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Artificial Intelligence-Supported Cultural Art Practices: A Bibliometric Analysis in the Field of Fine Arts

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Abstract: This study aims to evaluate the international literature on artificial intelligence-supported cultural art practices through bibliometric analysis. A total of 37 studies retrieved from the Web of Science and Scopus databases in accordance with the PRISMA flow diagram and meeting the inclusion criteria were included in the analysis. VOSviewer software was used for data analysis, and the examined studies were also subjected to thematic classification based on content analysis. The findings show that publication production in the field increased markedly, especially in 2024 and 2025, that a limited but growing impact network with a total of 109 citations has emerged, and that the highest citations were received by studies examining cross-cultural audience perception. The institutional and country-based distribution displays a broad but low-density structure, while production is concentrated in China-based research groups. The conceptual structure has evolved over time from technically oriented concepts toward cultural and interdisciplinary themes; the studies were grouped under three main themes: preservation of cultural heritage, artificial intelligence-supported artistic production, and cultural experience/social perception. It was determined that the literature predominantly focuses on production processes, whereas reception and social impact dimensions are relatively underrepresented. It is recommended that future research be expanded to include different databases and languages, that studies focusing on audience perception and social acceptance be increased, that research on the preservation of cultural heritage be deepened around local aesthetic authenticity, that international collaboration networks be strengthened, and that multidimensional frameworks integrating the ethical, legal, and pedagogical dimensions of artificial intelligence-supported art be developed.

Keywords: fine arts, artificial intelligence, cultural art practices, bibliometric analysis

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Artificial intelligence is currently one of the main actors redefining the relationship among art, culture, and technology. In artistic production processes, artificial intelligence expands the field in which creative decisions are made rather than eliminating the role of the artist; it simultaneously transforms the technical, aesthetic, and conceptual dimensions of production (Epstein et al., 2023; Li, 2026; Omirzakova & Tileubay, 2026; Suryani et al., 2026).This transformation raises questions not merely about the use of a new tool, but about how art should be performed, how creativity should be defined, and by what criteria aesthetic value should be determined (Chatterjee, 2022; Zhou & Lee, 2024). While classic debates about whether computers can produce art require a re-examination of the concepts of human perspective, originality, and creative agency (Hertzmann, 2018; Mazzone & Elgammal, 2019), the center of gravity in the literature is increasingly shifting towards the question of which aesthetic and institutional criteria should be used to evaluate these works.

This problem area becomes even more complex in the context of cultural art practices. Although digital technologies offer important opportunities for the sustainability of intangible cultural heritage, these opportunities must be carefully evaluated in terms of cultural authenticity and forms of representation (Huang et al., 2024; Kim et al., 2019). This is because artificial intelligence-supported production transforms not only individual artistic performance but also institutional areas such as the preservation of cultural heritage, the re-enactment of historical experiences, digital archiving, and the personalization of audience experience (J.Li et al., 2024; Suiçmez et al., 2025). Information that a work has been produced by artificial intelligence generally shapes audience judgment through perceptions of the production source rather than visual qualities (Chamberlain et al., 2018; Ragot et al., 2020), and people tend to prefer human-made works over AI-generated works (Bellaiche et al., 2023; Chiarella et al., 2022; Malecki et al., 2025). Nevertheless, it has also been shown that these biases may change over time with the level of exposure to AI art (W. Zhang et al., 2026).

The existing literature proceeds in two contexts: one dimension focusing on production technologies and human-AI co-creativity, and another focusing on audience perception and evaluation biases; however, these two contexts largely advance independently of each other (Aydin et al., 2026; Cetinic & She, 2022). In addition, AI-supported art is mostly addressed within the general context of digital art; although studies on cultural heritage, traditional art forms, and the museum context at the center of cultural experiences make important contributions (Huang et al., 2024; Kim et al., 2019; J. Li et al., 2024), their connection with AI production remains indirect. Based on this gap, the study aims to address AI-supported cultural art practices within the framework of cultural representation, the transformation of traditional practices, audience and institutional evaluation, and debates on the creative subject; it also aims to evaluate bibliometric trends in the field of Fine Arts not only through publication counts and citation patterns but also through conceptual clusters and connections among researchers.

For the purposes of this review, AI-supported cultural art practice is operationally defined as research in which artificial intelligence methods are applied either (a) to the creative production of artistic works (generative, assistive, or collaborative use of AI in art-making) or (b) to the analysis, curation, or interpretation of artworks and cultural heritage objects, provided that fine arts, museum, or cultural heritage content constitutes the primary disciplinary context of the study (following Cetinic & She, 2022). Studies in which AI or machine-learning techniques were applied to visual data without an explicit artistic or cultural-heritage framing (e.g., generic image classification, industrial computer vision, unrelated public-health imaging) were excluded during full-text screening.

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Literature Review

Integration of Artificial Intelligence Technologies into Artistic Production Processes

The integration of artificial intelligence technologies into artistic production processes is closely related to technical advancements such as generative models based on deep learning, text-to-image production systems, style transfer, dataset creation, and command engineering. These technologies accelerate visual production while simultaneously restructuring the artist's aesthetic decision-making process, field of application, and control mechanisms within the production process (Cetinic & She, 2022; Epstein et al., 2023; Özdemir Kibici, 2026). In this context, the question of whether computers can produce art is not limited solely to technical capacity. It also encompasses broader conceptual issues such as human perspective, contextual interpretation, and art historical positioning (Hertzmann, 2018; Mazzone & Elgammal, 2019). Therefore, AI-assisted artistic production can be considered a broader production ecology where algorithmic computation and aesthetic choices are intertwined.

Human-AI co-production is one of the main debates at the center of this ecology. A more consistent framework emerges when artificial intelligence is positioned not as an independent subject replacing the artist but as a collaborative system that expands the creative process, opens alternative idea spaces, and accelerates production (Karimi et al., 2020). Questions such as how agency is distributed in human-AI collaboration, by whom and at which stage creative decisions are made, and how the artist maintains a sense of control are among the basic conceptual problems of this field (Rafner et al., 2025). Discussions on the need to redefine creativity in the age of artificial intelligence also gain meaning in this context (Runco, 2023; Wingström et al., 2024). Findings indicating that generative AI may enhance individual creativity while reducing collective content diversity show that these technologies should be evaluated not only in terms of individual artistic practice but also in terms of cultural diversity (Doshi & Hauser, 2024).

The widespread use of text-to-image generation tools requires artists to develop new skill sets in the production process. Activities such as prompt writing, variation selection, visual editing, and stylistic guidance are now evaluated not only as technical usage skills but also as creative interfaces that enable artistic intention to be transferred to the algorithmic system (Curcic, 2024; Oppenlaender, 2024; Liu & Chilton et al., 2022). This does not mean that the artist loses control completely; on the contrary, it shows that creative control is re-established at a different level. Prompt-based production creates a new production field in which the artist negotiates aesthetic preferences, conceptual framework, and formal expectations with the algorithmic process. Therefore, AI-supported production should be examined not only through the visual quality of outputs but also through decision networks and human-machine interaction within the production process.

Digital Transformation and New Aesthetic Paradigms in Cultural Art Practices

Digital transformation in cultural arts practices plays a fundamental role not only in production but also in the preservation, transmission, reinterpretation, and transmission of cultural heritage to future generations. Making intangible cultural heritage sustainable through digital technologies enables the archiving of traditional art forms as well as their revival in new contexts (Kim et al., 2019). Examples of the digital transformation of traditional art forms offer significant possibilities for how local aesthetic textures can be reproduced with contemporary technologies (Huang et al., 2024). However, alongside the potential for preserving cultural

memory, digitalization also carries the risk of standardizing cultural authenticity and weakening the local context. Therefore, the digital transformation of cultural heritage should be considered not as a technology-focused solution, but as a balanced process that respects cultural sensitivities.

AI-assisted art production also presents new problems in terms of cultural representation and local aesthetic codes. The training data of algorithmic systems may highlight certain aesthetic patterns. Or, conversely, they may render invisible local, underrepresented, or contextually sensitive art forms. Therefore, it is not sufficient to evaluate AI art solely by its capacity to produce new aesthetic forms. Issues such as dataset bias, cultural representation, and the preservation or transformation of local aesthetic codes constitute the cultural dimension of algorithmic aesthetics (Broeckmann, 2019; Chatterjee, 2022). What AI art can teach us about the concept of art becomes important at this point. The value of art lies not only in the means of production but also in the relationship, context, and meaning-making process of the work (Chiodo, 2024).

Museums and cultural heritage institutions are among the most frequent application areas for AI-powered transformation. Digital exhibition technologies, augmented reality, data analysis, and AI-based personalization systems are making the visitor experience more interactive and participatory (Li et al., 2024; Suiçmez et al., 2025). Interactive heritage applications contribute to the transformation of cultural content from something merely observed to something experienced and interpreted (Kiourexidou & Stamou, 2025). However, this transformation also brings new responsibilities at the institutional level. How the digital transformation of cultural heritage will be managed in terms of sustainable development, regional differences, and cultural sensitivities is considered one of the fundamental debates in this field (Melnyk et al., 2025; Sandriester et al., 2025).

Cultural and Institutional Evaluation of AI-Supported Artworks

The evaluation of AI-powered artworks is not solely a process based on visual qualities. Information about the source of the work can directly influence the viewer's aesthetic judgment, perception of originality, and level of trust (Chamberlain et al., 2018; Ragot et al., 2020). The fact that attributing AI authorship can diminish the aesthetic appreciation of abstract paintings demonstrates that information about the source of production can directly interfere with the aesthetic experience (Chiarella et al., 2022). The greater preference for human-made works over AI-produced works also supports this trend (Bellaiche et al., 2023). This reveals that the AI label is not merely an informative element; it functions as a psychological and cultural cue that shapes aesthetic evaluation. However, biases towards AI art are certainly subject to change. The audience's familiarity with technology, level of exposure to AI art, cultural background, and understanding of art can alter the direction of the evaluation process (Malecki et al., 2025; Ting et al., 2023). Psychological barriers to the adoption of AI art are related to various variables such as trust, authenticity, intent, and perception of humanity (Zhang et al., 2026). Therefore, the perception of AI-assisted art should not be considered a one-dimensional matter of liking or disliking, but rather evaluated in conjunction with audience experience, cultural codes, and institutional legitimation processes.

Institutional-level evaluation, on the other hand, requires a broader framework including museum exhibitions, digital archives, cultural heritage policies, copyright, and ethical responsibilities. How AI-supported artworks will be exhibited in cultural institutions, how the production process will be explained, how the roles of the artist and the algorithm will be defined, and how copyrights will be regulated remain open areas of discussion (Westenberger & Farmaki, 2025). The impact of generative artificial intelligence on cultural industries reveals

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the necessity for existing evaluation regimes to adapt to this new form of production (Epstein et al., 2023). In this context, institutional acceptance is not merely a decision based on aesthetic appreciation, but a multilayered evaluation process that jointly incorporates legal, ethical, pedagogical, and cultural dimensions.

The main purpose of this study is to evaluate the international literature on AI-supported cultural art practices within the framework of bibliometric analysis and to systematically reveal the structural characteristics, thematic trends, collaboration networks, and conceptual transformations of knowledge production in the field. In line with this purpose, the following sub-research questions were formulated:

The main research question of this study is as follows: What are the bibliometric characteristics of scientific publications in the field of Fine Arts related to AI-supported cultural art practices? In line with this main question, the following sub-research questions were formulated:

1. How does the distribution of the examined publications by year and the trend of scientific productivity in the field vary according to publication types?
2. What is the citation performance of the examined studies, and which studies have generated the greatest impact in the field?
3. What is the distribution of the most productive sources in the field and the institutional (affiliation) and country-based distribution of publications?
4. How is the conceptual/thematic structure of the field shaped according to keyword frequency and abstract word density?
5. Under which themes, subthemes, and categories can the examined publications be classified in terms of the topics they address?

Method

Research Design

In this study, the bibliometric analysis method was used to quantitatively and visually map the scientific literature produced on AI-supported cultural art practices. Bibliometric methods aim to reveal the productivity, citation, and collaboration trends of scientific output produced in a particular field at the level of journals, authors, institutions, and countries (Donthu et al., 2021; Karakose et al., 2022; Zupic & Čater, 2015). The ability of this approach to use descriptive statistics and network analysis techniques together makes it frequently preferred in reviewing the literature (Aria & Cuccurullo, 2017).

Data Source and Search Strategy

The research data were obtained from the Web of Science (WoS) and Scopus databases. These databases are accepted as standard sources in bibliometric studies because of their interdisciplinary coverage and consistency in citation data (Mongeon & Paul-Hus, 2016). During the search process, the following search string, which brings together terms addressing the intersection of artificial intelligence and culture/art, was used. For the Scopus database: TITLE-ABS-KEY(("artificial intelligence" OR "generative artificial intelligence" OR "generative AI" OR ChatGPT OR "large language model*" OR "machine learning" OR "deep learning" OR "computer vision" OR "generative model*") AND (culture* OR cultural* OR "cultural heritage" OR "cultural production" OR "cultural practice*" OR "cultural institution*" OR museum* OR gallery OR exhibition*) AND ("fine art*" OR "visual art*" OR "digital art"

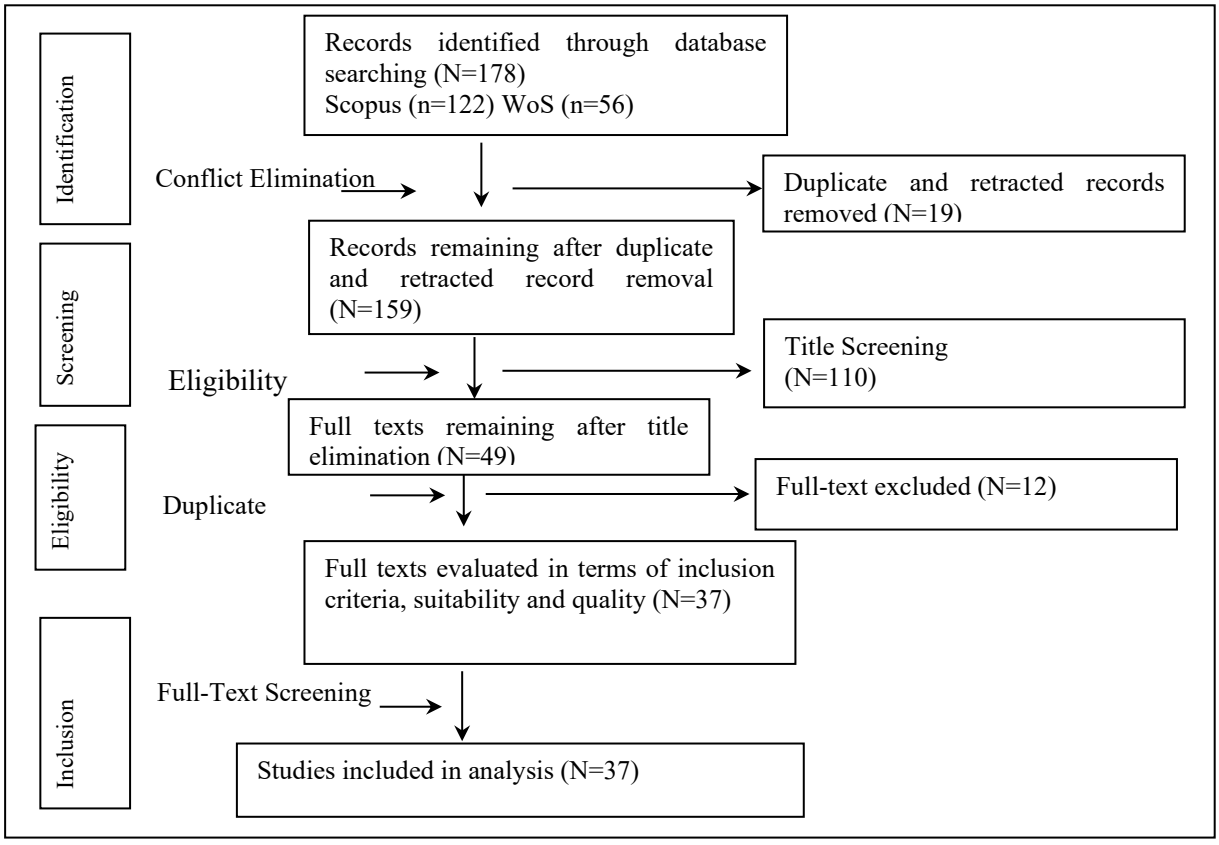
OR artwork* OR artist* OR painting OR sculpture OR illustration OR photography OR "media art" OR "creative practice*" OR "artistic practice*" OR "creative industr*" OR "visual culture" OR "art education"))

Based on the same conceptual framework, the following search string was also prepared for the Web of Science (WoS) database: TS=(("artificial intelligence" OR "generative artificial intelligence" OR "generative AI" OR ChatGPT OR "large language model*" OR "machine learning" OR "deep learning") AND (culture* OR cultural* OR "cultural heritage" OR "cultural production" OR "cultural practice*") AND ("fine art*" OR "visual art*" OR "digital art" OR artwork* OR artist* OR painting OR sculpture OR illustration OR photography OR "media art" OR "creative practice*" OR "artistic practice*")

Inclusion and Exclusion Criteria

Studies published in English and indexed in WoS and Scopus were included in the search. No restriction was imposed in terms of document type; therefore, publications in the form of articles, proceedings papers (conference papers), book chapters, and books were included together in the final dataset. Data collection was carried out as of June 10, 2026, and a total of 37 studies were reached as a result of the search. Both databases were searched on the same date (June 10, 2026); field selections were Title-Abstract-Keyword (Scopus) and Topic (Web of Science, TS=), covering title, abstract, and author/index keywords in both cases. The dataset includes publications covering the years 2020-2025 (please see figure 1).

Figure 1
PRISMA Flow Diagram



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The study selection process was conducted in four stages in accordance with the PRISMA flow diagram (Page et al., 2021). In the identification stage, a total of 178 records were retrieved from the Scopus (n=122) and WoS (n=56) databases; after 19 duplicate and retracted records were removed, 159 records were included in the screening stage. As a result of title screening, 110 records outside the scope were excluded, and the full texts of 49 studies were obtained. In the eligibility stage, 12 of the studies whose full texts were screened were excluded. Of the 12 full-text exclusions, 4 were due to a lack of empirical AI/ML application (purely conceptual/philosophical discussion), 4 because the AI/ML was applied outside an art or cultural-heritage context, and the remaining 4 were excluded for duplicate/overlapping datasets with already-included studies. The remaining 37 studies were evaluated in terms of inclusion criteria, eligibility, and quality, and all were included in the analysis (N=37).

Eligibility was further assessed using the following substantive criteria: (a) AI or machine-learning methods had to be applied either to artistic creation or to the analysis/curation of art or cultural heritage content; (b) fine arts, cultural heritage, or museum practice had to constitute the primary disciplinary framing, not an incidental application domain. Deduplication across Scopus and WoS exports was performed using DOI and title-author-year matching in EndNote following the deduplication procedure described by Bramer et al. (2016). Title/abstract and full-text screening were conducted independently by two reviewers, with disagreements resolved through discussion and, where necessary, consultation with a third reviewer.

Analysis Process and Tools

The keyword co-occurrence network was visualized using VOSviewer software (Van Eck & Waltman, 2010). In the keyword co-occurrence analysis, *keywords* were selected as the unit of analysis and *full counting* as the counting method. A minimum occurrence threshold of 5 was applied, and spelling/synonym variants were merged using a thesaurus file in VOSviewer prior to visualization The keyword frequency distribution and thematic classification of the topics addressed by the studies were created by the researcher based on content analysis of the titles, abstracts, and keywords of the 37 studies examined. Unlike title/abstract and full-text screening, which were conducted independently by two reviewers, thematic classification was conducted by a single researcher; this is acknowledged as a source of potential interpretive subjectivity (see Limitations). Descriptive bibliometric indicators were obtained separately from the Scopus and Web of Science Analyze Results interfaces and reconciled by retaining the higher citation count per record (Ciftci et al., 2016; Pranckutė, 2021). Citation counts for both databases were extracted on the same date as the search (June 10, 2026). Content analysis is a research technique based on the systematic coding of textual data and its classification under certain themes and categories, enabling the objective interpretation of latent and manifest content (Krippendorff, 2018).

Findings

Distribution of Publications by Year and Document Type

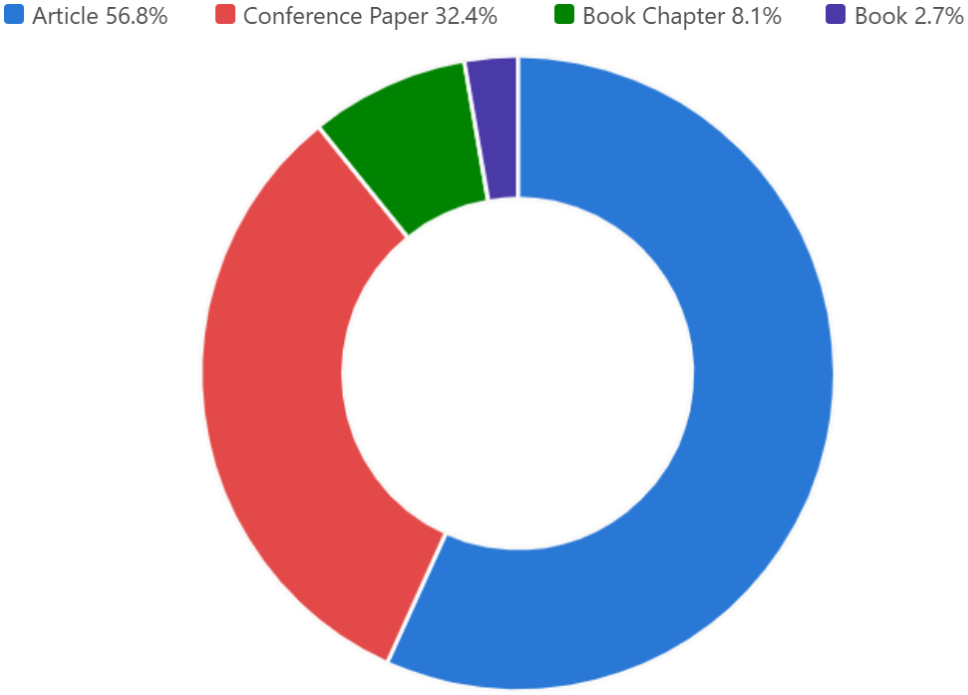
The distribution of the 37 examined studies by year is presented in Table 1. The findings show that the first publication in the field appeared in 2020, and that no publication was encountered in 2021. A steady increase in the number of publications is observed from 2022 onward, with a marked acceleration drawing attention in 2024 (*n*=10) and especially in 2025

(*n*=17). This trend indicates that AI-supported cultural art practices have become a rapidly growing focus of interest in the literature in the last two-three years.

Table 1
Number of Publications by Year

Year	N	%
2020	1	2.7
2021	0	0.0
2022	6	16.2
2023	3	8.1
2024	10	27.0
2025	17	45.9
Total	**37**	**100.0**

Figure 2
Distribution of Publications by Document Type



When the distribution of publications by document type is examined (*see Figure 2*), it is seen that the majority of publications are in article (56.8%) and proceedings paper (32.4%) formats, whereas publications in the form of book chapters (8.1%), and books (2.7%) remain limited.

Citation Analysis

The total number of citations of the 37 examined studies was calculated as 109. The study with the highest number of citations was the research by Xu et al. (2020), which examined users' responses to artworks generated by machine learning within a cross-cultural framework (35 citations). This study was followed by Silva and Oliveira (2024), which addressed the relationship between cultural heritage and photography through a systematic review (21

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citations), and Mikuni et al. (2024), which compared aesthetic judgments through machine learning among Japanese and German participants (12 citations) (Table 2).

Table 2
Most Cited Studies

Author(s), (Year), Context	Total citations	Average per year
*Xu et al. (2020) *h - Using machine learning to learn machines: A cross-cultural study of users' responses to machine-generated artworks	35	5.0
*Silva & Oliveira (2024) *h - Artificial intelligence at the interface between cultural heritage and photography: A systematic literature review	21	7.0
*Mikuni et al. (2024) *h - Cross-cultural comparison of beauty judgments in visual art using machine learning analysis of art attribute predictors among Japanese and German speakers	12	4.0
*Chirosca et al. (2025) *h - Machine learning models for artist classification of cultural heritage sketches	5	2.5
*Wang (2024) *h - Deep learning-based hand-drawn illustration in packaging design of cultural and creative products	5	1.7
*Yu (2022) *h - Deep learning-based artistic inheritance and cultural emotion color dissemination of Qin Opera	5	1.0
Hutson & Smit (2025) - Cinematic algorithms: The rise of generative ai in video art and visual culture	4	2.0
Liu & Kim (2025) - The analysis of body emotion recognition in new media art exhibition space-based artificial intelligence	4	2.0
Targa et al. (2025) - Automated edge detection for cultural heritage conservation: Comparative evaluation of classical and deep learning methods on artworks affected by natural disaster damage	3	1.5
Tilahun et al. (2023) - Culture reflecting artistic fashion design using deep learning and assisting custom algorithm	3	0.8
Aissi et al. (2025) - Computer vision and halftone visual culture: improving similarity search for historical photographs	2	1.0
Chen & Lin (2024) - Experimental research on optimizing intangible cultural heritage artistic creation process using artificial intelligence technology	2	0.7
Yi et al. (2022) - Predicting Museum visitors' artwork preference through deep learning	2	0.4
Ruan (2022) - The cultural value validity of digital media art based on deep learning network model	2	0.4

Table 2
Continued

Author(s), (Year), Context	Total citations	Average per year
Zhang et al. (2025) - CultiVerse: Towards cross-cultural understanding for paintings with large language model	1	0.5
Su & Sen (2024) - Research on the artistic design method of cultural and creative products based on artificial intelligence and interactive virtual simulation	1	0.3
Wang (2023) - Application of digital media art design in urban cultural and creative industries based on deep learning algorithms	1	0.2
Zhong et al. (2022) - Research on the identification of modern ceramic ornaments based on wireless network-guided artificial intelligence model and the communication strategy of Chinese ceramic culture and creative industry in southeast Asia	1	0.2
Total / Mean	**109**	**2.3**

Note. The table covers the 18 studies that received at least one citation among the 37 studies included in the review. The h-index value of 5 means that 5 studies in the cluster received at least 5 citations.

Figure 3
Distribution of Citation Counts by Year

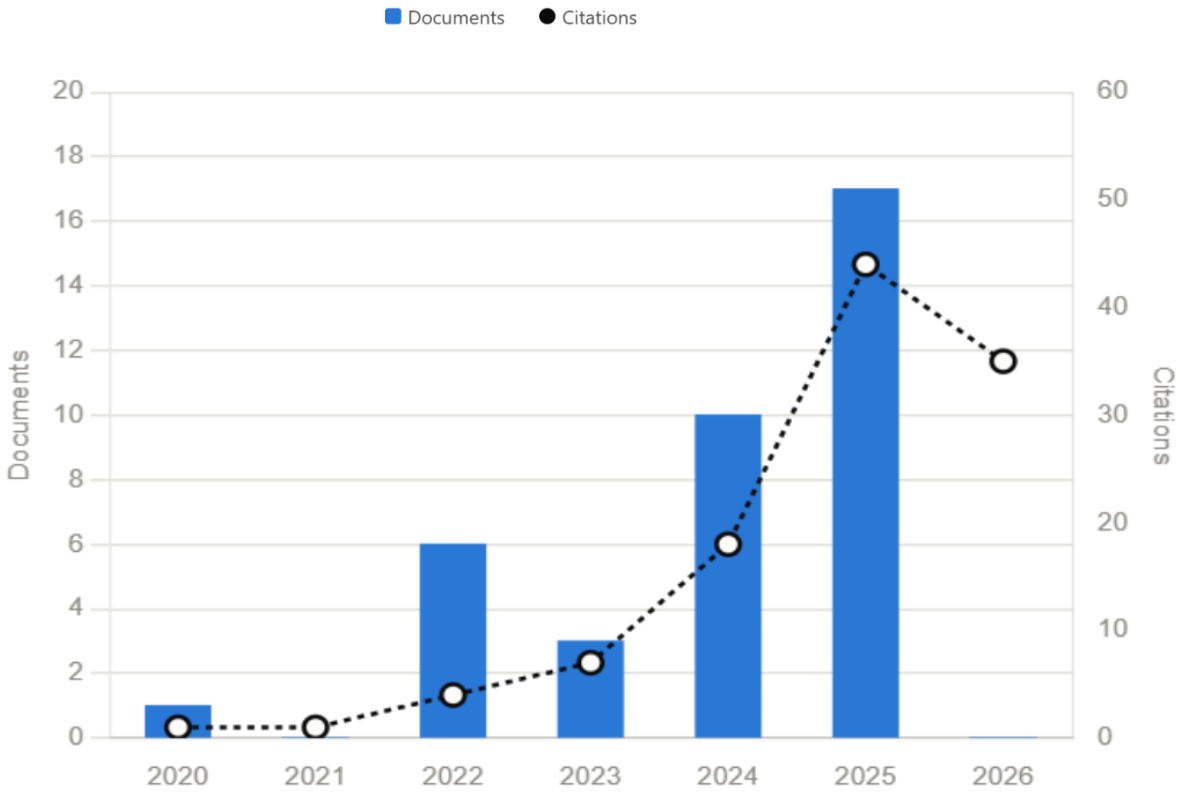

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Figure 3, in which publication and citation count by year are examined together, shows that the increase in publication production is also reflected in citation accumulation. The year 2025, when the number of publications was highest (n=17), was also the year in which the number of citations reached its peak; the decrease observed in both publication and citation counts in 2026 is due to the fact that the data belong to a year that has not yet been completed. It should be clarified that the dataset itself contains no publications dated 2026 all 37 included studies fall within 2020–2025 and the apparent 2026 values reflect citations received in 2026 by these 2020–2025 publications, not newly indexed records. According to the citation analysis, 18 of the 37 examined studies received at least one citation, the total number of citations was 109, and the h-index of this dataset was 5. This indicates the formation of a core publication group in which 5 studies received at least 5 citations (Table 2). The study with the highest number of citations is Xu et al. (2020), which examines users' responses to artworks generated through machine learning (35 citations, annual average 5.0); this is followed by Silva and Oliveira (2024), a systematic review addressing the relationship between cultural heritage and photography (21 citations), and Mikuni et al. (2024), which compares aesthetic judgments cross-culturally (12 citations). Considering annual average citation values, some studies published in 2024 and 2025 (e.g., Silva & Oliveira, 2024) reached high citation averages in a short time, which can be considered an indicator of current interest in studies on artificial intelligence, cultural heritage, and photography.

Institutional and Country-Based Distribution

When author affiliations are examined, it is seen that 65 different institutions are represented and that the institutional distribution extends across a very broad geography. The institutions contributing the most are Universidade Federal do Pará, Universidade de Aveiro, and Krirk University, each represented by two publications; all remaining institutions are limited to one publication each (Table 3). The institutional analysis is based on affiliation counts rather than document counts, using full counting (each affiliation on a publication counted once per institution, following Donthu et al., 2021).

Table 3
Institutions Represented by Publications

Institution	Country	n	%
Universidade Federal do Pará	Brazil	2	2.9
Universidade de Aveiro	Portugal	2	2.9
Krirk University	Thailand	2	2.9
Handan Polytechnic College	China	1	1.5
Shandong Vocational College of Science and Technology	China	1	1.5
Chongqing College of Architecture and Technology	China	1	1.5
State Council of Educational Research and Training (SCERT)	India	1	1.5
Jingdezhen Vocational University of Art	China	1	1.5
D. S. N. P. G. College	India	1	1.5
School of Handicraft Arts	India	1	1.5
Institute for Culture Management and Media	Poland	1	1.5
Jinan Preschool Education College	China	1	1.5
Granthaalayah Publications and Printers	India	1	1.5
Kangwon National University	South Korea	1	1.5
Northwest University	China	1	1.5

Table 3
Continued

Institution	Country	n	%
Changsha University of Science and Technology	China	1	1.5
Sorbonne Université	France	1	1.5
Universitatea din Bucureşti	Romania	1	1.5
Radboud University Medical Center	Netherlands	1	1.5
Universitat de València	Spain	1	1.5
Zhejiang University	China	1	1.5
Umm Al-Qura University	Saudi Arabia	1	1.5
CNRS (Centre National de la Recherche Scientifique)	France	1	1.5
Hong Kong University of Science and Technology	China (Hong Kong SAR)	1	1.5
Universität Zürich	Switzerland	1	1.5
Seoul National University	South Korea	1	1.5
University of Florida	USA	1	1.5
Chung-Ang University	South Korea	1	1.5
Shenyang Jianzhu University	China	1	1.5
Yonsei University	South Korea	1	1.5
Université Paris Nanterre	France	1	1.5
Harbin University of Commerce	China	1	1.5
Chhatrapati Shahu Ji Maharaj University	India	1	1.5
Waseda University	Japan	1	1.5
Hanyang University	South Korea	1	1.5
Shanghai Jiao Tong University	China	1	1.5
The University of Sydney	Australia	1	1.5
Universität Wien	Austria	1	1.5
Keio University	Japan	1	1.5
Korea Advanced Institute of Science and Technology (KAIST)	South Korea	1	1.5
Southwest Forestry University	China	1	1.5
Hebei Geo University	China	1	1.5
National Institute of Research and Development for Optoelectronics	Romania	1	1.5
Adama Science and Technology University	Ethiopia	1	1.5
Universiti Teknologi Malaysia Kuala Lumpur	Malaysia	1	1.5
Hangzhou City University	China	1	1.5
Birmingham City University	UK	1	1.5
Donders Institute for Brain, Cognition and Behaviour	Netherlands	1	1.5
Xi'an Polytechnic University	China	1	1.5
Tilak Maharashtra Vidyapeeth	India	1	1.5
Middle Technical University	Iraq	1	1.5
Hubei University of Technology	China	1	1.5
Laboratoire d'Informatique de Paris 6	France	1	1.5
Lindenwood University	USA	1	1.5
Graduate School of Convergence Science and Technology	South Korea	1	1.5
Suzhou University	China	1	1.5
Hunan International Economics University	China	1	1.5
Shandong University of Art and Design	China	1	1.5

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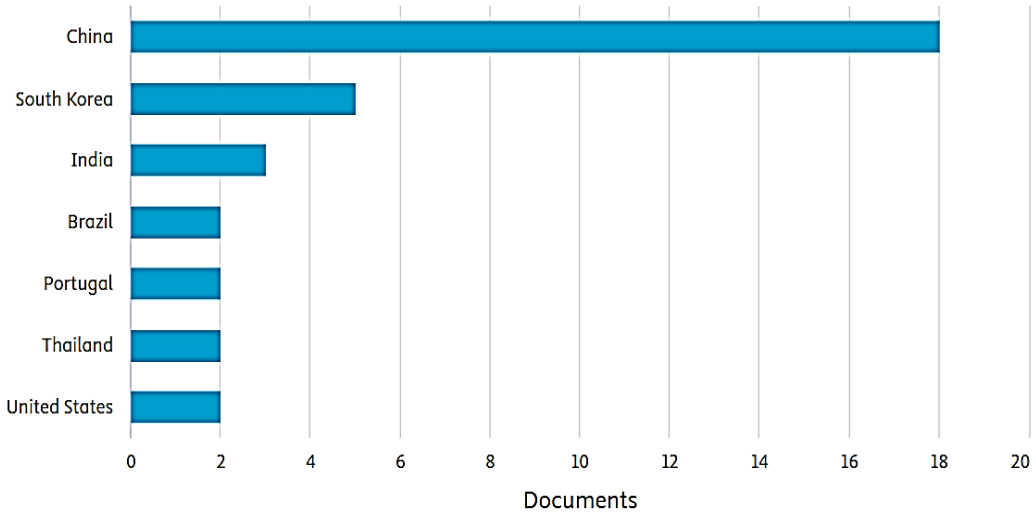
Table 3
Continued

Institution	Country	n	%
Université Paris Cité	France	1	1.5
Azman Hashim International Business School	Malaysia	1	1.5
Alliance University	India	1	1.5
GLS University	India	1	1.5
Europe États-Unis Empires-Post-Empires, Cultures, Histoire, Littératures, Longue Durée et Sciences Sociales	France	1	1.5
Total		**68**	**100.0**

Note. The percentages in Table 3 are based on institutional affiliations (n = 68) rather than on the number of unique institutions (n = 65), since three institutions contributed two publications each.

Country-level counts were calculated using full counting at the affiliation level: each country was counted once per document in which it appeared, regardless of the number of authors from that country (*See Figure 4*). Multinational affiliations (e.g., China (Hong Kong SAR)) were counted under the country designation used in the original publication record. The country-based distribution shows that production in the field is largely concentrated around China-based research groups, followed by South Korea, the United States of America, Thailand, Brazil, India, and Portugal, while the remaining countries are represented by a limited number of contributions (n=1-2).

Figure 4
Institutional (Affiliation) Distribution



Source (Journal/Event) Distribution

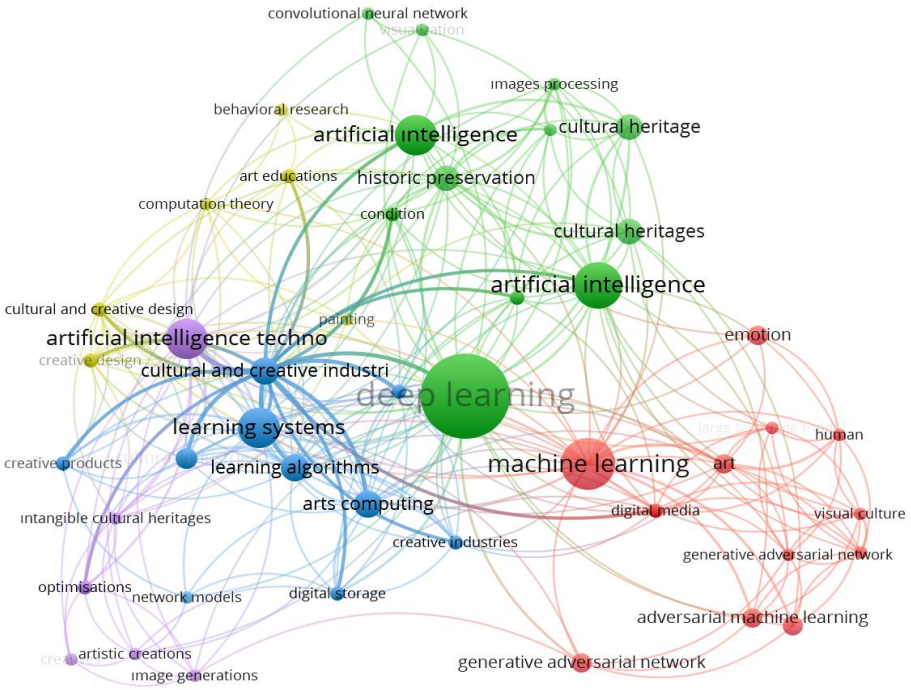
It was determined that the 37 studies were published in 35 different sources (journals, conference proceedings, book series), which shows that the literature has a rather scattered structure in terms of source diversity. While only Applied Sciences (Switzerland) and Springer Series in Design and Innovation stand out with two publications each, each of the remaining 33

sources hosted a single publication. In terms of document type distribution, the dataset consists of 21 articles, 12 proceedings papers, 3 book chapters, and 1 book; this indicates that the subject is discussed in parallel in both journal and conference settings.

Keyword and Abstract Analysis

When the frequency distribution of author keywords is examined, it is seen that "deep learning" (n=20), "artificial intelligence" (n=15) and "machine learning" (n=10) are the most frequently used concepts in the literature. This trio shows that the studies largely focus on specific AI sub-techniques. The frequent repetition of concepts such as "cultural heritage", "cultural and creative industries", "art" and "visual culture" indicates that the technical focus is intertwined with the cultural and artistic context (Figure 5).

Figure 5
Keyword Distribution and Density



According to Figure 6 when the distribution of keywords in abstracts over time is examined, it is seen that in publications from 2023, technical terms such as "exclusive license", "potential", "order" and "convolutional neural network" stood out; in 2024, conceptual integration themes such as "artificial intelligence", "framework", "innovation" and "integration" became central; and in the 2024.5-2025 period, interdisciplinary and visual-culture-focused terms such as "insight", "visual culture" and "intersection" became dominant. This evolution shows that the literature has developed from technical foundations toward conceptual integration, and from there toward interdisciplinary insights and visual culture.

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 105-132
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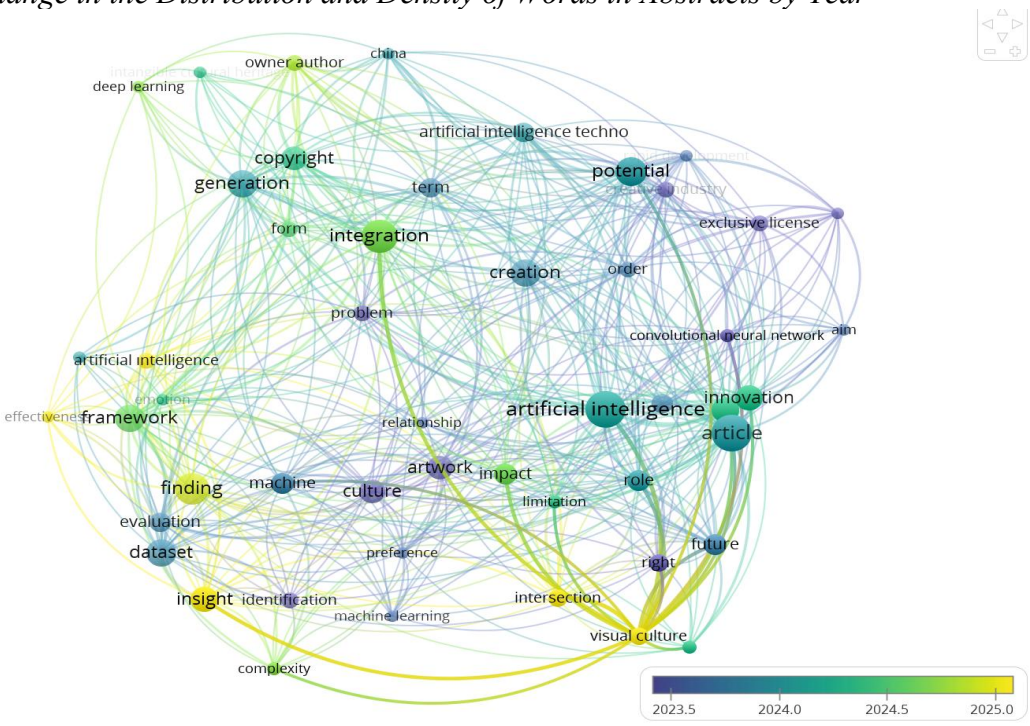
Figure 6
Change in the Distribution and Density of Words in Abstracts by Year



Thematic Classification of the Examined Studies

The titles, abstracts, and keywords of the 37 studies in the data file were subjected to content analysis and classified, in terms of the topics they addressed, under three main themes, seven subthemes linked to these themes, and categories linked to the subthemes. During the classification process, care was taken to include each study in at least one category; studies related to more than one category in terms of topic were shown in all relevant categories (Table 4).

Table 4
Classification of the Examined Studies by Theme, Subtheme, and Category

Theme		Subtheme	Category
Related Study/Studies	Preservation, Documentation, and Transmission of Cultural Heritage	Digital Documentation and Preservation of Tangible Cultural Heritage	Damage Detection and Condition Assessment
		3D Modeling and Image Fusion Digital Archiving and Similarity Search	3D Modeling and Image Fusion Digital Archiving and Similarity Search
	Transmission of Intangible Cultural Heritage through Artificial Intelligence	Transmission of Intangible Cultural Heritage through Artificial Intelligence	Reproduction of Traditional Art and Craft Forms
		Cultural Symbol and Pattern Recognition	Cultural Symbol and Pattern Recognition

Table 4
Continued

Theme		Subtheme	Category
AI-Supported Artistic Production, Design, and Creative Industries	AI-Supported Artistic Production, Design, and Creative Industries	Generative Artificial Intelligence and Style Transfer	Generative Models in Visual/Video Art
		Style Transfer and Digital Illustration	Style Transfer and Digital Illustration
	Artificial Intelligence Applications in Product and Spatial Design	Artificial Intelligence Applications in Product and Spatial Design	Artistic Product and Sculpture Design
		Packaging and Urban Design	Packaging and Urban Design
	Cultural-Creative Industry Management and Classification	Cultural-Creative Industry Management and Classification	Creative Industry Chain and Business Models
		Artist and Artwork Classification/Attribution	Artist and Artwork Classification/Attribution
Cultural Experience, Education, and Social Perception	Cultural Experience, Education, and Social Perception	Artificial Intelligence in Museum and Exhibition Experience	Visitor Preference and Emotion Analysis
		Integration with Cultural Tourism	Integration with Cultural Tourism
	Art Education and Public Visual Culture Perception	Art Education and Public Visual Culture Perception	Artificial Intelligence Integration in Art Education
		Social media and Public Perception	Social media and Public Perception

When the thematic classification of the 37 studies presented in Table 4 is examined, it is seen that the studies are grouped under three main themes, seven subthemes linked to these themes, and categories linked to the subthemes.

The first theme, Preservation, Documentation, and Transmission of Cultural Heritage, consists of two subthemes. The subtheme Digital Documentation and Preservation of Tangible Cultural Heritage include studies addressing damage detection and condition assessment (Targa et al., 2025), 3D modeling and image fusion (Quan, 2025), and digital archiving and similarity search (Aissi et al., 2025; Silva & Oliveira, 2024, 2025). The subtheme Transmission of Intangible Cultural Heritage through Artificial Intelligence includes five studies on the reproduction of traditional art and craft forms through artificial intelligence (Chen & Lin, 2024; Li et al., 2024; J. Wang, 2024; Yu, 2022; W. Zhang et al., 2025) and two studies focusing on cultural symbol and pattern recognition (Luo, 2024; Zhong et al., 2022).

The second and most comprehensive theme, AI-Supported Artistic Production, Design, and Creative Industries, was examined under three subthemes. The subtheme Generative Artificial Intelligence and Style Transfer include studies addressing generative models in visual/video art (Downey, 2025; Hutson & Smit, 2025; J. Zhang, 2024; W. Zhang et al., 2025) and studies on style transfer and digital illustration (Pandey et al., 2025; Tilahun et al., 2023; H. Zhang, 2025). The subtheme Artificial Intelligence Applications in Product and Spatial Design consists of the categories of artistic product and sculpture design (Madani, 2025; Su &

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Sen, 2024; F. Wang & Zheng, 2024) and packaging and urban design (J. Wang, 2024; X. Wang, 2023). The subtheme Cultural-Creative Industry Management and Classification include six studies addressing the creative industry chain and business models (Dzhimova, 2023; Han & Zhou, 2024; Lv et al., 2022; Wang, 2023; Zhong et al., 2022;) and four studies on artist and artwork classification/attribution (Chirosca et al., 2025; Mikuni et al., 2024; Ruan, 2022; Xu et al., 2020).

The third theme, Cultural Experience, Education, and Social Perception, consists of two subthemes. The subtheme Artificial Intelligence in Museum and Exhibition Experience includes four studies on visitor preference and emotion analysis (Chung, 2022; Lee et al., 2025; Liu & Kim, 2025; Yi et al., 2022) and one study addressing integration with cultural tourism (Tang et al., 2025). The subtheme Art Education and Public Visual Culture Perception include studies on artificial intelligence integration in art education (Lv et al., 2022; Salama, 2025; Tang et al., 2025) and studies focusing on social media and public perception (Fan et al., 2025; Yang, 2025).

In terms of category-level frequencies (studies could be assigned to more than one category), Theme 1 (Preservation, Documentation, and Transmission of Cultural Heritage) accounted for approximately 12 category assignments, Theme 2 (AI-Supported Artistic Production, Design, and Creative Industries) accounted for approximately 21 category assignments, and Theme 3 (Cultural Experience, Education, and Social Perception) accounted for approximately 10 category assignments. These frequencies substantiate the observation that production-oriented research predominates over reception-oriented research

In general, it is seen that most studies are concentrated around the second theme, artistic production, design, and creative industries, while the themes of cultural heritage preservation and cultural experience, education, and social perception are represented by relatively fewer studies. The fact that some studies (e.g., Lv et al., 2022; J. Wang, 2024; X. Wang, 2023; W Zhang et al., 2025; Zhong et al., 2022) are associated with more than one category shows that the studies in the literature mostly have an interdisciplinary and multidimensional character.

Discussion and Conclusion

This study examined the international literature on AI-supported cultural art practices within the framework of bibliometric analysis. During the research process, the productivity trend of the field by years, source and document type distribution, institutional and country-based forms of representation, citation performance, and conceptual/thematic structure were systematically addressed.

The findings related to the first research question, which concerns the distribution of the examined publications by year and how the trend of scientific productivity in the field is shaped, show that publications on AI-supported cultural art practices began to emerge in the recent past together with the development of artificial intelligence and that the field still constitutes a very young research ground. While publication production followed a stagnant course in the initial years, a marked acceleration has occurred in the last 2 years. This trend can be directly associated with the increasing social and academic visibility of generative artificial intelligence technologies. This acceleration indicates not only technical interest but also the expansion of academic curiosity toward cultural art practices. This finding is consistent with the literature on generative AI systems transforming artistic production processes and confirms that this transformation has rapidly increased academic interest (Cetinic & She, 2022; Epstein et al., 2023). The fact that generative AI technologies have spread to a wide area of use in a short time is also evaluated as a development supporting this acceleration (Zhou & Lee, 2024). The fact

that the field is a young research ground indicates that conceptual frameworks and methodological approaches are still at a maturing stage; this also suggests that the accumulation of knowledge in the field may expand rapidly in the coming years.

The findings regarding the identification of the most productive journals, conferences and publication types in the field show that the great majority of publications are in article and proceeding format, while book chapter and book type publications remain limited so far. Looking at the source distribution, it is seen that the studies are spread across a large number of different journals and conference proceedings, and that no particular publication outlet has attained a dominant position in the field.This structure reveals that the field has not yet become institutionalized around a specific publication ecosystem. This suggests that the subject is discussed in parallel in both journal and conference settings and is the object of interdisciplinary interest. This finding appears consistent with the literature indicating that the technical, cultural, and institutional dimensions of AI-supported art are addressed simultaneously by different academic communities (Chatterjee, 2022; Epstein et al., 2023). The fact that debates on whether computers can produce art are maintained separately in both philosophy of art and computer science circles can also be seen as a factor explaining this scattered publication structure (Hertzmann, 2018). The dispersion of publication sources can be interpreted as a reflection of the interdisciplinary nature of the field; however, it also indicates that a field-specific scientific identity has not yet fully formed.

The second research question focuses on the citation performance of the examined studies and the studies that have generated the greatest impact in this dataset. The findings show that most studies in this dataset have received a limited number of citations, whereas a small number of studies stand out markedly and form a core impact group. The fact that the study examining user responses within a cross-cultural framework reached the highest impact indicates that the themes of audience perception and cross-cultural comparison have particular importance in the field (Xu et al., 2020). The high citation level reached by the review study that systematically addressed the relationship between cultural heritage and photography shows that interdisciplinary review studies have a reference value in the literature (Silva & Oliveira, 2024). It should be noted that both the high citation counts of the cross-cultural perception study and of the systematic review may partly reflect their earlier publication date and, in the latter case, its review-article format. Both known to inflate citation counts independently of topical centrality (Aksnes et al., 2019). As the dataset comprises 37 recent and heterogeneous documents (in type and age), citation-based indicators such as the h-index and the identification of a core group should be interpreted as descriptive characteristics of this specific dataset rather than as evidence of established impact or thematic centrality within the broader field. These findings are therefore interpreted as indicative rather than as direct evidence of the field's thematic priorities. The prominence of the study comparing aesthetic judgments cross-culturally reveals that audience-based evaluation studies are receiving increasing attention in the field (Mikuni et al., 2024). These findings are consistent with the literature indicating that the reception dimension of AI-supported art is the subject of academic interest as strong as the production dimension (Chamberlain et al., 2018; Ragot et al., 2020). Findings showing that information about AI authorship can negatively affect aesthetic evaluation also explain why these highly cited studies emerge especially from research on audience perception (Chiarella et al., 2022). The concentration of citation density around a limited number of studies suggests that the field is still in the process of maturation and that a broader impact network may emerge in the future.

The third research question addresses how the institutional and country-based distribution of publications takes place. The findings show that the institutions contributing to the field are spread across a very broad geography, but very few institutions are represented by

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more than one publication. When the country-based distribution is examined, it is seen that production stands out in certain geographies, especially China, where particular research groups are concentrated, while many other countries are included in the field with limited contributions. This indicates that AI-supported cultural art research displays a scattered and fragmented structure on a global scale. Such broad and low-density institutional representation suggests that the field has not yet clustered around specific research centers and has interdisciplinary interest. This finding overlaps with the literature indicating that the digital transformation of cultural heritage and AI-supported artistic production are addressed simultaneously in different geographical and institutional contexts (Huang et al., 2024; Kim et al., 2019; J. Li et al., 2024). Findings that the digital transformation of cultural heritage progresses at different speeds in terms of regional differences and institutional capacity also support this fragmented institutional appearance (Sandriester et al., 2025). The broad but low-density nature of the institutional distribution shows that the field is in a developmental stage that is open to international collaboration but has not yet acquired a systematic network structure.

In the context of another research question, how the conceptual and thematic structure of the field is shaped according to keyword frequency and co-occurrence patterns has been addressed. The findings show that technically focused concepts are used intensively in the literature, while culturally and visual-culture-based concepts are also strongly represented. This indicates that AI-supported art research, while proceeding from a technical ground, has developed a conceptual structure intertwined with the cultural context. Examining the change over time, it is seen that the literature initially took shape around technical and legal-based concepts, that conceptual integration themes came to the fore in the subsequent period, and that interdisciplinary and visual-culture-focused concepts became dominant in the most recent period. This evolution reveals that the field has transformed from a discourse of technical innovation into a cultural and interdisciplinary ground of discussion. This finding is consistent with the literature regarding the fact that AI art needs to be addressed not merely as a matter of technical capacity but together with its aesthetic and cultural consequences (Chatterjee, 2022; Chiodo, 2024). The fact that discussions on the need to redefine creativity in the age of artificial intelligence also intensified in this period shows that the conceptual evolution has gained not only a technical but also a philosophical dimension (Wingström et al., 2024). This evolution of the conceptual structure shows that the literature has matured over time toward a more holistic and interdisciplinary framework.

The final research question focuses on under which themes, sub-themes and categories the examined studies can be classified in terms of the topics they address. The findings show that the literature is structured around three main themes: the preservation and transmission of cultural heritage, AI-supported artistic production and creative industries, and cultural experience, education and social perception. It is seen that the great majority of the studies are concentrated in the theme of artistic production, design and creative industries, while the themes of cultural heritage preservation and cultural experience and social perception are represented by relatively fewer studies. This distribution reveals that the literature is predominantly focused on production processes, while the dimensions of reception and social impact have not yet been sufficiently deepened. The association of some studies with more than one category shows that AI-supported cultural art research has a multidimensional and interdisciplinary character. This finding is consistent with observations that studies focused on production processes and studies focused on audience perception and evaluation processes largely proceed independently of one another in the literature (Cetinic & She, 2022; Chamberlain et al., 2018). The fact that discussions on how agency is shared in human-AI co-production processes largely remain

within production-focused themes also supports this imbalance (Karimi et al., 2020). This nature of the thematic distribution indicates that the dimensions of cultural heritage preservation and social perception may become subject to more research in the future. Synthesizing across the three themes, the imbalance between production-focused and reception-focused research constitutes the field's most salient gap: of the 37 studies, the majority address generative or classification tasks, while audience-perception and social-impact studies remain a minority. This asymmetry suggests that future bibliometric growth is likely to be concentrated in production-oriented subfields unless reception-focused research is deliberately incentivized.

The findings of this study contribute to the literature on AI-supported cultural art practices from various perspectives. Presenting a holistic bibliometric framework that addresses the production and reception dimensions of the field together makes it possible to evaluate together two research lines that have proceeded in a scattered manner together. From a theoretical perspective, this study supports the need to conceptualize AI-supported art not only as a technical innovation but also together with cultural representation, perception of originality, and processes of institutional legitimacy. From an applied perspective, the findings indicate that museums and cultural heritage institutions should consider cultural sensitivities and local context when integrating AI-supported technologies. The evolution of the conceptual structure from technical foundations toward a cultural and interdisciplinary framework encourages researchers to design future studies through interdisciplinary collaborations. The broad but low-density nature of the institutional and country-based distribution provides an applied implication that international collaboration networks should be strengthened. Taken as a whole, these findings reveal that the field needs more systematic development at both theoretical and applied levels.

This study has some limitations. The analysis was limited to studies indexed in the Web of Science and Scopus databases, which may have caused certain publication sources to remain outside the analysis. Restricting the search to studies published only in English caused contributions produced in other languages to be excluded from the evaluation. In addition, the Scopus and Web of Science search strings, while conceptually aligned, were not fully harmonized at the level of individual terms; the Scopus string included several supplementary terms (e.g., “computer vision,” “generative model*,” “cultural institution*,” “creative industr*,” “visual culture,” “art education”) that were not replicated in the Web of Science string. This asymmetry may have introduced database-specific coverage differences that were not systematically assessed, and future replications should employ fully harmonized search strings across databases. The fact that data collection was carried out on a specific date means that publication and citation data, especially from the recent period, may not yet have fully accumulated. The thematic classification process being carried out by the researcher through content analysis may have introduced a certain level of interpretive subjectivity into the classification process. No formal codebook, second coder, or inter-coder reliability statistic was used in this classification; the reported themes, subthemes, and categories should therefore be read as researcher's systematic interpretation of the dataset. These limitations require the findings to be evaluated as reflecting trends within a particular time period and database scope rather than the entire field. Given that the dataset is concentrated mainly in 2024-2025, claims regarding the conceptual maturation of the field should be read as preliminary. The dataset size ($N = 37$) is modest relative to bibliometric reviews in more established fields; this reflects the genuine early-stage size of the AI-supported fine-arts literature as delimited by our eligibility criteria, and findings on network structure and thematic evolution should accordingly be read as indicative rather than definitive.

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Conclusion and Recommendations

This study makes an important contribution to the literature by systematically evaluating the international literature on AI-supported cultural art practices within the framework of bibliometric analysis. The study fills a gap that has not previously been sufficiently integrated in the literature by presenting a holistic perspective that addresses production and reception dimensions together. Making visible the relationship between the digital transformation of cultural heritage and AI-supported artistic production reveals the multidimensional structure of the field intertwined with cultural context. The bibliometric findings show that, although the field has a short history, it constitutes a rapidly growing research ground that has acquired an interdisciplinary character. This indicates that AI-supported cultural art practices will continue to remain at the center of academic interest in the future. In this direction, the study reveals the necessity of conducting more systematic and holistic research at both theoretical and applied levels.

It is recommended that future studies evaluate the literature from a broader perspective by bringing together different databases and language scopes. Increasing research focusing on reception and social perception may contribute to eliminating the current imbalance in which production-oriented studies are concentrated. It is important to deepen studies on the preservation and transmission of cultural heritage around local aesthetic codes and issues of cultural authenticity. Supporting initiatives to strengthen international collaboration networks may help overcome the fragmented institutional structure of the field. Increasing collaboration between museums and cultural heritage institutions and academic researchers would be beneficial in terms of transferring theoretical findings into practice. It is recommended that future research develop multidimensional frameworks that also include the ethical, legal, and pedagogical dimensions of AI-supported art. This pedagogical dimension resonates with broader developments in AI-supported teaching practice outside the fine-arts domain (Katsampoxaki-Hodgetts et al., 2025; Lampropoulos & Papadakis, 2025).

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Ethics statement

This study is a bibliometric analysis based on publicly available published data and does not involve human participants, animal subjects, or any experimental interventions. Therefore, ethical approval and informed consent were not required.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The author declares no conflict of interest.

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