, "Offered possibilities of AI tools", "AI Perception of artists", "AI Perception of audience", "Challenges", and "Ethical Concerns".

During the extraction process, the name of thematic fields was slightly changed based on the articles' findings. For example, the field "Offered possibilities of AI tools" substituted the "Impact of AI tools and methods". Moreover, while verbatim text was extracted for the "Challenges" and "Ethical Concerns", a few proposed solutions also were identified and were included in the analysis, despite not being pre-specified. As a result, the relevant questions were adjusted accordingly. This deviation from initial planning is rationale based on Pollock et al. (2023).

Most of the "General Information" fields, including "Title", "Author", "Publication year", and "Journal", were automatically extracted in excel from the Zotero program, where the final selection of articles was collected. The rest, including "Aim of the study", "Data collection", and "Method of analysis", were extracted manually by the articles' abstracts. Regarding the extraction of thematic data, this process was also performed manually by reviewing the article and mainly the introduction, findings, discussion and conclusion sections. Furthermore, minor data cleaning was required — for example, converting capitalized entries into sentence cases — to ensure consistency before proceeding to the next stage of analysis.

3.5 Data analysis

Data analysis is the **fifth stage** of the six-stage framework by Arksey & O'Malley (2005) that refers to "collating, summarizing and reporting the results" (p. 22). According to Clark et al. (2021), qualitative research is well-suited to explore and map conceptual and thematic patterns across existing literature, rather than test predefined hypothesis. For this stage, an inductive approach was also adopted to move from specific observations toward broader generalizations (Clark et al., 2021). This aligned with the nature of the scoping review, where themes and categories emerged from the qualitative data.

After data were collected during the "Charting the data" stage, the analysis began with a thorough familiarization process, involving close reading and comprehension of the extracted verbatim text to verify the relevance to the research questions, as outlines Pollock et al. (2023). This is also the first step of thematic analysis as outlined by Clark et al. (2021). Through this familiarization process, some repetitive topics were observed and set the starting point for an open coding process. In this phase, a codebook in excel file was maintained to ensure a standardized way to generate codes as indicated by Pollock et al. (2023).

The verbatim text of articles was broken down and meaningful codes (short phrases or words) were shaped based on recurring ideas or concepts (e.g. co-creator, unexpected errors, threat, loss of artistic control etc.). Similar codes then were grouped into broader themes such as "environmental impact", "economic impact" depending on their relevance. To manage the coding process more efficiently in relation to each research question, the initial Excel data file from the charting stage was split into separate sheets. These steps were undertaken to enhance credibility and confirmability, two key components of trustworthiness in qualitative research as outlined by Clark et al. (2021).

The open coding process was applied across all research questions, except for RQ1, allowing unique codes and themes to emerge inductively from the data. This approach enabled the mapping of conceptual landscape and contributed to the development of meaningful and structured findings. The results of qualitative text analysis presented as narrative summaries to identify, classify, and contextualize existing knowledge (Peters et al., 2022; Levac et al., 2010).

The extracted "General Information" data, as part of the Arksey & O'Malley (2005) protocol were analyzed by using some statistics graphs to provide the framework of the selected articles and to indicate the characteristics of the included literature (Arksey & O'Malley, 2005; Peterson et al., 2017). It functions as an introductory to justify the significance of researching AI in art by highlighting the scholarly engagement across a variety of journals, including diverse areas of interest.

RQ1 was addressed by analyzing the thematic field labeled "Concepts" in the data extraction phase. To organize thematically the collected data, a "frequency analysis" was required to assess how often each concept appeared across the selected articles, providing insight into their relative prominence within the literature. In parallel, definitions for each concept were captured (See Table 3), allowing for the identification of shared characteristics. Based on this analysis, a mind map (See Figure 4) was created to visualize and group the concepts thematically. These observations led to the development of four distinct conceptual categories, which are described in detail in Section 4.1.

RQ2 was addressed through analysis of the thematic field "Tools" and "Offered possibilities of Tools". During the review of the selected articles, all the AI-related tools and techniques used by artists, were identified and documented, along with the descriptions of their capabilities within the creative process. A pivot table also supported the frequency analysis of the tools mentioned across the literature to understand and analyze the most popular tools. Thus, the most frequently cited tools were visualized in a graph (See Figure 6) and further analyzed, while less frequently mentioned ones were listed in Table 4.

In addition, it was observed that some of the authors specify the category to which the tools belong. To reflect this, additional classification was developed and presented in Table 5, offering a more structured overview of how the scholarly community presents the technological landscape.

The textual data extracted under “Offered possibilities” thematic field were then inductively coded and grouped into five key thematic categories based on recurring functions and features (See Table 6). This categorization process allowed for a clearer understanding of how these tools contribute to artistic production.

RQ3 was built on the thematic categories “AI perception of artists” and “AI perception of audience” in artistic creative process. The collected verbatim text from the data extraction stage was systematically coded that led to the division of further thematic categories, “Positive perception” and “Negative perception” per both audience and artists. This categorization enabled clearer thematic analysis and supported a structured comparison across different viewpoints. The thematic categorization and coding distribution within articles is presented in Table 7 and 8. This approach allowed for understanding both supportive and critical attitudes of artists and audience toward AI in art, highlighting the perspectives and ongoing debates within the creative community.

RQ4 was addressed by using the verbatim text from the “data extraction” stage under the thematic fields “Challenges” and “Ethical Concerns”. An open coding process was also used, categorizing the data into seven main thematic categories that included both ethical concerns and challenges. These categories are presented in Table 9, which maps the distribution of how frequently each concern / challenge was addressed across the reviewed articles. A pivot table was also used to support the frequency analysis of the thematic categories, providing a clearer understanding of the topics that have received the most attention within the scholarly community.

In addition to identifying challenges, the review also recorded proposed solutions or recommendations mentioned in the literature, where available. These insights contribute to ongoing discussions about how policymakers, artists, and developers might revise frameworks around intellectual property, artistic agency, and responsible AI use.

4 Results and Analysis

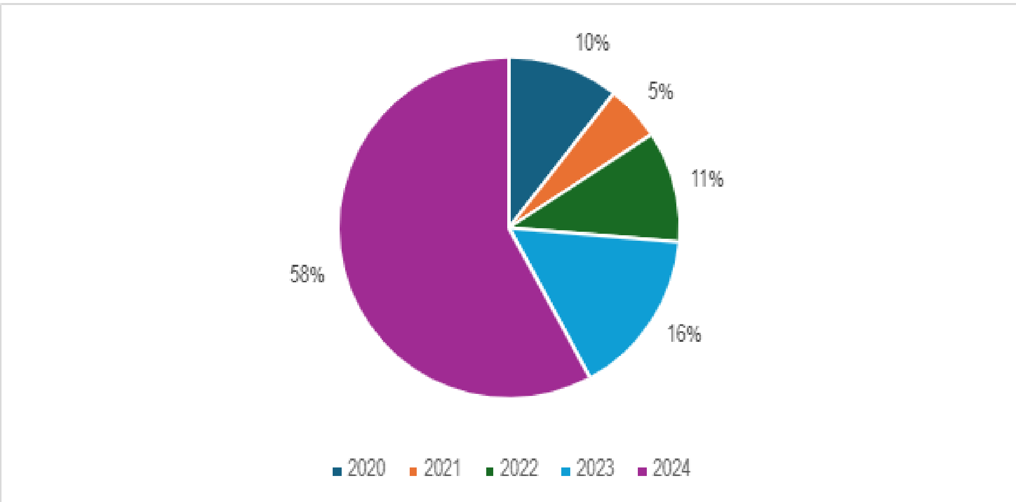
This chapter presents the findings of the scoping review based on the thematic and descriptive analysis of the selected literature. The results are structured around the four research questions outlined in Section 1.2 and follow the methodological process described in Chapter 3. This chapter begins with descriptive statistics (See Figures 2, 3) to highlight publication trends and the interdisciplinary scope of the selected literature, contextualizing the thematic results that follow. Then, it addresses each research question in turn, using narrative summaries, tables, and visualizations to present the key concepts, tools, perceptions, and ethical concerns identified in literature.

The analysis of the first part of "data extraction", entitled "General Information" (See Section 3.4), reveals a few descriptive statistics that highlight key characteristics of the reviewed literature. Specifically, Figures 2 and 3 provide insights into publication trends over the five-year period under review, as well as the disciplinary fields that demonstrate interest in the topic of AI in art. This overview contributes to a broader understanding of the evidence landscape and supports the contextualization of subsequent thematic findings (Arksey & O'Malley, 2005; Peterson et al., 2017).

In this scoping review, this type of analysis helps readers initially understand the trend of AI research in art in the 5-year timeframe, as illustrated in Figure 2. Notably, 2024 stands out as the year when the research for AI was intensive in the domain of art.

Figure 2

Publication Distribution

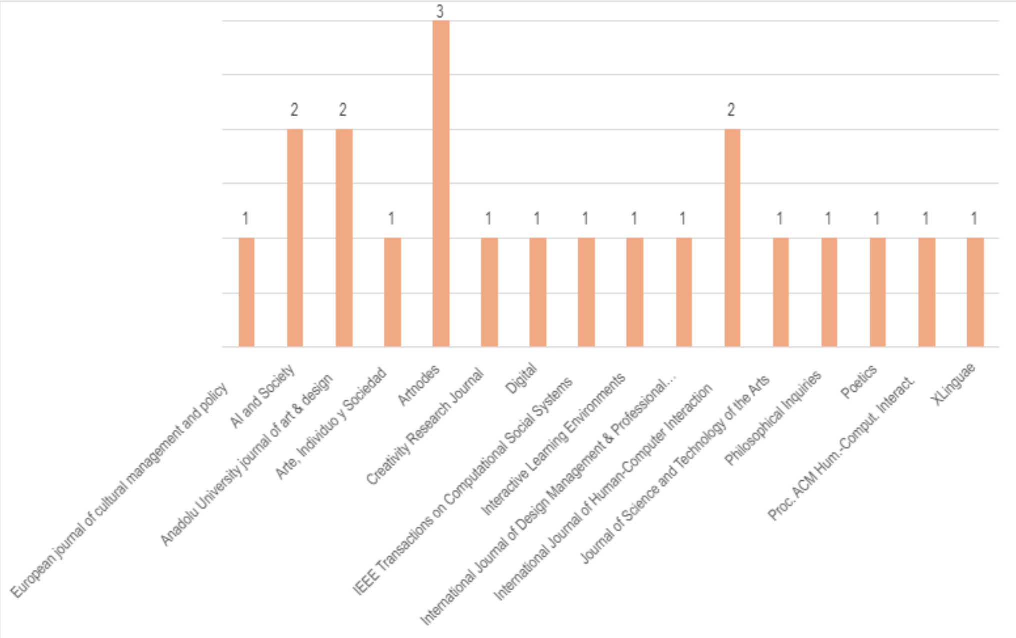


Several journals have published articles that analyse AI's impact on art, artists and audience through the analysis particularly of well-known artworks such as the work entitled "Le Comte de Belamy" (Barale, 2021; Hakopian, 2024; Isik, 2024; Rani et al., 2024).

Figure 3 presents the journals that host the selected articles which are not solely focused on art but also intersects with disciplines such as technology, design, social systems, education, human-computer interaction, philosophy, media studies, and linguistics.

Figure 3

Interdisciplinary distribution of selected articles by Journal



This multidisciplinary spread underscores the relevance of AI in art across diverse academic domains, providing a valuable foundation to this scoping review for the findings described to the next four sections. These highlighted trends are relevant especially with RQ1 and RQ2, since multidisciplinary background helps explain why concepts and different tools may be used inconsistently.

4.1 Identified concepts and the use in literature

One of the aims of this scoping review is to examine and clarify the definitions of the concepts used in literature, as this has been identified as a common practice in scoping reviews (Munn et al., 2018). The concepts, identified during the "data extraction" stage are presented in Table 3 alongside their brief definitions.

Table 3

Identified concepts within selected articles in alphabetical order

Concepts	Sources	Concept Definition
AI Aesthetics	(Liu, B., 2023)	It is a theoretical framework that examines the style and

		beauty of AI-generated art, how people perceive and appreciate it, and how AI interprets human emotions.
AI Art	(Ashour & Rashdan, 2024; Barale, 2021; Liu, B., 2023; Caramiaux & Fdili Alaoui, 2022; Kreković et al., 2023; Rani et al., 2024)	It is an interdisciplinary form of creative expression that combines artificial intelligence techniques with artistic intent, blending technological innovation with human creativity.
AI Art Therapy	(Garcia, 2024)	It is a practice that includes AI and produces art to support emotional and psychological healing.
AI Creation in art	(Guan et al., 2024)	It refers to the use of AI algorithms to assist in producing artworks, including the development of Non-Fungible Token (NFT) collections.
AI-assisted	(Fiialka et al., 2024)	It refers to works originally created by humans that are refined or enhanced using AI tools, such as grammar and spellcheckers, or language and style analysis tools.
AI-generated	(Fiialka et al., 2024)	It refers to works that are initially created by an AI agent, even if they are later edited by humans.
Anthropomorphism	(Grba, 2022)	It refers to the idea that AI, when trained with sufficient data and computing power, could potentially develop human-like thoughts, feelings, or behaviors.
Art democratization	(Garcia, 2024)	It refers to the possibility that AI can allow a wider audience to generate art by combining simple concepts or themes.

Artificial Creativity	(Garcia, 2024)	It refers to creative outputs or processes where authenticity and intentionality are absent.
Artivism	(Milovidov, 2024)	It is a blend of art and activism, referring to the practices artists use to challenge norms, content policies, and restrictions imposed by major AI developers.
Bricolage (correlated with crafting)	(Caramiaux & Fdili Alaoui, 2022)	It is a method in interaction design where artworks are created through improvisation rather than precise planning and execution.
Computational Art	(Ozturk & Balaban, 2024)	It involves the use of computational processes and algorithms in the creative process.
Computational Creativity	(Caramiaux & Fdili Alaoui, 2022)	It is the field of computational tools, such as algorithms that inspire human creativity.
Creative AI	(Forbes, 2020)	It refers to the use of ML by artists and designers to generate creative outputs or to serve as a medium in the artistic process.
Creative Autonomy	(Li et al., 2024)	It refers to the ability of artists to have control over the content, style, process, and outcomes of a creative activity.
Creative Computing	(Ashour & Rashdan, 2024)	It is the use of computer technology and software tools by artists and designers to create new forms of visual expression.
Creative Workers	(Duester, 2024)	They are artists and arts professionals whose daily labor involves artistic

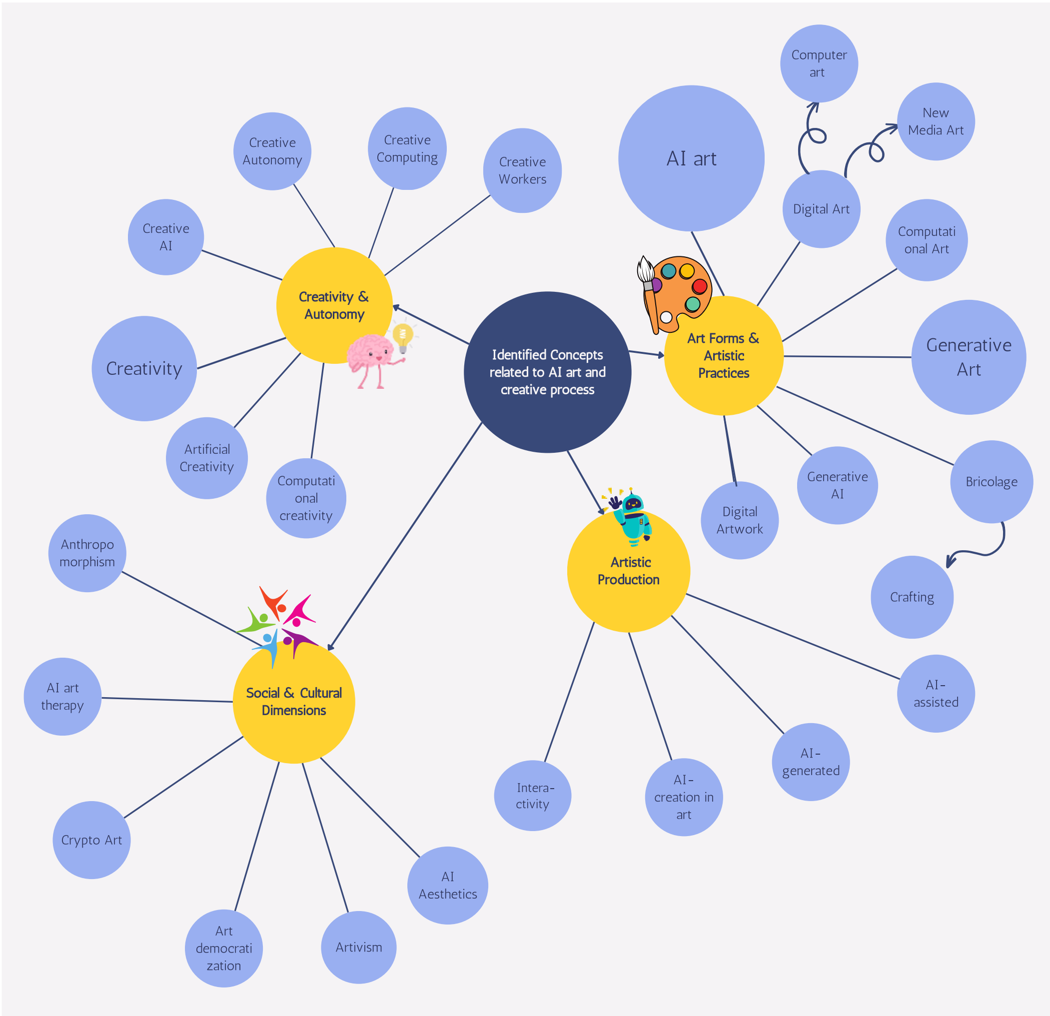
		practice and who are subject to labor demands.
Creativity	(Liu, B., 2023; Garcia, 2024; Rani et al., 2024)	It is a mental process based on clear logic, involving ideas, principles, thinking, and methods, relying on algorithms.
Crypto Art	(Guan et al., 2024)	It is a form of digital art linked to NFTs that uses blockchain technology to address scarcity and uniqueness in the digital art market.
Digital art	(Barale, 2021; Rani et al., 2024)	It is used interchangeably with “Computer Art” or “New media art” and it is closely linked to digital technologies to produce paintings, illustrations and videos that can be displayed across various digital platforms.
Digital art work	(Duester, 2024)	It refers to work that includes new forms of creativity, efficiency, and new types of digital labor.
Generative AI	(Garcia, 2024)	It refers to the use of ML algorithms to create new semi-autonomous artwork.
Generative Art	(Liu, B., 2023; Ozturk & Balaban, 2024)	It refers to the use of AI to create new practices that differentiate from traditional art.
Interactivity	(Olgen & Cucuzzella, 2024)	It refers to an active and dynamic relationship between the artwork and the viewer.

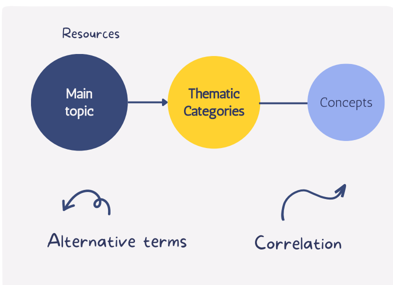
Note. This table consisted of three columns. The first column provides the concepts as referred to in the articles, the second column provides the articles that include the concepts, and the third a brief definition of the concepts.

This table facilitated the thematic categorization of the concepts based on observed similarities. Figure 4 presents a mind map that visually clusters these concepts into four thematic categories. Moreover, with the support of a "frequency analysis", the representation of different sizes of light blue circles indicates the relative frequency of each concept within articles, providing a visual cue to their prominence within the literature.

Figure 4

Mind map of identified concepts & legend that facilitates its understanding





Note. The figure was created using "Canva" tool (https://www.canva.com/).

“Art Forms and Artistic Practices” is a category that includes concepts that express in a way the genres of art practices and forms. **“Creativity and Autonomy”** cluster all the concepts that include the terms creativity and creative and indicate how creativity is expressed through AI and the control over the creative process. **“Social & Cultural Dimensions”** collects the concepts that expand the scope of AI art, indicate how AI interact with society and culture. **“Artistic Production”** refers to concepts that emphasize the interaction between artist and AI during the production of artwork.

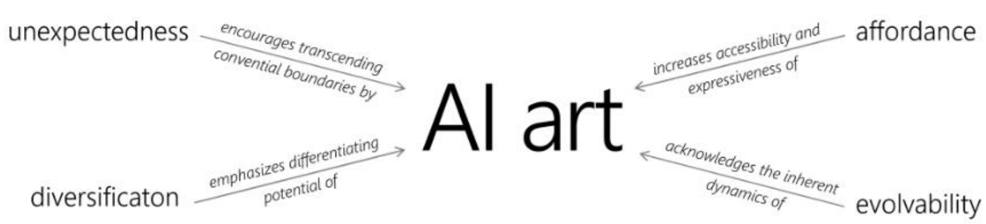
Art Forms and Artistic Practices

Notably, the concept **“AI art”** emerges as one of the most frequently mentioned concepts across the articles, followed by “creativity” and “generative art” (both indicated with bigger circle size in the mind map). Despite its prominence, only a few articles provide detailed definitions or address broader questions that contribute to shaping their meaning. The findings indicated that the authors of the specific articles shared some common features that highlight the interdisciplinary nature of AI art, blending technological innovation with creative expression.

Particularly, Caramiaux & Fdili Alaoui (2022) describe AI art as involving both AI techniques and the purpose of the art field. Liu, B. (2023) and Ashour & Rashdan, (2024) argue that AI art merges technological algorithms with artistic creativity, forming a distinct intersection between science and art. Barale (2021) connects AI art with aesthetics and the sensory experience of the world. He also argues that artists contribute to the generated output. Rani et al. (2024) highlight the autonomy characteristic of AI art and the collaboration between human creativity and machine-generated output. Moreover, Barale (2021) addresses the frequently raised question of whether AI art is considered as art. Kreković et al. (2023) introduce the “artistically desirable values of AI” art (See Figure 5).

Figure 5

Artistically desirable values of AI



Note. From “Towards an artist-centered AI”, by Kreković, G., Pošćić, A., & Grba, D., 2023, *Journal of Science and Technology of the Arts, 15(2),* p. 114. CC BY 4.0.

“Generative art”, as a branch of AI art, alongside **“computer art”** and **“computational art”** are different approaches to express the new art practice produced with the help of artificial intelligence and algorithms. This contrasts with traditional forms of art that creativity is defined as “a tool for a kind of self-expression or a way of communication being people centered and occurring between the people and subjects” (Liu, B., 2023; Ozturk & Balaban, 2024). Additionally, Garcia (2024) discusses **“generative AI”**, which uses machine learning (ML) algorithms to create new semi-autonomous artworks such as texts and images, music and other forms of media and supports the preservation and restoration of historical art pieces.

The concept of **“digital art”** is also referenced in the literature, sometimes interchangeably with terms such as "computer art" or “new media art” and as broader category of AI art, leading to confusion among non-experts (Barale, 2021; Rani et al., 2024). According to Rani et al. (2024) digital art, which emerged from the third industrial revolution, is closely linked to digital technologies — software, computers, or other electronic devices — to produce paintings, illustrations and videos that can be displayed across various digital platforms. **“Digital art work”** was conceptualized by Duester (2024) to describe how artists are now regularly using AI and digital software in their creative process.

“Bricolage” is a concept that discussed as a method of the interaction design practice, resulted in artworks that are not made with precision and planning (Vallgårda and Fernaeus 2015; qtd in Caramiaux & Fdili Alaoui, 2022). Caramiaux & Fdili (2022) correlate it with the concept of **“crafting”** to characterize “the way artists work with AI algorithm as a tool and a material”.

Creativity and Autonomy

Just like traditional art and AI art, digital art involves creativity as well. According to Liu, B. (2023) **“creativity”** in AI art is “a mental process that can be followed” and “the creativity of AI art relies on processes and algorithms, which in turn rely on clear logic” (p. 813). It relates to the notions of ‘idea’, ‘principles’, ‘thinking’, and ‘method’. Rani et al. (2024) expand on this by highlighting the role of creativity in uncovering beauty that gives value to things and recognizes that AI needs to master this. Garcia (2024) adopts the concept of **“artificial creativity”** to describe cases where authenticity and intentionality are lacking; elements that have been integrated to the revised meaning of creativity by Runco, (2023).

The literature also discusses the role of AI in creative processes. The concept of **“creative AI”** is used by artists and designers for machine learning that is used either for creative outputs or as a medium (McCormick et al. 2020; qtd. in Forbes, 2020). **“Creative autonomy”** was also explored and defined as “having decisive influence and control over the content, style, process, and outcomes of a painting activity” (Li et al., 2024). **“Creative computing”** emerged in the 1980s, describing how artists and designers used advancements in computer technology and software tools to generate new forms of visual expression (Ashour & Rashdan, 2024). **“Computational creativity”** is “the philosophy, science and engineering of computational systems which, by taking on particular responsibilities, exhibit behaviors that unbiased observers would deem to be creative" (Róisín & Michael, 2017.; qtd in Caramiaux & Fdili Alaoui, 2022, p. 2). Duester (2024) highlights the concept of **"creative workers"** to describe the work of artists and arts professionals, highlighting aspects of their daily labor and their exposure to labor demands.

Social & Cultural Dimensions

Additional concepts have emerged in literature, reflecting the expanding scope of AI art. Garcia (2024) introduces the concept of **"AI art therapy"** that connects the use of AI to generate art for therapeutic purposes. For example, AI enables individuals to express themselves artistically in case they might be difficult to communicate verbally. Guan et al. (2024) argue that the rise of NFTs has led to the emergence of **"crypto art"**, which addresses in a way the issue of scarcity in digital art through blockchain technology.

The field of AI art has also given rise to new theoretical frameworks. **"AI aesthetics"** has been proposed to explore various aesthetic issues regarding the style and beauty of AI-generated art, how people appreciate it, and how AI understands human emotions (Lin, 2020; qtd in Liu, B., 2023).

During a soft ideological conflict between artists and OpenAI in 2021, a new concept emerged, **"artivism"**, combining art with activism. The concept refers to all the practices and processes that the artivists activate to challenge norms and content policies and restrictions imposed by major AI developers (Milovidov, 2024).

Moreover, the concept of **"art democratization"** reflects the ability of AI-powered software to enable individuals to create multiple designs by combining simple concepts or themes (Newton and Dhole 2023; qtd in Garcia 2024). Grba (2022) adds the concept of **"anthropomorphism"** in AI art in sense that if AI would be trained with enough data and computing power, it could finally develop human thoughts, feelings, or behaviors.

Artistic Production

A distinction is drawn between **"AI-generated"** and **"AI-assisted"** works. Works initially created by an AI-agent, even if they have been edited by human afterwards, are classified under the concept of "AI-generated" (Creamer, 2023; qtd. in Fiialka et al., 2024). In contrast, the concept "AI-assisted" is used to "describe works initially created by humans but refined using AI tools such as grammar and spellcheckers or even language and style analysis tools" (Clark et al., 2018; qtd. in Fiialka et al., 2024, p. 3).

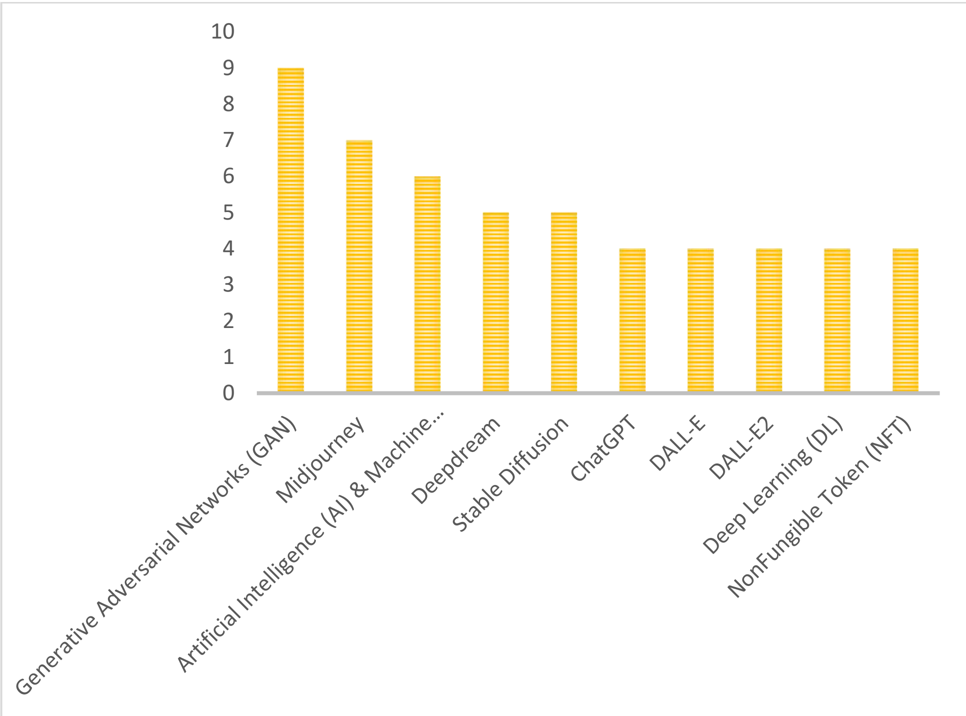
Guan et al. (2024) discuss the concept of **"AI creation in art"** that related to the application of AI algorithms to support the production of artwork, in terms of the creation of Non-Fungible Token (NFT) collections. Finally, **"interactivity"** was also discussed in terms of AI art to highlight its importance to develop efficient and practical eco-didactic experiences (Olgen & Cucuzzella, 2024).

4.2 Current AI-related tools used in the creative process

The 10 most frequently identified tools within the articles are presented in Figure 6, while those mentioned in fewer than three articles are presented in a separate list (See Table 4). Both results derived mainly from the "frequency analysis" of the thematic field "Tools", as it is described in Section 3.5. Due to the variety of the AI-related tools, it has been decided to describe further the top ten to provide an overview of their key features capabilities.

Figure 6

Top 10 AI-related tools identified within articles



Generative Adversarial Networks (GANs): They are a type of artificial intelligence algorithm developed to address the generative modeling problem and are considered among the most successful generated models. They are particularly effective in producing high-resolution, realistic images (Goodfellow et al., 2020). However, the challenge that the artists deal with is the requirement of a huge set of training images to generate reasonable results (Elgammal & Mazzone, 2020).

Midjourney: It is a platform that assists artists to transform minimal textual descriptions into stunning images due to its distinctive text-to-image functionality (Isik, 2024). However, the artists argue that they do not have control of the image generation process (Li et al., 2024).

Artificial Intelligence (AI) & Machine Learning (ML): They are considered techniques as creative design materials which require the involvement of various stakeholders for a careful collaboration (Caramiaux & Fdili Alaoui, 2022). AI-generated art has the capacity to produce entirely original works or mimic established styles, offering individuals the opportunity to explore new artistic possibilities (Mazzone and Elgammal 2019; qtd in Rani et al. 2024). They are used as part of the creation process (Duester, 2024). Machine learning algorithms increasingly identify and utilize features in artworks. However, they cannot model "how an artwork is perceived or why it is interpreted in a particular way" (Forbes, 2020, p. 6).

Deep Dream Generator (DDG): It is a platform that can be used by both professional artists and amateurs to create images & video based on a wide range of visual styles (Deep Dream Generator, 2025). In 2014, when Google released for first time the online app, it became widely popular as a digital meme generator (Tyka, 2015; qtd in Kreković et al. 2023).

Stable Diffusion: It is an AI program released in 2022 for creating detailed images based on text descriptions and various optional parameters (sampling type, output image dimensions etc.). It also includes image-to-image option that enables artists to generate a new image based on the existing one and using parameters, for example, to change and obscure the visual features (Ashour & Rashdan, 2024).

ChatGPT: is a well-known AI platform that was released to a great number of people in 2022 by OpenAI. In terms of creative writing, it simplifies the creative writing process and assists authors to generate novel story ideas. Its main ability is to "craft detailed character portraits, engage in realistic dialogue, and produce atmospheric descriptions" without extensive training and experience in short time (Fiialka et al., 2024, p. 3; Kreković et al., 2023). However, while it provides experience and emotion in the generated texts, so far the AI technologies cannot provide truly emotional texts as human (Fiialka et al., 2024).

DALL-E & DALL-E 2: DALL-E is the first text-to-image neural network generator of GPT-3 (launched in January 2021) that allowed the creation of graphical concepts like the "avocado chair" that went viral on the Internet (Milovidov, 2024). The second generation, DALL-E 2 was launched in April 2022 and generated "more realistic and accurate images with 4x greater resolution" (*DALL·E 2*, 2022). Idea generation and exploration of different artistic and aesthetic styles provided by DALL-E 2 assist the artists to be more creative (Mim et al., 2024; qtd in Guan et al., 2024).

Deep Learning (DL): It is a machine learning technique that enables computers to complete tasks without human intervention. The artists take advantage of this technique to create artwork and test their creativity based on patterns and structures that have been identified within analyzed datasets (Rani et al., 2024). The results expand the boundaries of artistic creativity and challenge the traditional understanding of creativity process (Isik, 2024).

Non-Fungible Tokens (NFTs): are a type of cryptocurrency that permit "artists to sell unique, one of-a-kind digital artwork that is verified on the blockchain" (Guan et al., 2024, p. 1). NFTs protocol ensures the ownership and authenticity of the artwork and act as a digital certificate including all the detailed information about it enabling the artists to trade and collect them without risking the legitimacy (Duan et al., 2024; Guan et al., 2024). One more significant advantage for artists is that they can earn royalties, meaning that they can earn portion of the sales every time their artwork is resold (Garcia, 2024).

The remaining tools of Table 4 are also utilized by artists offering great capabilities in creative process. However, as already mentioned, they were not multiply referenced to include them as basic tools. Nonetheless, the next section explores and includes their capabilities too.

Table 4

List of AI-related tools in alphabetical order

Identified AI-related tools in artistic creative process	
Acute Art	GpT-2 and the updated version
Adobe Firefly	GpT-3
AI Painter	Imagen
AICAN	Interactive Machine Learning (IML)
Amper Music	Leonardo.ai
ANBreeder	Make-a-Scene
Artbreeder	MuseNet
BeautyGan	Natural Language Processing (NLP)
Blockchain technology	neural glitch
ChatGPT-4	Neural style transfer
Computer Vision (CV) algorithms	NVIDIA GauGAN
Courseara's Generative Adversarial Networks with TensorFlow	Parti
Creative Adversarial Networks (CAN)	pix2pix
Data Brushes art application	Playform
Deep convolutional neural networks (CNNs)	Prisma
Deep Dream Generator	PyTorch
Deep Neural Networks (DNN)	RealtimeGen
DeepStyle	RunwayML
Divergent Association Task (DAT)	Simulacrabot
Dreamstudio	Sotheby's Metaverse
Fiebrink's Wekinator tool	StyleGAN
GigaGAN	StyleGAN3
GLIDE	StyleTransfer4
Google Magenta Studio	TensorFlow
	Variational autoencoders (VAEs)

Note. The AI-related tools are collected from the selected articles based on their use in artistic creative process.

Table 5 was developed based on the observation that, while the reviewed articles mention various tools used in the artistic creative process, some authors also attempted to classify them into specific categories. By presenting these tools into clearly defined categories, as reflected in the literature, Table 5 allows readers to better understand the diversity of AI tools used in art.

Table 5

Categories of AI tools used in creative process

Category	Tools	Source
ML Architectures	Deep Learning (DL)	(Grba, 2022)
Artificial Intelligence-Generated Content (AIGC) Tools	Stable Diffusion	(Li et al., 2024)
Generative Adversarial Networks (GANs) Tools	AI Painter, ArtBreeder, Courseara's Generative Adversarial Networks with TensorFlow, DeepStyle, GANBreeder, Google Magenta Studio, NVIDIA GauGAN, pix2pix, Prisma, RunwayML	(Rani et al., 2024)
	BeautyGan, GigaGAN, StyleGAN	(Duan et al., 2024)
Platforms	Acute Art, AICAN, Amper Music, Deep Dream Generator, Leonardo.ai, Midjourney, Sotheby's Metaverse	(Rani et al., 2024)
Diffusion Model	Stable Diffusion DALL-E 2[1] Midjourney	(Duan et al., 2024)
Generative AI programs	Stable Diffusion DALL-E Midjourney ChatGPT	(Duester, 2024)

[1] Inside the article the DALL-E 2 was presented as DALLÂ-E 2. However, searching to the original article of "Ramesh, A., Dhariwal, P., Nichol, A., Chu, C., & Chen, M. (2022). *Hierarchical Text-Conditional Image Generation with CLIP Latents*. https://doi.org/10.48550/arxiv.2204.06125" only as DALL-E 2 was mentioned and the web searching didn't reveal anything relevant to DALLÂ-E 2.

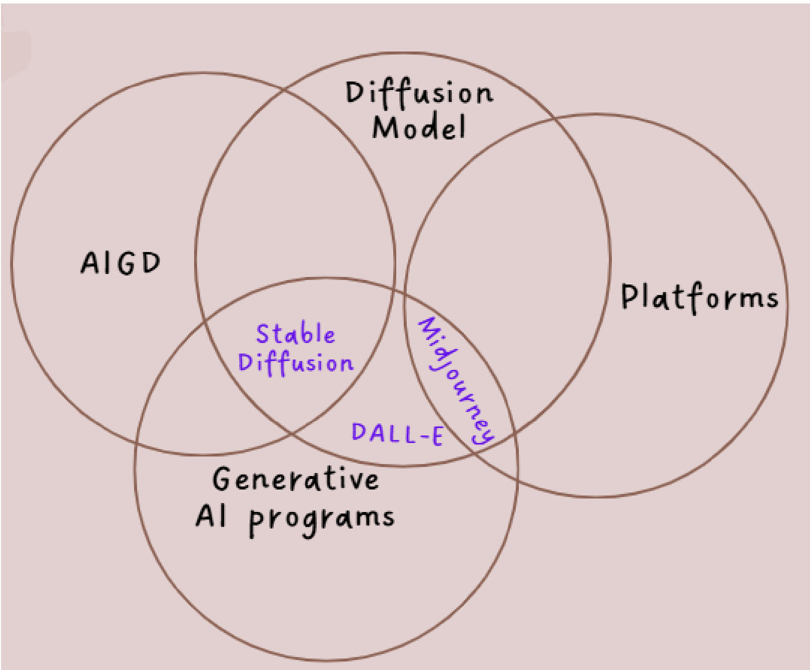
	Adobe Firefly DALL-E Midjourney	(Garcia, 2024)
Software frameworks	TensorFlow PyTorch	(Forbes, 2020)

Note. The names of categories have been derived as was mentioned in the articles.

The differentiation of categories is not based on specific arguments within literature and some of them are identified into more than one category. The Venn Diagram visualizes these overlaps (See Figure 7). For example, Midjourney is mentioned as platform, diffusion model and generative AI program, but it's not clear through the literature what it is valid and does not provide justification for any categorization. This overlap, in turn, is an indicator that the classification of the AI-related tools is not clear either to the community that investigates AI art.

Figure 7

Venn Diagram



Note. The Venn Diagram highlights the weakness of categorizing specific tools properly. It was created using the "Canva" tool (https://www.canva.com/).

4.2.1 Possibilities offered by AI-related tools in the creative process

The findings of the above section indicate that there are a variety of AI-related tools, techniques that are used for generating various forms of art such as painting and writing. Possibly all of them are not adequate to produce all kinds of artwork but they offer some common possibilities to the artists and therefore to the audience. In Table 6, five key categories of possibilities were identified through the thematic analysis described in Section 3.5 and are explained in detail to this section. An inductive approach was followed with specific coding that reassures transparency in the decision-making of the process.

Table 6

Thematic categories of the possibilities offered by AI-related tools

Thematic category	Description	Coding	Source
Creative Support	AI-related tools support and enhance the creative process by providing inspiration and brainstorming ideas.	ideation, exploration	(Caramiaux & Fdili Alaoui, 2022; Forbes, 2020; Duester, 2024; Rani et al., 2024; Fiialka et al., 2024)
		inspiration, motivation	(Liu, 2023; Elgammal & Mazzone, 2020; Li et al., 2024; Garcia, 2024; Fiialka et al., 2024)
		breakthrough implementation	(Ozturk & Balaban, 2024)
		experimentation	(Ashour & Rashdan, 2024; Rani et al., 2024; Milovidov, 2024)
		powerful amplifier	(Isik, 2024; Li et al., 2024)
Efficiency	AI-related tools reduce the time, cost and effort required for certain creative tasks.	saving time, cost-reduction, increased scalability	(Ashour & Rashdan, 2024; Duester, 2024; Elgammal & Mazzone, 2020; Fiialka et al., 2024; Garcia, 2024; Li et al., 2024)
		transaction security and transparency	(Guan et al., 2024)
		adaptation to various artistic styles	(Li et al., 2024; Ashour & Rashdan, 2024)
		complex ecosystem creation	(Garcia, 2024; Olgen & Cucuzzella, 2024)
Interaction	AI-related tools interact with humans	complex interactive scenarios	(Caramiaux & Fdili Alaoui, 2022)
		co-creation	(Ozturk & Balaban, 2024; Rani et al.,

	(both artists and audience)		2024; Li et al., 2024; Garcia, 2024)
		interactive participation	(Ashour & Rashdan, 2024; Olgen & Cucuzzella, 2024)
		real-time insights	(Olgen & Cucuzzella, 2024; Li et al., 2024)
		didactic installations community dialogues	(Olgen & Cucuzzella, 2024; Guan et al., 2024)
		blockchain technologies	(Guan et al., 2024)
		culture styles combination	(Garcia, 2024)
Serendipity and Unpredictability	The value of unexpected outcomes in artistic creation.	surprises	(Caramiaux & Fdili Alaoui, 2022; Elgammal & Mazzone, 2020; Duester, 2024; Rani et al., 2024)
		uniqueness	(Ashour & Rashdan, 2024; Olgen & Cucuzzella, 2024; Guan et al., 2024; Garcia, 2024; Kreković et al., 2023)
		novelty	(Ashour & Rashdan, 2024; Li et al., 2024; Fiialka et al., 2024)
		complex and unconventional designs	(Ashour & Rashdan, 2024)
Artistic Autonomy and Freedom	AI-related tools provide artists autonomy and freedom over the creative process and broaden the art to bigger audiences	curating data freedom freedom of expression	(Caramiaux & Fdili Alaoui, 2022; Milovidov, 2024; Rani et al., 2024; Kreković et al., 2023)
		non-standardized creative process	(Caramiaux & Fdili Alaoui, 2022)
		creative autonomy	(Latikka et al., 2023; Li et al., 2024)
		AI art democratization	(Isik, 2024; Duan et al., 2024; Guan et al., 2024; Garcia, 2024; Kreković et al., 2023)
		accessible and affordable AI art	(Ashour & Rashdan, 2024)
		self-employment	(Duester, 2024)

Note. This table consists of 4 columns: Key thematic categories, their definition, the coding that was used in the thematic classification, and finally the list of the selected sources which include these insights.

"Creative support" is a recurring theme across literature. The AI-related tools such as the Interactive Machine Learning (IML) and AI itself enable the artists to ideation, exploration and experimentation of new technologies and practices (Caramiaux & Fdili Alaoui, 2022; Forbes, 2020). AI and ML algorithms such as GANs, VAEs, CNNs facilitate them to create virtual environments and expand their creative boundaries (Ashour & Rashdan, 2024). AI functions as a powerful amplifier that sparks curiosity and provides inspiration for more creativity (Elgammal & Mazzone, 2020; Isik, 2024; Liu, 2023; Rani et al., 2024;). Specifically, platforms like MidJourney supports artists to be creative providing them with a variety of images, while Leonardo.ai offer them a variety of artistic styles and forms (Isik, 2024).

"Efficiency" gained during the creative process is also argued by many authors. AI-related platforms such as ChatGPT and Playform automate certain artistic tasks, allowing artists to save time and focus more on the creative aspect of their work (Fiialka et al., 2024; Elgammal & Mazzone, 2020). ChatGPT enforces the creative process for the writers by discovering uncommon ideas and Playform supports visual artists to create artworks within one or two hours using the friendly interface of the platform and the imagery database included. Artists can produce lots of work with minimum effort and cost and take fast artistic decisions (Duester, 2024; Garcia, 2024). Like ChatGPT and Playform, Stable Diffusion and DALL-E offer an easy interface even for visual artists and writers that are not so familiar with technology. Artists can easily create complex artworks using various artistic styles (Li et al., 2024; Olgen & Cucuzzella, 2024). Image generation tools such as RealtimeGen were proved an efficient tool for artists in the commercial painting process, maintaining a balance between AI automation and the artists' control (Li et al., 2024). Furthermore, technologies like NFTs offer practical benefits, such as security and transparency in art transactions (Guan et al., 2024).

"Interaction" is another theme that emerges across articles including the concept of co-creation between AI machines and humans. Artists collaborate with AI and create complex interactive scenarios, adapting faster for instance to various painting styles (Li et al., 2024). Moreover, generative AI brings together different cultures by combining different styles such as traditional Japanese aesthetics with Brazilian street art styles (Garcia, 2024). Collectors can easily interact with artists, combining the marketing opportunities with blockchain technology and NFTs practices (Guan et al., 2024). The audience can interact with the installations placed in public and be participants of a community dialogue around environmental issues (Olgen & Cucuzzella, 2024).

Real-time insights that can be provided into the communities may create unique eco-didactic interactive experiences. Projects like the one of Baron Lanteigne, "La Plante" which was exhibited in a gallery in 2022, offer the possibility to participants to interact with the virtual plant-composed of AI-generated plant images-by influencing its condition through a dedicated Discord chat channel. At the same time, the artist uses this interaction to criticize the overconsumption culture highlighting the tendency to engage with products that offer no tangible benefit, yet continue to be consumed (Olgen & Cucuzzella, 2024).

"**Serendipity and Unpredictability**" collects the concepts that include the unexpected outcomes of the artistic creation. Artists using any of the AI-related tools often encounter surprises, both positive and negative, which finally result in unique artwork and inspire them for another round of creativity (Caramiaux & Fdili Alaoui, 2022; Elgammal & Mazzone, 2020). Sometimes the surprise can be related to earning a living when they receive an unpredictable income from their artwork (Duester, 2024). Uniqueness and novelty are typical characteristics in the final artwork produced by AI, since unique motifs, combination of styles, themes and techniques are used to generate complex artworks (Garcia, 2024; Guan et al., 2024; Li et al., 2024; Olgen & Cucuzzella, 2024).

"**Artistic Autonomy and Freedom**" includes two powerful concepts of freedom and autonomy. Artists find freedom in their artistic expression and creativity that allows them continuously to alter their expressive language without constraints and be autonomous using systems such as DeepDream Generator (Kreković et al., 2023; Milovidov, 2024). Using tools like Playform and Runway ML, they are free to curate the data and explore new practices without following standardized creative processes to get the desired outcome (Caramiaux & Fdili Alaoui, 2022). Art democratization, driven by AI, contributes to a more open and autonomous creative environment. AI-related tools such as Midjourney allow personalization and enhance the control over the artwork in per case (Guan et al., 2024; Li et al., 2024). Moreover, using AI-related tools like Adobe Firefly anyone can create a piece of art that can be accessible and affordable to a broader audience without formal artistic training (Ashour & Rashdan, 2024; Garcia, 2024). Finally, these tools also benefit self-employment and the project-based careers that can create unpredictable incomes (Duester, 2024).

4.3 Artists and audience perception of AI in artistic creative process

For this section, it was also necessary to follow the thematic analysis described in Chapter 3.5. Based on verbatim text, a qualitative analysis was conducted and revealed a range of opinions among artists and audiences regarding the use of AI in the creative process. These findings were coded and after were clustered into positive and negative perceptions. Tables 7 and 8 outline the main codes that emerged from the data, providing insight into how AI is positioned within the artistic landscape by both artists and the audience. In this thesis, the artists and audience are defined both through PICo framework (See Section 1.2) and specifically through Population element based on the reviewed literature.

Table 7

Positive Perception of artists and audience for AI

Artists	Audience	Source

Perception	Perception	
embodied tool, creative instrument, tool for augmenting imagination, medium, process and design material appealing technology pleasant surprise	n/a	(Caramiaux & Fdili Ala-oui, 2022)
n/a	charming, strong aesthetic pleasure	(Barale, 2021)
measuring instrument	n/a	(Forbes, 2020)
n/a	appraise the human engagement curiosity interesting modern special abstract surprising technical exciting colourful	(Latikka et al., 2023)
spontaneous creativity willing to take risks & innovate	n/a	(Liu, 2023)
functional tool	n/a	(Hakopian, 2024)
n/a	accessible and affordable	(Ashour & Rashdan, 2024)
mean of inspiration medium curator	n/a	(Elgammal & Mazzone, 2020)
toolkit	n/a	(Grba, 2022)
invisible tool technical support mechanism cultural dialogue	n/a	(Olgen & Cucuzzella, 2024)
assistants collaborator empowerment tool stimulants thinking systems	n/a	(Duester, 2024)
creative tool intelligent assistant collaborator human imitator	n/a	(Rani et al., 2024)
assistant	n/a	(Duan et al., 2024)
auxiliary tool assistant in art learning partner	n/a	(Garcia, 2024)
collaborator assistant	n/a	(Fiialka et al., 2024)

Note. The table includes three columns. The first and second columns display the coded perceptions of artists and audience, while the third lists the sources that refer to this positive framing.

Table 8

Negative Perception of artists and audience for AI

Artists Perception	Audience Perception	Source
n/a	not always a clear distinction between ai-generated art & human-generated art concern, strange artificial boring useless cold scary unknown false insensitive	(Latikka et al., 2023)
n/a	lack of originality and uniqueness skeptical of the value or authenticity of artworks	(Ashour & Rashdan, 2024)
threat of losing their job	n/a	(Duester, 2024)
threat of earning a living	n/a	(Duan et al., 2024)
less flexible control options, no efficient integration with other creative tools & software for smoother workflow.	n/a	(Li et al., 2024)
n/a	tendency to human-made art instead of AI art	(Garcia, 2024)
threat to their practices & livelihoods	n/a	(Kreković et al., 2023)

Note. The table includes three columns. The first and second columns display the coded perceptions of artists and audience, while the third lists the sources that refer to this negative framing.

Artists commonly perceive AI as a valuable tool, serving as an assistant, collaborator, and partner to "non creative tasks" such as image search and editing that helps them to be creative and produce unique works (Duester, 2024; Rani et al., 2024). Moreover, it is considered a great assistant for amateurs to create artwork and enhance their efficiency (Duan et al., 2024). Garcia (2024) argues that even in the education field, AI can play the role of assistant by facilitating art students to experiment with different art styles or techniques.

Many articles describe AI as both a source of inspiration and a powerful creative tool. Artists often consider AI as a tool that augment their imagination and creative capacity (Caramiaux & Fdili Alaoui, 2022). Liu (2023) also argues that AI takes more risks than humans and thus the machines are considered more creative and spontaneous. Even the errors and the mistakes considered as opportunities of artistic expression (Caramiaux & Fdili Alaoui, 2022). AI operates as a stimulator and enhances creative thinking (Ozturk & Balaban, 2024). Elgammal & Mazzone (2020) claims that creative AI systems, such as Playform, can further inspire human creativity when trained effectively.

Another notable perception suggested by Olgen & Cucuzzella (2024) is that AI can serve as a platform for artists to engage communities in dialogue about various issues, including environmental concerns and social phenomena like overconsumption. Additionally, AI is viewed as a human imitator, capable of reflecting the ideas, styles and human influences (Rani et al., 2024).

A key negative perception identified through the analysis is the threat artists feel toward the sustainability of their role, creative practices, and livelihood (Duan et al., 2024; Duester, 2024; Kreković et al., 2023).

Audiences view AI from their own perspective. It seems that they feel charmed, excited and curious (Barale, 2021). Latikka et al. (2023) indicate that people describe AI such as "interesting, modern, special, abstract, surprising, technical, exciting, and colorful" (p. 7). They also tend to appraise the human engagement during the artistic process as soon as they learned about it (Latikka et al., 2023). Additionally, Ashour & Rashdan (2024) note that AI is appreciated by the audience since it makes art more accessible and affordable and can also provide personalize experience.

On the other hand, the enthusiast of traditional art finds that AI art lacks originality and uniqueness and they have doubts about authenticity (Ashour & Rashdan, 2024). Moreover, Garcia (2024) points out that there is a tendency of people to prefer human-made art instead of AI art because of the emotions personal touch, and context it conveys.

4.4 Ethical concerns

In this chapter, several key ethical concerns surrounding the use of AI in art creation were identified through the inductive approach of the selected literature as described in the "Data Analysis" section. These concerns were coded and finally have been organized into seven distinct thematic categories (See Table 9). The proposed solutions identified in the literature are integrated into the summary of the corresponding concern.

Table 9

Categories of ethical concern

Source	Transparency, Control & Authorship	Creativity & Authenticity	Bias & Cultural Sensitivity	Copyright & Ownership	Environmental Impact	Professional Impact	Technical & Digital literacy

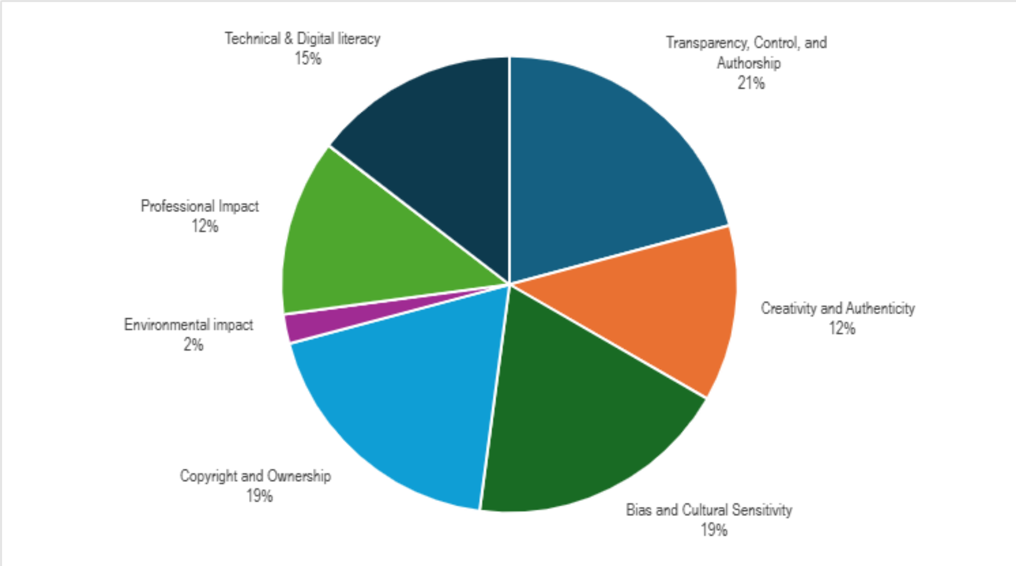
(Caramiaux & Fdili Alaoui, 2022)	M						M
(Barale, 2021)	M			M			
(Forbes, 2020)			M				
(Liu, 2023)		M					
(Hakopian, 2024)			M				
(Ozturk & Bala-ban, 2024)		M					
(Ashour & Rashdan, 2024)	M	M	M	M			M
(Elgammal & Mazzone, 2020)							M
(Milovidov, 2024)	M						
(Grba, 2022)	M		M			M	M
(Olgen & Cu-cuzzella, 2024)					M		
(Duester, 2024)				M		M	M
(Rani et al., 2024)	M	M	M	M		M	
(Isik, 2024)		M		M			
(Guan et al., 2024)	M	M	M	M			M
(Duan et al., 2024)				M		M	
(Li et al., 2024)				M		M	
(Garcia, 2024)	M		M	M		M	
(Fiialka et al., 2024)	M		M				
(Kreković et al., 2023)	M		M				M

Note. “M” stands for “Mentioned” and indicates the presence of each category theme in literature.

A pie graph (See Figure 8) has been used to highlight the significance attributed by literature to various categories of ethical concerns, which are outlined in the same sequence.

Figure 8

Percentages of thematic categories identified within literature



Literature raises profound questions about **Transparency, Control and Authorship** during the artistic creative process and over the final artwork. It is indicated that it is not easy for the artists to have total control of their work due to the complexity of AI systems and the lack of algorithm development transparency. According to Ashour & Rashdan (2024) this may lead to unexpected results. The proposed solution for the lack of controllability by Ashour & Rashdan (2024) is to use some techniques such as testing, debugging, and visualization for better understanding and control of the AI system's result. The involvement also of experts could contribute to the productivity of the AI system and ensuring its expected behavior.

Disinformation constraints are also a result of lack of transparency that can lead to the so-called "fake archive" and deep fake (Milovidov, 2024, p. 4). The solution of a transparent operation can be derived from the open-source software movement that is more accountable than the corporations.

Authorship of the artwork can also be doubted, as happened to the creation of "Edmond de Belamy", since it was created by an algorithm that has borrowed code from Robbie Barrat's algorithm and it was unclear which part of the code was the original or just sourced (Miller, 2019; qtd in Rani et al., 2024). The US Copyright Office states that software-generated art cannot be claimed authorship without human creative input. However, the US Patent and Trademark Office argues that this may not apply when AI is involved in the creative process, viewing it as a collaborative partnership between humans and machines (Rani et al., 2024).

Guan et al. (2024) discuss transparency to the artworks trading and as a solution present the blockchain technology that can be also used to ensure the authenticity and provenance of the artworks. Often it is unclear who is the owner of the AI-generated artwork, which is also highlighted by other researchers such as Garcia (2024).

Copyright and Ownership is the next category that will summarize the main arguments around this theme. The popular auction of "Portrait of Edmond de Belamy" and the raised questions around the ownership made it clear that copyright will be a huge problem for all the stakeholders (Barale, 2021; Isik, 2024; Rani et al., 2024). Ashour & Rashdan (2024) argue that owner can be considered either the AI itself or the person/entity that programmed/trained the AI or the individual that commissioned the work. For this reason, it is proposed to develop new legal frameworks or guidelines that clarify the ownership, authorship, and copyright of AI artworks taking into consideration all parties involved. Already a few parts of the world such as the European Union, China and the US have been starting discussion on ethics issues around AI, including copyright, ownership, and the artists' role. As a result, they proceed to regulations for ensuring more accountability and responsibility of AI use (Duester, 2024).

In cases of transactions, the artists' copyright can be vulnerable to the lack of detailed instructions on many platforms and the absence of official regulations governing this matter (Guan et al., 2024). The establishment of clear agreements between artists and collectors regarding copyright ownership could be a solution to prevent collectors from violating the rights of the artists. RealtimeGen, a tool developed by Li et al. (2024) is considered a unique promising solution for the ethical challenges raised by the development of AI image technology to strengthen IP ownership of the artists for their creative efforts. Garcia (2024) proposes a more collaborative solution: "Legal scholars, policymakers, and the art community must engage in dialogue to establish a transparent, fair, and enforceable system that protects the rights of human artists while also considering the unique nature of AI-generated art" (p. 5).

Bias and Cultural Sensitivity is also identified through the analysis as a main ethical concern. Bias is often embedded in datasets, as they tend to reproduce the Western racialized models or to exclude for example the feminist dataset (Forbes, 2020; Garcia, 2024; Hakopian, 2024). Moreover, training datasets developed with specific artistic styles and subjects can reinforce specific stereotypes leading to homogeneous artistic expressions and reducing innovation in the art ecosystem (Garcia, 2024; Guan et al. 2024). Ashour & Rashdan (2024) argue that if the training data, algorithms or even the same person who creates the models are biased, the resulting AI-generating outputs will likely reflect those biases. Additionally, biased or unverified information produced by AI technologies such as ChatGPT can contribute to copyright violations in the literally world (Fiialka et al., 2024).

To mitigate the bias, it is crucial to ensure that datasets are representative and diverse, to implement techniques that detect the bias and finally promote inclusivity in parties involved for designing and developing the AI systems (Ashour & Rashdan, 2024; Garcia, 2024). An example of efforts to highlight AI's ethical flaws is Kate Crawford and Trevor Paglen's project Training

Humans (2019–2020). However, even in this project was proved that included technical errors and moral conflicts (Grba, 2022; Kreković et al., 2023).

Technical & Digital literacy refers to the lack of the artist to follow the trends of technology and to the difficulties addressed in keeping pace with the market request. Caramiaux & Fdili Alaoui (2022) highlight that many artists lack knowledge of ML and often do not have the computational power to train the models. This can create difficulty in collaboration between them and engineers and make the creative process more complex.

As a proposed solution by Ashour & Rashdan (2024), it is suggested that AI technology should be more inclusive by engaging all the interested parties. It could be effective to dedicate time and resources to train or set up the AI system to ensure that the final artistic output aligns with the artists' vision. Another suggested solution is to integrate AI into existing creative tools and processes alongside foster interdisciplinary collaboration to ensure that everyone is aligned with the changes (Ashour & Rashdan, 2024).

Elgammal & Mazzone (2020) highlight the challenge that non-AI expert artists encounter the difficulty to understand technical terms, which may guide them to abandon experimenting with the AI systems that require computer science skills. Similarly, Grba (2022) discusses the demand of AI art in a broad set of technical skills required by the artists and the difficulty to balance technical skills with artistic creativity.

The concern over digital literacy is reinforced by Duester (2024) who notes that many artists from the current generation have not received formal training in digital skills at art academy or university. As a result, they spend too much time learning, testing and experimenting with new technologies. To be up to date, it is required to be trained continuously. Duester (2024) calls for a clear cultural policy and management strategy to establish standards and protocols for regular training, particularly for independent artists.

Beyond the creation process, digital literacy concerns also extend to financial transactions and market participation. Despite the benefits of NFTs and blockchain technology, many artists struggle to grasp new concepts before completing the first independent transaction. To address this, artists often rely on watching videos and reading guidelines as self-learning tools (Guan et al., 2024).

An optimistic perspective derived from Kreković et al. (2023), who argue the requirement of technical expertise and time investment to use AI technology, but there are gradually technical solutions that make their use more accessible and user friendly for creative exploration and learning.

Professional Impact regards the concern of the artist community about their professional sustainability in the coming years. Their role as an artist can be uncertain with the rapid development of AI technologies and in correlation with the issues of ownership, authenticity and authorship. Grba (2022) discusses how professional reputation in the art world is influenced by fluid social networks, trends and authority appeals-factors that can undermine artistic merit and institutional privileges. He also discusses the pressure of artists to conform to market demands and institutional endorsements which may further impact their creative autonomy. To ensure the sustainability of artists' practices, creativity and jobs, Duester (2024) highlights the need to understand and respect how artists integrate AI with other software tools and different mediums. He advocates for global policy that protects the artist profession.

The emergence of AI technology has also intensified the fear of job loss (Rani et al., 2024). While the art democratization through the NFTs marketplace provides opportunities for emerging artists, it can also create barriers to technological and financial entry requirements (Guan et al., 2024). Li et al. (2024) argues that artists, particularly painters, may be affected financially due to the gradual demand for AI-generated images. Moreover, AI systems often learn from existing artworks without compensating the original artists, further threatening their livelihoods.

Similarly, Garcia (2024) highlights the potential decrease in value and demand for traditional art due to the intense market competition and ability of AI to produce artworks quickly and cost-effectively. He also argues that an artist can suffer significant economic ramifications because their artistic style has been replicated without credit, potentially harming their market reputation too. To deal with these issues, it is crucial to develop legal and ethical framework in the digital market to safeguard the artists' economic interests and ensure fair compensation for their work (Garcia, 2024).

Creativity and Authenticity is another key ethical concern that raises questions about whether AI can be sufficiently creative to produce original artworks (Ashour & Rashdan, 2024). Ozturk & Balaban (2024) propose further research on the original quality even of the artworks generated by AI itself. One prominent example is the auction of "Portrait of Edmond de Belamy" where disputes among claimants reinforced the debate over the originality and authorship of AI-generated art (Isik, 2024; Rani et al., 2024).

Before the rise of NFTs, artists worried about the uncontrolled distribution of their artworks on the Internet as digital artworks were frequently copied and shared without regard for authenticity. As a solution for ensuring authenticity is indicated the blockchain technology that through the recordings of transactions the attribution of digital assets can be easily verified (Guan et al., 2024). Additionally, this technology helps collectors assess the investment value of AI-generated artworks.

Environmental impact cannot be missed from the concerns of the researchers. The artists themselves have self-awareness about the high energy consumption of these digital technologies and consequently their artwork should be worth consuming this energy and create environmental awareness for the public. Already many artists talk about eco-art, but the question is still raised if it is meaningful, and the educational benefit justifies the significant energy consumption. To address this issue, Olgen & Cucuzzella (2024) argue that the use of solar panel technology in digital installations is considered promising especially with the notable advancement of transparent solar panels.

5 Discussion

This chapter builds on the findings presented in Chapter 4 by exploring their broader implications in relation to the four research questions. The discussion highlights important insights and situates them within ongoing debates in the fields of art, IS, and AI. It also considers the significance of these findings for both scholarly and professional contexts. Finally, the chapter concludes with a methodological reflection about the quality of the study.

5.1 Key Findings

5.1.1 Concepts of AI in art – Conceptual Diversity

The analysis of the literature revealed a wide range of concepts related to AI in art, such as “AI-generated”, “artificial creativity”, “artivism”. The most prominent concept identified is “AI art”, which is commonly used to describe artworks that derived from the collaboration between human creativity and technological algorithms. The predominance of this concept could not be a surprise since it includes the main agents that express the way that art practices and forms. However, the variety in definitions indicates that the researchers consider the interdisciplinary nature of the concept and even if they recognize the contribution of both human and AI in art, they cannot reach a common definition.

The lack of consistency in concepts such as “digital art”, “computer art” or “new media art” may have important implications. First, it could make the collaboration and interdisciplinary dialogue between interested parties such as artists, theorists and policy makers very difficult because they may interpret the same concepts differently. Second, it challenges the creation of standardized metadata and taxonomies for digital art archives, which are essential for documentation, curation, and long-term preservation.

Moreover, this review does not clarify that the identified concepts are applicable with the same meaning to other forms of art such as literature, music or performance art, beyond the visual and digital artworks which dominated the focus of the reviewed articles. In meanwhile, new concepts such as “AI art therapy” and “Artivism” display the importance of AI art in other type of disciplines such as the field of mental health care or social justice movements that use it as a tool for self-expression and healing and as a challenging power.

5.1.2 AI Tools – Accessibility vs Control

The results of Section 4.2 indicated a wide variety of AI-related tools used in artistic practices but there is no consistent classification across the literature. The lack of consistency in tools’ classification cannot support a clear discourse among the stakeholders and it may create confusion regarding the actual use of specific tools.

A notable finding is that several tools, such as ChatGPT, or Deep Dream Generator, are accessible to both professionals and amateurs, allowing individuals without technical expertise to produce high-quality artistic outputs. This creativity freedom supports the democratization of art that enables accessibility in a wider audience. This raises the question of whether the output is considered art alongside several ethical concerns, such as ownership, authorship of AI-generated artwork, that are discussed further in Section 5.1.4.

Moreover, although the findings indicated AI-related tools as valuable aids in the creative process, supporting artists in many aspects such as in brainstorming, reducing cost, accelerating production, extending the boundaries of artistic exploration, some artists express concern over the loss of creative control. Not transparent algorithms create insecurity to the artists about ownership and authorship of their artwork.

In this contradiction, there is a dual-edge impact: The positive one that fosters inclusivity for artists that lack of resources and capabilities such as the disability artists, and the negative one where the artist contribution and artwork's authenticity is questioned. Even if the AI-related tools expand the aesthetic possibilities, they commonly use repetitive styles. If the artists use the same pre-trained models or templates, it may raise the risk of homogenization. The final outputs may lack originality and diversity.

Eventually, although some of them such as the DDG are considered easy for amateurs, it is also highlighted by the authors the lack of digital literacy of the artists to train the models or even non expert artists to understand the technical terms. Some solutions that have been already mapped in section 4.4 lead us to think that the widespread use of AI-related tools could influence the educational institutions of art to enrich their curriculum by teaching algorithmic systems and encourage the students to explore both the opportunities and limits of working with AI.

5.1.3 Perceptions – Co-creator or Competitor

The results presented in Section 4.3 indicated a spectrum of perceptions from both artists and audiences regarding the use of AI in the creative process. Both hold an excitement but also concern about the AI's role. As summarized by Kreković et al. (2023) "this development has been seen either as a milestone in the history of art or as a harbinger of its death" (p. 103).

For many artists, the dominant perception is that AI poses a threat to their creative practices and livelihoods, while at the same time they consider it assistant, collaborator or creative partner. This suggests that the artists may redefine their role towards AI, a shift that may lead to the reconstruction of artistic authorship. As artists, they may also need to develop technical literacy in AI tools to effectively integrate these systems into their practice. The fear of losing their job may affect labor dynamics in the creative industries, not only the visual artists but also the dancers, writers, musicians and any other artistic role.

Audiences, meanwhile, are frequently captivated by AI-generated artworks but remain skeptical about their authenticity and artistic value. These diverging perceptions carry important implications for institutions involved in funding and the public presentation of creative work. If the authenticity or emotional depth from the AI-generated art is questioned by certain audience, cultural funders may hesitate to support projects that heavily rely on these tools. Similarly, these doubts may also influence the way that museums and galleries curate and exhibit AI-assisted artworks.

5.1.4 Ethical Concerns - Ownership and Authorship

The identified concerns presented in Section 4.4 do not significantly differ from those raised in relation to other technological advancements. Key issues include transparency, control, authorship, copyright, and ownership—topics frequently discussed in both artistic and technological contexts.

The analysis of 21 articles indicates that AI democratizes art but raises important challenges and ethical concerns. From the one side, any individual has access to platforms and tools that allow them to create artwork. On the other hand, freedom in creative process may devaluate the final artworks and consequently the concept of art, especially when the creative process is not transparent and the ownership is doubted. The boundaries between human and machine creativity are blurred, as AI-related tools become more capable of generating complex artworks with minimal human input. Still, there is no clear way to define who is the actual creator and the owner of AI artwork. This can increase the risk of undermining both the recognition and compensation of human creators.

Additionally, the thematic analysis (See Table 9) reveals a notable gap: environmental impact is mentioned only once across the reviewed sources. As the training and operation of AI models demand considerable computational power and energy, the environmental cost, associated with the fact that these tools become widely accessible to both amateur and professional artists, can be substantial. This highlights that alternative solutions such as solar panel technology should be further investigated and promoted to the art community. The adoption of sustainable practices in using AI technologies should be the primary concern of all stakeholders.

In conclusion, the discussion has explored the key thematic findings with broader implications for artists, audiences, and any other party involved. Even if visual art is the focus of the examined articles, the conceptual findings could be equally applicable to other forms of art that are generated by AI. For example, ChatGPT is suitable to generate novel story ideas, by drawing on diverse writing influences, without making the original sources easily identifiable. Similar issues of conceptual ambiguity and ownership dilemmas could also affect other art domains including music composition, creative writing, and performing arts beyond the realm of visual art.

To contextualize and critically assess the quality of this study, it is important to reflect on the methodological choices that shaped the study.

5.2 Methodological reflection

This section provides a methodological reflection, addressing the strengths, limitations, and potential biases inherent in the research design and analysis process. The assessment of research quality is grounded in the four trustworthiness criteria outlined by Clark et al. (2021): credibility, transferability, dependability, and confirmability.

Throughout the process, transparency was the priority to ensure that this scoping review and the qualitative approach used to address the research questions would be replicable and not subjective. To support credibility, during the themes' identification and coding, there was a great effort to keep the criteria of topic repetition through the verbatim text and be aligned with the subject of research questions. This ensured that the emerging themes were grounded in the data rather than influenced by prior assumptions.

Nonetheless, the fact of being the only reviewer, not only during the analysis process but also during the selection of articles, raises the risk of bias and subjectivity. Despite this limitation, efforts were made to strengthen procedural integrity and confirmability by using a well-established protocol such as the foundational framework of Arksey & O'Malley (2005) and the PRISMA-ScR checklist as well tools like Zotero, Excel (for data charting and coding), and Rayyan (for screening). This approach ensured that the findings were derived systematically from the data, rather than shaped by the bias of researcher.

However, due to time constraints, the decision not to involve other reviewers (domain experts, artists, or co-reviewers) in validation of the final decisions may limit the dependability of the thematic outcomes. Future research could increase dependability by involving multiple coders or by integrating primary data (e.g., interviews with artists) to triangulate findings.

While the review provides valuable insights, it does not aim the generalization of conclusions. Instead, the scope was to map the existing body of evidence and identify key themes, rather than test hypotheses. Thus, the findings should be interpreted as exploratory rather than conclusive. Although transferability is not the primary aim of the scoping review, the thematic richness and conceptual mappings provided here could inform further research in both artistic and information science contexts. Moreover, the peer-reviewed journals' language restriction (English only) and the exclusion of other types of literature may limit cultural diversity and potentially narrow the scope for transferability of findings to other contexts.

In summary, this study is not completely fulfilling all the criteria – credibility, transferability, dependability, and confirmability – but using well known protocols and tools has contributed to maintain transparency and methodological rigor. The research process is replicable to a reasonable degree, and the findings offer transferable insights that can inform further interdisciplinary research and practice.

6 Conclusions

In this final chapter, the conclusions of the study are presented, as well as suggestions for further research and knowledge contribution to the field of IS.

The focus of this scoping review was to explore and map the existing body of evidence on AI in art and the creative process. Through the analysis of 21 peer-reviewed articles between 2020 and 2024, the review mapped current knowledge concerning the use and impact of AI-related tools in art, the perceptions of both artists and audiences, and the ethical concerns that emerge from this evolving relationship.

Guided by PICo protocol, the research questions were developed to reflect the needs of a diverse group of stakeholders, including artists, AI developers, policymakers, and cultural institutions, all together to contribute to the fair use of AI. The review followed the six-stage framework by Arksey & O'Malley (2005) for scoping reviews, combining qualitative thematic analysis to ensure a comprehensive and structured approach to reach a fruitful mapping and findings aligned to the four criteria of trustworthiness.

The findings highlighted the importance of establishing a shared conceptual language among the stakeholders. The varied definitions of key concepts that were introduced across articles and the lack of consistent categorization of the multiple AI-related tools indicated the need for further investigation from the side of researchers and further collaboration among the parties involved in AI art. Furthermore, the review revealed both enthusiasm and skepticism regarding AI's role in artistic creative processes, highlighting the complex nature of human-AI interaction.

Finally, the review identified critical concerns that need to be addressed further such as the "environmental impact". It also reinforces the need for ongoing dialogue between policymakers, artists, developers, audiences and other stakeholders to ensure that AI in art supports creativity, transparency, and inclusivity.

6.1 Future Research

The findings of this scoping review could possibly be enriched by the undertaking of a systematic review examining more types of documents (e.g. grey literature, books, policy documents). As Pollock et al. (2023) argues, it can be a precursor of a systematic review, since some knowledge gaps were identified. It could answer further research questions such as the role of AI art in therapy or in education. It could also focus on specific art forms such as music.

The overlap and ambiguity identified in the literature about the classification of AI-related tools by the researchers themselves suggests further academic research for resulting in a clear and consistent classification and in a common and standardized understanding. Ontological work could be beneficial in contributing to a distinction between AI technologies, techniques and tools. The classification with the involvement of subject matter experts could be further developed to support both practitioners and researchers in selecting appropriate tools based on artistic goals.

Furthermore, most perception-related discussions were still rooted in visual arts. It remains unclear how perceptions vary across other domains, such as literature, music, or performance—where notions of authorship, embodiment, and temporality may influence reactions differently.

The observation that the “environmental impact” is addressed only once underscores the need of further investigation into the ecological implications of AI-generated art by the scholarly community. Examining this aspect more thoroughly could provide valuable insights into how the policymakers, artists, developers and other stakeholders could contribute to sustainable solutions and overall establish frameworks for fair AI use in art.

There is also a growing need for frameworks that would assist artists, audiences and additional stakeholders to navigate the blurred lines between human and machine contribution, while providing clearer guidance on authorship, ownership and copyright of AI generated artworks.

From the IS perspective, the term definition inconsistencies highlight the need for controlled vocabularies or ontologies that could support both humanistic and technical engagement with AI-generated content. This suggests an opportunity for further research to examine how AI-related concepts are used or adapted across different art forms, and whether a unified or discipline-specific conceptual framework would be more appropriate. The need for a standardized way to categorize each one of them to support clearer discourse also aligns with core functions of Information Science, such as knowledge organization, metadata design, and semantic interoperability, especially in multidisciplinary contexts where clarity in terminology is essential for collaboration, digital curation, and long-term information access.

6.2 Knowledge Contribution in Information Science

While the previous section outlined future directions for research, this section reflects on how the scoping review’s findings add to the conceptual, methodological, and practical understanding within the field of IS.

Conceptually, the mapping of key concepts that emerged from AI art and the identification of a missing consistent terminology help clarify the ambiguity within both the arts and IS domains. By identifying and thematically categorizing over 20 concepts from the selected literature, the study could lay groundwork for the development of controlled vocabularies, taxonomies or domain ontologies for AI in creative contexts.

Methodologically, the application of a structured scoping review approach demonstrates its relevance and adaptability for IS research in emerging or interdisciplinary domains. The methods used for evidence mapping, thematic coding and concept extraction can be applied in similar studies involving digital technologies, cultural data or creative industries, offering a transparent and replicable framework.

The findings about the ethical perspective of the AI generated art highlights the lack of clear ethical and legal frameworks around authorship, ownership and copyright, an area where IS has a pivotal role through policy development, IP metadata standards and responsible data governance. Additionally, the mapping of AI-related tools & platforms and the examination of both artists and audiences' perceptions offer useful insights to IS professionals, such as digital curators, librarians, metadata specialists, and system designers. They can benefit from the insights and understand how they can support the authenticity and provenance of the AI generated artwork in digital repositories and cultural heritage collections.

All things considered, this thesis provides an overview of the AI in art and in creative process and sets the foundations for the field of IS to acquire a better understanding of this domain and a more structured and ethical engagement with AI-generated content in both scholarly and applied contexts.

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