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SUSTAINABILITY IN CREATIVE AND CULTURAL INDUSTRIES: A BIBLIOMETRIC ANALYSIS

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Abstract. The global focus shifts towards sustainable development and makes all the industries to adapt and be active in order to reduce their negative impact on environmental and social environments. The main objective of this study is to provide a coherent overview of current research on sustainability in creative and cultural industries and to highlight possible research streams for future investigations. This is the first study to investigate the scientific publications on sustainability in creative and cultural industries. In total, 247 publications published between 2000 and 2021 and included in *Web of Science* (*Clarivate*) were taken into account. The results of this study reveal the following: (1) the increasing trend of publications in the field; (2) the most influential journals, researchers, countries, and articles review; (3) the gaps of extant research and future research directions. The presented study contributes to the scientific fields of business, economics, and communication and the insights are helpful to the researchers and policy-makers in the field of sustainability in creative and cultural industries.

Keywords: bibliometric analysis, communication industries, creative and cultural industries, creative and cultural economy, sustainability.

Introduction

The global focus shifts towards sustainable development and makes all the industries to adapt and be active in order to reduce their negative impact on environmental and social environments. Creative and cultural industries (CCIs) is no exception to that rule. Sustainability in CCIs is an important topic that has already been addressed by local and national governments two decades ago. However, only recently the phenomenon started to gain attention from the scientific community.

In past three decades, when CCIs became visible in global economy (Deloitte, 2021; Gustafsson & Lazzaro, 2021; UNESCO, 2021) scientists from various disciplines were attracted

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drawn to this field of research. However, only recently the scientific documents on the importance of sustainability in CCIs started to be investigated (del Giudice et al., 2017; Štreimikienė & Kačerauskas, 2020). Hence, scientific publications have been increasing in scientific databases. The growth of publications is more than 18% annually in *Scopus* database (Bui Hoai et al., 2021) and increases by 16 times in *Web of Science* (*WoS*) database (*Clarivate*).

Although the integration of various aspects of CCIs triggered several reviews in the literature, most studies investigate CCIs from various perspectives without distinguishing the sustainability dimension. Lazzeretti et al. (2017) applied bibliometric analysis to scientific documents (n = 941) and investigated the relationship between CCIs and intellectual property. Lazzeretti et al. (2017) follow Florida's (2019) research on human capital and the "creative class" on urban and regional development. Bui Hoai et al. (2021) investigated scientific documents (n = 746) on CCIs in the field of arts and humanities. The important research directions guide to the creative economy in relation of cultural policy. Dharmani et al. (2021) investigated scientific documents (n = 297) on characteristics and trends of creative industries such as creativity, innovation, human capital, organisational aspects, corporate social responsibility, entrepreneurship, and integration into creative industries. However, a bibliometric analysis that investigates sustainability in CCIs is missing.

Therefore, the presented publication addresses this research gap and seeks to expand the body of knowledge about the sustainability phenomenon in the CCIs. The study aims to uncover and present a coherent review of the current research status on sustainability in CCIs and to highlight the possible research streams for future investigations.

The publication consist of four sections. First, the theoretical background on CCIs and sustainability in CCIs is presented. Section 2 provides the research methodology. Section 3 introduces detailed results of the research. Section 4 provides a discussion and future research agenda.

1. Theoretical background

1.1. Creative and cultural industries

CCIs were first mentioned in the fourth decade of the 20th century (Cunningham, 2002; Garnham, 2005; Moore, 2014), and gave stimulus to empower entrepreneurship (Gibson, 2012; Schulte-Holthaus, 2018), create value, and commercialise the created intellectual property, thus drawing the attention first from Australian and British policymakers, and later worldwide.

The United Kingdom (UK) Department for Digital, Culture, Media and Sport (2001) described the creative industries to be

> "based on individual creativity, skill and talent and have the potential to create wealth and jobs through the development of intellectual property and since then it is widely used as a standard explanation" (Bakhshi et al., 2013).

European Commission (EU) (2012) in line with United Nations Educational, Scientific and Cultural Organization (UNESCO) (2007) suggest that *cultural industries* refer to the industries that create and distribute goods or services that "have a specific attribute, use or

purpose which embodies or conveys cultural expressions, irrespective of the commercial value they may have". The commercial value is a distinctive characteristics of *creative industries* (European Commission, 2012) where "culture is used as an input although the outputs are mainly functional". Cunningham (2002) and Creative Industries Research and Applications Centre, Queensland University of Technology (2005) agree that the core of culture in creative industries is creativity but also adds that "creativity is produced, deployed, consumed and enjoyed quite differently in post industrialised societies". The examples include architecture, design, media, or advertising. Some scholars suggest that using both sectors in one definition CCIs represents a qualitative augmented industry and a more inclusive concept of economy (Chapain & Comunian, 2010; Pratt, 2009). Therefore, the creative economy is used as a synonym of cultural economy and *vice versa* (Li, 2020; Rahimli & See-to, 2018; Štreimikienė & Kačerauskas, 2020).

1.2. Sustainability in creative and cultural industries

The Brundtland Report prepared by The World Commission on Environment and Development (1991) triggered the focus on sustainable development. According to the scholars (Bonzanini Bossle et al., 2016; Díaz-García et al., 2015; Schiederig et al., 2012; Shrivastava et al., 2016), the term *sustainable development* refers to meeting the needs of the today's generations, without prejudicing the possibilities of the generations in the future to live and fulfil their potential. Despite that, only recently a term *sustainability* was introduced in the CCIs, where social and environmental principles (UNESCO, 2021) go hand in hand with financial and economic sustainability issues (Coe, 2000; Imperiale et al., 2021).

United Nations (UN) General Assembly (2020) suggests that the creative economy can contribute to the three dimensions of sustainable development and the achievement of the *2030 Agenda for Sustainable Development*, by fostering economic growth and innovation, and eradicating poverty. EY: Building a Better Working World (2021) and UNESCO (2007) suggest that CCIs contribute to sustainability by creating favourable ecosystem for social inclusion, gender diversity, employment of young people, and integrating technological innovation and cultural diversity. Howkins (2013) suggests that creative economy is based on innovative ideas and not on the exploitation of limited traditional resources. Hence, it is argued that innovativeness leads to sustainable economic development. Harper (2021) argues that the inclusion of CCIs with other economic sectors is a potential driver of transformative sustainability. UNESCO (2021) suggests actions such as investment in creativity for climate change (Gustafsson & Lazzaro, 2021), supports inclusive cultural participation, promotion of creativity for sustainable economic growth and decent work and development of holistic policy approach, to make CCIs contribute to sustainable development. Therefore, it is important to gain a better understanding of the current state of knowledge about sustainability in the CCIs.

2. Research methodology

Taking into account the importance of sustainability in CCIs stated above, the research aims to uncover and present a coherent review of the current research status on sustainability in CCIs and to expose the direction for the future research investigations. A bibliometric analy-

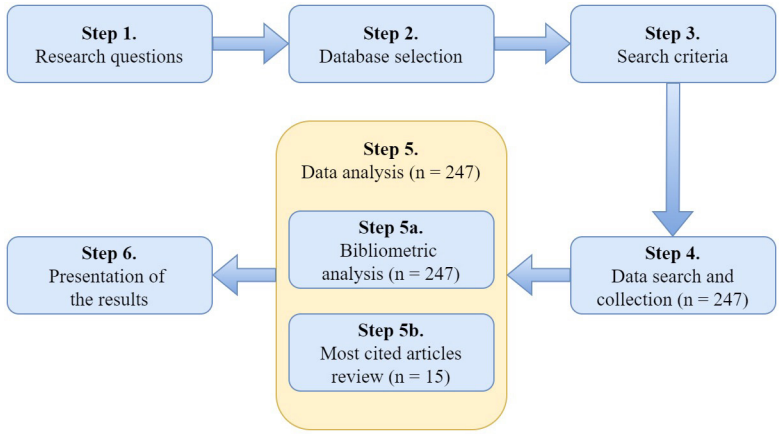

Figure 1. Research design (source: created by the authors)

sis and literature review were performed to achieve the aim. Bibliometric analysis is based on pre-planned methods, thus minimizing bias and random errors, "has the potential to achieve rigorous scientific investigations, and is also recognized as a more transparent method in constructing theory" (Pedro et al., 2018). The research protocol are presented in Figure 1.

Step 1. *Research questions.* Aiming to achieve the goal of this study, four research questions are raised:

- (RQ1) What is the output and growth trend of publications in the field?;
- (RQ2) Which are the most productive authors and journals in the field?;
- (RQ3) What are the most influential articles in the field?;
- (RQ4) How do these articles investigate sustainability in CCIs and what are the key findings?

Step 2. *Database selection.* This study collects data from *WoS* database (*Clarivate*), used by many other published bibliometric studies (Reddy Maditati et al., 2018). Many studies compared scientific literature databases such as *WoS* (*Clarivate*), *Scopus*, *Google Scholar*, *etc.* and found that *WoS* (*Clarivate*) and *Scopus* provide similar results, without reaching a clear conclusion of "which one is better" (Pranckutė, 2021). However, *WoS* database (*Clarivate*) is recommended in social science and humanities due to a large number of exclusive journals. It is also a multi-disciplinary database, indexed by most of the journals cited in each field (Dabić et al., 2020; Pedro et al., 2018).

Step 3. *Search criteria.* This paper analyses the scientific literature on sustainability in CCIs and ensures that the study maintains the focus of the research questions. Therefore, it is very important to remain within the scope and to rely on scientific publications that focus primarily on sustainability in CCIs. The initial search was composed the following: first, it focuses on the CCIs using: TOPIC: "creative industr*" or "cultural industr*" or "creative and cultural industr*" or "cultural and creative industr*" or "creative economy" or "cultural economy" or "creative and cultural economy"; the second focuses on sustainability part, using: TOPIC: "sustainab*". The quotation marks and asterisks were included in the search to combine two keywords: creative with cultural with industries (*e.g.* creative and cultural

economy), thus minimizing the risk that multiple keywords are used separately in different meaning. The asterisk extracts different endings of the same word (*e.g.* "sustainab*"), such as *sustainable* and *sustainability*. Topic search includes title, abstract, author keywords, and keywords plus. To achieve the most relevant results and to avoid incomplete research, the only articles as a type of document and only articles in English were included into search. No limitations were added for the publication year, "Timespan: All years". Indexes: Science Citation Index Expanded, Social Sciences Citation Index, Arts and Humanities Citation Index, Conference Proceedings Citation Index – Science, Conference Proceedings Citation Index – Social Sciences and Humanities, Book Citation Index – Science, Book Citation Index – Social Sciences and Humanities, and Emerging Sources Citation Index.

Step 4. *Data search and collection.* Data search and collection were performed in early 2022. The initial data search provided 459 publications. Additional exclusion criteria were used in order to gain the most relevant results as explained in Step 3. In total, the data search and collection resulted in 247 articles. Results were exported with full record and cited references in the text file – *.txt* – format. General data processing was performed before data analysis using *Microsoft Excel*. During data processing, the missing data were manually entered from the *WoS* database (*Clarivate*).

Step 5. *Data analysis.* After data search and collection, Step 5 was divided into two sub-steps: sub-step 5a and sub-step 5b. Sub-step 5a – aiming to answer RQ1 and RQ2 bibliometric analysis was conducted. Bibliometric analysis is a quantitative method, but it is valuable and frequently found in bibliographic material studies (Yin et al., 2018). The method became popular due to the possibility of representing "summarised results of classified bibliography" (Cancino et al., 2017). *Microsoft Excel* was used for quantitative bibliographic data analysis and software *VOSviewer* was used to visualise the results of the bibliometric networks (van Eck & Waltman, 2017). Software generates two-dimensional maps based data processes and visualises the bibliographic coupling, co-authorship, citation, co-citation, co-occurrence of keywords, authors and also shows the relationships. Cancino et al. (2017), Gall et al. (2015) and van Nunen et al. (2018) describe various principles within the bibliometric analysis, such as: (1) bibliographic coupling links two papers that cite the same third document; (2) co-citation presents similarity of subjects between two documents; (3) co-authorship shows the level of co-authorship among the most productive sources; (4) citation analysis shows the degree of citation similarity between two variables; (5) co-occurrence of keywords shows the most frequent keywords and the links (van Raan, 2014) refer to the most frequent keywords in the same publications. The clustering method is used to identify separate clusters. The clusters are established by grouping all publications that are linked by a co-citation threshold. General rules were followed interpretation of the results generated by the software: (1) size of the circles indicate how many time the occurrences appear; (2) distance between two separate circles represents relatedness; (3) colours indicate clusters (van Eck & Waltman, 2017; van Nunen et al., 2018). Sub-step 5b – aiming to answer RQ3 and RQ4 fifteen the most cited articles matching the search criteria were analysed. Following previous studies (Merigó & Yang, 2017; Ruiz-Real et al., 2018; Yin et al., 2018), respectively in the selected field, to measure productivity and influence, we use the following measures: (1) impact factor (IF); (2) h-index; (3) citation count; (4) total number of published documents. A thesaurus file

was used to perform data cleaning, where nouns, such as *study*, *paper*, *document*, *etc.* were filtered out, also correcting spelling differences, as well as merging abbreviated terms with full terms (van Eck & Waltman, 2013).

Step 6. *Presentation of the results.* The detailed results of data analysis and visualisations are provided in the results section:

- Publication output and growth trend by each year (2000–2021);
- The most productive countries and geographic distributions of publications in the selected field;
- Co-authorship of countries;
- Fifteen the most productive authors in the field;
- Co-citation of authors;
- Co-occurrence of all keywords;
- Fifteen the most influential articles in the field;
- Analysis of fifteen the most influential articles.

VOSviewer software was used to visualise the bibliographic data collected. Only the most significant authors or journals are analysed.

3. Results

This section presents the results of this study. Given the aim and research questions, this study examines scientific documents on sustainability in CCIs, 247 articles from the *WoS* database (*Clarivate*). The number of scientific documents in the field and the growth trend of publications are important measures to evaluate the development of the research stream. Answering to RQ1, the output of the publications and the growth trend for each year are studied (Figure 2). This study examines the articles with no limitation for time period. However, there were no publications until 2000. The article titled: "The View from out West: Embeddedness, Inter-Personal Relations and the Development of an Indigenous Film Industry

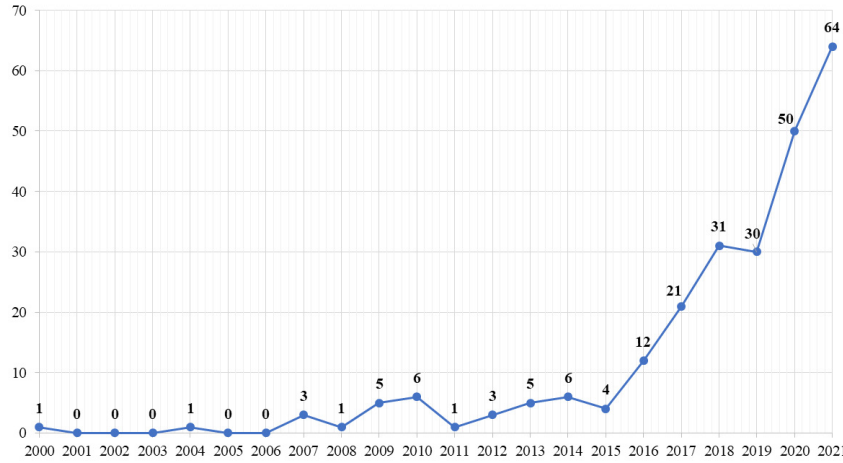

Figure 2. Publications output and growth trend for each year (2000–2021)
(source: created by the authors)

in Vancouver" by Coe (2000), was the first published document matching the search criteria. The number of publications from 2000 to 2015 did not exceed 6 publications. The growth of publications is observed from 2016 (n = 12) almost doubling every year, with the exception of 2018 and 2019. In 2017, a total of 21 article; in 2018 – 31 articles; in 2019 – 30 articles; in 2020 – 50 articles; in 2021 – 64 articles were published. This study was carried out in February, 2022 and thus, the publications for 2022 were not included in Figure 1 for the purpose not to distort the trend. It is observed that for the last five years, publications related to sustainability in CCIs have been growing rapidly.

In response to RQ2, an analysis of the most productive authors and journals in the research field was conducted. Based on the search criteria and the selected data, 590 authors from 58 countries with a total of 247 publications are analysed.

Fifteen the most productive journals in the selected field with total citations, citations per document, IF, and publisher with country are presented in Table 1. The most productive journal is *Sustainability* (publisher: Multidisciplinary Digital Publishing Institute, Switzerland) with IF (5 years) = 3.473, with the highest number of published documents (n = 36). Other journals do not exceed eight documents. However, *Sustainability* is not the most cited journal. *Cities* (publisher: *Elsevier*, Netherlands), with IF (5 years) = 6.203, is the most cited journal (n = 125) with four documents and citation per document 31.3. The journal with the highest rate of citation per document (39) is *Agriculture and Human Values* (publisher: *Springer Science+Business Media*, Germany) with IF (5 years) = 4.264, with two documents, total citations of 78. The journal with the highest IF (5 years) = 6.427 is *Sustainable Development* (publisher: *Wiley*, United States (US)) published five documents, total of 103 citations and 20.6 citations per document.

Table 1. Fifteen the most productive journals in the field (source: created by the authors)

Journal	Total documents	Total citations	Citations per document	Impact factor (5 year)	Publisher, country
Sustainability	36	105	2.9	3.473	Multidisciplinary Digital Publishing Institute, Switzerland
Cultural Trends	8	29	3.6	2.301	*Taylor & Francis*, United Kingdom
International Journal of Cultural Policy	7	52	7.4	2.173	*Taylor & Francis*, United Kingdom
Sustainable Development	5	103	20.6	6.427	*Wiley*, United States
European Planning Studies	5	73	14.6	4.089	*Taylor & Francis*, United Kingdom
Cities	4	125	31.3	6.203	*Elsevier*, Netherlands
Entrepreneurship and Sustainability Issues	4	31	7.8	ESCI*	*Enterpreneurship and Sustainability Center*, Lithuania
Journal of Environmental Protection and Ecology	4	4	1.0	0.598	*Scientific Bulgarian Communications*, Bulgaria

End of Table 1

Journal	Total documents	Total citations	Citations per document	Impact factor (5 year)	Publisher, country
Journal of Coastal Research	4	2	0.5	1.072	Coastal Education and Research Foundation, United States
Journal of Urban Culture Research	3	0	0.0	ESCI*	Chulalongkorn University, Thailand
Agriculture and Human Values	2	78	39.0	4.264	*Springer Science+Business Media*, Germany
International Journal of Cultural Studies	2	50	25.0	1.796	*SAGE Publishing*, United States
Geographical Review	2	39	19.5	2.110	*Taylor & Francis*, United Kingdom
Journal of Rural Studies	2	30	15.0	5.754	*Pergamon-Elsevier Science Ltd*, United Kingdom
Journal of Business Economics and Management	2	16	8.0	2.569	Vilnius Gediminas Technical University, Lithuania

**Note:* ESCI – Emerging Sources Citation Index.

Answering RQ2, an analysis on the most productive authors, journals, and countries in the research field was conducted. Based on the search criteria and the selected data, 590 authors from 58 countries with a total of 247 publications are analysed. Figure 3 shows the geographical distribution of the total publications (n = 247) in 58 countries. Five countries contributing with more than half (133/247) of total publications: three countries with over 20 publications: China (n = 44), England, UK (n = 32), US (n = 23); and two countries: Australia (n = 18), Italy (n = 16).

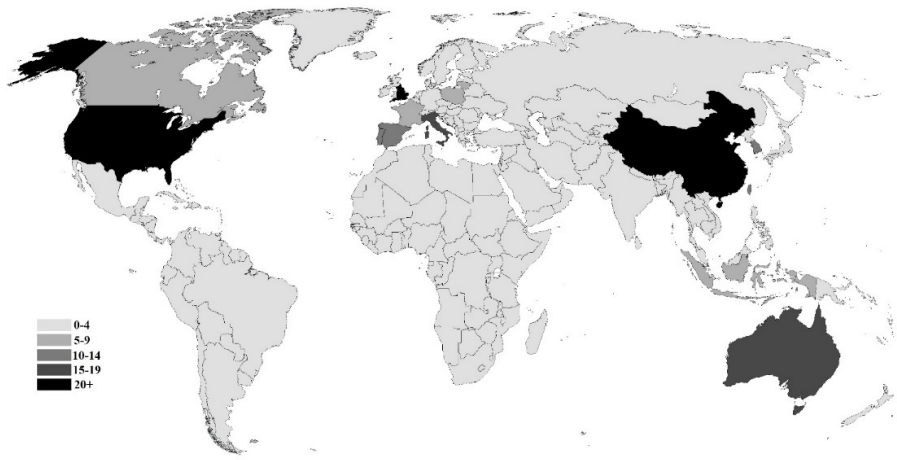

Figure 3. Geographical distributions of publications (source: created by the authors)

The co-authorship analysis of the countries (Figure 4) determines the relatedness of the countries based on the number of co-authored documents. The size of the circles represents the number of citations, the distance represents relatedness and similarities between two countries, while the different colours represent different clusters. Only results that meet the threshold of three documents are shown in Figure 4. Eight clusters are formed: (1) cluster on the right (in blue) is formed by China in the centre with Singapore, Taiwan, and Lithuania being at a close distance; (2) cluster on the bottom right (in purple) is formed by the US in the centre with Finland, and Sweden; (3) cluster on the centre right (orange) is formed by South Korea in the centre and Portugal; (4) cluster on the bottom left (in red) is formed by Italy with Poland, Spain, Slovenia, France, and Bulgaria; (5) cluster on the centre left (in green) is formed by England in the centre with Russia, Indonesia, and Egypt; (6) cluster on the centre top (in light blue) is formed by Australia and Scotland, UK; (7) cluster on the top (in yellow) is formed by Canada in the centre, Slovakia, and Wales, UK; (8) cluster is formed by the Netherlands.

Bibliographic coupling (Figure 5) links two journals that cite the same third journal. The meanings of the indicators are explained in Section 2. Only results meeting the threshold of two documents are shown in Figure 5. Five different clusters consisting of the journal with the most cited documents in the cluster can be identified in Figure 5: (1) cluster on the

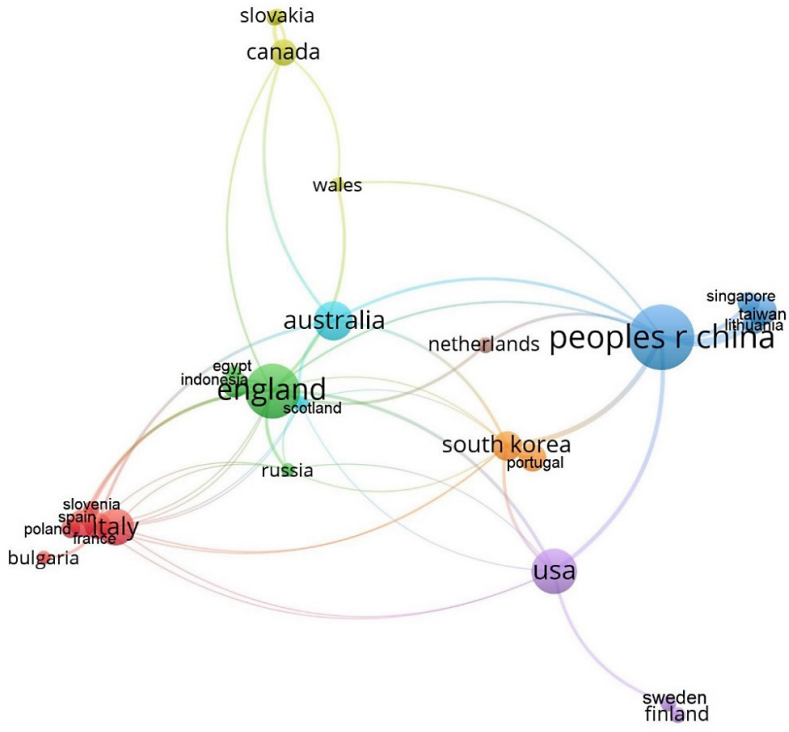

Figure 4. Co-authorship of countries (source: created by the authors)

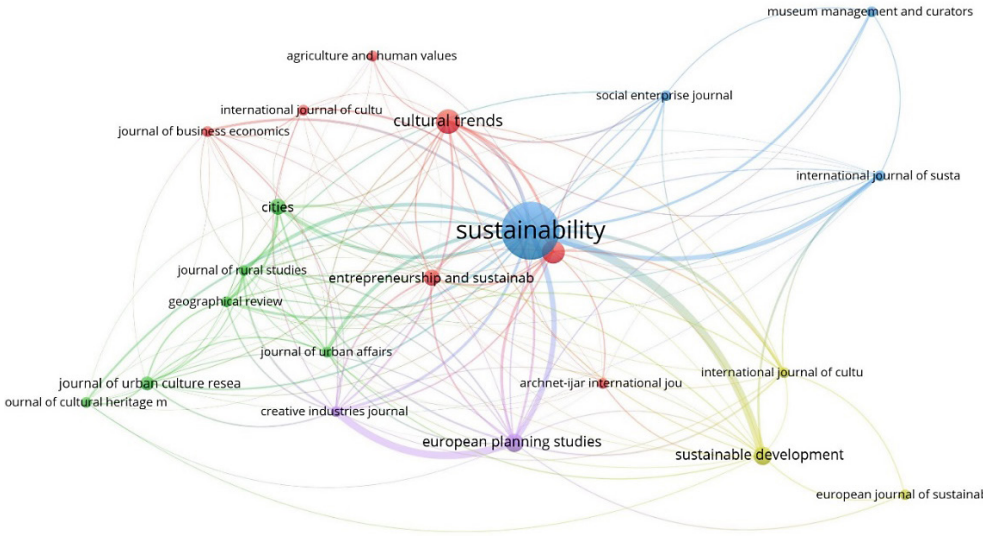

Figure 5. Bibliographic coupling of journals (source: created by the authors)

right (in blue), journal with the most documents in the cluster – *Sustainability*; (2) cluster on the bottom right (in yellow), journal – *Sustainable Development*; (3) cluster on the bottom (in purple), journal – *European Planning Studies*; (4) cluster on the left (in green), journal – *Cities*; (5) cluster on the top (in red), journal – *Cultural Trends*.

Fifteen the most productive authors in the field with total authors cited, citations per document, author's h-index, and institution with country are presented in Table 2. The results show that the top two authors are from University of Beira Interior, Portugal, and both authors are co-authors, therefore, the total number of documents and citation coincides. Tomas Kačerauskas follows with 4 articles and then the rest authors with 2 publications. However, Lisa de Propris from the University of Birmingham, UK, stands out with the highest citations per document (n = 52). According to the *WoS* database (*Clarivate*), Cunningham from Manchester Metropolitan University, UK, has the highest h-index (35).

Table 2. Fifteen the most productive authors in the field (source: created by the authors)

Author	Number of documents	Times cited	Citations per document	Author's h-Index	Institution, country
Franco, Mário	5	34	6.8	18	University of Beira Interior, Portugal
Rodrigues, Margarida	5	34	6.8	6	University of Beira Interior, Portugal
Kačerauskas, Tomas	4	24	6	10	Vilnius Gediminas Technical University, Lithuania

End of Table 2

Author	Number of documents	Times cited	Citations per document	Author's h-Index	Institution, country
Propris, de Lisa	2	104	52	19	University of Birmingham, United Kingdom
Caprotti, Federico	2	79	39.5	14	University of Exeter, United Kingdom
Trauger, Amy	2	67	33.5	12	University of Georgia, United States
Kong, Lily	2	53	26.5	28	Singapore Management University, Singapore
Comunian, Roberta	2	43	21.5	14	King's College London, United Kingdom
Cunningham, Stuart	2	35	17.5	35	Manchester Metropolitan University, United Kingdom
Yang, Jing	2	22	11	15	Heilongjiang University of Chinese Medicine, China
Černevičiūtė, Jūratė	2	22	11	5	Vilnius Gediminas Technical University, Lithuania
Luckman, Susan	2	12	6	9	University of South Australia, Australia
Donato, Fabio	2	9	4.5	5	University of Ferrara, Italy
Borin, Elena	2	9	4.5	3	University of Burgundy – Franche-Comté, France
Kaymas, Serhat	2	9	4.5	2	Hacettepe University, Turkey

The co-occurrence of keywords (Figure 6) analyses the linkage of keywords based on the number of specific keywords used. Thesaurus file was used to merge similar keywords such as *creative industry* and *creative industries*, *art* and *arts*. Only results that meet the threshold of 10 occurrences are shown in Figure 6. Four clusters with the main keywords in the cluster are shown in Figure 6: (1) cluster on top (in green) with the keywords: *sustainable development*, *creative economy*, *economy*, *cultural and creative industries*, *cultural economy*; (2) cluster on the right (in blue), with the keywords *creative industries*, *sustainability*, *innovation*, *performance*; (3) cluster in the centre (in red), with the keywords *city*, *cultural industries*, *urban*, *culture*, *creativity*, *creative city*; (4) cluster at the bottom (in yellow), with the keywords *knowledge*, *networks*, *clusters*.

To answer RQ3, fifteen the most influential articles were identified based on search criteria (Table 3). The most influential article in the selected field is titled "Conceptualizing Integrated Rural Tourism" by Saxena et al. (2007), in the *Tourism Geographies: An International Journal of Tourism Space, Place and Environment*, cited 136 times, with average citation per year – 9.1 times. The newest most influential article "The Microlevel Actions Undertaken by Owner-Managers in Improving the Sustainability Practices of Cultural and Creative Small and Medium Enterprises: A United Kingdom–Italy Comparison", by del Giudice et al. (2017) published in *Journal of Organizational Behavior*, cited 79 times with the highest average citation per year, 15.8 times.

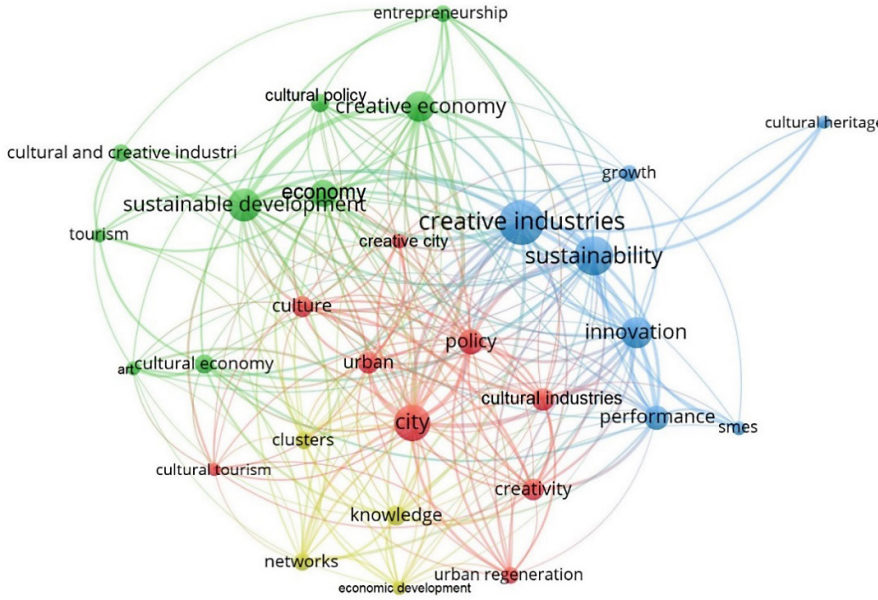

Figure 6. Co-occurrence of all keywords (source: created by the authors)

Table 3. Fifteen the most influential articles (source: created by the authors)

Title of the publication	Author(s)	Journal	PY/TC*
"Conceptualizing Integrated Rural Tourism"	Saxena, Gunjan; Clark, Gordon; Oliver, Tove; Ilbery, Brian	*Tourism Geographies: An International Journal of Tourism Space, Place and Environment*	2007/136
"Shaping Neighborhoods and Nature: Urban Political Ecologies of Urban Waterfront Transformations in Portland, Oregon"	Hagerman, Chris	*Cities*	2007/82
"The View from out West: Embeddedness, Inter-Personal Relations and the Development of an Indigenous Film Industry in Vancouver"	Coe, Neil M.	*Geoforum*	2000/81
"The Microlevel Actions Undertaken by Owner-Managers in Improving the Sustainability Practices of Cultural and Creative Small and Medium Enterprises: A United Kingdom–Italy Comparison"	Giudice, del Manlio; Khan, Zaheer; Silva, de Muthu; Scuotto, Veronica; Caputo, Francesco; Carayannis, Elias	*Journal of Organizational Behavior*	2017/79

End of Table 3

Title of the publication	Author(s)	Journal	PY/TC*
"The Green Economy: Functional Domains and Theoretical Directions of Enquiry"	Bailey, Ian; Caprotti, Federico	*Environment and Planning A: Economy and Space*	2014/66
"A Framework for Sustainable Heritage Management: A Study of UK Industrial Heritage Sites"	Landorf, Chris	*International Journal of Heritage Studies*	2009/66
"Inequality in the Creative City: Is There Still a Place for "Old-Fashioned" Institutions?"	Donegan, Mary; Lowe, Nichola	*Economic Development Quarterly*	2008/65
"A Policy Agenda for EU Smart Growth: The Role of Creative and Cultural Industries"	Cooke, Phil; Propris, de Lisa	*Policy Studies*	2011/62
"'Our Market Is Our Community': Women Farmers and Civic Agriculture in Pennsylvania, USA"	Trauger, Amy; Sachs, Carolyn; Barbercheck, Mary; Brasier, Kathy; Kiernan, Nancy Ellen	*Agriculture and Human Values*	2010/56
"The Eventification of Place: Urban Development and Experience Consumption in Berlin And New York City"	Jakob, Doreen	*European Urban and Regional Studies*	2013/50
"Sustainable Development and the Rehabilitation of a Historic Urban District – Social Sustainability in the Case of Tianzifang in Shanghai"	Hiu Kwan Yung, Esther; Hon Wan Chan, Edwin; Xu, Ying	*Sustainable Development*	2014/45
"Creative Industries and Informal Economies: Lessons from Nollywood"	Lobato, Ramon	*International Journal of Cultural Studies*	2010/44
"The Role of Universities in the Regional Creative Economies of the UK: Hidden Protagonists and the Challenge of Knowledge Transfer"	Comunian, Roberta; Taylor, Calvin; Smith, David N.	*European Planning Studies*	2014/43
"How Are Creative Industries Weathering the Crisis?"	Propris, de Lisa	*Cambridge Journal of Regions, Economy And Society*	2013/42
"Creative Labour and Graduate Outcomes: Implications for Higher Education and Cultural Policy"	Bridgstock, Ruth; Cunningham, Stuart	*International Journal of Cultural Policy*	2016/35

**Note:* PY/TC – Publication year/Times cited.

To answer RQ4 and to have an in-depth understanding of the scientific field, the most influential articles were analysed (Table 4), and results are presented in the following: (1) author(s), year; (2) research method(s), sample; (3) examined phenomenon; (4) findings.

Table 4. Review of fifteen the most influential articles (source: created by the authors)

Author(s), year	Research method(s), sample	Examined phenomenon	Findings
Saxena et al., 2007	Case study, semi-structured interviews, field notes, personal notes and theoretical notes. 6 countries: 600 tourists, 300 businesses, 120 public institutions, 120 agencies, 60 gatekeepers, 300 host communities members.	Integrated rural tourism and its networks.	The integrated rural tourism approach leads to more sustainable tourism to create powerful network networks between social, cultural, economic, and environmental resources and is a basis for endogenous growth.
Hagerman, 2007	Discource analysis, case study.	Urban development.	Urban political ecologies of urban waterfront transformations.
Coe, 2000	Discource analysis, case study.	The development of cultural industry, the indigenous and television production sector internationally, nationally, and locally.	The key characteristics of the relationship between the network of film producers are presented, such as mobilising resources and co-sharing the distribution channels. The abilities aim to raise and secure financing and distribution channels.
del Giudice et al., 2017	Literature review and structured interviews. 10 creative and cultural industries small and medium-sized enterprises owners.	Sustainability practices of small and medium-sized enterprises in creative and cultural industries.	The role of the owner-manager in introducing sustainability into action is significant, although the participation of other stakeholders and employees improves collective sustainability practices.
Bailey and Caprotti, 2014	Discourse analysis.	Green cultural economy.	The concept of a green cultural economy including features and functional domains is developed.
Landorf, 2009	Content analysis. 6 industrial World Heritage Site management plans in the United Kingdom.	Integration of sustainable development principles into World Heritage Site management plans.	The framework for sustainable heritage management extends McCann's (1983) guidelines for social problem solving and the adoption of extensive long-term participation of communities in decision-making processes is presented. Formal collaborative partnerships in heritage management limit community participation.

Continue of Table 4

Author(s), year	Research method(s), sample	Examined phenomenon	Findings
Donegan and Lowe, 2008	Ordinary least squares model. Observations for 277 metropolitan statistical areas in unmanned aircraft systems, 1990–2003.	Relationship between creative workers and earnings inequality in the context of the broader urban economy.	The factors presented: inequality of earning, technology or management inducement, immigration, international trade, skill-based technical change, unionisation, minimum wage, creative division of labour and controls.
Cooke and de Propris, 2011	Document analysis.	Creative and cultural industries role in smart economic growth after the crisis.	Balanced integration of creative and cultural industries into traditional economies is crucial in the sustainable recovery of the European Union to promote endogenous growth.
Trauger et al., 2010	In-depth interviews. 22 women farmers.	Women farmers practices in civic agriculture.	Civic agriculture actions play an important role in the development of active communities.
Jakob, 2013	Case study.	Eventification of urban areas.	Eventification of cities encourages new networks and partnerships between local urban developers and individual artists.
Hiu Kwan Yung et al., 2014	Case study. 10 in-depth interviews, 165 respondents for questionnaires.	Socially sustainable development in the rehabilitation of historic districts.	A framework to specify factors for socially sustainable rehabilitation of historic districts is presented that helps to design and implement rehabilitation strategies, as well as a list of 21 factors.
Lobato, 2010	Comparative industry analysis.	The role of informal markets in creating efficient and economically sustainable media industries.	The informal creative industry is significant to rethink the media industries.
Comunian et al., 2014	44 interviews in 10 universities, 2007–2008.	The application of the triple-helix framework in the creative economy.	Universities have a long history of interaction interacted with their regional creative economies. The relationships focus on knowledge sharing, economic impact, knowledge spillovers, and local economic development. New forms of organization, partnership, transdisciplinarity, accountability, and reflexivity: new contexts of knowledge creation and diffusion in triple-helix engagement in creative and cultural industries.

End of Table 4

Author(s), year	Research method(s), sample	Examined phenomenon	Findings
de Propris, 2013	Analysis of statistical data, 2009–2011.	Development of creative industries during the crisis period.	The contribution of creative and cultural industries contribution to the recovery of the national economy after the crisis is crucial. Creative and cultural industries bring higher value-added, higher adoption of innovation, and higher creativity in traditional industries and is a stimulus for smart economic growth.
Bridgstock and Cunningham, 2016	Creative trident methodology, census data, and survey. 916 graduates from undergraduate creative degrees.	Employment potential of creative graduates and career sustainability in the creative economy.	The graduates in the creative pathways study believed that they had acquired skills that they considered relevant to their careers. Creative and cultural industries jobs are associated with a far higher degree of full-time employee-based job holding, lower unemployment, higher earnings per hour, and a higher average number of paid hours of work per week than specialist and cultural production jobs.

Table 4 provides an overview of the most influential articles and lets us categorise in the following: (1) one article expands the theoretical concept of sustainability in CCIs (Bailey & Caprotti, 2014); (2) one article (Trauger et al., 2010) uses the term *cultural* in a different scientific field (*i.e.* agricultural); (3) eight articles explore the practical application of sustainability aspects in specific CCIs (Bridgstock & Cunningham, 2016; Coe, 2000; del Giudice et al., 2017; Hagerman, 2007; Jakob, 2013; Lobato, 2010; Saxena et al., 2007; Hiu Kwan Yung et al., 2014); (4) two articles explore the role of CCIs toward sustainability (Cooke & de Propris, 2011; de Propris, 2013); (5) two articles explore the overall integration of sustainability principles in the documentation related to CCIs (Comunian et al., 2014; Donegan & Lowe, 2008; Landorf, 2009).

Conclusions and future research

In the discourse of contemporary inclusive economic development, a topic of adoption of sustainability in CCIs is very relevant, and the increase in political, analytical, and scientific attention proves it. This study applied bibliometric analysis and addressed the research gap in the scientific field of sustainability in CCIs. 247 publications in the *WoS* database (*Clarivate*) were investigated, published between 2000 and 2021 exploring sustainability in CCIs.

Our results show that the research on sustainability in CCIs is relatively recent and the scientific production growth trend shows a rapid increase of academic interest in the field.

Since 2016 to 2021, the publication rate has grown 16 times and these results are in line with previous studies (Bui Hoai et al., 2021; Dharmani et al., 2021; Lazzeretti et al., 2017).

The most productive country in the field is Switzerland (n = 36); however, almost equal production output comes from England (n = 31) and then from the US (n = 8). Based on co-authorship of countries, it can be observed, that the distance from China to European countries is staggering, with the US being the linkage among them.

The analysis of all keywords complements the studies by Bui Hoai et al. (2021), Dharmani et al. (2021), Gustafsson and Lazzaro (2021), Lazzeretti et al. (2017). It reveals that the terms *creative industries*, *cultural industries*, *creative economy* and *cultural economy* are used widely with broad understanding. Based on cluster distribution, *creative industries*, *cultural industries*, and *creative economy* represent separate clusters, even if have close distance and are related. The term *sustainability* is very closely related to *creative industries*, whilst *sustainable development* is in the separate cluster and is placed between *creative economy* and *cultural and creative industries*. The term *sustainability* is observed in close relationship with terms *innovation*, *performance*, *small and medium-sized enterprises*, and *growth* and is placed in the same cluster. Though the *creative economy* and the *cultural economy* are in the same cluster (in green), the distance between them suggests that the relatedness is very small. Pairs of terms *creative industries* and *sustainability*, *sustainable development* and *economy*, *creative economy* and *cultural policy* are extremely close to each other. The terms such as, *cultural heritage* and *entrepreneurship*, *network*, *economic development* are on the boundaries of the co-occurrence of the keywords analysis.

The analysis of the most influential articles in the field let us categorise the main research streams: (1) the concept of sustainability in CCIs; (2) practical application of sustainability aspects in specific CCIs; (3) the role of CCIs towards sustainability; (4) overall integration of sustainability principles in the documentation, which regulates CCIs. Although the majority of most influential articles analysed sustainability in CCIs, few of the articles investigated the opposite relation. It can be argued that sustainability principles affect the CCIs development with more and more increasing global concern for sustainable development, and the CCIs change is inevitable. Most of the articles investigate practical application of social, economic, or environmental principles of sustainability in specific CCIs sectors. The role of CCIs to increase sustainability globally and in other industries is researched by few scholars.

Regarding the research questions and findings, this study outlines the future research directions, guides to a more holistic and twofold theoretical approach and investigate a more in-depth analysis of the process, whilst separating the input and the outcome on interrelationships of sustainability and CCIs. Investigating sustainability principles as input factors for CCIs and *vice versa* could guide more focused research in the field. Furthermore, CCIs can be seen as a major contributor to the achievement of sustainable development goals globally. The main principles of CCIs, such as creativity and innovation, can foster sustainability in other industries and act as a catalyst for sustainability in a global economy and society, which can be of a special interest after COVID-19 pandemic crisis.

Bibliometric literature analysis reduces bias often observed in the literature reviews, though it inevitably also brings some limitations. The main benefit of a quantitative analysis method is that it allows us to explore and review many scientific documents in the selected

field. However, it has restrictions to discuss the insights from the articles in detail. The second is that only the most influential articles were analysed. The third limitation is closely related to the selected timeline, the date of this study and the updates of the *WoS* database (*Clarivate*). For example, if the same analysis were conducted at different times, the results would differ.

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