

SAFETY AND HEALTH IN THE ENTERTAINMENT INDUSTRY: A BIBLIOMETRIC, SCIENTOMETRIC, AND THEMATIC ANALYSIS

Khairul Hafezad Abdullah

Occupational Safety and Health Management Programme, School of Business Management, Universiti Utara
Malaysia, 06010 Sintok, Kedah, Malaysia (E-mail: hafezad@uuu.edu.my)

Article history

Received date : 11-4-2026
Revised date : 12-4-2026
Accepted date : 13-6-2026
Published date : 29-6-2026

To cite this document:

Abdullah, K. H. (2026). Safety and health in the
entertainment industry: A bibliometric, scientometric,
and thematic analysis. *Jurnal Penyelidikan Sains
Sosial (JOSSR)*, 9 (30), 30 - 47.

Abstract: *Safety and health issues in the entertainment industries have traditionally received little attention in the research, often overshadowed by the celebratory framing of artistic production. However, the complexity and ever-changing nature of work within entertainment, with its physical demands, psychosocial pressures, and emerging technological risks, have gradually attracted greater academic attention. This study aims to map the intellectual structure, growth, and thematic development of safety and health research in the entertainment industries using a bibliometric analysis. A systematic search of the Scopus database yielded 1,206 publications published between 1990 and 2025, which were retrieved and analysed. Bibliometric, scientometric, and thematic analyses have been carried out on the MetaInfoSci platform using the BibTrail, SciTrace, and ThemantiX modules. The analysis examined publication trends, leading journals, prolific authors and institutions, and the field's thematic evolution through Sankey visualisation, word cloud, and BERT-based topic modelling. The results show a clear long-term growth pattern, with a significant rise in publications after 2015, indicating that safety and health in the entertainment industries have moved from a niche topic to a more established area of research. Scholarly output continues to be concentrated in specialised medical and health journals, but growing contributions of public health, psychological and interdisciplinary journals indicate thematic diversification. Core research themes remain focused on health in the performing arts, and new ones reflect the growing importance of digital technologies, virtual reality and data-driven approaches. This study provides a broad overview of the field's development and identifies opportunities for future research, including interdisciplinary integration, greater geographical representation, and closer links between research, policy, and practice.*

Keywords: *safety and health, entertainment industries, bibliometric analysis, occupational health, performing arts*

Introduction

The entertainment industries occupy a unique place in modern society. They are widely recognised as sites of creativity, cultural production, and economic vitality, and, as people have realised, contribute not only to national economies but also to collective identity and social meaning (Mammadova & Abdullayev, 2025). Nonetheless, the celebratory frame that foregrounds artistic achievement often occludes the realities of labour in the quotidian domain, effectively relegating them to the background of artistic production. Beneath the pageantry of performance and production lie complex occupational settings where safety and health risks coexist with routine practices, accelerated schedules, and high expectations for excellence (Santos & de Oliveira, 2019). These risks can become normalised within artistic work cultures, where professional dedication and performance excellence may inadvertently obscure occupational safety and health concerns, despite their potentially severe consequences for workers' well-being.

Over the years, scholarly focus on safety and health issues in the entertainment industries has slowly expanded (Lai, 2025). Earlier investigations were primarily based on tangible, observable dangers, such as physical harms, repetitive strain injuries, and biomechanical stress related to performance, and are observed in investigations of physically demanding undertakings, such as cheerleading and other high-intensity performances (Deng & Yu, 2025). While these hazards remain salient, recent research has begun to recognise that the occupational challenges faced by entertainment workers are not limited to the concrete, physical domain. Recent scholarship has increasingly drawn attention to psychosocial pressures, emotional labour, and the psychological demands associated with sustained public exposure, particularly as organisational cultures and employment structures shape these experiences within the entertainment industries (Geetha & Chitranshi, 2024). This changing view reflects a global shift in thinking on occupational safety and health, especially in sectors characterised by insecure employment, irregular income flows, and performance-driven appraisal. At a deeper level, this shift raises the question of whether the search for artistic perfection has so overwhelmed the recognition of artists as performing and producing personnel, workers entitled to systematic protection and care.

Despite this growing awareness, the academic landscape on safety and health in the entertainment industries remains fragmented. Early scholarship in this area tended to emerge within relatively bounded disciplinary contexts, including dance science, musicians' performance health, and ergonomic evaluations of theatre and stage production (Daykin et al., 2008; Lai et al., 2021). Although these studies provided valuable insights, they were limited in their engagement with other disciplines, thereby hindering the development of a cohesive understanding of occupational safety in creative work environments. Consequently, knowledge production was often in the same mould as the compartmentalised character of artistic labour itself.

More recent literature shows a gradual shift towards integrative and critical approaches. There has been an increasing number of studies exploring mental distress vulnerabilities in performers, the stigma of help-seeking behaviours in artistic communities and the role of organisational and institutional support in the safeguarding of creative workers (Li et al., 2025; Newman et al., 2022). These contributions represent important advances and offer a key clue to fundamental questions about how research in this field progresses. How has scholarly attention changed over the years, in disciplines, and in themes? Which risks have had their priorities prioritised, which ones remain marginalised? Addressing these questions is

essential in formulating a more coherent and inclusive understanding of safety and health in the entertainment industries, and one that reconciles artistic achievement with sustainable and humane working conditions.

Materials and Methods

Research Design and Approach

This study adopted a bibliometric research design. This method helps identify the development, organisation, and thematic trends (Abdullah, 2022). Hence, these elements may help us analyse publications related to safety and health in the entertainment industry, focusing on what has been done before and what is next. In addition, the selection of bibliometric analysis was due to its ability to conduct a quantitative assessment of large volumes of scientific work (Passas, 2024), thereby enabling the identification of trends, potentially significant co-authors, and emerging research topics in a transparent and repeatable manner (Abdullah et al., 2023).

Database and Search Strategy

To access the bibliographic data for the given study, the Scopus database was chosen, as it is one of the largest databases that covers peer-reviewed journals, conference proceedings, and multidisciplinary research results (Gusenbauer, 2022). The search was conducted using the following query to record the related publications: (“safety and health” OR “safety” OR “health”) AND (“entertainment industry” OR “film industry” OR “movie industry” OR “television industry” OR “music industry” OR “radio industry” OR “performing arts” OR “theatre industry” OR “live entertainment” OR “event production” OR “broadcasting industry”). Accordingly, the current study limited the search to the title, abstract, and keywords to ensure relevance and conceptual alignment with the research objectives. The corpus spanned 1990 to 2025, allowing examination of past and current research trends in the entertainment industry. There were no restrictions on language, and all types of documents indexed in Scopus were included to provide an overall picture of the research landscape.

Data Extraction and Handling

The bibliographic data were extracted from Scopus in January 2026 and exported in CSV format to ensure compatibility with the bibliometric analysis platform used in this study. A total of 1,206 documents were retrieved following the search criteria. The exported dataset included essential bibliographic information, including publication year, authorship, affiliations, journals, citations, keywords, and abstracts, necessary for descriptive, network, and thematic analyses.

Analytical Tools and Scope

The bibliometric analyses were conducted using the MetaInfoSci web-based tool, which combines bibliometric, scientometric, and thematic analytical capabilities in a single system (Sharma et al., 2025a). The four main modules supported by MetaInfoSci. Nevertheless, three out of them: BibTrail, SciTrace, and ThemantiX were considered in this analysis. These modules were selected because they directly enable descriptive bibliometric evaluation, scientometric profiling, and thematic exploration (Sharma et al., 2025b), thereby aligning with the goals of the current study.

The objectives of this study are as follows:

1. Examine the dynamic trends of safety and health research in the entertainment industry.
2. Determine the most prominent journals that make contributions to safety and health research in the entertainment industry.
3. Analysis of prolific authors taking part in safety and health research in the entertainment industry.
4. Explore the thematic organisation and development of the field through the analysis of dominating keywords, new topics, and conceptual bonds through the wordcloud analysis, visualisation of the Sankey diagram, and BERT-based topic modelling.

The BibTrail module was used to compare trends in publications over time and the top 10 journals with the highest contributions to research on safety and health in the entertainment industry. The SciTrace module has enabled author-level and country-level analysis, thereby identifying the most prolific authors and countries in terms of research output. The ThemantiX module was used to implement thematic analysis using word-cloud visualisation, BERT-based topic modelling, and Sankey diagram mapping, thereby enabling exploration of the prevailing themes, the development of topics, and the conceptual connections within the dataset.

Visualisation and Presentation

In this study, several visualisation methods were used to improve interpretability and analytical clarity. The visualisations include line charts, bar charts, word clouds, Sankey diagrams, and BERT topic modelling. These visualisation formats provided the opportunity to analyse the temporal patterns, comparative distributions, and topics of the dataset underlying the clear presentation of bibliometric results (Sharma et al., 2025b).

Results

Growth trajectory of publications

As part of the bibliometric analysis, Figure 1 illustrates the yearly pattern of publications on safety and health in the entertainment industry from 1990 to 2025. The publication trajectory reveals a clear long-term growth trend, interspersed with periods of stagnation, gradual development, and occasional surges. This sustained publication activity reflects a continued accumulation of scholarly work addressing safety and health in the entertainment industry. In contexts such as Japan, where performers and staff operated without formal legal protection until the introduction of industrial accident compensation insurance in 2021, the absence of institutional safeguards may have intensified the need for continued research and policy-relevant evidence (Morisaki, 2023).

The number of research studies in the initial years, from 1990 to the end of the 1990s, was very low, averaging 10 articles per year. This point indicates that research on safety and health concerns in the entertainment sector has been a new field of academic inquiry, since these concerns were previously marginal to the established field of occupational safety research. It should also be noted that a slight yet noticeable increase in research volume can be observed between the 2000s and approximately 2010. Publications grew until 2008, when they peaked at over 30 a year, but then decreased in the short term. It can be applied to illustrate a potential, and no doubt unfinished, scholarly issue that a heightened consciousness of professional risks in the creative and media-related workplaces may empower.

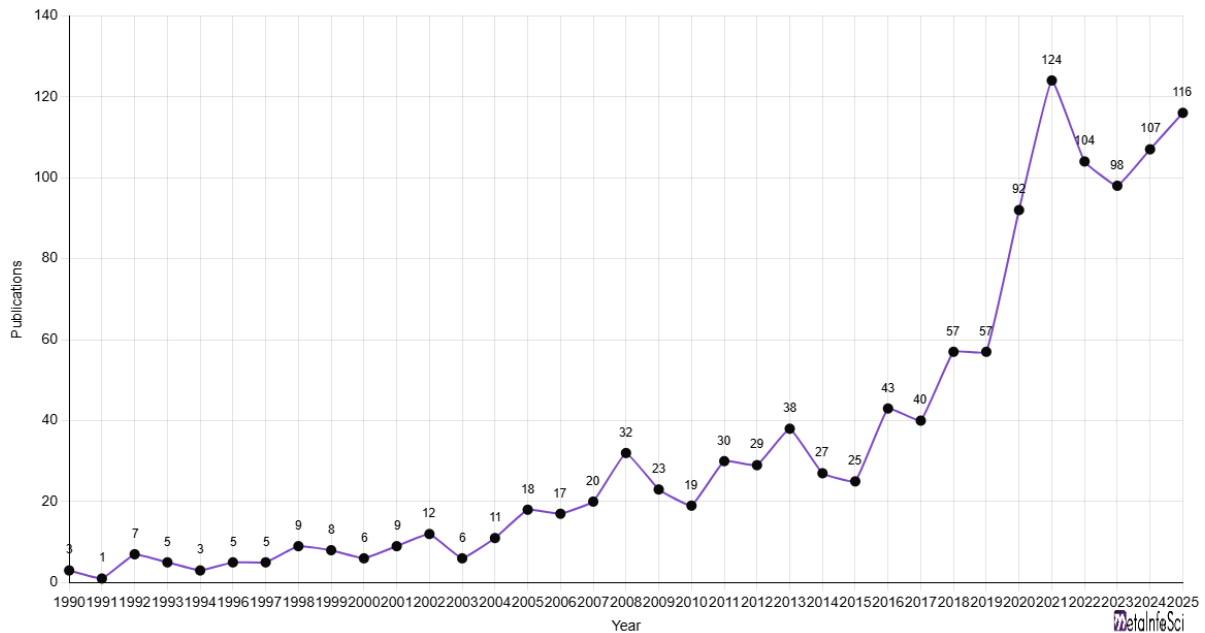


Figure 1: Publication Analysis

Source: Author's own analysis based on Scopus data and visualised using MetaInfoSci

Publication activity has gathered steam and escalated significantly after 2015. The steepest increase was between 2019 and 2021, with the highest number of publications in 2021 at 124. This trend in research aligns with an increase in scholarly interest in occupational health, worker welfare, and occupational safety during times of mass disruption, especially during the COVID-19 pandemic. Previous studies have highlighted how systemic shocks and prolonged uncertainty intensify occupational health and safety concerns, conditions that may, in turn, stimulate heightened scholarly attention and research activity (Lenoble et al., 2023). Although publication levels have gone down slightly from 2021, they remain considerably higher than in previous decades. The fact that the publications have not fallen below 90 annually since 2022 proves that the issue of safety and health within the entertainment industry is no longer a niche topic but an established academic field of study.

Top Ten Journals

To provide an overview of the leading journals in this research area, Figure 2 shows the distribution of publications across the top 10 journals identified by the MetaInfoSci platform. The results reveal a highly uneven distribution of scholarly production, with a particular focus on a small number of outlets. Most notably, *Medical Problems of Performing Artists* is the most prominent journal, accounting for about 79 publications, or about 44.4% of the total publications of the top 10 journals. This significant proportion indicates that the area has been predominantly published in a specialised, practice-oriented medical journal, demonstrating continued interest in health-related issues in the performance and artistic medium (Science & Medicine, Inc., n.d.).

The second- and third-highest productivity journals are the *International Journal of Environmental Research and Public Health*, with 22 publications (12.4%), and *Frontiers in Psychology*, with 20 publications (11.2%). The existence of these journals would seem to indicate the widening of the research arena beyond discipline-specific medical issues to public health and psychology, reflecting the growing interdisciplinary interest.

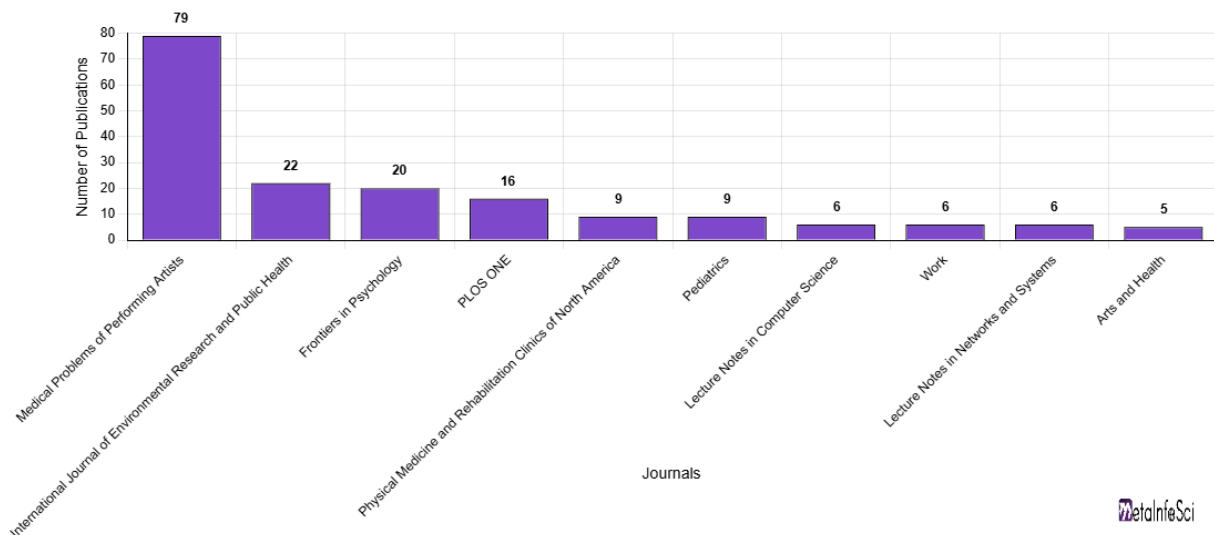


Figure 2: Publication Output of the Top Ten Most Productive Journals

Source: Author's own analysis based on Scopus data and visualised using MetaInfoSci

Further contributions are noted in PLOS ONE, with 16 publications (9.0%), followed by Paediatrics and Physical Medicine and Rehabilitation Clinics of North America, with 9 publications (5.1%), respectively. These journals suggest an ongoing interest in the clinical, developmental, and rehabilitative dimensions of the research area.

The remaining journals, Work, Lecture Notes in Networks and Systems, Lecture Notes in Computer Science, and Arts and Health, each contribute between five and six publications, which, individually, account for less than 3.5% of the total. Although their numerical contribution is relatively modest, their inclusion reflects new methodological, technological, and socio-cultural perspectives within the field.

Most Prolific Authors

Figure 3 illustrates the publication productivity of the top contributing authors identified through the MetaInfoSci analysis. The findings indicate a relatively concentrated authorship structure, with a small group of scholars accounting for a substantial share of the literature. The most prolific author, Ackermann Bronwen J., is primarily affiliated with the University of Sydney, Australia, where the author's work is closely associated with performing arts medicine and musician health. This affiliation reinforces the central role of Australian institutions in advancing clinical and applied research in this field.

Manchester Ralph A. and Dawson William J. are predominantly linked to academic and clinical institutions in the United States, including universities with strong traditions in occupational health, rehabilitation, and performing arts medicine. Their institutional backgrounds reflect a clinical-research orientation embedded within medical and allied health faculties. Stubbe Janine H. and van Rijn Rogier M. are mainly affiliated with institutions in the Netherlands, notably universities and research centres specialising in public health, injury prevention, and occupational epidemiology. Their contributions indicate a strong European public health perspective, particularly in relation to work-related health outcomes and injury surveillance. Guptill Christine A. (University of Ottawa, Canada) and McCrary J. Matt (Hannover Medical School, Germany), whose work bridges music performance, health education, and rehabilitation sciences.

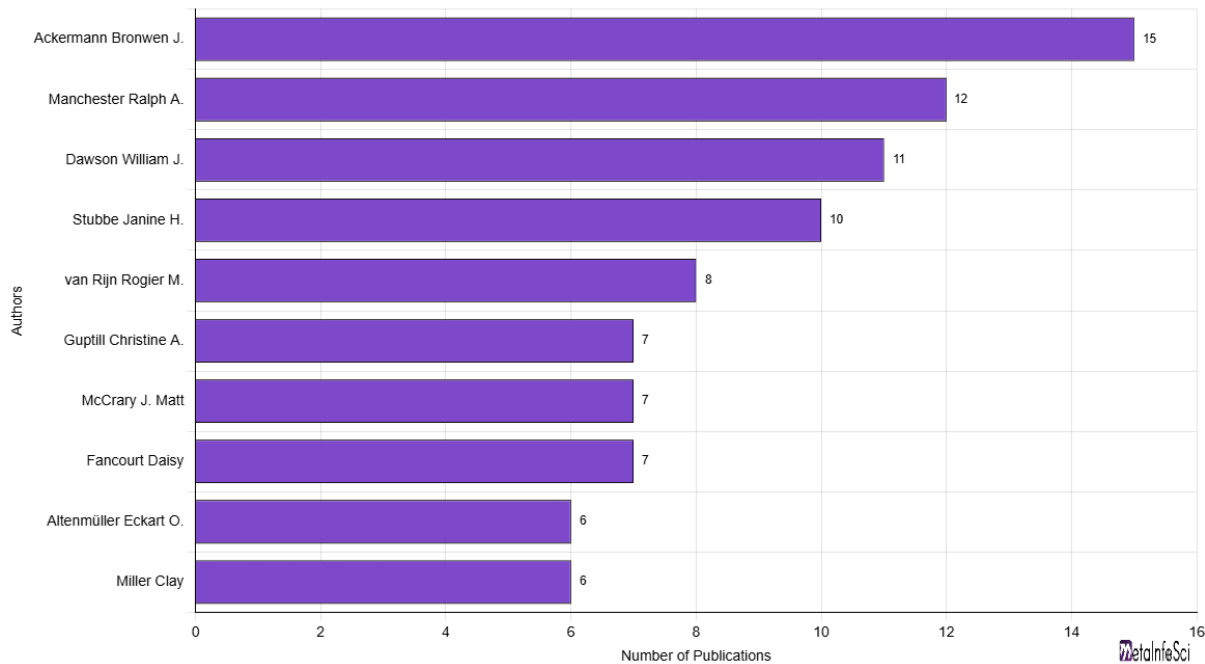


Figure 3: The Top Ten Contributing Authors

Source: Author's own analysis based on Scopus data and visualised using MetaInfoSci

Fancourt Daisy is affiliated with University College London, United Kingdom, a leading institution in arts, health, and well-being research. The author's presence among the top authors underscores the growing influence of psychosocial and public health approaches within the literature. Finally, Altenmüller Eckart O. is strongly associated with the Hochschule für Musik, Theatre und Medien Hannover, Germany. At the same time, Miller Clay is linked to academic institutions in the United States with expertise in music performance and pedagogy. These affiliations reflect the continued contribution of conservatoire-based and performance-focused institutions alongside traditional universities.

Thematic analysis

Figure 4 presents the thematic structure of the literature through a Sankey diagram, offering a visual synthesis of how core keywords, analytical themes, and country-level contributions are interconnected (Sharma et al., 2025a). This representation is beneficial for tracing the intellectual flow of research, moving from conceptual inputs to dominant analytical clusters and, finally, to geographical research outputs.

At the thematic entry level, the literature is characterised by a wide range of keywords, with strong visibility of technology-oriented terms such as virtual reality, machine learning, artificial intelligence, wearables, and social media. These are complemented by application-driven concepts, including education, healthcare, health monitoring, health and safety, the performing arts, the entertainment industry, and performing arts medicine. The breadth of themes at this stage indicates that the field is inherently interdisciplinary, situated at the intersection of technological innovation, the health sciences, and creative or cultural domains. This pattern is consistent with broader arguments in health research that complex safety and well-being challenges require integrated interdisciplinary approaches spanning technology, health, and the arts (Rezaei & Saghaezadeh, 2022).

These diverse keywords converge most prominently into a central thematic node labelled `reality_virtual_learning_data`. This dominant pathway suggests that virtual reality-based learning and data-driven applications represent a prominent integrative direction within the current research landscape. The thickness of the flows into this node reflects its role as an integrative theme, absorbing contributions from education, healthcare, industry, safety, and the performing arts. In contrast, smaller but distinct thematic streams such as `mobility_data_cities_HHMM`, `5G_common_Bluetooth_wave`, `shunting_instruments`, `_femoralradial_thrombectomy`, and `cargo_stability_testing_safety` point to more specialised or emerging niches. These themes appear more fragmented and are linked to narrower application domains, often with a strong technical or clinical orientation.

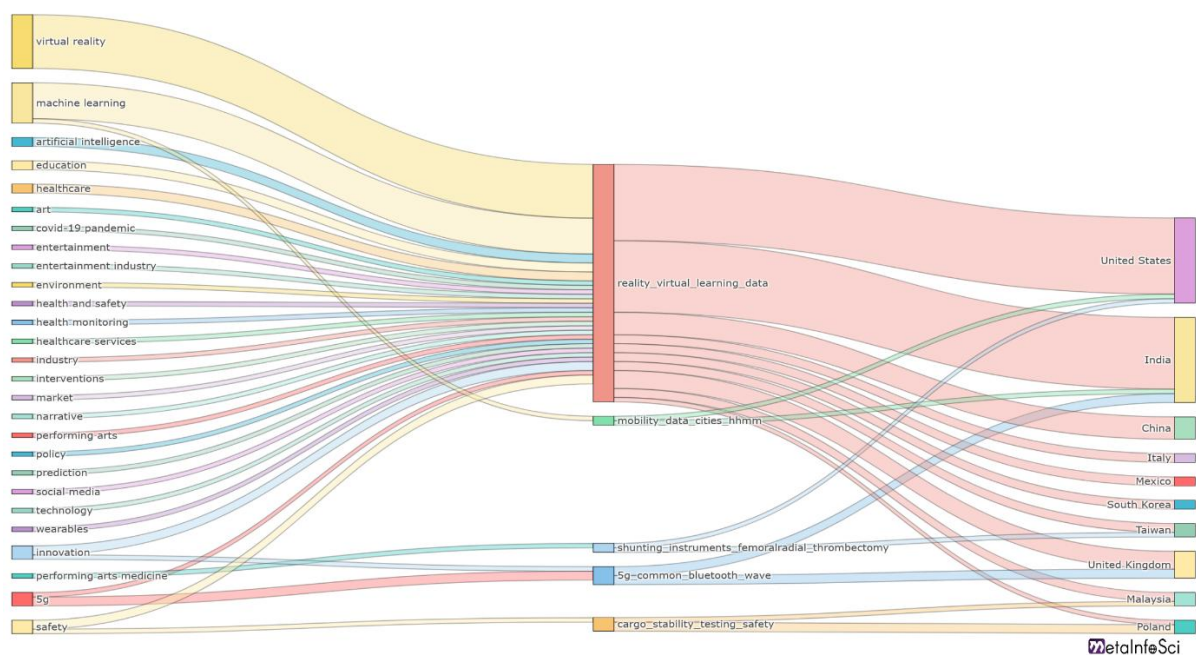


Figure 4: Sankey Diagram of Thematic Linkages Across Keywords, Core Themes, And Countries

Source: Author's own analysis based on Scopus data and visualised using MetaInfoSci

At the output level, the Sankey diagram maps these thematic clusters to contributing countries. The United States emerges as the most prominent contributor, receiving substantial thematic flows, particularly from the dominant virtual reality and learning-related cluster. This is followed by India and China, which also show strong engagement with data-driven and technology-enabled themes. European countries such as the United Kingdom, Italy, and Poland, along with Asian economies such as South Korea, Taiwan, and Malaysia, contribute more selectively, often aligned with specific sub-themes rather than the central, dominant cluster.

Figure 5 presents a word cloud visualisation of the most frequently occurring keywords in the dataset, offering an intuitive overview of the dominant concepts and thematic priorities shaping the literature. As is customary in word cloud representations, the relative size of each term reflects its frequency of occurrence, thereby signalling its prominence within the research corpus. The most visually dominant terms are performing arts, human, music, mental health, and female and male, indicating that the literature is firmly centred on human populations operating within performing and creative contexts. This thematic emphasis is consistent with scholarly arguments that creativity, particularly within artistic domains, cannot be understood

independently of its contextual conditions. Prior work has highlighted that temporal processes, degrees of social interaction or isolation, and the voluntary or involuntary exposure of creative outputs to audiences shape creative ideation in the performing arts. Attending to these contextual dimensions is therefore essential for understanding creative practices as lived, embodied, and socially situated experiences (Abraham, 2022).



Figure 5: Word Cloud of High-frequency Keywords in the Literature

Source: Author's own analysis based on Scopus data and visualised using MetaInfoSci

The most visually dominant terms include performing arts, human, music, mental health, and female and male, indicating that the literature is strongly centred on human populations operating within performing and creative contexts. The prominence of gender related descriptors further suggests that sex and gender are frequently employed as key analytical variables, particularly in relation to health outcomes, exposure patterns, and performance-related risks. This emphasis is consistent with broader public health and occupational health research, where stratification by sex and gender remains a standard analytical approach for examining variations in mental and physical health. Recent work has also highlighted the limitations of binary gender stratification and the importance of considering intersecting social and occupational positions when interpreting health outcomes, especially for mental health indicators (Mena et al., 2023).

Closely associated with these core terms are performing arts medicine, occupational health, occupational medicine, and public health. Their recurrent appearance highlights the medical and occupational framing of the literature, in which performance activities are examined not merely as artistic practices but as forms of work with tangible health implications. This positioning is consistent with sociological accounts of cultural labour that conceptualise performing arts as embodied and affective forms of work, where professional subjectivities, self-care practices, and health-related concerns are integral to everyday occupational experience. By recognising performance as labour situated beyond conventional organisational

boundaries, such perspectives help explain why performing arts research increasingly aligns with broader occupational and workplace health discourses (Naclerio, 2024).

Mental and psychosocial dimensions are also strongly represented within the literature. Keywords such as mental health, well-being, depression, quality of life, and psychology indicate a substantial concern with psychological outcomes alongside physical health. This thematic pattern reflects a gradual shift from a traditionally injury-focused perspective towards a more holistic understanding of performer health, encompassing emotional, cognitive, and social dimensions of well-being. Such a shift is consistent with recent scholarship in the performing arts that emphasises integrative, somatic-based approaches to training and practice, where embodied awareness, creativity, and experiential learning are recognised as central to performers' overall well-being rather than solely for injury prevention (Zafeiroudi et al., 2026).

Technological and methodological terms, including virtual reality, machine learning, artificial intelligence, augmented reality, and health education, appear with moderate prominence. Their presence suggests an emerging but growing interest in technology-enabled interventions, assessment tools, and educational approaches within the field. These terms align with earlier thematic findings, indicating a convergence between health research and digital innovation. Application-specific contexts, such as dance, musicians, television, the music industry, and entertainment, further illustrate the sectoral diversity of the literature. At the same time, a strong preventive orientation is evident through the recurring presence of terms such as prevention, injury prevention, safety, and occupational exposure, signalling an applied emphasis on risk reduction and health promotion. This focus aligns with broader occupational safety and health scholarship that conceptualises prevention services as central mechanisms for translating regulatory frameworks into practical risk management and preventive action across diverse work settings (Walters et al., 2022).

Figure 6 illustrates the temporal distribution of research topics identified through BERT-based topic modelling, providing insight into how thematic emphases have evolved. The figure traces annual publication counts across multiple topics, enabling longitudinal comparisons and the identification of emerging and dominant research streams. In the early period, from the early 1990s to the early 2000s, the literature is sparse and dominated mainly by the topic labelled `health_arts_performing_music`. Publications during this phase are limited in number and reflect a foundational stage of the field, where research attention was primarily centred on health-related issues within music and performing arts contexts. Other topics are either absent or appear only sporadically, suggesting limited thematic diversification during this formative period.

From the mid-2000s onwards, a gradual expansion in thematic coverage becomes evident. While `health_arts_performing_music` remains the most consistently represented topic, additional themes such as `sensor_film_battery_soil` and `mobility_data_cities_hhmm` begin to appear intermittently. This phase reflects an exploratory stage of knowledge development, in which methodological innovation and contextual experimentation start to complement the core health-focused discourse. Such diversification is consistent with broader developments in digital health and data-driven research, where emerging technologies and novel data sources are increasingly explored for their potential to monitor, assess, and support health outcomes, often in the absence of mature regulatory and ethical frameworks. Early work on voice-based artificial intelligence in healthcare, for example, illustrates how experimental technologies are

introduced and legitimised through innovation-driven narratives before standards, transparency mechanisms, and governance structures are fully established (Blatter et al., 2025).

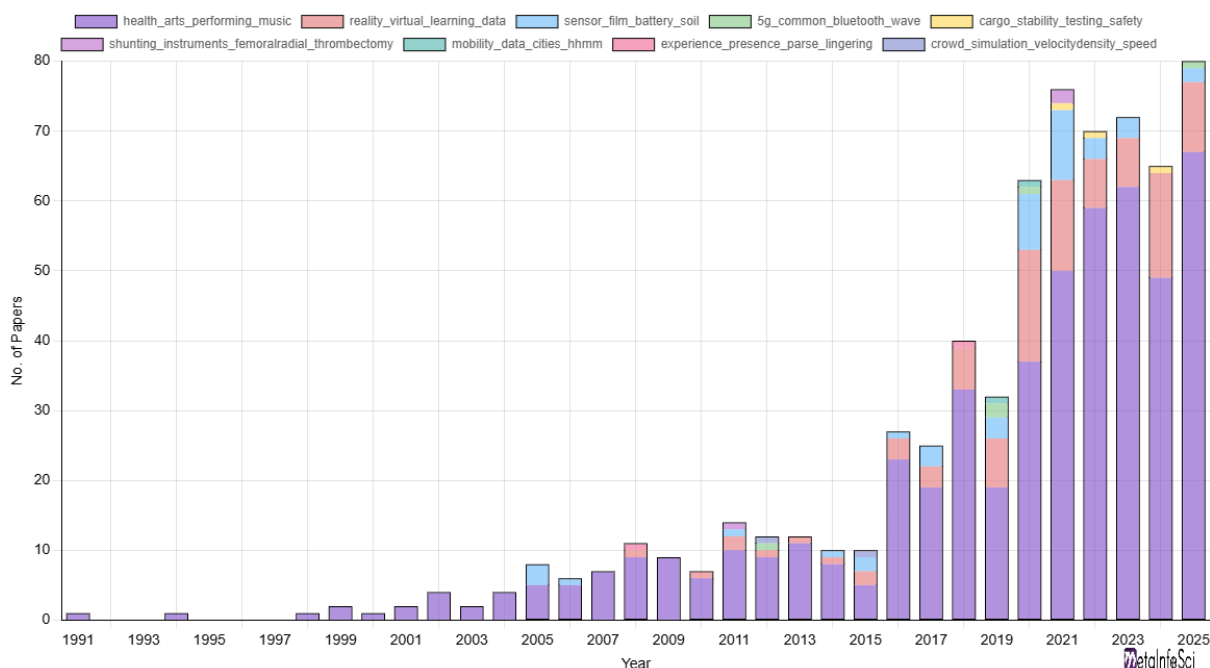


Figure 6: Temporal Distribution of Research Topics Based on BERT Topic Modelling

Source: Author's own analysis based on Scopus data and visualised using MetaInfoSci

A marked shift occurs after approximately 2015, where there is a pronounced increase in overall publication volume across multiple topics. The topic `reality_virtual_learning_data` shows robust growth during this period, indicating rising scholarly interest in virtual reality, learning environments, and data-driven approaches. This surge coincides with broader technological advancements and the accelerated adoption of digital tools across health, education, and the creative industries. Existing research has shown that rapid digitalisation within the creative and cultural industries has transformed the production, distribution, and consumption of digital content, while also reshaping professional practices, learning processes, and audience engagement. The expansion of digital infrastructures, mobile technologies, and online platforms has further intensified innovation across subsectors such as music, entertainment, audiovisual media, and interactive digital services, especially in the period surrounding the COVID-19 pandemic (Ortiz-Ospino et al., 2025).

Between 2019 and 2025, literature experiences its most substantial growth. The dominance of `health_arts_performing_music` persists, but it is now accompanied by more visible contributions from topics such as `5g_common_bluetooth_wave`, `cargo_stability_testing_safety`, `experience_presence_parse_lingering`, and `crowd_simulation_velocitydensity_speed`. Although these latter topics contribute to smaller absolute numbers, their consistent appearance suggests thematic diversification and the maturation of specialised research niches.

Discussion

The results of this bibliometric analysis provide an in-depth picture of the development of research on safety and health in the entertainment industry over the past three decades. All the above publication patterns, journal concentration, authorship trends, and topic organisation

point to a discipline that has shifted from marginal scholarly interest to a more institutionalised and interdisciplinary field.

Figure 1 shows a typical trend of the disciplinary rise. In the early years, 1990 to 1997, publication rates were very low, indicating that occupational safety and health research in the entertainment industry was far from the focus of mainstream research. Such marginalisation is not surprising because creative and entertainment labour has traditionally been positioned as informal, passion-based, or otherwise atypical, which usually falls outside mainstream regulatory and institutional protective frameworks. This type of framing is closely associated with the perception of creative work as a product of passion, where there is a strong attachment to the emotional aspects of creative products and working environments, which defines why people are willing to engage in such work and often rationalises precarity and structural issues regarding regulation, protection, and inequality (Bennett, 2018).

The slow growth of publications from the early 2000s to approximately 2010 is an indicator of a significant change. This trend is happening alongside a broader appreciation of non-traditional workplaces, freelance labour, and precarious employment relations as legitimate and warranted topics for occupational health investigation. Modern occupational health studies have challenged the primacy of the standard employment relationship, as alternative and non-standard forms of work organisation vary in terms of employment permanence, contractuality, and employer control over workers' exposure to health and safety risks (O'Connor et al., 2020). Temporal deterioration after 2008 could be influenced by broader shifts in research funding and institutional priorities, rather than by interest in the scholarly field. Notably, the revival and the subsequent pace after 2011 indicate that the sector not only recovered but also entered a period of consolidation.

Such a sharp increase since 2015, and especially the significant peak of 2019 through 2021, is a turning point. This wave is connected to the increased international interest in workers' well-being, psychosocial risks, and the systemic vulnerabilities revealed by the massive disturbances the entertainment sector faces. The studies that have arisen during the COVID-19 pandemic have shown the prevalence of uncertainty, health risks, organisational instability, and the lack of support systems (Bryce et al., 2022). Therefore, much worse psychosocial stressors in the various occupational groups result in negative consequences that include burnout, depression and low job satisfaction (Salvagioni et al., 2017). These lessons reinforce the need to focus on the psychosocial, organisational, and environmental aspects of worker health as a holistic, preventive process, especially in times of systemic disruption (Woods et al., 2023). The fact that the number of articles has not decreased since 2021 is a long-lasting indicator that the issue of safety and health in entertainment settings has ceased to be a niche topic, as the field now boasts academic credibility equivalent to that of more conservative occupational sectors.

The high concentration of publications across several journals, as depicted in Figure 2, indicates significant structural aspects of knowledge creation in the area. The prominence of the article's title, "Medical Problems of Performing Artists," underscores the historical centrality of performing-arts medicine as the field's primary intellectual home. Although this focus has given continuity and disciplinary identity, it also implies a degree of epistemic gatekeeping, with clinical and biomedical views dominant in shaping the research agenda early. The growing number of journals, such as the International Journal of Environmental Research and Public Health and others, such as Frontiers in Psychology and PLOS ONE, indicates the broadening of the conceptualisation of safety and health, which is not restricted to the treatment of injuries

but also includes prevention, mental well-being, and population analysis. The fact that outlets in computer science, systems and arts-based research are also included is another indication of the diversification of methodologies and of receptiveness to new methods of analysis.

The patterns of authorship shown in Figure 3 indicate that the field has been influenced by a small number of very productive scholars based in major institutional centres. The achievements of writers based at institutions in Australia, the United States, the Netherlands, the United Kingdom, and Germany suggest that long-term research programmes can be sustained through well-supported academic and clinical facilities. These institutional clusters seem to serve as intellectual enclaves, where clinicians' knowledge, access to performing populations, and interdisciplinary interaction meet. Meanwhile, the fact that the output is concentrated in the hands of a few authors also raises questions about inclusivity and international representation. Although the advantages of leadership by established centres include methodological rigour and continuity, they also indicate the possibility of wider involvement, especially in regions and institutions where the entertainment industry plays a significant economic role but is poorly represented in academia.

The identified themes in the presented thematic analysis (Figures 4 and 5) indicate a field characterised by both integration and diversification. The merging of various keywords into one central theme, which is virtual reality, learning, and data-driven approaches, points to the fact that digital technologies increasingly function as shared methodological and conceptual reference points across diverse strands of safety and health research in the entertainment industries. This integration is indicative of a broader shift in the field of occupational health research, where simulation, digital assessment, and tech-enabled interventions are increasingly utilised to address complex and dynamic workplaces. More recent research has highlighted that the emergent occupational risks associated with the technological system require interdisciplinary insights to comprehend and address these issues, using anticipatory and preventive models to consider the psychological and organisational consequences of digital technologies (Parker & Kho, 2025). Such approaches offer the potential to support anticipatory risk identification and data-informed preventive strategies, particularly in work environments characterised by rapid technological change and regulatory uncertainty (Perera & Chhetri, 2025).

Meanwhile, the existence of smaller, more niche-specific streams signals continued experimentation and niche development in the field. The themes of mobility data, 5G technologies, safety testing, and clinical instrumentation imply that the literature does not tend towards a single dominant paradigm but instead splits into a variety of applied and context-specific directions. This simultaneous presence of both a solid thematic heart and peripheral innovation is generally considered an indicator of disciplinary maturation. The intensity of terms involving humanity, gender, and psychosocial aspects in the word cloud also supports a move towards more holistic health views. Instead of viewing performers as objects of harm exposure, the literature is also moving towards seeing them as employees whose physical, mental, and social health are highly interrelated. This development aligns with modern occupational health models, which promote transdisciplinary approaches to perceiving and quantifying health, well-being, and quality of working life in complex organisational and workplace contexts (Loder et al., 2025).

Figure 6 depicts the outcomes of the BERT-based topic modelling, which can further inform the understanding of the topic of thematic priorities change. The prevalence of health-related

themes in the context of music and performing arts during their initial period can be attributed to the field's clinical orientation. The slow introduction of technology- and data-oriented themes since the mid-2000s may suggest a phase of method exploration, during which new tools were tested alongside familiar health systems.

Since 2015, the year characterised by definite thematic growth, virtual reality, digital learning, communication technologies, and crowd-related safety have become more prominent. Notably, these new subjects do not overtake the fundamental health themes but supplement them and serve as a pointer to continuity rather than fragmentation of the knowledge base. This tendency implies that future studies will expand on existing health and safety research while more actively incorporating technological innovation and a systems-level perspective. This integrative path would be compatible with modern occupational risk management approaches that coordinate health and safety goals with the larger sustainability and decent work agenda, and it would focus on the interconnectedness between the welfare of workers, the sustainability of organisations, and sustainable long-term development (Milea et al., 2025).

Implications for Research and Practice

These findings indicate that safety and health research in the entertainment industry has entered a phase of relative maturity, characterised by sustained growth, interdisciplinary engagement, and thematic diversification. However, the concentration of authorship and institutional leadership also highlights the need for broader international collaboration and contextual sensitivity, particularly in regions where entertainment work is expanding rapidly. From a practical standpoint, the increasing integration of technology, psychosocial perspectives, and preventive approaches suggests that future interventions are likely to be more proactive, data-informed, and worker-centred. For scholars, the results point to fertile ground for research that bridges clinical insight, organisational policy, and digital innovation, while remaining attentive to the unique cultural and structural features of entertainment work.

Conclusion

This bibliometric analysis shows that research on safety and health in the entertainment industries has evolved from a small, fragmented area into a more established, interdisciplinary field. Based on 1,206 Scopus-indexed publications from 1990 to 2025, the findings indicate sustained growth in scholarly attention, particularly after 2015, reflecting increased awareness of the complex risks faced by entertainment workers.

The results highlight that early research was mainly focused on physical and clinical health issues in specialised journals. Over time, the field has expanded to include public health, psychology, and technology-related perspectives, signalling a broader and more holistic understanding of safety and health. At the same time, research output has been driven mainly by a limited number of authors and institutions, suggesting strong leadership but also revealing the need for broader international and institutional participation.

Thematic analyses further show that while health-related concerns in performing arts remain central, emerging topics such as digital technologies, virtual reality, and data-driven approaches are increasingly shaping the research landscape. These developments suggest that the field is adapting to changes in work practices and technological advancements within the entertainment industries.

The findings confirm that safety and health in the entertainment industries is no longer niche research topics. Future studies should focus on strengthening interdisciplinary collaboration, expanding research across diverse cultural and geographical contexts, and translating research insights into effective policies and practices that support the well-being and sustainability of entertainment workers.

Acknowledgements

The author gratefully acknowledges the use of the Scopus database accessed through Perpustakaan Sultanah Bahiyah, Universiti Utara Malaysia. Sincere appreciation is also extended to the reviewers for their constructive comments and valuable suggestions that have improved the quality of this paper.

Declaration

The author declares no conflicts of interest. Also, the author declares that generative artificial intelligence (AI) tools, namely Grammarly and QuillBot, were used exclusively for language editing and grammatical improvement. The use of these tools did not influence the scientific content, study design, data analysis, data interpretation, results, or conclusions of the manuscript. Full responsibility for the content remains with the author.

References

- Abdullah, K. H. (2022). Publication trends in biology education: A bibliometric review of 63 years. *Journal of Turkish Science Education*, 19(2), 465-480. <https://doi.org/10.36681/tused.2022.131>
- Abdullah, K. H., Roslan, M. F., Ishak, N. S., Ilias, M., & Dani, R. (2023). Unearthing hidden research opportunities through bibliometric analysis: a review. *Asian Journal of Research in Education and Social Sciences*, 5(1), 251-262. <https://doi.org/10.55057/ajress.2023.5.1.23>
- Abraham, A. (2022). Creativity or creativities? Why context matters. *Design Studies*, 78, 101060. <https://doi.org/10.1016/j.destud.2021.101060>
- Bennett, T. (2018). "Essential—passion for music": Affirming, critiquing, and practising passionate work in creative industries. In *The Palgrave handbook of creativity at work* (pp. 431-459). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-77350-6_21
- Blatter, A., Gallois, H., Evangelista, E., Bensoussan, Y., Bridge2AI-Voice Consortium, & Bélisle-Pipon, J. C. (2025). "Voice is the New Blood": a discourse analysis of voice AI health-tech start-up websites. *Frontiers in Digital Health*, 7, 1568159. <https://doi.org/10.3389/fdgth.2025.1568159>
- Bryce, C., Ring, P., Ashby, S., & Wardman, J. K. (2022). Resilience in the face of uncertainty: early lessons from the COVID-19 pandemic. In *COVID-19* (pp. 48-55). Routledge.
- Daykin, N., Orme, J., Evans, D., Salmon, D., McEachran, M., & Brain, S. (2008). The impact of participation in performing arts on adolescent health and behaviour: A systematic review of the literature. *Journal of Health Psychology*, 13(2), 251-264. <https://doi.org/10.1177/1359105307086699>
- Deng, C., & Yu, Q. (2025). A systematic review of cheerleading injuries: Epidemiological characteristics, biomechanical mechanisms, and prevention strategies. *Frontiers in Public Health*, 13, 1-15. <https://doi.org/10.3389/fpubh.2025.1614164>
- Geetha, L., & Chitranshi, J. (2024). Cast and crew well-being in the entertainment industry and the impact of COVID-19 pandemic: A conceptual framework. In *Emerging Horizons: Business and Society in the Post-Pandemic Era* (pp. 96-105). CRC Press. <https://doi.org/10.4324/9781003559962-8>
- Gusenbauer, M. (2022). Search where you will find most: Comparing the disciplinary coverage of 56 bibliographic databases. *Scientometrics*, 127(5), 2683-2745. <https://doi.org/10.1007/s11192-022-04289-7>
- Lai, A. H. Y., Chui, C. H. K., Deng, S. Y., & Jordan, L. P. (2021). Social resources for positive psychosocial health: youths' narratives of a street dance performing arts program. *Journal of Social Service Research*, 47(1), 143-153. <https://doi.org/10.1080/01488376.2020.1725715>
- Lai, C. M. (2025). *Risk Assessment for Performing Arts Production Activities-A Primer*. Cheung Man Lai.
- LeNoble, C., Naranjo, A., Shoss, M., & Horan, K. (2023). Navigating a context of severe uncertainty: The effect of industry unsafety signals on employee well-being during the COVID-19 crisis. *Occupational Health Science*, 7(4), 707-743. <https://doi.org/10.1007/s41542-023-00155-x>
- Li, S. A., Sakata, N., & Donn, G. (2025). A scoping review of mental health literacy in performing and creative artists: identifying current gaps and future directions. *Frontiers in Psychology*, 16, 1-16. <https://doi.org/10.3389/fpsyg.2025.1329029>
- Loder, A., Candido, C., Altomonte, S., Austin Gray, W., Lindberg, C., Chung, S. S. E., ... & Augustin, S. (2025). Developing a transdisciplinary and adaptive framework to measure

- health and well-being for the workplace: the 12 competencies. *Journal of Corporate Real Estate*, 27(3), 238-258. <https://doi.org/10.1108/JCRE-09-2024-0033>
- Mammadova, E., & Abdullayev, A. (2025). Cultural industries and national economic competitiveness: A global perspective. *Porta Universorum*, 1(3), 322-344. <https://doi.org/10.69760/portuni.010326>
- Mena, E., Stahlmann, K., Telkmann, K., Bolte, G., & AdvanceGender Study Group. (2023). Intersectionality-informed sex/gender-sensitivity in public health monitoring and reporting (PHMR): a case study assessing stratification on an “intersectional gender-score”. *International Journal of Environmental Research and Public Health*, 20(3), 2220. <https://doi.org/10.3390/ijerph20032220>
- Milea, A., Moraru, R. I., & Cioca, L. I. (2025). Occupational risk management through the Lens of the sustainable development goals (SDGs): an integrated approach to promoting sustainability in the workplace. *Sustainability*, 17(5), 1864. <https://doi.org/10.3390/su17051864>
- Morisaki, M. (2023). Health and safety situation of arts and entertainment workers in Japan. *Industrial Health*, 61(6), 39-394. https://doi.org/10.2486/indhealth.61_600
- Naclerio, E. (2024). Flourishing on the Stage: Embodied Reflexivity and the Effacing of Work Boundaries in Contemporary Performing Arts. *Sociology*, 58(5), 1099-1114. <https://doi.org/10.1177/00380385241232604>
- Newman, C., George, R. P., Beitz, T., Bergson, Z., & Zemon, V. (2022). Mental health issues among international touring professionals in the music industry. *Journal of psychiatric research*, 145, 243-249. <https://doi.org/10.1016/j.jpsychires.2021.12.031>
- O'Connor, A., Peckham, T., & Seixas, N. (2020). Considering work arrangement as an “exposure” in occupational health research and practice. *Frontiers in Public Health*, 8, 363. <https://doi.org/10.3389/fpubh.2020.00363>
- 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>
- Parker, S. K., & Kho, M. C. (2025). Digital technologies and emerging psychosocial risks: a work design perspective. In *Research Handbook on Psychosocial Conditions at Work* (pp. 44-64). Edward Elgar Publishing. <https://doi.org/10.4337/9781035318636.00010>
- Passas, I. (2024). Bibliometric analysis: the main steps. *Encyclopedia*, 4(2), 1014-1025. <https://doi.org/10.3390/encyclopedia4020065>
- Perera, A., & Chhetri, A. (2025). Computational simulation and algorithmic analysis of occupational health risk dynamics in labor markets and their policy implications in developing regions. *Northern Reviews on Algorithmic Research, Theoretical Computation, and Complexity*, 10(6), 1-14.
- Rezaei, N., & Saghaadeh, A. (2022). Introduction on integrated science: Multidisciplinary and interdisciplinarity in health. In *Multidisciplinary and interdisciplinarity in health* (pp. 1-40). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-96814-4_1
- Salvagioni, D. A. J., Melanda, F. N., Mesas, A. E., González, A. D., Gabani, F. L., & De Andrade, S. M. (2017). Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. *PLOS ONE*, 12(10), e0185781. <https://doi.org/10.1371/journal.pone.0185781>
- Santos, R. B., & de Oliveira, U. R. (2019). Analysis of occupational risk management tools for the film and television industry. *International Journal of Industrial Ergonomics*, 72, 199-211. <https://doi.org/10.1016/j.ergon.2019.05.002>

- Science & Medicine, Inc. (n.d.). *Medical problems of performing artists*.
<https://www.sciandmed.com/mppa>
- Sharma, K., Khurana, P., & Uddin, Z. (2025a). *MetaInfoSci: An integrated web tool for scholarly data analysis* (arXiv:2506.09056) [Preprint]. arXiv.
<https://doi.org/10.48550/arXiv.2506.09056>
- Sharma, K., Khurana, P., & Uddin, Z. (2025b). *MetaInfoSci: Visualise trends and understand facts*. In *Proceedings of the 20th International Conference on Scientometrics & Informetrics (ISSI 2025)*. International Society for Scientometrics and Informetrics.
https://doi.org/10.51408/issi2025_199
- Walters, D., Johnstone, R., Bluff, E., Limborg, H. J., & Gensby, U. (2022). Prevention services for occupational safety and health in the European Union: Anachronisms or supports for better practice?. *Safety Science*, 152, 105793. <https://doi.org/10.1016/j.ssci.2022.105793>
- Woods, E. H., Zhang, Y., Roemer, E. C., Kent, K. B., Davis, M. F., & Goetzel, R. Z. (2023). Addressing psychosocial, organisational, and environmental stressors emerging from the COVID-19 pandemic and their effect on essential workers' mental health and well-being: a literature review. *Journal of occupational and environmental medicine*, 65(5), 419-427.
<https://doi.org/10.1097/jom.0000000000002802>
- Zafeiroudi, A., Tsartsapakis, I., Trigonis, I., Moustakidis, A., Ellinoudis, T., & Kouthouris, C. (2026). Training models in aerial dance education: structured progression, creative and hybrid approaches for skill development and performance. a convergent mixed-methods study and systematic review. *Journal of Educational and Social Research*, 16(1), 206-251.
<https://doi.org/10.36941/jesr-2026-0248>.