



Sustainable Pathways for Cultural and Creative Industries: A Comprehensive Literature Review

Ana-Maria OSADCI-BACIU¹, Alexandra ZBUCHEA²

National University of Political Studies and Public Administration, 30A Expozitiei Blvd., Sector 1, 012104 Bucharest, Romania

¹  ana-maria.osadici.22@drd.snsa.ro

²  alexandra.zbucnea@facultateademangement.ro

Abstract: Cultural and creative industries (CCIs) have always been integral to sustainable development, be it local, regional, or global, and now their contribution is recognized as such, as sustainability has begun to receive steady attention and become part of long-term strategies for companies, countries, and institutions. CCIs' relationship to sustainability, however, is intricate and multifaceted. Their oeuvre (the cultural product) contributes to sustainable societies in its own right and, at the same time, through the respective companies' sustainable practices and their contribution to economic output and growth. This makes research at the intersection of these areas particularly complex and fragmented, difficult to comprehensively explore, in part due to the specificities of each CCI and their knottiness as a whole. This study aims to chart the research at the intersection of sustainability and CCIs and to determine whether cultural sustainability emerges as a separate fourth pillar within the sustainability pillars framework. To achieve this, a set of bibliometric analyses has been done using Bibliometrix, including keyword co-occurrence network analysis, thematic mapping, and thematic evolution. The findings reveal the presence of the core sustainability pillars (environmental, social, and economic) and, indeed, the emergence of a fourth pillar in the form of cultural sustainability, which, however, seems to be in an infant phase, starting to develop and not very strongly delimited from the social sustainability pillar yet. Cultural heritage also emerges as a central conceptual axis between sustainability and CCIs, comprising the most intense and mature level of research. Temporal and more detailed thematic patterns are also assessed. Overall, the conceptual landscape reveals somewhat scattered research patterns, calling for more integrated and up-to-date theoretical frameworks, as well as empirical research on CCIs' position within sustainable development structures. Insights from this study could serve as a comprehensive theoretical basis for such empirical investigations. By drawing a panoptic picture of the development of this topic over time, it also offers solid support for the analysis and rethinking of frameworks for researchers, practitioners, and policymakers.

Keywords: cultural and creative industries; CCI; sustainability; sustainable development; sustainability pillars; cultural sustainability; cultural heritage; bibliometric analysis; thematic evolution; SDGs.

Introduction

Over the past several decades, especially after the adoption of the Sustainable Development Goals in 2015, sustainability has been a focal point for both academic research and practice. Both the SDGs and sustainable development serve as points of reference for governments and organizations around the globe, especially in the developed world. For instance, academic research on the SDGs reveals increased interest in the EU, the UK, the US, and Australia (Kumar et al., 2024; Mishra et al., 2024). This polarized interest is, no doubt, related not only to the more consistent research infrastructure in these areas, but it also reflects a more consistent focus on sustainability in these countries – a more practical interest in this field.

Another shift we observe is the recognition that Cultural and Creative Industries (CCIs) can ensure sustainable development. These industries are not only about culture; they

How to cite

Osadci-Baciu, A.M., & Zbucnea, A. (2025). Sustainable Pathways for Cultural and Creative Industries: A Comprehensive Literature Review. *Culture. Society. Economy. Politics*, 5(2), 77-95.
<https://doi.org/10.2478/csep-2025-0016>
ISSN (online) 2810-2010
<https://website.sciendo.com/publication/culture-society-economy-politics/>
<http://www.facultateademangement.ro/culture-sep/>

can also support economic growth, sometimes with significant contributions to GDP or local well-being. Studies show that CCI is a dynamic and highly productive sector, with strong potential for job creation and consistent added value (Florea et al., 2022; Zaman & Vasile, 2010). Additionally, research suggests a positive link between CCIs and urban regeneration and development (Liu & Chiu, 2017; Romanelli & Zbucnea, 2020). Also, the general public tends to recognize the contribution of CCIs and heritage to local sustainable development (Anghel, Bira, & Zbucnea, 2022; Idilfitri et al., 2015). Therefore, cultural and creative industries are increasingly more relevant for today's economy and society. They have not only cultural relevance but also contribute to social and regional development through innovation and resilience, as well as spillovers to other sectors. An extensive literature review shows that CCIs contribute to GDP growth, social cohesion, and urban development (Kalfas et al., 2024). CCIs are also linked to social innovation (Sica et al., 2025). An extended study on almost 80 developed and developing countries on all continents shows the contribution of CCIs to wealth and well-being (Domenech et al., 2023).

CCIs encompass a wide range of elements. Under the influence of technology, the CCI sector evolved significantly (Ortiz-Ospino et al., 2025). For instance, technology has become symbiotic with creativity; new economic models, especially related to intellectual property, have emerged; markets and consumption are increasingly digital, etc. Therefore, technology has become a structural factor for CCIs, not merely a tool.

Considering the previous dynamics, CCIs have a strong connection to sustainability. CCIs are not only about culture. They have a significant impact on the general economic development and social network. A systematic literature review might highlight and organize various dimensions that seem to be discussed in a fragmented manner in academic research. This study may signal gaps in the pillars of sustainability (economic, social, cultural, and environmental) that need further investigation.

Understanding Cultural and Creative Industries

Cultural and creative industries (CCIs) is a concept that everybody relates to, but hard to define at the same time. It refers to a wide range of sectors/industries that use creativity and culture as primary raw materials. Hesmondhalgh (2008) shows that interest in cultural economy began in the 1960s, with the concept of the political economy of culture. This concept shifted towards cultural industries. The outputs of cultural industries were identified as public symbolic goods with social meaning. Further, the preference for creative industries has diluted the specificity of culture. It has been linked to a perspective on culture as an economic resource, valuable, for instance, for urban regeneration, as well as for economic well-being in general, and as a key factor in the transformation of the economy and society. O'Connor (2009) suggests that the inclusion of the arts into the creative industries marked a shift from cultural policy to an innovation systems approach. He stresses that creative activities imply dynamic social networks and markets that generate both cultural and economic value. At the beginning of the 20th century, creativity started to be considered a focal point generating competitiveness (Hesmondhalgh, 2008, p. 563). Still, looking more closely at various subfields of the cultural and creative industries, as well as at specific cultural "workers", we see a very complex landscape, with artists barely surviving alongside prosperous IT holdings.

Today, the creative economy is seen as a dynamic system rather than a fixed set of sectors. Keywords for this economy are intellectual rights, knowledge, technology, and, more recently, digital platforms. Innovation is also a critical aspect in this domain (Moore, 2014). UNCTAD (2024) defines the creative industries as knowledge-based economic activities encompassing the cycles of creation, production, and distribution of tangible goods and intangible services that draw primarily on creativity and intellectual capital, generate economic and symbolic value, are protected through intellectual property rights, and operate at the intersection of artisan, service, and industrial sectors.

The creative industry group is composed of 10 specific sectors, according to UNCTAD classification: advertising and marketing; architecture, audiovisual, multimedia and photography; books and publishing; cultural and natural heritage; design; manufacturing of crafts and design goods; music, performing and visual arts; software, video games, computer and web services; research and development.

UNESCO Institute of Statistics (2025) has another approach, using the concept of cultural and creative ecosystem. It is defined as a "complex environment wherein artists, creative producers, social groups, communities, audiences and a broad spectrum of public and private intermediaries engage to generate diverse forms of cultural and economic value," composed of central, intermediaries', and support agents that might be either persons or organizations. Additionally, UNESCO defines domains rather than industries, including not only cultural activities, but also informal and social activities. This complex ecosystem includes seven main cultural domains (cultural and natural heritage; performing arts; visual arts and crafts; books and press; audiovisual; design and creative services; music) and seven transversal domains (cultural knowledge; festivals; interactive media; cultural governance and management; cultural education; cultural tourism; multipurpose devices and equipment).

The sheer complexity of these industries and their dynamics is therefore challenging to encompass, let alone map. Previous attempts of academic literature reviews have covered various aspects. A first set of studies investigated the concept of CCIs, creative economy, and creative sectors, as well as their characteristics (Borre et al., 2023; Kloosterman et al., 2019; O'Connor, 2010; Peris-Ortiz et al., 2019). Since increasingly more CCIs are credited with economic growth, an important part of the literature reviews concentrates on economic and labor aspects (Berg & Hassink, 2014; Borre et al., 2023; Cho et al., 2018; Dharmani et al., 2021; Gohoungodji & Amara, 2023; Kloosterman et al., 2019). Connected with this line is also the clustering of industries and the distribution of creative activities, investigated in some literature reviews (Berg & Hassink, 2014; Chapain & Sagot-Duvaouroux, 2020; Pratt, 2008; Silva et al., 2024). A last group of literature reviews we mentioned concentrated on policies and governance (Dijkhuizen et al., 2024; da Silva et al., 2024; Foord, 2009).

A group of systematic literature reviews considers general bibliometric analysis, mapping research trends, and identifying thematic patterns and gaps. Flew and Cunningham (2013) argue that, after a decade of debate, the creative industries concept was recognized mainly for its economic relevance. They also advocate extending the research framework to integrate the technological dimension. Berg and Hassink (2014) and Cho et al. (2018) identified that the three main thematic interests in this field have been business, economics, and geography. The first studies aimed to map the industry, while more recent studies focus on economics, policies, and cultural value creation. Dharmani et al. (2021) present a fragmented profile of the research in this field. Several lines of investigation are identified: economic aspects; innovation in the field (including technological facets); creative clusters and cooperation in creative cities; cultural value and cultural policy. Bui Hoai et al. (2021) identified a growing academic interest in this field, with cultural policy and economic aspects among the most discussed topics. Also, they identified an increasing interest in the digital dimension of the creative industries. Casadei et al. (2023) also highlighted the increased interest in this domain, especially the economic dimension, with a lack of a unified conceptual framework. They identify a larger predominance of European research, including mostly qualitative approaches.

A few literature reviews in the field focus on sustainability-related aspects. Kovaitė et al. (2022) show a growing interest in this sub-field of research on CCIs, especially in developed countries. They show an uneven approach of concepts. Also, they identify a certain lack of interdisciplinary approaches. Borre et al. (2023) discuss how CCIs contribute to sustainable development through several mechanisms, such as innovation, social cohesion, and urban regeneration. Studies show that technological innovation is an important driver in this domain. There is a geographic imbalance of the research, with

Europe and Asia leading it. Borin et al. (2025) highlight the importance of stakeholder relationships and governance for sustainable development. Also, a more holistic investigation of this topic is needed for a more balanced understanding of the phenomenon.

Cultural and Creative Industries on the sustainability path

Cultural heritage plays a vital role in cultural sustainability, as it comprises elements from multiple cultural and creative industries and, from a certain perspective, serves as an authenticity curator. Moreover, heritage institutions such as museums and heritage sites are early and enthusiastic adopters of sustainability practices within the cultural sector (Loach et al., 2017). Just as mentioned about culture itself, cultural heritage "extends beyond the cultural sphere and process, as it is an economic asset and social commodity," as stated by Min (2025). Besides preserving cultural artifacts, heritage contributes to economic growth through job opportunities, cultural events that foster social cohesion and community building, and acting as a catalyst to cultural tourism (Jelinčić, 2021) - things that create virtuous circles from an economic perspective. However, this also creates tension between preservation and access, with risks such as over-commercialization, loss of authenticity and identity markers, and even physical damage or theft of certain items. The main challenge is to ensure economic viability while safeguarding both the tangible and intangible heritage (Shakya & Vagnarelli, 2024). This is especially the case when it comes to the primary economic driver of CCI - cultural tourism. Its effects on the local communities are quite complex. On the one hand, cultural tourism acts as an economic growth factor for both the cultural products or events that generate it, has synergistic effects on other CCIs, and can act as a powerhouse for entire regions. On the other hand, as noted by Matteucci et al. (2022), there might be adverse effects such as "cultural commodification and homogenisation" and "cultural identity alienation," calling for acknowledging the tension between economy-oriented approaches maximizing industry benefit and a community-oriented approach that has as its main goals "revitalising local cultures" and "maximising community well-being." From a sustainability perspective, a careful harmonization between the two positions would be required to benefit communities and ecosystems through all three sustainability pillars - environmental, social, and economic (Liu & Kou, 2024).

Digitalization and technological advancements within the CCIs landscape also have intricate impacts on sustainability. The existence of digital platforms and other vehicles of digital distribution helps expand the reach of certain voices that might otherwise remain unheard, such as very niche artists or cultural products from less developed countries (Anderson et al., 2020; Bello & Garcia, 2021). At the same time, a paradoxical effect occurs, with platform algorithms often favoring those who already have higher engagement, sending smaller accounts to the margins, which tends to increase cultural homogenization rather than promoting diversity (Anderson et al., 2020; Werner, 2020). Likewise, while digitization of intangible cultural heritage can help safeguard and promote it, it must be done with extra caution to avoid the decontextualization of the respective cultural practices (Manžuch, 2017; Spano & Zhang, 2025). When it comes to environmental sustainability, things are again complicated. Digitalization often reduces the impact of physical production and distribution but creates new types of environmental damage, such as increased energy use in electronic production and maintenance, data centers, and electronic waste (Brennan & Devine, 2020; Istrate et al., 2024).

The newest technological disruptor, artificial intelligence, is also controversial from an environmental way of thinking, due to its high consumption demands, especially of water and rare elements (Li et al., 2024; Luccioni et al., 2023). To boot, the rapid shifts in production, consumption, and business models have the potential to create, at least for the transitory period, a no man's land from a business, legal, and ethical viewpoint, changing market dynamics which, as usually happens in such cases, can be split even more between winners and losers, raising frictions related to authorship, authenticity,

adaptability, and the future of creative industries in general (Tyagi, 2024; Lee, 2022). Nevertheless, if approached correctly, it may become a stellar opportunity to boost creative output and even to address serious sustainability issues for which no viable solutions have been found so far (Goel et al., 2024).

When it comes to research gaps in sustainability in cultural and creative industries, the keyword seems to be fragmentation, which is mentioned in multiple studies across various scopes within the same domain (Dharmani et al., 2021; Casadei et al., 2023; UNESCO, 2021a). This fragmentation seems to occur at multiple levels, from creative industries being researched separately rather than as a holistic environment to geographical fractures (Borre et al., 2023; Kovaitė et al., 2022). This exacerbates the already difficult-to-define nature of CCIs, which further results in issues related to potential frameworks and classifications that would work across wider regions or even globally (Salvador & Comunian, 2024; UNESCO, 2021a).

Another important question raised by the literature concerns the place of cultural sustainability within the broader sustainable development framework. The question of whether it could emerge as a 4th pillar within the sustainability framework has been raised, but the results are not yet conclusive, calling for further research on this aspect (Pop et al., 2019; Järvelä, 2023). It seems that currently, although there are discussions in this direction, and culture is clearly an important driver towards more sustainable societies, it is looked at more through a social sustainability lens rather than standalone, which raises the question of whether this 4th pillar, if emergent, could reach an equal level to the other three (Järvelä, 2023). The relationship between cultural sustainability and other elements mentioned in the literature, such as cultural heritage, cultural tourism, economic development, technology, and environmental impact, is significant for building bridges towards a more integrated research framework (Borin et al., 2025).

Methodology

The purpose of this study is to understand the link between sustainability and CCIs (cultural and creative industries), and to assess to what extent research emphasizes the cultural dimension of sustainability and in which areas. We also aim to understand better whether culture emerges as a distinct pillar within the sustainability pillar model or is integrated into the social sustainability pillar. To gain a comprehensive view, the first step was to download multiple datasets from Scopus using "sustainability" as a common search term combined with a set of CCI-related generic terms and each of the UNESCO domains (core cultural and transversal) (UNESCO Institute for Statistics, 2025), excluding the devices and equipment category, as it deviates too much from the cultural dimension. In total, there were 66 searches, yielding an initial total of 10,068 papers.

A filter on subject area was applied to restrict the search to Social Sciences, Arts & Humanities, Business, Management & Accounting, Economics, and Econometrics & Finance to find the papers most relevant to this research topic. The final search was completed on November 12, 2025.

Scopus was chosen as it has the widest coverage of humanities subjects (Pranckutė, 2021). To uncover as much as possible from the research, given the diversity of the investigated sector, a wide range of keywords was used. Each search had the following structure: "CCI-related keyword" AND "sustainability". For the CCI-related keywords, a three-tiered approach has been employed:

- 1) General, "umbrella" CCI terms, such as "Cultural and creative industr*", "CCIs", "Creative industr*", "Cultural industr*", "Cultural organization*", "Creative econom*", "Cultural entrepreneur*", "Creative entrepreneur*".
- 2) Terms related to each of the cultural and creative domains as defined by UNESCO Institute for Statistics' (2025) classification: cultural and natural heritage; performing arts; visual arts and crafts; audiovisual; books and press;

music; design. In this case, a variety of search terms for each domain has been used to obtain solid datasets for each.

- 3) Terms related to each of the transversal domains as defined by the UNESCO Institute for Statistics (2025): cultural knowledge; festivals; interactive media; cultural governance and management. For this set of searches, only the transversal domain names were used as search terms, with a single exception: cultural governance and management, which was divided into "cultural policy", "cultural governance", and "cultural management". Only the "equipment and multipurpose devices" domain was not included in the analyses, as the search results consistently contained an increasing number of papers less related to the studied subject, which risked introducing noise terms that could alter the analysis.

This method was used to identify and include relevant papers for each CCI domain, avoiding the domination of a single or a few domains that would have resulted from using only general terms. The risk was a distorted view, in which the papers containing more umbrella terms would have been related to less representative CCI areas. Even so, specific themes dominate the analysis (such as "cultural heritage" and "cultural tourism"), but this approach adds validity to the idea that this reflects current research patterns.

Due to the high number of searches, it was not feasible to run them in parallel with searches in other databases. This might represent a limitation, as missing documents are not present in Scopus. The 66 exports have been collated and deduplicated in RStudio, using *convert2df* and *duplicatedMatching* functions (Aria & Cuccurullo, 2017).

The final deduplicated dataset consisted of 7,411 documents. A manual quality check confirmed that no duplicates were found. Several DOIs matched, but the titles revealed they are actually different chapters of the same book. Both the comprehensive list of search terms used with "sustainability" and the R code for merging and deduplication can be found at <https://github.com/anamariaosadci/Sustainability-in-CCIs> (Osadci & Zbucnea, 2025).

Although the dataset is consistent, it is probably not exhaustive - this represents a limitation, as possibly some search terms might have been missed. Additionally, exports by theme contain different numbers of documents, sometimes with significant differences. While this speaks to the current state of research across various domains, some of them will clearly dominate the analyses, as they do the current research discourse, potentially leading us to miss more nuanced aspects of niche themes.

The resulting data file was imported into the RStudio package Bibliometrix (Biblioshiny) for further analysis (Aria & Cuccurullo, 2017). From all of the analyses, the following terms have been excluded as they represent research design methods, geographic artifacts, or overly generic terms: literature review, strategic approach, Spain, China, UNESCO, perception, Italy, questionnaire survey, Europe, United States, spatiotemporal analysis, Western Europe, North America, sustainability, sustainable development, and the United Kingdom. Additionally, the terms cultural heritages, museums, and sustainable development goals were merged with their singular/plural variants to be reflected under a single term. The following analyses were conducted using Biblioshiny: annual scientific production, countries' output over time (to see how the research developed over time and what are the leading 10 countries investigating this field), co-occurrence network, thematic map, and thematic evolution - to answer the research question about the cultural pillar within sustainability research in CCIs.

For keyword co-occurrence analysis, the Louvain clustering algorithm was used for its modularity-based approach to identifying distinct thematic communities (Blondel et al., 2008; Jayawickrama, 2021). Automatic network layout was applied based on association

strength. An opacity of 0.8 was applied to balance node visibility with edge transparency. The obtained network was manually adjusted to avoid label and node overlap.

The thematic map aimed to identify emerging cultural themes from the research and categorize them into niche, motor, basic, and emerging/declining themes. To clarify the CCI dimensions, the sustainability and sustainable development terms have been excluded from the analysis, along with the other terms mentioned above. The same approach has been taken for the thematic evolution analysis, aimed at observing how the research focus changed over time. The following cutoff years were chosen: 2009 - a policy shift starting period on the international arena, close to the midpoint since the research began and the point where research began to be more intensive, 2015 - more established period starting after SDGs adoption in 2015 and becoming part since 2016 of 2030 Agenda for Sustainable Development, also showing clear pre-pandemic patterns (United Nations, 2015), 2019 - to see research focus during the pandemic and post-pandemic period, and 2023 - to understand the current focus.

Findings and discussions

The research on sustainability in cultural and creative industries appears to have an established tradition, with the first paper in our Scopus searches dating back to 1992 (Figure 1). However, there seems to be a limited number of studies (fewer than 100 publications annually) until 2010, when a more steady growth began. This might be related to policy shifts happening between 2010-2015, culminating with the UN Sustainable Development Goals (SDGs) established in 2015 and being introduced on 2030 Agenda for Sustainable Development since the beginning of 2016 (United Nations, 2015), which made sustainability a more central point in global strategies and brought forward also the idea of culture as part of sustainability.

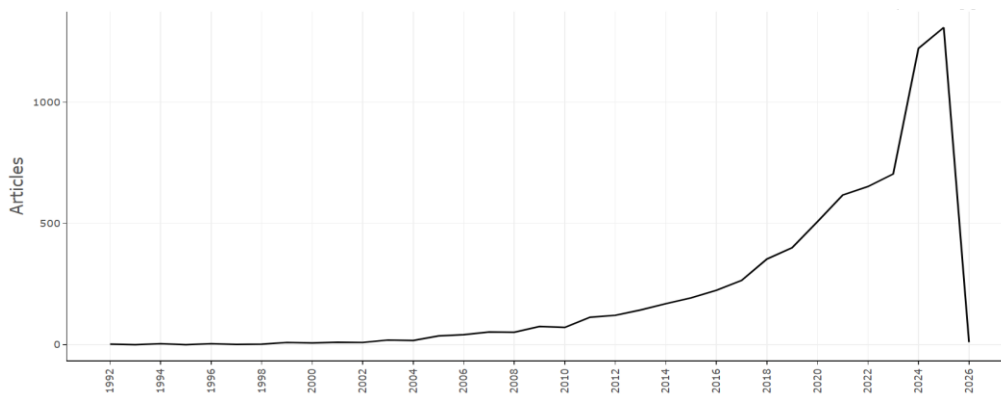


Figure 1. Annual scientific production

Source: authors' research; image generated with Bibliometrix (Biblioshiny)

From 2010 to 2019, there was steady but moderate growth, reflecting increasing interest in the cultural aspects of sustainability, but not a massive focus. However, between 2020 and 2024, a much steeper, almost explosive, growth can be observed - this timeframe coincides with the COVID-19 pandemic and the post-pandemic period. This might relate to several aspects: during the pandemic, there can be observed a global increase in research across various themes due to the magnitude the pandemic had as a historic and economic event (Klingelhöfer et al., 2021); sustainability became even more central to the international discourse, due to the energetic crisis overlapping with the economic and health crisis generated by the pandemic (Hosseini, 2020; International Energy Agency, 2020); and finally, more focused on cultural and creative industries - these industries needed to find innovative ways to survive in the market in the absence of or with minimal direct contact with the public, this becoming at the same time a concern for policymakers, researchers, and the population with civic consciousness in

general (OECD, 2020; UNESCO, 2021b). Aside from the pandemic-related increase, there has been a general increase in interest in cultural sustainability since 2020, with the sharp decline in 2025 due to the data collection cutoff rather than a real pattern.

This positive interest in the topic is matched by increased attention to sustainability from professionals and cultural/creative organizations (Müller & Grieshaber, 2024). Additionally, these findings align with the growing recognition of culture as an enabler of sustainable development and the emergence of more policies at various levels aimed at facilitating these processes (Clinu & Bănică, 2024). The results confirm the growing interest in this field, as noted by Bui Hoai et al. (2021), but reveal a less-covered nuance: a research spike starting in the 2019-2020 timeframe.

Figure 2 shows the top 10 countries leading the research. Their starting points differ, but after 2020, their growth trajectories become more parallel, and all show a steep increase, indicating a possible global paradigm shift toward a deeper focus on cultural sustainability during this period. Overall, the US and UK appear to be the global leaders in cultural sustainability research, which may be related to the Anglo-Saxon cultural predominance (Bennett, 2013) and to the economic resources these countries have to support comprehensive research.

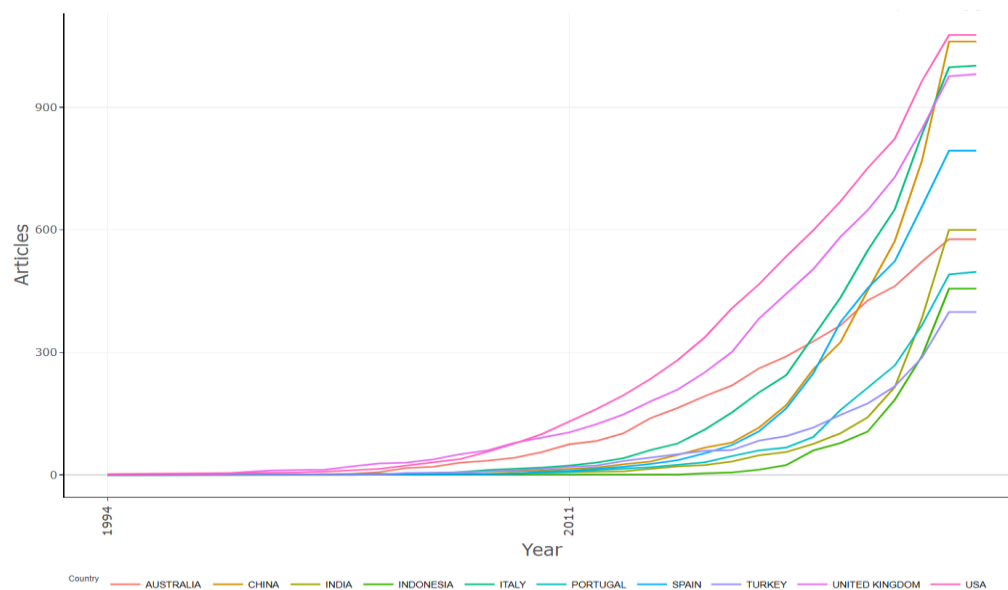


Figure 2. Countries' production over time

Source: authors' research; image generated with Bibliometrix (Biblioshiny)

Apart from the UK, other European countries leading the research discourse, but with fewer overall studies, are Italy, Spain, and Portugal, which is aligned with the reality as these countries are key players within the EU CCI landscape, being also important voices in addressing cultural sustainability issues such as copyright protection in the AI era (European Writers' Council, 2025; MLex, 2025).

China seems to have entered this field of research later but has shown rapid acceleration, especially after 2020, possibly reflecting growing national interest in sustainable development and cultural industries (Park, 2022). Likewise, Turkey, India, and Indonesia, three emerging economies with rich cultural heritage and exquisite tourist destinations (Data Bridge Market Research, 2025), come to the fore as other non-Western leaders in the research.

The data on geographical patterns confirm imbalances, with a bias towards Western countries and partly Asia (Borre et al., 2023; Kovaitė et al., 2022), but it also reveals a

shift in the research discourse towards an increasingly global focus. Two shifting points seem to be 2015-2016 and 2020, as per previous observations.

Further analysis of the thematic analysis reveals that the keyword co-occurrence network, shown in Figure 3, comprises three distinct clusters: the classic sustainability pillars and emerging cultural sustainability as a distinct pillar. "Environmental sustainability" and "social sustainability" appear as distinct keywords in the red cluster; "economic development" relates to the economic sustainability concept in the blue cluster; and, finally, "cultural sustainability" emerges as a distinct keyword in the green cluster.



Figure 3. Keyword co-occurrence network

Source: authors' research; image generated with Bibliometrix (Biblioshiny)

Looking at Figure 3, one of the first things to notice is the "sustainability", "sustainable development", "cultural heritage" central axis, a triangular core conceptual structure of sustainability in the cultural and creative industries research. This is consistent with observations during data collection: works relating to cultural heritage seem central to the discourse, as they comprise, within a more theoretically defined framework, all the creative and cultural domains. This finding validates the idea that heritage occupies a distinctive position in cultural sustainability research, tackling all sustainability pillars while serving as an important social resource and economic asset (Jelinčić, 2021; Min, 2025).

Table 1. Keywords per cluster

Cluster	Keywords
1 (Red)	Sustainability, cultural heritage, sustainable development, heritage conservation, museum, architectural design, historic preservation, innovation, sustainable development goals, conservation, climate change, education, urban planning, environmental sustainability, decision making, architecture, social sustainability, environmental impact, urban development, urban area, design, cultural identity, preservation, environmental protection, social media, creative industries, covid-19, artificial intelligence, biodiversity, circular economy, interior design
2 (Blue)	tourism, ecotourism, tourism development, heritage tourism, sustainable tourism, cultural tourism, tourist destination, stakeholder, tourism management, marketing, economic development, festival, local participation, rural area
3 (Green)	heritage, culture, cultural sustainability, intangible cultural heritage, art

Source: authors' research; table generated with Bibliometrix (Biblioshiny)

The red cluster, which is also the largest and contains the three central nodes, relates to the environmental and social sustainability pillars. Within this cluster there can be distinguished five *imaginary subclusters* or areas of interest: 1. environmental sustainability, where there can be seen a research focus on climate change, biodiversity preservation, and environmental protection; 2. social sustainability, with a focus on education, cultural identity and creative industries (hereby culture being integrated in the social sustainability pillar); 3. historic preservation and conservation of cultural heritage, with a focus on museum practices and promotion techniques; 4. sustainability through all its pillars getting integrated into infrastructure - hinted by terms such as "urban planning", "architectural design", "interior design", "circular economy"; and 5. hot topics from the scientific discourse, such as "covid-19" that seems to be a milestone in sustainability research; "innovation" and "decision making" as management terms that describe a strive for continuous improvement through finding novel solutions and delving deeper into behavioral approaches of decision science; and last but not least the bursting issue of "artificial intelligence", that has become a significant area in scientific research across domains, a reason for both high hopes and increased anxieties (Wang et al., 2023). Artificial intelligence, particularly, is an important topic of discussion in the field of CCIs' sustainability, as it is disruptive to how content is created, distributed, and consumed, and affects central areas of CCIs such as content creation, copyright, and dissemination (Harvard Law Review, 2025), tackling back to technological potential disruptive effects as note by Lee (2022) and Tyagi (2024). At the same time, within this cluster context, AI might also be researched to enhance circular economy design and architecture technologies (Pak & Kocaturk, 2025). As discussed in the literature, AI's presence in this cluster could also signal tensions between its potential for environmental damage (Li et al., 2024; Luccioni et al., 202) and the possibility of helping us find innovative solutions to the most urgent sustainability issues (Goel et al., 2024).

The blue cluster has formed around the economic sustainability pillar ("economic development"), whose main driver appears to be tourism, as found also in the literature (Liu & Kou, 2024). As this research has been conducted specifically for cultural tourism (particularly used as a search term), keywords such as "cultural tourism", "heritage tourism", and "festival" are important for understanding how CCIs may sustain their financial viability. Tourism, supported by targeted marketing as indicated by the presence of the "marketing" keyword, emerges as a primary driver of CCIs' economic activity. This cluster is also linked to the social sustainability pillar, through the presence of keywords such as "rural area", "local participation", "stakeholder", as oftentimes cultural heritage tourism (Zbucnea, 2020) and cultural events such as festivals being held in certain remote or rural areas may boost these regions' economic development (Liu et al., 2023), leading to synergies creating virtuous circles of growth. At the same time, it could point to research on reconciling the tension between economic growth's benefits, stakeholders'/communities' overall well-being, and safeguarding cultural authenticity (Matteucci et al., 2022). The "ecotourism" keyword points to environmental sustainability, linking this cluster to the environmental sustainability pillar as well. In this cluster, a focus on the management perspective also emerges through the "tourism management" keyword, suggesting a growing trend towards strategic thinking when it comes to cultural tourism (Agarwal et al., 2024).

The green cluster is the smallest one, with strong interconnections with the red cluster (one could speculate that it emerged from the research in the red cluster) - it has "cultural sustainability" as a central element, suggesting the emergence of a 4th, cultural sustainability pillar, which is not yet very well established, but starts to gain consistency and build momentum at least considering the CCIs-related research, in line with preoccupations mentioned in the literature (Järvelä, 2023; Pop et al., 2019). This cultural sustainability pillar appears to be built on research themes related to intangible cultural heritage, such as art, as shown in Figure 3. The cluster position within the overall network, in the middle - between the environmental and social pillars on one side and the economic pillar on the other side, implies that it grows from and alongside them. Although distinct from social sustainability, there still seems to be overlap between

them, without a consistent separation, which confirms Järvelä's (2023) observation that it is a less specified driver, often diffusely differentiated from social sustainability. There are more pronounced links between the green cluster's keywords and "innovation", "decision making", and "artificial intelligence", highlighting an increased preoccupation with novel technologies and management techniques. At the same time, they are connected in the same manner to historic conservation and preservation terms. These associations with both digital innovation and historic preservation terms may suggest the idea of dynamic conservation, in which cultural artifacts are adapted to emerging technologies. At the same time, literature evidences tensions with novel technologies, especially the more controversial ones, such as AI (Tiribelli et al., 2024). This raises a research question worth exploring further: to what degree is technology a threat and to what degree an enabler of cultural sustainability?

Overall, this nascent 4th pillar may represent CCIs' unique contribution to the broader sustainability discourse. Its seemingly infant state may represent a research gap in focusing specifically on cultural sustainability, and therefore a good opportunity for future research. Moreover, as this pillar evolves over time, it may require new frameworks and metrics to accommodate it.

The thematic map, displayed in Figure 4, aligns with the keyword co-occurrence network findings and adds nuance to them. What first catches the eye when looking at the figure is that there are no clear motor themes and no emerging or declining themes. This indicates a lack of a specific research core as an overarching theme for the entire research on sustainability in CCIs and, at the same time, the fact that new concepts haven't yet crystallized into detectable themes, further confirming the idea of research being fragmented into various areas of interest (Casadei et al., 2023; Dharmani et al., 2021; UNESCO, 2021a) that link incidentally rather than strategically. The absence of declining themes also suggests that the conceptual structure, overall, although scattered, is solid, and that the older, *classic* themes are carried forward rather than abandoned. A quite scattered conceptual structure can also be noted, confirming the idea that an "univocal classification" has not yet emerged, as stated with concern by Salvador and Comunian (2024).

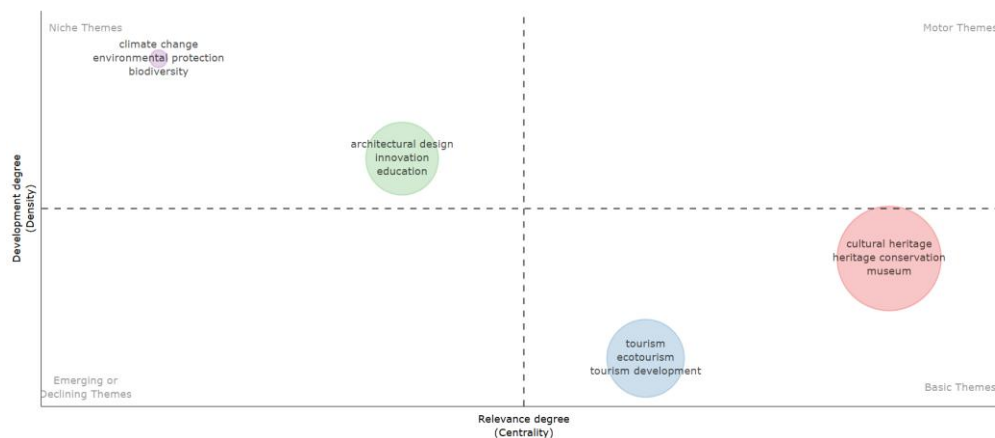


Figure 4. Thematic map

Source: authors' research; image generated with Bibliometrix (Biblioshiny)

Analyzing the conceptual bubbles in the thematic map reveals parallels with the keyword co-occurrence analysis. Cultural heritage, with a focus on conservation and museums, appears to fall between basic and motor themes, positioning it as one of the central research themes in the CCIs field, confirming the idea of heritage institutions as more zealous supporters of sustainability practices (Loach et al., 2017). This maps onto the cultural heritage as part of the central axis and red cluster, but also to the intangible cultural heritage thematic of the green cluster. It does, however, not fully reach the

status of a "motor" theme due to lower density, indicating that the field could benefit from deeper exploration and from building stronger theoretical frameworks, which could represent another potential area of research.

The blue bubble corresponds to the blue cluster in Figure 3. Its position as a basic theme confirms that tourism as a catalyst for CCIs' economic growth is discussed in an intense but fragmented manner, possibly across various cultural domains' studies.

As niche themes, the purple and green bubbles also relate to identified subclusters in the red cluster. The purple bubble, related to environmental protection, appears to be a really niche theme, with deep research and focus, but not central to the CCI sustainability discourse. The green bubble, containing "architectural design", "education", and "innovation", seems to have a bit more centrality, situated closer to motor themes. This might support the idea of increased interest in building sustainable structures and possibly planning whole sustainable settlements using innovative technologies.

Finally, the thematic evolution shown in Figure 5 illustrates how the research evolved in terms of its focus subjects and conceptual discourse. Overall, it's interesting that the sustainability pillars don't appear as distinctive keywords in the co-occurrence network, but are implied by their thematic meanings. It seems that early research is more sparse across domains, and then becomes more cohesive in line with the SDGs' establishment. This is further emphasized by the presence of "sustainable development goals" in the last time slice, as we are approaching the 2030 milestone.

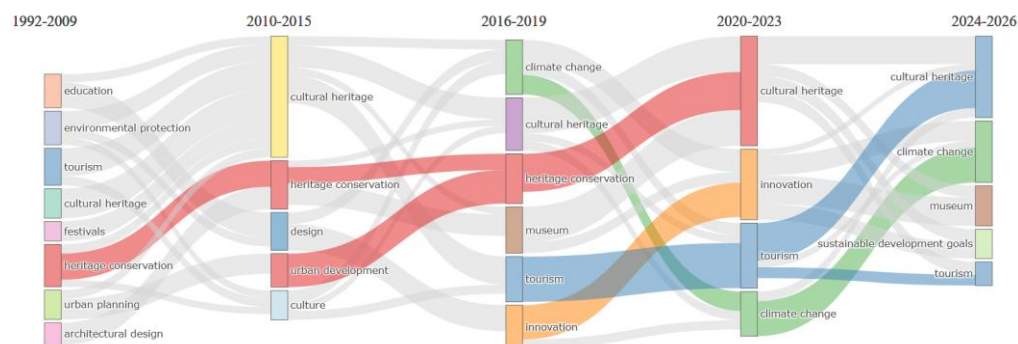


Figure 5. Thematic evolution

Source: authors' research; image generated with Bibliometrix (Biblioshiny)

Just as revealed by previous analyses, the most consistent thematic pattern directly related to cultural sustainability is cultural heritage. The research in this area seems to have begun as more focused on heritage conservation, eventually shifting towards cultural heritage as a concept by itself, for which, since 2016, a connection with tourism has been observed, supporting the idea of socioeconomic development benefit emerging from cultural tourism (Zbucnea, 2020). It is worth noting that heritage conservation/cultural heritage has been a constant and important area of research throughout time, evident in each time slice from 1992 to 2026.

One observes several structural and institutional reasons why research focuses more on understanding the relationship between cultural heritage/built heritage or museums and sustainability than other CCI sectors, such as music, festivals, media, and others. Built heritage has a material component that is directly linked with sustainability, especially the environmental pillar. In the case of music, especially festivals, sustainability is less evident and manifests more in the behavioural aspects of organizations and consumers. Museums and cultural heritage are more regulated and institutionalized, therefore, offering more points of reference for various sustainability-related aspects. Not only is the environmental pillar easier to observe and document in the case of museums and cultural heritage more broadly, but the social dimension of

sustainability is also more straightforward to grasp, given its impact on communities and even urban regeneration (Romanelli & Zbucnea, 2020; Zbucnea et al., 2022).

Based on all the analyses, it seems that the core link between sustainability and CCIs lies in cultural heritage conservation, promoted through innovative practices and cultural tourism. As most cultural and creative industries contribute to cultural heritage, this implies that, in the end, there is a holistic approach, with the focus on safeguarding these industries' cultural artifacts rather than specifically on sustainable practices within the CCIs' production processes. For current applications and industry practices, innovation (within a sustainable framework) is a key theme. This can be explained by the fact that cultural production itself contributes to social sustainability irrespective of the production process. Nevertheless, the consistent presence of keywords such as "climate change" or "environmental protection" confirms that green practices are indeed assessed, though possibly more marginally, which aligns with environmental sustainability appearing as a niche theme in the thematic map (Figure 4).

Regarding whether cultural sustainability emerges as a distinct pillar or as a component of the social sustainability pillar, it seems to be a distinct pillar. However, there is still ambiguity around it, as if it is still nascent/infant and not well established within the overall sustainability framework. Sometimes it appears as part of the social pillar, and other times on its own. It would be interesting for future research to assess any patterns that distinguish the two hypostases.

Conclusions

In the academic research on sustainability in CCIs, as in other fields of study, there seems to be a shift from Anglo-Saxon production towards a more global discourse and geographic diffusion. Italy, Spain, and Portugal play a strategic role in the European CCIs, and their interest in sustainability might reflect consistent practices, particularly in sustainable processes in this field. The research growth also suggests that the emerging economies in the Global South increasingly and more consistently include CCIs in their development plans.

The analysis confirms that the increased interest in sustainability within the CCI framework aligns with growth in other sectors and appears to be accelerated by systemic changes, such as pandemics or economic crises.

The bibliometric analysis shows two emerging points in this field. One is the conceptual triangle of sustainability – sustainable development – cultural heritage. It seems that cultural heritage is at the center of discourse and practices related to sustainability and is a central actor in sustainable development. Innovation appears to act as a bridge between heritage conservation goals and organizations' strategies oriented towards the future. Further research on which CCIs and cultural heritage are most intertwined, and on their relationship with technological advancements, could reveal more refined patterns that speak to empirical realities.

A research bias towards tangible heritage and architectural monuments can be observed. This could relate to easier environmental assessments and measurement frameworks due to the material nature, but also to a stronger focus on sustainability in these domains. Generally, the tangible heritage area is where most intense environmental sustainability research is concentrated. In other cultural domains, it is increasingly eclipsed by social, cultural, and economic sustainability. Again, the most apparent reason seems to be a more direct relationship between tangible cultural outputs, especially architectural ones, and environmental sustainability.

The second emerging topic, at least in the framework of CCIs and related research, is the fourth pillar of cultural sustainability. Previous research identified this pillar, but it was not recognized as a distinct cluster/focus (Järvelä, 2023; Loach et al., 2017; Pop et al.,

2019). The current network analysis shows, in a quite direct way, that "cultural sustainability" is beginning to separate from the other pillars ("cultural sustainability" as a distinct keyword in a separate cluster). Yet it still seems to be in an infant phase, not fully established, as there is some ambiguity around the other pillars, especially social sustainability. However, it seems to have a strategic position, linked to various elements related to each of the other pillars, suggesting that, as research grows (which appears to be the trend), this fourth pillar will evolve alongside, becoming more differentiated. An important implication is that updated frameworks and metrics are required to account for this reality and support cultural sustainability in achieving parity with the other three pillars.

Another observation is that cultural tourism appears to play a catalytic role in the economic development of CCIs, further confirming its role as an engine of CCIs' financial viability and growth. This calls for an increased focus on cultural tourism management strategies researched in the context of cultural sustainability. It is important to approach it correctly, with cultural heritage safeguarding and stakeholders' well-being in mind, while continuing to innovate for commercial feasibility.

Innovation, as often happens, seems deeply related to technology. Worth mentioning is the emergence of "artificial intelligence" as an important keyword in the CCIs' environmental and social sustainability discourse, with significant reverberations for cultural sustainability and economic development. At the moment, even AI development experts are unsure about how it will continue to develop, what level of advancement it will achieve, and how it will shape the world (Wang et al., 2023). In CCIs, especially for intangible products with content at their core, this is an existential question. Further research on AI implications for the sustainability of cultural and creative industries, possibly through scenario analysis, would be valuable for both commercial actors and policymakers in the field. More generally, the CCIs–sustainability–technology relationship could represent a valuable separate subject of analysis.

Finally, the current research aimed to provide a holistic picture of cultural and creative industries and what it reveals to the viewer, in an attempt to address existing research gaps noted in the literature (Casadei et al., 2023; Dharmani et al., 2021; UNESCO, 2021a). Although the research is indeed fragmented (as confirmed by the absence of overarching motor themes in the thematic analysis) and scattered across domains, it is solid and consistent (as confirmed by the absence of declining themes). It seems that the level at which it becomes most integrated is in creative output/cultural artifacts, revealing a bottom-to-top orientation in an integrated approach. What appears to be lacking in the conceptual landscape is a consistent theoretical framework; aside from the three (or actually four) sustainability pillars, the analysis did not reveal keywords or themes related to other, perhaps more sophisticated sustainability frameworks. This might also be associated with the definitional ambiguity, which is an impediment to building internationally binding frameworks that would be very important for comparative studies, for instance.

The increased global participation and the emergence of the fourth sustainability pillar - cultural sustainability reveal an opportunity for policymakers and companies to reassess the current frameworks and build on them to create more accurate foundations for empirical sustainability work.

References

- Anderson, A., Maystre, L., Anderson, I., Mehrotra, R., & Lalmas, M. (2020). Algorithmic effects on the diversity of consumption on Spotify. In *Proceedings of The Web Conference 2020* (pp. 2155–2165). ACM.
<https://doi.org/10.1145/3366423.3380281>

- Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959-975.
<https://doi.org/10.1016/j.joi.2017.08.007>
- Agarwal, R., Mehrotra, A., Mishra, A., Rana, N. P., Nunkoo, R., & Cho, M. (2024). Four decades of sustainable tourism research: Trends and future research directions. *International Journal of Tourism Research*, 26(2), e2643.
<https://doi.org/10.1002/jtr.2643>
- Anghel, S., Bira, M., & Zbucnea, A. (2022). Archaeology and Sustainable Development in the Public Eye. In *Proceedings of Strategica 2022* (pp. 648-664). Tritonic.
https://strategica-conference.ro/wp-content/uploads/2024/09/45_22.pdf
- Bello, P., & Garcia, D. (2021). Cultural divergence in popular music: The increasing diversity of music consumption on Spotify across countries. *Humanities and Social Sciences Communications*, 8, 182. <https://doi.org/10.1057/s41599-021-00855-1>
- Bennett, K. (2013). English as a Lingua Franca in Academia: Combating Epistemicide through Translator Training. *The Interpreter and Translator Trainer*, 7(2), 169–193. <https://doi.org/10.1080/13556509.2013.10798850>
- Berg, S. H., & Hassink, R. (2014). Creative industries from an evolutionary perspective: A critical literature review. *Geography Compass*, 8(9), 653-664.
<https://doi.org/10.1111/gec3.12156>
- Blondel, V. D., Guillaume, J. L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, 2008(10), P10008. <https://doi.org/10.1088/1742-5468/2008/10/P10008>
- Borin, E., Mirone, F., Sagona, A., Saleh, R., & Briamonte, M. F. (2025). Sustainability in the Business Literature on Cultural and Creative Industries. In *Sustainable Development Goals and Business Dynamics* (pp. 87-104). Routledge.
- Borre, J. R., Romero, G. C., Gutiérrez, J. M., & Ramírez, J. (2023). Discussion of the aspects of the cultural and creative industries that impact on sustainable development: a systematic review. *Procedia Computer Science*, 224, 532-537.
<https://doi.org/10.1016/j.procs.2023.09.077>
- Brennan, M., & Devine, K. (2020). The cost of music. *Popular Music*, 39(1), 43–65.
<https://doi.org/10.1017/S0261143019000552>
- Bui Hoai, S., Hoang Thi, B., Nguyen Lan, P., & Tran, T. (2021). A bibliometric analysis of cultural and creative industries in the field of arts and humanities. *Digital Creativity*, 32(4), 307-322. <https://doi.org/10.1080/14626268.2021.1993928>
- Casadei, P., Bloom, M., Camerani, R., Masucci, M., Siepel, J., & Ospina, J. V. (2023). Mapping the state of the art of creative cluster research: a bibliometric and thematic analysis. *European Planning Studies*, 31(12), 2531-2551.
<https://doi.org/10.1080/09654313.2022.2158722>
- Chapain, C., & Sagot-Duvaurox, D. (2020). Cultural and creative clusters—a systematic literature review and a renewed research agenda. *Urban Research & Practice*, 13(3), 300-329. <https://doi.org/10.1080/17535069.2018.1545141>
- Cho, R. L., Liu, J. S., & Ho, M. H. C. (2018). What are the concerns? Looking back on 15 years of research in cultural and creative industries. *International Journal of Cultural Policy*, 24(1), 25-44. <https://doi.org/10.1080/10286632.2015.1128417>
- Clinicu, M., & Bănică, A. (2024). Boosting the cultural dimension of sustainable development-from grassroots to policy level. *Eastern Journal of European Studies*, 15(1). 2019-249 <https://doi.org/10.47743/ejes-2024-0110>
- da Silva, A. M. V., Muzzio, H., & da Silveira, D. S. (2024). Analysing public policies for the creative economy: A systematic literature review. *Journal of International Development*, 36(6), 2655-2669. <https://doi.org/10.1002/jid.3930>
- Data Bridge Market Research. (2025). *Global Cultural Tourism Market Size, Share, and Trends Analysis Report – Industry Overview and Forecast to 2032*.
<https://www.databridgemarketresearch.com/reports/global-cultural-tourism-market>

- Dharmani, P., Das, S., & Prashar, S. (2021). A bibliometric analysis of creative industries: Current trends and future directions. *Journal of Business Research*, 135, 252-267. <https://doi.org/10.1016/j.jbusres.2021.06.037>
- Dijkhuizen, E., Loots, E., & Enterman, J. S. (2024). Policies for cultural and creative entrepreneurship: a systematic review of the literature since the year 2000. *Revue de l'Entrepreneuriat/Review of Entrepreneurship*, 23(2), 141-178. https://pure.eur.nl/ws/portalfiles/portal/168868102/DIJKHUIZEN_revue_policy_and_eship_2024_prepublished.pdf
- Domenech, R. B., Molina, B. D. M., & Köster, P. R. (2023). The impact of cultural and creative industries on the wealth of countries, regions and municipalities. In *Rethinking culture and creativity in the digital transformation* (pp. 170-190). Routledge.
- European Writers' Council. (2025, June 19). *Joint letter to the European Parliament: Protecting the rights of creators and artists vs generative AI*. https://europeanwriterscouncil.eu/2506_jl_juritoep/
- Flew, T., & Cunningham, S. (2013). Creative industries after the first decade of debate. In *Creative industries and urban development* (pp. 68-78). Routledge.
- Florea, A. G., Sava, D. C., & Marcu, O. A. (2022). Testing the catalysts of the Romanian Creative Economy—a panel data analysis approach. *Sustainability*, 14(21), 14658. <https://doi.org/10.3390/su142114658>
- Foord, J. (2009). Strategies for creative industries: an international review. *Creative Industries Journal*, 1(2), 91-113. https://doi.org/10.1386/cij.1.2.91_1
- Goel, A., Masurkar, S., & Pathade, G. R. (2024). An Overview of Digital Transformation and Environmental Sustainability: Threats, Opportunities, and Solutions. *Sustainability*, 16(24), 11079. <https://doi.org/10.3390/su162411079>
- Gohoungodji, P., & Amara, N. (2023). Art of innovating in the arts: definitions, determinants, and mode of innovation in creative industries, a systematic review. *Review of Managerial Science*, 17(8), 2685-2725. <https://doi.org/10.1007/s11846-022-00597-7>
- Harvard Law Review. (2025). Artificial intelligence and the creative double bind. *Harvard Law Review*, 138. <https://harvardlawreview.org/print/vol-138/artificial-intelligence-and-the-creative-double-bind/>
- Hesmondhalgh, D. (2008). Cultural and creative industries. In T. Bennett & J. Frow (Eds.), *The SAGE handbook of cultural analysis* (pp. 552-569). SAGE Publications.
- Hosseini, S. E. (2020). An outlook on the global development of renewable and sustainable energy at the time of COVID-19. *Energy Research & Social Science*, 68, 101633. <https://doi.org/10.1016/j.erss.2020.101633>
- Idilfitri, S., Rodzi, N. I. M., Mohamad, N. H. N., & Sulaiman, S. (2015). Public perception of the cultural perspective towards sustainable development. *Procedia-Social and Behavioral Sciences*, 168, 191-203. <https://doi.org/10.1016/j.sbspro.2014.10.224>
- International Energy Agency. (2020). *The COVID-19 crisis and clean energy progress*. <https://www.iea.org/reports/the-covid-19-crisis-and-clean-energy-progress>
- Istrate, R., Tulus, V., Grass, R. N., Vanbever, L., Stark, W. J., & Guillén-Gosálbez, G. (2024). The environmental sustainability of digital content consumption. *Nature Communications*, 15, Article 3724. <https://doi.org/10.1038/s41467-024-47621-w>
- Jayawickrama, T. D. (2021, January 29). Community detection algorithms. *Medium*. <https://medium.com/data-science/community-detection-algorithms-9bd8951e7dae>
- Järvelä, M. (2023). Dimensions of cultural sustainability—Local adaptation, adaptive capacity and social resilience. *Frontiers in Political Science*, 5, 1285602. <https://doi.org/10.3389/fpos.2023.1285602>
- Jelinčić, D. A. (2021). Indicators for cultural and creative industries' impact assessment on cultural heritage and tourism. *Sustainability*, 13(14), 7732. <https://doi.org/10.3390/su13147732>
- Kalfas, D., Kalogiannidis, S., Ambas, V., & Chatzitheodoridis, F. (2024). Contribution of the cultural and creative industries to regional development and revitalization: A

- European perspective. *Urban Science*, 8(2), 39.
<https://doi.org/10.3390/urbansci8020039>
- Klingelhöfer, D., Braun, M., Brüggmann, D., & Groneberg, D. A. (2021). The pandemic year 2020: World map of coronavirus research. *Journal of Medical Internet Research*, 23(9), e30692. <https://doi.org/10.2196/30692>
- Kloosterman, R., Pratt, A., d'Ovidio, M., Greco, L. & Boren, T. (2019). *Creative and cultural industries in global production network approaches so far: a brief review of the literature and its relevance for the creative and cultural industries*. The CICERONE project. CITY University of London. <https://doi.org/10.5281/zenodo.4535064>
- Kovaitė, K., Šumakaris, P., & Korsakienė, R. (2022). Sustainability in creative and cultural industries: a bibliometric analysis. *Creativity Studies*, 15(1), 278-298.
<https://doi.org/10.3846/cs.2022.16565>
- Kumar, M., Manglani, H., & Jadhav, J. (2024). Unveiling Research Trends on the Sustainable Development Goals: A Systematic Bibliometric Review. *International Journal of Sustainable Development & Planning*, 19(5). 1723-1733
<https://doi.org/10.18280/ijstdp.190510>
- Lee, H.-K. (2022). Rethinking creativity: Creative industries, AI and everyday creativity. *Media, Culture & Society*, 44(3), 601–612.
<https://doi.org/10.1177/01634437221077009>
- Li, P., Yang, J., Islam, M. A., & Ren, S. (2024). Making AI less 'thirsty': Uncovering and addressing the secret water footprint of AI models [Preprint]. *arXiv. Cornell University*. <https://doi.org/10.48550/arXiv.2304.03271>
- Liu, Y. L., Chiang, J. T. & Ko, P. F. (2023). The benefits of tourism for rural community development. *Humanities and Social Sciences Communications*, 10(1), 1-12.
<https://doi.org/10.1057/s41599-023-01610-4>
- Liu, Y. Y., & Chiu, Y. H. (2017). Evaluation of the policy of the creative industry for urban development. *Sustainability*, 9(6), 1009. <https://doi.org/10.3390/su9061009>
- Liu, T., & Kou, I. E. (2024). Determinants for the development of creative tourism: A stakeholder perspective. *Heliyon*, 10(13), e33727.
<https://doi.org/10.1016/j.heliyon.2024.e33727>
- Loach, K., Rowley, J., & Griffiths, J. (2017). Cultural sustainability as a strategy for the survival of museums and libraries. *International Journal of Cultural Policy*, 23(2), 186–198. <https://doi.org/10.1080/10286632.2016.1184657>
- Luccioni, A. S., Viguier, S., & Ligozat, A.-L. (2023). Estimating the carbon footprint of BLOOM, a 176B parameter language model. *Journal of Machine Learning Research*, 24, 1–15. <https://www.jmlr.org/papers/v24/23-0069.html>
- Manžuch, Z. (2017). Ethical issues in digitization of cultural heritage. *Journal of Contemporary Archival Studies*, 4(2), 1-17.
<https://elischolar.library.yale.edu/jcas/vol4/iss2/4/>
- Matteucci, X., Koens, K., Calvi, L., & Moretti, S. (2022). Envisioning the futures of cultural tourism. *Futures*, 142, 103013. <https://doi.org/10.1016/j.futures.2022.103013>
- Min, W. (2025). A scientometric review of cultural heritage management and sustainable development through evolutionary perspectives. *npj Heritage Science*, 13, 1-20.
<https://doi.org/10.1038/s40494-025-01708-9>
- Mishra, M., Desul, S., Santos, C. A. G., Mishra, S. K., Kamal, A. H. M., Goswami, S., ... & Baral, K. (2024). A bibliometric analysis of sustainable development goals (SDGs): a review of progress, challenges, and opportunities. *Environment, development and sustainability*, 26(5), 11101-11143. <https://doi.org/10.1007/s10668-023-03225-w>
- MLex. (2025, May 8). *Safeguard copyright in AI development, Italy, Spain and Portugal will urge*. <https://www.mlex.com/mlex/artificial-intelligence/articles/2337259>
- Moore, I. (2014). Cultural and Creative Industries concept—a historical perspective. *Procedia-Social and Behavioral Sciences*, 110, 738-746.
<https://doi.org/10.1016/j.sbspro.2013.12.918>
- Müller, M., & Grieshaber, J. (2024). How sustainable are cultural organizations? A global benchmark. *Sustainability: Science, Practice and Policy*, 20(1), 2312660.
<https://doi.org/10.1080/15487733.2024.2312660>

- O'Connor, J. (2009). Creative industries: a new direction?. *International Journal of Cultural Policy*, 15(4), 387-402. <https://doi.org/10.1080/10286630903049920>
- O'Connor, J. (2010). *The cultural and creative industries: a literature review* [Creativity, Culture and Education Series]. <https://eprints.qut.edu.au/43835/>
- OECD. (2020). *Culture shock: COVID-19 and the cultural and creative sectors*. OECD Policy Responses to Coronavirus (COVID-19). <https://doi.org/10.1787/08da9e0e-en>
- Ortiz-Ospino, L., González-Sarmiento, E., & Roa-Perez, J. (2025). Technology trends in the creative and cultural industries sector: a systematic literature review. *Journal of Innovation and Entrepreneurship*, 14(1), 39. <https://doi.org/10.1186/s13731-025-00497-6>
- Osadci, A.-M., & Zbucnea, A. (2025). *Sustainability in CCIs: Bibliometric analysis data and code* [Data set]. GitHub. <https://github.com/anamariaosadci/Sustainability-in-CCIs>
- Park, S. D. (2022). Policy discourse among the Chinese public on initiatives for cultural and creative industries: Text mining analysis. *SAGE Open*, 12(1). <https://doi.org/10.1177/21582440221079927>
- Pak, B., & Kocaturk, T. (2025). AI-driven circular architectural design. In M. Sedrez & G. Pitts (Eds.), *Artificial intelligence-aided design for sustainability* (pp. 259-278). Springer. https://doi.org/10.1007/978-981-95-1349-9_14
- Peris-Ortiz, M., Gomez, J.A., López-Sieben, M. (2019). Cultural and Creative Industries: An Overview. In Peris-Ortiz, M., Cabrera-Flores, M.R., Serrano-Santoyo, A. (Eds.) *Cultural and Creative Industries. Innovation, Technology, and Knowledge Management*. Springer. https://doi.org/10.1007/978-3-319-99590-8_1
- Pop, I. L., Borza, A., Buiga, A., Ighian, D., & Toader, R. (2019). Achieving Cultural Sustainability in Museums: A Step Toward Sustainable Development. *Sustainability*, 11(4), 970. <https://doi.org/10.3390/su11040970>
- Pranckutė, R. (2021). Web of Science (WoS) and Scopus: The titans of bibliographic information in today's academic world. *Publications*, 9(1), 12. <https://doi.org/10.3390/publications9010012>
- Pratt, A. C. (2008). Creative cities: the cultural industries and the creative class. *Geografiska Annaler: series B, Human Geography*, 90(2), 107-117. <https://doi.org/10.1111/j.1468-0467.2008.00281.x>
- Romanelli, M., & Zbucnea, A. (2020). Knowledge-based social innovation for cultural endeavours revitalising urban structures. *International Journal of Knowledge-Based Development*, 11(1), 98-121.
- Salvador, E., & Comunian, R. (2024). Why and how higher education is so important for cultural and creative industries' sustainable development?. *Industry and Higher Education*, 38(1), 6-13. <https://doi.org/10.1177/09504222231219250>
- Shakya, M., & Vagnarelli, G. (2024). Creating value from intangible cultural heritage—The role of innovation for sustainable tourism and regional rural development. *European Journal of Cultural Management and Policy*, 14, 1-17. <https://doi.org/10.3389/ejcmp.2024.12057>
- Sica, G., Palazzo, M., Micozzi, A., & Ferri, M. A. (2025). Leveraging on cultural and creative industries to foster social innovation: A bibliometric analysis. *Journal of Innovation & Knowledge*, 10(1), 100649. <https://doi.org/10.1016/j.jik.2024.100649>
- Silva, S. R., Marques, C. S., & Galvão, A. R. (2024). Where is the rural creative class? A systematic literature review about creative industries in low-density areas. *Journal of the Knowledge Economy*, 15(2), 6026-6056. <https://doi.org/10.1007/s13132-023-01341-6>
- Spano, I., & Zhang, Y. (2025). Indigenous data sovereignty in intangible cultural heritage governance: A complementary approach to public-private partnerships. *International Journal of Cultural Property*, 32(2), 167-193. <https://doi.org/10.1017/S0940739125100064>
- Tiribelli, S., Pansoni, S., Balloni, E., Santucci, G., Bolognini, A., Zingaretti, P., & Giovanola, B. (2024). Ethics of artificial intelligence for cultural heritage: Opportunities and challenges. *IEEE Transactions on Technology and Society*, 5(3), 293-305. <https://doi.org/10.1109/TTS.2024.3432407>

- Tyagi, K. (2024). Copyright, text & data mining and the innovation dimension of generative AI. *Journal of Intellectual Property Law & Practice*, 19(7), 557–570. <https://doi.org/10.1093/jiplp/jpae028>
- UNCTAD. (2024). *Creative economy definition and update on the statistical framework* (Annex I, DITC/TSCE/2024/2 Annex 1). https://unctad.org/system/files/official-document/ditctsce2024d2_annex1_en.pdf
- UNESCO. (2021a). *Cutting edge | The creative economy: Moving in from the sidelines*. <https://www.unesco.org/en/articles/cutting-edge-creative-economy-moving-sidelines>
- UNESCO. (2021b). *Cultural and creative industries in the face of COVID-19: An economic impact outlook*. <https://unesdoc.unesco.org/ark:/48223/pf0000377863>
- UNESCO Institute for Statistics. (2025). *2025 UNESCO framework for cultural statistics, Part I: Concepts and definitions*. <https://unesdoc.unesco.org/ark:/48223/pf0000395490>
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development* (A/RES/70/1). <https://sdgs.un.org/2030agenda>
- Wang, W., Downey, J., & Yang, F. (2023). AI anxiety? Comparing the sociotechnical imaginaries of artificial intelligence in UK, Chinese and Indian newspapers. *Global Media and China*, 10(4), 425-441. <https://doi.org/10.1177/20594364231196547>
- Werner, A. (2020). Organizing music, organizing gender: algorithmic culture and Spotify recommendations. *Popular Communication*, 18(1), 78–90. <https://doi.org/10.1080/15405702.2020.1715980>
- Zaman, G., & Vasile, V. (2010). Cultural-creative industries (CCI)-economic and social performances. *The USV Annals of Economics and Public Administration*, 10(3), 63-77. <https://doi.org/10.4316/aepa.2010.10.3.63-77>
- Zbucea, A. (2020). World heritage sites, local communities and tourists. *PLURAL. History. Culture. Society*, 8(2), 77-90. <https://www.cceol.com/search/article-detail?id=923000>
- Zbucea, A., Romanelli, M., & Bira, M. (2022). Museums Driving Urban Regeneration and Community Well-being. In *Knowledge Drivers for Resilience and Transformation* (pp. 1450-1471). Arts for Business Institute.

Received: October 7, 2025
Accepted: December 15, 2025

Author biographies

Ana-Maria Osadci-Baciu is a PhD candidate at the National University of Political Studies and Public Administration (SNSPA, Bucharest, Romania), where her doctoral research examines the integration of digital business models into publishing houses' strategies in Romania. Her research interests include digital transformation in creative industries, cultural sustainability, and data-driven approaches to cultural management.

Alexandra Zbucea is a vice dean of the Faculty of Management of the National University of Political Studies and Public Administration (SNSPA, Bucharest, Romania) and the Director of the Center for the Study of Responsible Organizations at the same university. She coordinates PhD research in sustainable development, as well as in cultural and non-profit management.