

TRACING DIGITAL TRANSFORMATION IN CREATIVE INDUSTRIES THROUGH CRISIS: A BIBLIOMETRIC ANALYSIS ON THE IMPACT OF COVID-19

DOI: 10.17261/Pressacademia.2025.1995

PAP- V.21-2025(14)-p.70-74

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To cite this document

Evci, D., Cebi, F.A, (2025). Tracing digital transformation in creative industries through crisis: a bibliometric analysis on the impact of Covid-19. PressAcademia Procedia (PAP), 21, 70-74.

Permanent link to this document: <http://doi.org/10.17261/Pressacademia.2025.1995>

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ABSTRACT

Purpose- The purpose of this study is to map and analyze the evolving scholarly discourse on how the COVID-19 pandemic catalyzed digital transformation in the performing arts sector—particularly theatre—by using bibliometric methods to identify key research clusters, trends, and gaps in the literature.

Methodology- The study employs a systematic literature review and bibliometric analysis using the Scopus database to identify and map thematic patterns and research trends on the digital transformation of the performing arts during the COVID-19 pandemic.

Findings- The analysis reveals that the COVID-19 pandemic accelerated digital transformation in the performing arts, revealing six thematic research clusters focused on education, audience engagement, creative labor, community, digital theatre, and emerging technologies.

Conclusion- Based upon the findings, it may be concluded that the COVID-19 pandemic acted as a catalyst for lasting digital transformation in the performing arts, prompting innovation across educational, artistic, technological, and organizational domains.

Keywords: Digital transformation, performing arts, Covid-19, theatre, bibliometric analysis

JEL Codes: Z11, O33, L82

1. INTRODUCTION

The COVID-19 pandemic caused major disruptions across societies, significantly impacting cultural and creative industries (CCI). The performing arts—particularly theatre—suffered immensely due to their dependency on physical, in-person engagement (OECD, 2020). Yet, the crisis sparked a wave of digital experimentation, prompting fundamental changes in how performances are created, shared, and consumed.

Creative industries, which rely on individual talent and generate intellectual property as their main output, were already growing rapidly in OECD economies. However, the pandemic exposed their structural vulnerabilities, especially in sectors like theatre that depend on face-to-face interaction. This study investigates how the pandemic catalyzed digital transformation within theatre by reviewing academic literature through a bibliometric lens. Rather than relying on primary data, the research maps the academic discourse from 2018 to 2025, identifying emerging research clusters and thematic shifts.

2. LITERATURE REVIEW

The COVID-19 pandemic caused major disruptions across industries, yet research on its impact on creative industries remains relatively limited despite their cultural and economic importance (Khlystova et al., 2022; Throsby, 1999; OECD, 2020). Although creative industries have long been associated with innovation, digitalization, and intellectual property (DCMS, 2001; Potts & Cunningham, 2008), the pandemic revealed structural vulnerabilities—especially in performing arts sectors dependent on live interaction.

While bibliometric approaches have become increasingly common in mapping academic fields (Donthu et al., 2021), most studies either offer general overviews (Dharmani et al., 2021) or focus on economic and psychological effects (Cohen & Ginsborg, 2021; Spiro et al., 2021). A growing number of works now address digital transformation in the arts during COVID-19, emphasizing virtual formats, streaming, and hybrid practices (Bruno et al., 2023; Eder & Rowson, 2023). Notably, Evci et al. (2025) analyze how crisis periods accelerate technological innovation in theatre, framing COVID-19 as a key disruptor and catalyst for structural change.

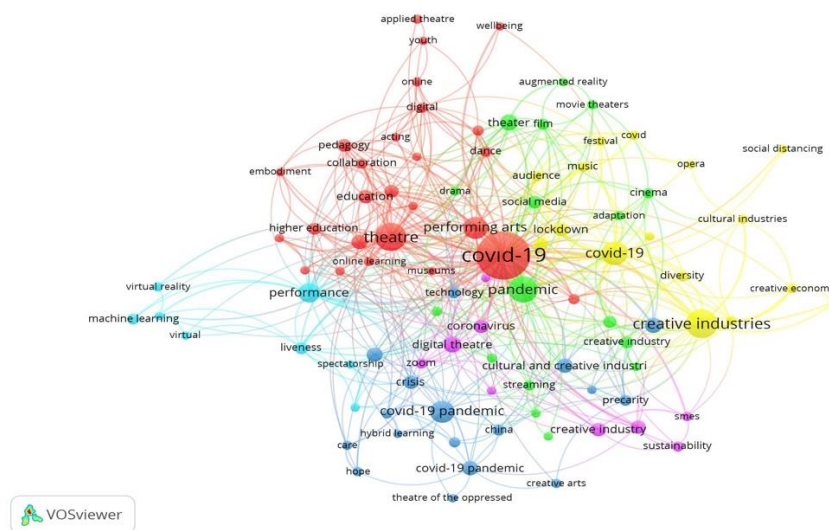
Despite these contributions, comprehensive mappings of academic discourse on the digital evolution of performing arts—especially from a cross-disciplinary and data-driven perspective—remain scarce. This study addresses that gap through a bibliometric analysis of literature published between 2018 and 2025.

3. DATA AND METHODOLOGY

A systematic literature review (SLR) and bibliometric analysis were conducted using the Scopus database. The search targeted peer-reviewed articles in English from 2018 to 2025 that included keywords such as “performing arts,” “theatre,” and “COVID-19.” The initial pool of 888 articles was narrowed to 710 relevant works.

The bibliometric mapping tool VOSviewer was used to identify keyword clusters and thematic patterns. Keywords that appeared at least four times were categorized into six thematic clusters, offering a structured view of how digital transformation in the arts has evolved.

Figure 1: Cluster Analysis of Abstracts' Keywords



4. FINDINGS

4.1. Cluster Analysis

Six distinct keyword clusters emerged, highlighting how the pandemic influenced theatre and performing arts:

Cluster 1: Pedagogical and Socio-Cultural Transformations in Theatre and Performing Arts (Red Cluster): Focuses on the intersection of education, theatre, and digital transformation during the COVID-19 pandemic. It reflects how performing arts institutions, especially theatre and applied theatre, shifted toward online and hybrid learning environments. Keywords such as online learning, digital technologies, pedagogy, and higher education indicate changes in teaching methods, while embodiment, youth, and wellbeing highlight the emotional and developmental aspects of arts education. The cluster emphasizes the use of technology as a pedagogical and social tool—supporting creativity, accessibility, and social justice through digital performance and participation. Overall, it signals a lasting transformation in theatre education and practice during crisis.

Cluster 2: Audience Experience and Digitalization (Green Cluster): This cluster captures how the pandemic transformed audience engagement through digital innovation and media convergence. Keywords such as audience engagement, streaming, online theatre, and social media reflect the migration of cultural participation to virtual platforms. Simultaneously, the inclusion of cinema, film, drama, and augmented reality signifies a blending of traditional and immersive media. Thematically, this cluster situates itself at the intersection of technological adaptation and the redefinition of public cultural spaces (public sphere, adaptation, creative industry). The term *ecocriticism* also hints at critical discourses that consider environmental and ethical dimensions in new media performances. The emphasis is on technological adaptations in media and entertainment, especially in audience interaction and online experiences (augmented reality, streaming, social media), business model transformation (digitalization, entrepreneurship in the arts), ecological and public discourse through digital drama and film (*ecocriticism*, public sphere) and a shift toward cross-platform and hybrid media reflecting the influence of tech on production and distribution.

Cluster 3: Crisis, Precarity, and Creative Labor (Dark Blue Cluster): Examines the broader structural impacts of the pandemic on the cultural and creative sectors, emphasizing themes of vulnerability and transformation. The recurring terms “crisis”, “precarity”, “hope”, and “care”

illustrate a response to the socio-economic instability faced by artists and institutions. This cluster includes cultural policy and cultural and creative industries, suggesting that macro-level governance and funding frameworks became central concerns during the pandemic. Additionally, concepts like hybrid learning, theatre of the oppressed, and creative city connect the crisis to urban creativity, activist performance, and community resilience in diverse geopolitical contexts, including China. Focus areas like digital resilience strategies in arts education and performance, hybrid educational models enabled by tech (hybrid learning), sociopolitical reflections through tech-facilitated performance (e.g., Theatre of the Oppressed online), policy implications and city-level adaptations in creative industries shows that technology appears as both a response and a structural change agent amid global crises.

Cluster 4: Community, Festivals, and Cultural Economy (Yellow Cluster): Engages with the communal and economic dimensions of cultural production and consumption. Central terms such as creative economy, cultural industries, diversity, and inclusion emphasize policy and economic frameworks that seek to balance creativity with equity and sustainability. Meanwhile, terms like festival, music, opera, and cultural tourism reflect the performative and celebratory aspects of culture that were either interrupted or reconfigured during lockdowns. Keywords such as “social distancing”, “lockdown”, and “community” situate this cluster firmly in the pandemic context, addressing how restrictions reshaped cultural gatherings and emphasized the importance of socially responsive programming. In this cluster technology supports community engagement during social distancing (online festivals, virtual opera/music events), sustainability and cultural tourism through virtual formats, emphasis on diversity and inclusion in the digital cultural sphere, audience development and reach expansion via digital platforms.

Cluster 5: Digital Theatre and Entrepreneurial Resilience (Pink Cluster): This more compact but sharply defined cluster centers on the digital turn in theatre and its implications for identity and sustainability. Keywords such as “digital theatre”, “Zoom”, “telepresence”, and “coronavirus” reflect the immediate technological adaptations adopted by theatre practitioners. In parallel, “identity”, “sustainability”, and “resilience” point to the broader philosophical and practical concerns about maintaining artistic integrity, entrepreneurial survival (SMEs), and cultural relevance in crisis conditions. This cluster may also reflect a post-digital theatre discourse that blends aesthetics with urgent survival strategies and focuses on micro-level technological impacts as use of telepresence platforms (e.g., Zoom) for creative expression and continuity, the role of digital theatre in sustaining identity and community, SMEs in creative sectors leveraging tech for survival and resilience and links between tech adoption and sustainable creative practices.

Cluster 6: Technology and Philosophies of Presence (Light Blue Cluster): Points to emerging tech trends in the performing arts and their conceptual implications by focusing on theoretical and technological investigations into the nature of performance, presence, and spectatorship. With terms such as liveness, virtual reality, metaverse, and machine learning, this cluster explores how emergent technologies redefine both the ontology and phenomenology of performance. Spectatorship and performance suggest an ongoing interrogation of the viewer-performer relationship, particularly as digital tools mediate human presence. The inclusion of William Shakespeare suggests a dialogue between classical content and contemporary platforms—an exploration of how canonical works are adapted in technologically mediated contexts. Concepts of liveness and presence in digital performance, the nature of spectatorship and interaction, reinvention of classical works (e.g., Shakespeare) in virtual environments makes sixth cluster the most forward-looking, immersive tech-focused cluster.

Together, these clusters offer a comprehensive view of how the creative and performing arts sectors have reconfigured themselves across educational, technological, economic, social, and aesthetic dimensions in response to unprecedented global disruption.

4.2. Overlay and Density Analysis

The bibliometric overlay map (Figure 2, left side) visually captures the evolving scholarly discourse on performing arts and creative industries during the COVID-19 pandemic. Nodes represent key concepts, with links showing their relationships, and colors indicating the timeline from late 2021 to mid-2023. Early research (blue/purple terms) focused on educational challenges and pandemic disruptions, while recent terms (yellow/green) highlight themes of digital transformation, resilience, and technological adaptation.

Central keywords like “COVID-19,” “theatre,” and “performance” reveal how the sector adapted to new realities, with growing attention to “digital,” “online,” and “virtual reality” signaling a shift toward technology-mediated performances that challenge traditional notions of liveness and audience interaction. The map also emphasizes the role of digital platforms in reshaping artistic delivery and education, highlighting evolving pedagogical strategies in both physical and virtual settings.

Keywords such as “creative economy,” “cultural industries,” and “adaptation” reflect the resilience and transformation of artistic communities. Overall, the map provides a time-sensitive overview of academic engagement with the sector’s crisis-driven innovation and digital integration, guiding future research and informing academics, practitioners, and policymakers navigating the hybrid post-pandemic arts landscape.

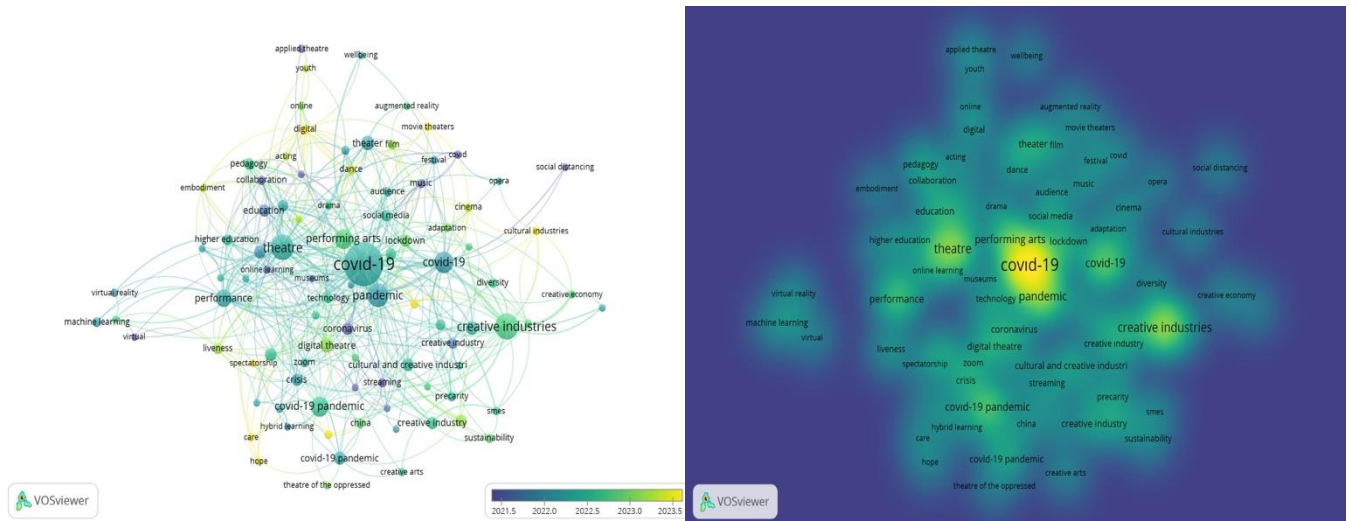


Figure 2. Overlay and Density Analysis of Abstracts' Keywords

The density map from the bibliometric analysis (Figure 2, right side) visually highlights the most discussed themes in theatre and performing arts during the COVID-19 pandemic. Brighter areas represent more frequent academic focus, showing the prominence and interconnectedness of key concepts over time. While themes like adaptation and digital transformation dominate, the map also reveals gaps—such as limited focus on long-term impacts on audience experience and cultural consumption. These areas present opportunities for future research on the future of live performance and the sustainability of creative industries.

Despite a growing body of work, several gaps persist. For instance, while economic precarity and mental health are widely acknowledged, few studies explore how institutions can build sustainable resilience infrastructures post-pandemic. Similarly, the long-term effectiveness of pedagogical adaptations and their impact on artistic quality remain underexamined.

Another area in need of further exploration is the digital divide. Many articles reference access inequalities—both among artists and audiences—but empirical data on who is left out of the digital shift is limited. This lack of granularity hinders the development of inclusive policies that can ensure equity in digital cultural participation. Moreover, the sector's intersection with emerging technologies like AI, AR/VR, and blockchain (e.g., for intellectual property or patronage) presents untapped opportunities for future inquiry.

5. CONCLUSION

The COVID-19 crisis became a transformative moment for performing arts. Initially seen as emergency responses, tools like livestreaming and hybrid performances have become part of a long-term strategy for audience expansion and sustainability. The six clusters show how digital tools restructured not just artistic production but also pedagogy, policy, and participation. However, gaps remain—particularly regarding the long-term effects of digital transition, the digital divide, and integration of emerging technologies like AI or blockchain in the creative economy.

This study highlights how the performing arts, especially theatre, leveraged crisis as a driver of technological and structural change. While the pandemic destabilized traditional models, it also encouraged innovation and more inclusive practices. Although the Scopus data collection did not specifically target studies on COVID-19's technological impact on performing arts, the bibliometric analysis showed all clusters strongly focus on technology and digitalization. Cluster 1 covers online learning, digital pedagogy, and hybrid arts with themes of education, wellbeing, and inclusivity. Cluster 2 emphasizes streaming, augmented reality, and social media, focusing on audience engagement and media entrepreneurship. Cluster 3 highlights hybrid learning and digital performance, tied to crisis response and policy adaptation. Cluster 4 centers on online festivals and digital tourism, linked to community, diversity, and resilience. Cluster 5 focuses on platforms like Zoom and telepresence tech, relating to SME innovation and sustainability. Cluster 6 explores virtual reality, the metaverse, and AI, with themes of immersion and future performance. Going forward, investment in digital infrastructure, skills, and accessibility will be key. Scholars and practitioners must continue interrogating the balance between technology and the irreplaceable liveness of performance.

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