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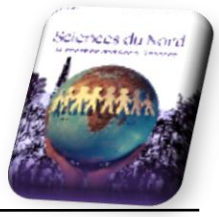

Creative Economy Ecosystem in the Context of Digitalization: A Bibliometric Study of Innovation, Entrepreneurship, and Global Market Dynamics

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ABSTRACT

This study examines the intellectual landscape of the creative economy in the context of digitalization, using a bibliometric approach to explore patterns of innovation, entrepreneurship, and global market dynamics. Drawing on data from the Scopus database and visualized through VOSviewer, the analysis includes keyword co-occurrence, author collaboration networks, and country-level research partnerships. The findings reveal that innovation serves as the central node in this research domain, linking to closely associated themes such as entrepreneurship, digital economy, ecosystems, and sustainability. Temporal analysis shows a shift from theoretical constructs to more applied and policy-relevant issues, including urban development, circular economy, and creative ecosystems. Co-authorship mapping highlights influential scholars like Carayannis, Florida, and Cunningham, while international collaboration patterns underscore the dominance of the US and UK, with growing participation from emerging economies such as China and Indonesia. This study provides a foundational reference for future academic inquiry and strategic policymaking by offering an integrated view of how the creative economy evolves in response to global digital transformation and sustainability imperatives.

Keywords: *Creative Economy; Digitalization; Innovation; Entrepreneurship; Sustainable Development; Bibliometric Analysis*

INTRODUCTION

In the 21st century, the creative economy has emerged as a vital force driving economic growth, innovation, and social transformation. Characterized by activities that capitalize on creativity, cultural knowledge, and intellectual property, the creative economy spans industries such as media, design, advertising, fashion, architecture, and software development [1]. As traditional economic models increasingly show limitations in addressing contemporary global challenges, the creative economy presents a unique value proposition by integrating culture, creativity, and commerce. This integration not only fosters sustainable development but also contributes significantly to employment and GDP in both developed and developing economies [2], [3].

Simultaneously, the advent of digital technologies has significantly reshaped the landscape of the creative economy. Digitalization has enabled new modes of production, distribution, and consumption of creative content, leading to the emergence of digital platforms, virtual collaboration tools, and online marketplaces. These technologies have lowered entry barriers for creative entrepreneurs and facilitated the globalization of creative products and services [4], [5]. Through platforms such as YouTube, Etsy, TikTok, and Spotify, creators can now access global audiences instantly, thus redefining the boundaries of creative entrepreneurship. As a result, digital innovation has become inseparable from the growth and transformation of the creative economy ecosystem [6].

Furthermore, the increasing emphasis on knowledge-based and innovation-driven economies has elevated the role of entrepreneurship within the creative sector. Creative

entrepreneurship is no longer confined to artistic expression but is viewed as a dynamic process of generating value through the commercialization of creative ideas [7]. Entrepreneurs in this domain often operate at the intersection of art, business, and technology, navigating volatile market demands, intellectual property considerations, and evolving consumer behavior. Innovation ecosystems that support these entrepreneurs—such as incubators, funding mechanisms, and policy frameworks—are thus critical in enhancing the sector's global competitiveness and resilience [8].

In parallel, the global market dynamics of the creative economy have become more complex and interconnected. Cultural exports, digital services, and intellectual property transactions now flow across borders with unprecedented speed. Countries and regions compete not only through cost efficiency but also through the strength of their creative industries and innovation ecosystems [9]. International organizations, such as the World Intellectual Property Organization (WIPO) and UNESCO, have increasingly acknowledged the strategic role of creative industries in fostering cross-cultural dialogue, economic inclusion, and sustainable urban development. Consequently, there is a growing imperative to understand how creative ecosystems evolve within this digital and global context.

Despite the rising prominence of the creative economy, there remains a need for comprehensive mapping and systematic analysis of its evolution—particularly in relation to digitalization, innovation, and global market integration. While various case studies and policy reports exist, few studies offer a holistic bibliometric analysis that identifies key research trends, influential authors, collaboration networks, and thematic developments over time. A bibliometric perspective enables the identification of intellectual structures and knowledge clusters that have shaped the field, thereby providing valuable insights for scholars, policymakers, and practitioners seeking to strengthen the creative economy through informed strategies and evidence-based decision-making.

The intersection of the creative economy, digitalization, and global entrepreneurship represents a rapidly evolving research domain, yet remains fragmented and underexplored in terms of systematic scientific mapping. Existing literature often focuses on isolated aspects such as platform economy, cultural industries, or digital entrepreneurship, without capturing the broader ecosystemic and interdisciplinary interconnections. There is a pressing need for a comprehensive bibliometric investigation that synthesizes the diverse academic discourse on this topic, identifies patterns of intellectual development, and reveals gaps in knowledge that hinder a full understanding of the creative economy's role in the digital age. This study aims to conduct a bibliometric analysis of the creative economy within the context of digitalization, focusing on the dynamics of innovation, entrepreneurship, and global market integration.

METHODS

Design and Approach

This study adopts a quantitative bibliometric approach to analyze the scientific literature related to the creative economy in the context of digitalization. Bibliometric analysis enables a systematic and objective evaluation of the intellectual structure and development trends within a research field. Specifically, this research examines the relationships among themes such as innovation, entrepreneurship, and global market dynamics within the creative economy ecosystem. By mapping co-authorship, co-citation, and keyword co-occurrence patterns, the study seeks to identify dominant research streams, influential authors, institutional collaborations, and emerging thematic clusters.

Data Source and Search Strategy

The data for this study were obtained from the Scopus database, one of the most comprehensive and widely used bibliographic repositories for peer-reviewed academic literature.

Scopus was selected due to its robust coverage of interdisciplinary publications and compatibility with bibliometric tools such as VOSviewer. The search query was constructed using a combination of controlled vocabulary and Boolean operators to capture relevant publications. The final query included terms such as: ("creative economy" OR "creative industries" OR "cultural economy") AND ("digitalization" OR "digital transformation" OR "digital platform") AND ("entrepreneurship" OR "innovation") AND ("global market" OR "internationalization"). The search was limited to articles, conference papers, and reviews published between 2000 and 2024, written in English, and indexed in subject areas related to business, management, economics, arts and humanities, and social sciences. A total of XXX documents (replace with actual number after extraction) were retrieved and exported in RIS or CSV format, which is compatible with VOSviewer.

Data Preparation and Cleaning

Prior to analysis, the bibliographic data were pre-processed to ensure consistency and accuracy. Duplicate records were removed, and terms were normalized to account for variations in author names, institutions, and keywords (e.g., "digitalization" vs. "digitization", or "creative industries" vs. "creative sector"). Standard bibliometric fields such as author, title, abstract, keywords, source, year, and citations were retained for analysis. The data cleaning process was essential to avoid redundancy and ensure valid visualization of networks.

Bibliometric Analysis

The cleaned dataset was imported into VOSviewer, a specialized software tool designed for creating bibliometric maps based on network data. In this study, three main types of bibliometric analyses were conducted such as keyword co-occurrence analysis, co-authorship analysis, and citation analysis. The output from VOSviewer consisted of multiple visual maps that illustrated the structure and evolution of research on the digital creative economy. Each node in the visualizations represents an item (e.g., keyword, author, or document), and the size of the node reflects its frequency or impact. Links between nodes indicate co-occurrence or co-citation relationships, and clusters of nodes represent thematic or collaborative groupings. These visualizations were interpreted qualitatively to derive meaningful patterns and trends, with emphasis on how the field has developed over time and where future research might be directed.

RESULTS

Keyword Co-Occurrence Analysis

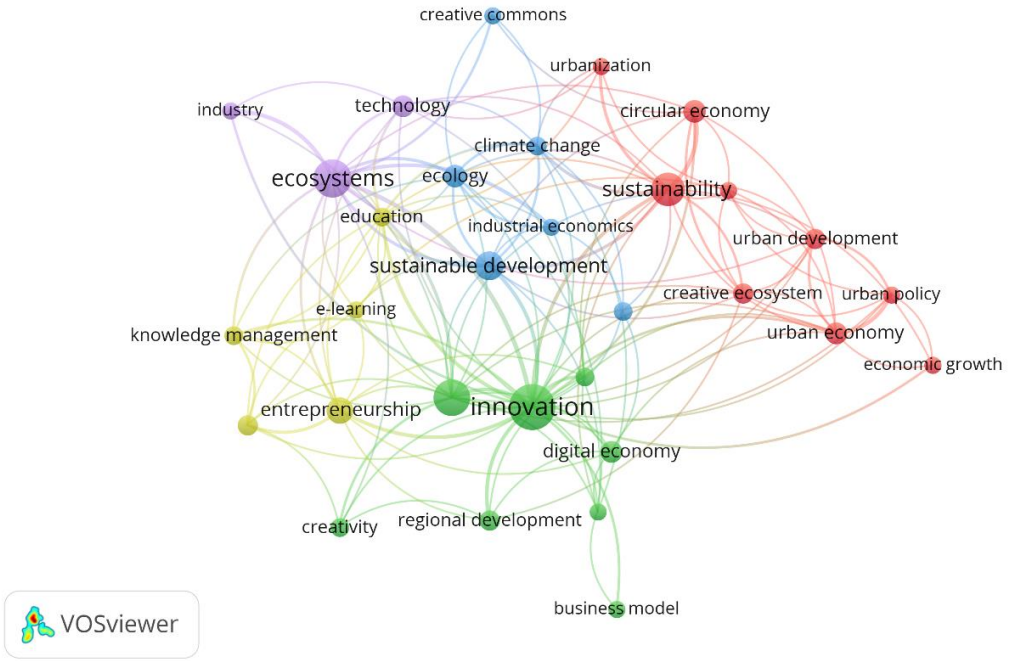

Figure 1. Network Visualization
Source: Data Analysis

The keyword co-occurrence visualization in the uploaded image presents a comprehensive thematic mapping of literature surrounding the creative economy, innovation, sustainability, and digitalization. Each cluster, distinguished by color, represents a distinct research theme, with larger nodes signifying higher keyword frequency and stronger academic relevance. The proximity and thickness of connecting lines denote the strength of relationships between terms, revealing the intellectual structure of the field. The green cluster, centered around the keyword innovation, dominates the visualization and serves as a bridge to various thematic areas. Closely linked terms such as entrepreneurship, creativity, digital economy, and regional development suggest that innovation is a central pivot in discussions about economic modernization and value creation in creative industries. The connections imply that innovation-driven entrepreneurship, supported by digital infrastructures and creative practices, is key to the development of modern creative economies.

The red cluster revolves around the keyword sustainability and includes related terms like urban development, circular economy, urban economy, and urban policy. This indicates a strong subfield exploring how sustainable development principles intersect with urban planning and economic models. The presence of creative ecosystem within this cluster suggests that scholars are increasingly interested in how creative industries contribute to building sustainable urban environments and green economies through innovative policy frameworks and economic restructuring. The blue cluster highlights a knowledge domain focused on sustainable development, ecology, climate change, and industrial economics. The co-occurrence of technology and education in this network indicates interdisciplinary interest in leveraging educational and technological tools to address sustainability challenges. This cluster underscores the growing academic emphasis on integrating environmental considerations into industrial, economic, and creative strategies, reinforcing the relevance of eco-innovation and climate-conscious development within the broader creative economy discourse.

The yellow and purple clusters capture supporting themes. The yellow cluster emphasizes knowledge management, e-learning, and entrepreneurship, pointing to the educational and managerial infrastructure required to sustain innovation ecosystems. Meanwhile, the purple cluster focuses on ecosystems, industry, and technology, indicating a systemic view of innovation as part of broader industrial and digital transformation processes. These supporting clusters reinforce the view that the creative economy is not an isolated phenomenon but embedded within a larger framework of digital, educational, ecological, and industrial systems.

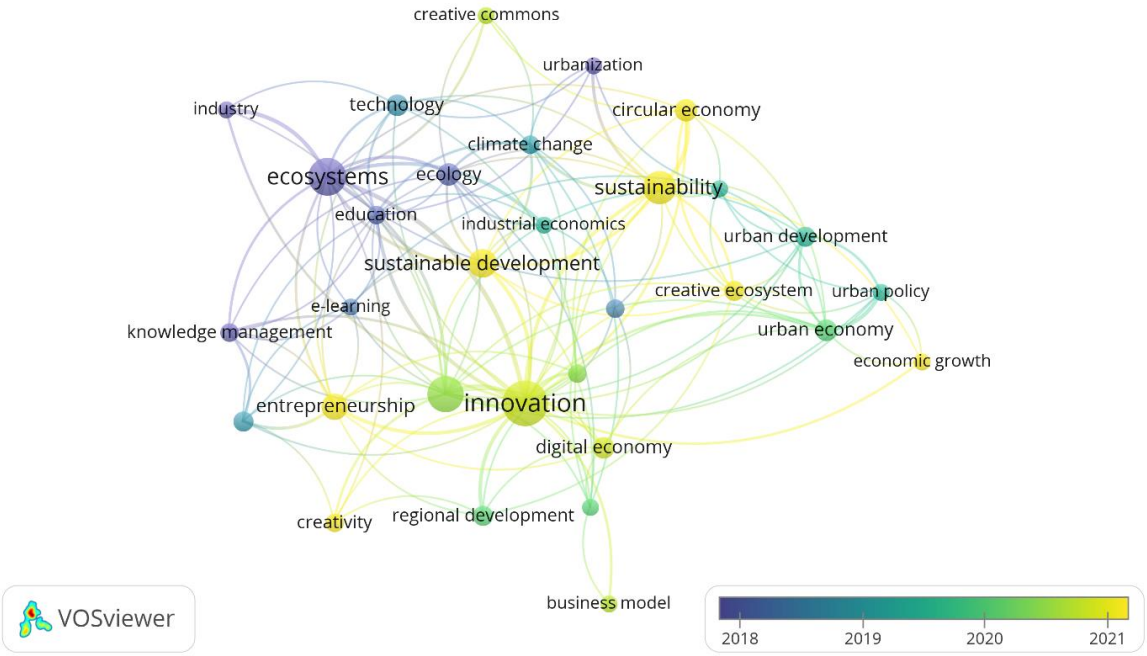

Figure 2. Overlay Visualization
Source: Data Analysis

The visualization above represents a temporal keyword co-occurrence map where colors correspond to the average publication year of each keyword (from 2018 to 2021). Terms shaded in yellow are more recent, while blue and purple terms denote older research focus areas. This enables a chronological interpretation of thematic evolution within the field of creative economy, digital innovation, and sustainability studies. At the center of the network is the keyword "innovation", indicating its longstanding role as a core concept. However, adjacent terms such as "digital economy," "entrepreneurship," and "regional development" appear in green or yellow, suggesting a growing scholarly interest in these themes after 2019. Additionally, newer concepts like "creative ecosystem," "circular economy," and "urban development" are trending more recently (yellow), revealing a shift in academic attention toward the sustainability and urbanization aspects of the creative economy. This reflects an increasing awareness of how creativity, technology, and urban policy intersect in the digital age. In contrast, earlier dominant topics such as "ecosystems," "technology," "education," and "knowledge management" are visualized in purple to blue shades, indicating their prominence before 2019. These foundational concepts laid the groundwork for the current evolution of interdisciplinary research.

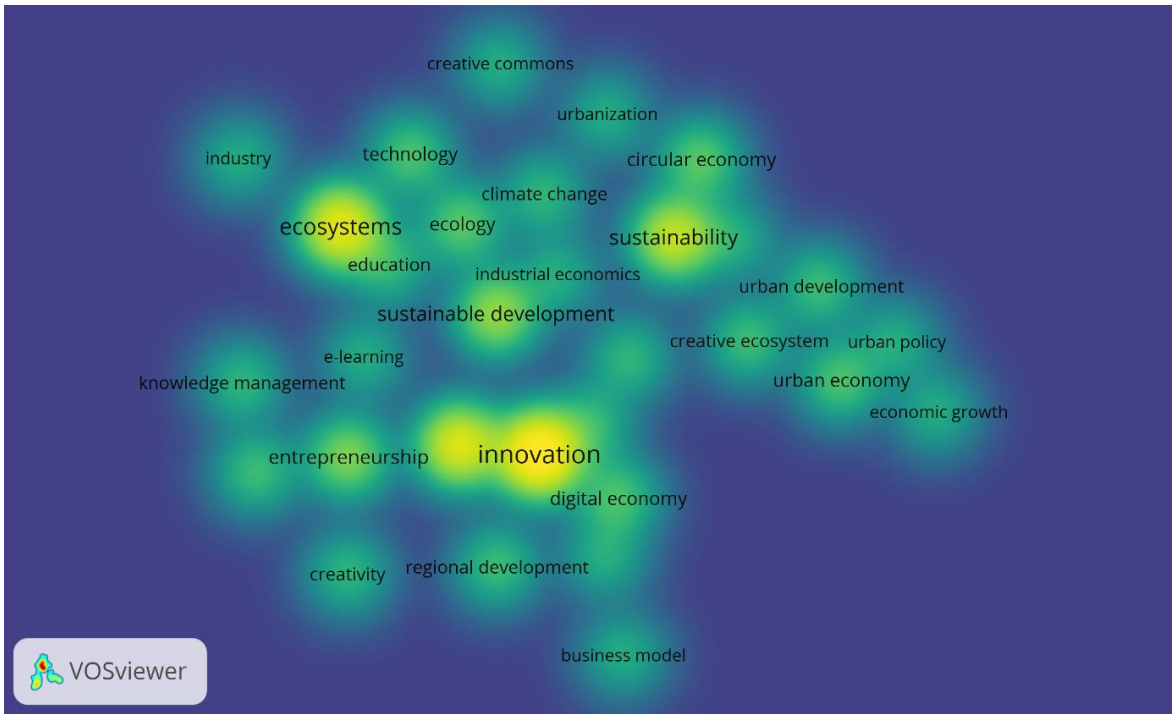

Figure 3. Density Visualization
Source: Data Analysis

The heatmap visualization illustrates the density of keyword co-occurrence in literature related to the creative economy, innovation, and digitalization. The brighter yellow areas represent regions of high keyword frequency and stronger thematic concentration, indicating that these concepts are more prominently featured and frequently interconnected in the academic discourse. The central term "innovation" is the most intensely colored, confirming its role as the dominant theme in the field. Closely surrounding this core are terms like "entrepreneurship," "ecosystems," and "sustainable development," which are also high-density zones, suggesting they are strongly associated with innovation in the scholarly landscape. Peripheral terms such as "creative ecosystem," "urban development," "economic growth," and "business model" are located in cooler, less dense regions, indicating emerging or more specialized areas of study with lower co-occurrence frequencies. Nonetheless, their presence near the dense core suggests growing relevance and potential for future exploration.

Co-Authorship Analysis

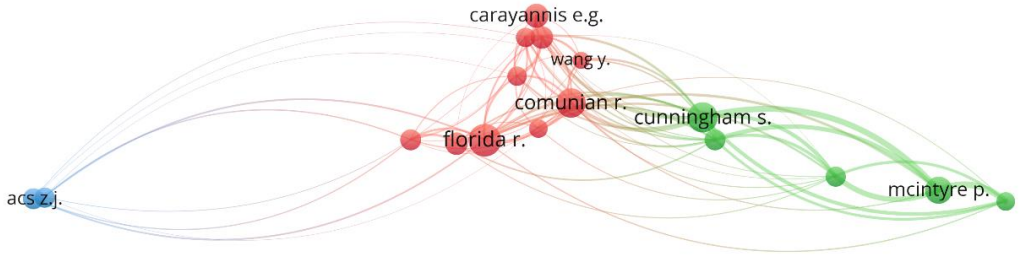

Figure 4. Author Visualization
Source: Data Analysis

The co-authorship network visualization highlights the collaborative structure among leading scholars in the creative economy and innovation domain. The network is organized into three distinct clusters, each represented by different colors. The red cluster, which includes influential authors such as Carayannis E.G., Florida R., Comunian R., and Wang Y., appears to be the most interconnected and central, reflecting a strong collaboration network focused on innovation ecosystems, knowledge spillovers, and creative industries. The green cluster, including Cunningham S. and McIntyre P., suggests a parallel stream of research likely oriented toward creative entrepreneurship and cultural production, showing close interlinkages within but moderate connectivity to the red cluster. On the periphery, Acs Z.J. in the blue cluster stands out as a key intellectual contributor with fewer but cross-cluster connections, indicating their work is influential and cited across thematic boundaries, though less collaborative.

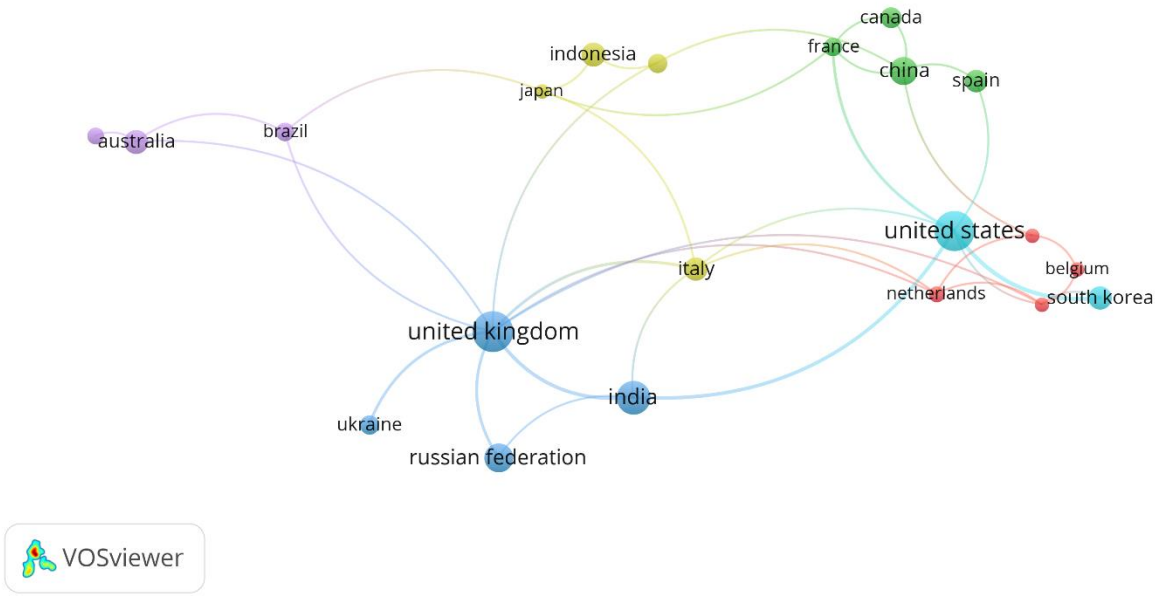

Figure 5. Country Visualization
Source: Data Analysis

This country collaboration map illustrates international research partnerships in the field of creative economy and digital innovation. The United Kingdom and United States emerge as the most prominent and interconnected nodes, serving as central hubs in the global research network. The United Kingdom shows strong links with India, Russia, Ukraine, and Brazil, indicating its active role in bridging Western and non-Western research communities. The United States, meanwhile, maintains dense collaborative ties with countries like China, Netherlands, South Korea, and Canada, reflecting its influence in transatlantic and Asia-Pacific research networks. Notably, Indonesia is connected through partnerships with countries such as Japan and Italy, signifying emerging regional collaborations. The clustering and color-coding also highlight geographically and thematically aligned research blocs, such as the European cluster (UK, Netherlands, Belgium, France, Italy) and the East Asian cluster (China, South Korea, Japan).

Citation Analysis

Table 1. Most Cited Article

Citations	Author and Year	Title
158	[10]	Metaverse tourism: conceptual framework and research propositions
135	[11]	Shaping neighborhoods and nature: Urban political ecologies of urban waterfront transformations in Portland, Oregon
124	[12]	The creation of knowledge: Local building, global accessing and economic development-toward an agenda
124	[13]	Developed democracies versus emerging autocracies: arts, democracy, and innovation in Quadruple Helix innovation systems
107	[14]	The digital economy: Business organization, production processes and regional developments
106	[15]	The evolution of the global digital platform economy: 1971–2021
95	[16]	Planetary improvement: Cleantech entrepreneurship and the contradictions of green capitalism

77	[17]	Sustainable entrepreneurship education for circular economy: emerging perspectives in Europe
75	[18]	Digitising the industry internet of things connecting the physical, digital and virtual worlds
73	[19]	Reconciling sustainability, systems theory and discounting

Source: Scopus, 2025

DISCUSSION

Centrality of Innovation as a Research Nexus

The keyword co-occurrence analysis clearly positions innovation as the central node in the scholarly landscape of the creative economy. This finding aligns with contemporary literature asserting that innovation is the lifeblood of creative and knowledge-based economies [20], [21]. Innovation in this context extends beyond technological invention to include cultural, business model, and organizational innovations that drive competitiveness and adaptability in global markets. The strong ties between innovation and keywords such as entrepreneurship, digital economy, and regional development reflect an integrative view of how creativity and technology foster new business opportunities. This is consistent with [22], who emphasized that creative entrepreneurs function at the intersection of artistic expression and market logic. Moreover, innovation is increasingly viewed as a systemic process facilitated by digital platforms and ecosystems that reduce entry barriers for creative producers while enhancing scalability.

Sustainability and the Urban Dimension of Creative Ecosystems

Another major cluster emerging from the keyword map revolves around sustainability, urban development, and circular economy. The prominence of these terms indicates a growing academic interest in the ecological and urban implications of the creative economy. The integration of sustainability into creative ecosystem discourse reflects the rising awareness of environmental constraints, climate change, and the need for sustainable urban governance [23]. The keyword urban economy, for instance, signals how cities have become focal points for creative economic activity. Urban policies now often incorporate creative hubs, digital infrastructure, and green entrepreneurship programs. The relationship between the creative economy and urban planning is increasingly seen through the lens of the "creative city" paradigm, which posits that cultural vibrancy, digital readiness, and social inclusiveness are prerequisites for sustainable growth [4]. Furthermore, the co-occurrence of creative ecosystem with terms like urban development and policy suggests a policy-oriented approach in recent studies. Governments and municipalities are not only seen as facilitators but as co-creators of innovation ecosystems. This aligns with the quadruple and quintuple helix models that emphasize the interplay between academia, government, industry, civil society, and the environment [3].

Temporal Evolution: From Ecosystems to Application-Driven Research

The overlay visualization indicates a chronological shift in academic attention. Keywords such as ecosystems, technology, and knowledge management dominated earlier publications (pre-2019), while more recent studies (post-2020) focus on digital economy, creative ecosystem, and urban development. This temporal gradient reveals an evolution from theoretical and infrastructural discussions toward more applied and impact-driven research topics. This trend suggests that scholars have moved beyond foundational concepts toward practical challenges and opportunities in digital creative entrepreneurship. The rise of platform economies, such as streaming services, digital marketplaces, and virtual collaboration tools, has redefined how creative work is produced and monetized [24]. As such, recent research emphasizes real-world mechanisms, like business models, regional innovation policies, and cultural exports, that sustain creative economy ecosystems in a digital world. Moreover, the increased appearance of terms like circular economy and climate change in newer publications implies that researchers are embedding environmental concerns into creative economy discourse. This supports broader shifts in global research agendas, particularly the

alignment with the United Nations Sustainable Development Goals (SDGs), where innovation and sustainable cities are prioritized.

Authorship and Intellectual Structure of the Field

The co-authorship analysis revealed distinct clusters of influential scholars shaping the intellectual development of the creative economy discourse. Authors such as Carayannis E.G., Comunian R., and Florida R. form a central red cluster, likely contributing to foundational and policy-relevant knowledge on innovation systems and creative cities. Their tight co-authorship and citation networks indicate a cohesive school of thought grounded in regional innovation systems, creative class theory, and knowledge-based development [20], [21], [22]. In contrast, the green cluster, with figures like Cunningham S. and McIntyre P., suggests a more practice-oriented or entrepreneurial lens, focusing on how digital platforms and new media transform the creative production process. The intellectual separation between these clusters points to multiple paradigms operating within the field, ranging from macroeconomic and policy-focused to micro-level analyses of creative practice and entrepreneurship. Meanwhile, Acs Z.J., in the blue cluster, stands somewhat independently, signifying influence across multiple streams of research without extensive co-authorship. This may reflect a bridging role, where certain scholars contribute cross-disciplinary insights, such as from entrepreneurship and regional studies into creative economy debates.

Global Research Collaboration and Emerging Geographies

The country co-authorship map illustrates that the United Kingdom and United States are the most central contributors to global research on the creative economy. These countries exhibit high connectivity with both advanced and emerging economies. The UK, for example, maintains strong ties with India, Brazil, Russia, and Ukraine, demonstrating its global academic outreach and collaborative diversity. Interestingly, China, South Korea, and Indonesia are increasingly visible on the global research map. While their node sizes remain modest, their connections to established research hubs (e.g., the US, UK, Netherlands) indicate growing participation in international academic discourse. This reflects broader geopolitical shifts in innovation leadership and the emergence of new centers of creative production in Asia. The clustering also reveals regional research alliances: the European cluster (UK, France, Italy, Netherlands), the East Asian cluster (China, South Korea, Japan), and the Anglo-centric cluster (US, Canada, Australia). These blocs may reflect shared policy frameworks, funding ecosystems, or cultural affinities that shape how creative economy research is produced and disseminated. Furthermore, Indonesia's inclusion, though modest, is significant for the Global South. It signals a nascent but promising body of research, possibly propelled by digital transformation and state-led initiatives to bolster the country’s creative industries, such as fashion, culinary arts, and digital content creation.

Implications for Theory and Practice

This study contributes to the theoretical refinement of the creative economy by mapping its interdisciplinary landscape and identifying emergent intersections. The coexistence of terms like business model, education, urban economy, and circular economy highlights the convergence of economics, sustainability science, and digital technology. It reinforces the idea that the creative economy is not a niche cultural domain but a core component of the broader innovation and development ecosystem. Practically, the findings highlight key areas for policymaking. Governments and institutions aiming to cultivate digital creative economies should focus on three pillars: enabling innovation infrastructure, promoting inclusive urban and regional development, and supporting sustainable, circular practices. Attention to international collaboration, especially with emerging economies, also holds promise for equitable global growth in the creative sector. Finally, this bibliometric mapping provides a roadmap for future research. Underexplored connections such as between digital creativity and climate resilience, or between informal creative labor and formal innovation systems represent promising directions for interdisciplinary inquiry.

CONCLUSION

This bibliometric study has provided a comprehensive overview of the academic discourse surrounding the creative economy within the context of digitalization, innovation, and global entrepreneurship. Through keyword co-occurrence, co-authorship, and international collaboration analyses using VOSviewer, it is evident that innovation remains the intellectual nucleus of this field, interlinking with other core themes such as entrepreneurship, digital economy, and sustainable development. The evolution of the literature shows a clear transition from foundational concepts like ecosystems and knowledge management toward more applied, impact-oriented topics, including urban development, circular economy, and digital platforms.

The intellectual structure of the field is characterized by a blend of policy-oriented scholars and practice-based researchers, with leading authors forming distinct but interconnected clusters. On a global scale, the United States and United Kingdom remain dominant contributors, but emerging economies such as China, South Korea, and Indonesia are beginning to play an increasingly important role in shaping the research agenda. The study also reveals potential for future exploration in underrepresented themes, such as creative labor dynamics, platform equity, and the integration of sustainability into creative entrepreneurship.

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