



Scientometric Analysis of Urban Studies Challenges and Crises with an Emphasis on Creative Approaches in Urban Management

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Abstract

A precise understanding of the conceptual differences between urban challenges and crises not only aids in identifying research and executive priorities in urban studies but also serves as a foundation for developing innovative strategies for managing these issues. This study aims to conduct a scientometric analysis of urban challenges and crises and examine the potential of creative approaches in managing these issues. To this end, research indexed in the Scopus citation database was analyzed using co-occurrence network analysis of keywords, and research patterns, geographical distribution, and thematic trends were examined. Findings indicate that housing, sustainability, and climate change are among the most frequently cited urban challenges, while topics such as smart cities, resilience, gentrification, and informal settlements have gained increased attention in recent years. On the other hand, housing, economic, and financial crises have been identified as the most significant urban crises in the scientific literature. The thematic distribution analysis of urban challenges research highlights significant differences in research priorities across countries, where developed countries predominantly focus on long-term and sustainable challenges, whereas developing countries face more immediate and livelihood-related crises. Furthermore, the limited focus of research on urban crises on specific issues underscores the need for a global commitment to controlling and managing these crises. This study emphasizes the necessity of leveraging creative approaches in managing urban challenges and crises and highlights the potential of the creative city as a framework for developing innovative solutions and flexible responses to complex urban issues.

Keywords: *Urban challenges, urban crises, creative city, urban studies, scientometrics, VOSviewer, Scopus.*

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1. Introduction

In the field of urban studies, challenges and crises are concepts that play a central role in analyzing issues and formulating urban management policies. The existence of diverse terminology aims to convey different meanings and concepts; however, the lack of clarity and precision in defining and using certain terms in scientific research has, over time, led to ambiguity and inaccuracies in their application. Therefore, to ensure greater consistency and

coherence in scientific texts, it is essential to delineate the conceptual boundaries of terms and clarify their similarities and distinctions from other related terms within each scientific field. Examining and analyzing scientific applications of these terms on a global scale can significantly contribute to determining their precise meaning and specialized use while preventing unintentional errors arising from the misuse of similar terms. A correct understanding of these concepts and their distinctions not only enhances theoretical clarity but also establishes a foundation for



making effective decisions and formulating efficient strategies in urban management [1].

Urban challenges refer to issues that require the mobilization of various skills, capacities, and capabilities for resolution, often necessitating innovation and collective participation. In contrast, urban crises refer to situations that, due to their complexity and severity, demand immediate intervention and critical decision-making, as failing to manage them promptly may lead to irreparable consequences [2]. The distinction between challenges and crises has received limited attention in the scientific literature, and the lack of a clear differentiation between these two concepts can result in confusion in policy formulation and issue prioritization [3]. Moreover, social, economic, and environmental changes have further complicated these challenges and crises, making the adoption of innovative approaches in urban management essential [4, 5].

The nature of any dynamic and evolving system necessitates confronting various challenges. However, the value and credibility of a system are determined by its ability to systematically address challenges. A city, as a dynamic social system [6, 7], constantly faces challenges, and its ability to manage these issues effectively determines its resilience and sustainability. Given that inappropriate responses to challenges can increase the likelihood of their transformation into crises (as complex and severe problems), it is crucial to analyze both urban challenges and crises, examine controversial urban planning issues, and assess how different countries approach these topics in relation to their conceptual distinctions.

Despite numerous studies on urban issues, few comprehensive studies have systematically analyzed urban challenges and crises using a scientometric approach. Additionally, there is a lack of comparative research on how different countries address these challenges and crises [2]. This research gap underscores the need for a study that not only clarifies the conceptual boundaries between challenges and crises but also examines global research trends and emerging approaches in urban management.

To better organize existing scientific findings in the field of urban challenges and crises, this study conducts a macro-analysis of the literature on urban planning challenges and topics categorized as crises in urban studies. Beyond identifying each country's capabilities in different areas of urban planning, this analysis can also guide future research efforts. Moreover, proposing creative approaches in urban management as an innovative response to complex urban

challenges can play a crucial role in preventing the transformation of challenges into crises (Landry, 2008). Creative cities, by leveraging their cultural, social, and technological capacities, enable the development of innovative solutions for urban issues and contribute to urban resilience [8, 9]. This perspective emphasizes that incorporating creativity and innovation into urban management processes not only facilitates the resolution of challenges but also prevents the emergence of new crises [10]. Therefore, examining urban challenges and crises through a scientometric lens, alongside an analysis of creative approaches, can provide a framework for innovative and resilient urban management.

The objective of this study is to conduct a comprehensive analysis of urban challenges and crises using scientometric methods. This research seeks to clarify the conceptual boundaries of challenges and crises in urban studies, identify frequently used terms and key themes in research on urban challenges and crises, analyze the different approaches adopted by various countries in addressing these issues, and examine the role of creative cities and innovative approaches in managing challenges and preventing crises. Accordingly, this article first discusses the research methodology and the process of collecting bibliometric data. Then, through scientific network analysis in the Scopus database, it identifies the main challenges and crises in urban studies and compares them on a global scale. Finally, with a focus on creative urban management, it evaluates the potential of this approach for addressing challenges innovatively and preventing urban crises. By providing valuable insights into urban challenges and crises, this study can serve as a guide for future research efforts and scholarly approaches in this field.

2. Methodology

To examine the bibliometric details of the scientific literature on challenges and crises in urban studies, relevant data were extracted from the Scopus database. Scopus is considered one of the most reliable sources for scientometric analyses due to its extensive and comprehensive coverage of scientific articles, conferences, and books. Beyond its quantitative scope, Scopus is also recognized for the quality of its scientific sources, particularly in interdisciplinary fields such as social sciences and urban studies [11].

2.1. Data Collection and Scientometric Analysis Method

The most recent data update and extraction for this study was conducted on August 1, 2020. To compile a reference database, the ISSN (International Standard Serial Number) of reputable journals in urban studies was first collected. A targeted search was then performed using the keywords "challenge" and "crisis" in the title, abstract, and keywords of articles. This process identified 5,204 scientific documents related to urban challenges and 2,116 scientific documents related to urban crises.

To analyze the data, scientometric methods were employed. Scientometrics, as a quantitative approach to scientific data analysis, enables the assessment of knowledge production patterns, research trends, scientific collaborations, and thematic clustering [12]. This approach is particularly useful for examining the evolution of concepts and analyzing scientific networks in urban studies [13]. VOSviewer software was used as the primary tool for data analysis. VOSviewer is a powerful tool for cluster analysis, scientometric mapping, and visualizing network relationships. It implements high-frequency data extraction and is widely used in academic literature for mapping co-authorship networks, journal and country collaborations, and analyzing in-text scientific terms. Additionally, VOSviewer applies text mining algorithms to identify noun phrases from the titles and abstracts of publications, which are then used to generate networks, clusters, and heat maps. Overall, the capabilities of this software include co-occurrence mapping, co-authorship analysis, citation analysis, and heatmap visualization [14].

2.2. Data Analysis Process

The data analysis process in this study was conducted through several systematic and precise stages to ensure the comprehensiveness and accuracy of the findings. The first step was data filtering, during which irrelevant records and articles lacking abstracts or sufficient information for analysis were removed. This step helped minimize errors caused by incomplete or invalid data, ensuring that only credible scientific documents with complete information were included in the analysis. The filtering process was carried out based on rigorous selection and exclusion criteria to provide an accurate representation of urban challenges and crises in urban studies.

In the next step, data coding and classification were performed. The extracted data were divided into two main categories: The first group consisted of documents directly

addressing urban challenges, while the second group included articles focusing on urban crises. This classification was intended to facilitate comparative analysis between the two concepts and examine their interconnections. Following this stage, the data were clustered based on criteria such as publication year, thematic area, country, and academic institution to prepare them for in-depth analysis.

One of the key aspects of the analysis was trend analysis over time, conducted to identify conceptual shifts and research patterns across different time periods. This analysis helped clarify the evolution of the terms "challenge" and "crisis" in urban studies and demonstrated how social, economic, and environmental transformations have influenced the scientific discourse surrounding these concepts over time. The temporal analysis also revealed the rise or decline in scholarly attention to each concept and provided a comparative perspective on research trends.

In the final stage, a network analysis was performed using VOSviewer. This analysis involved mapping scientific collaboration networks among authors, institutions, and countries and identifying thematic clusters. This method enabled the examination of collaborative research patterns in urban studies and facilitated the identification of influential scholars and research institutions in this field. Furthermore, network analysis helped elucidate the relationships between key terms and the formation of conceptual clusters in the literature.

2.3. Methodology Validation

To ensure the accuracy and reliability of the applied methodology, a set of validation measures was implemented. First, data collection was conducted systematically, based on defined criteria, to prevent the inclusion of irrelevant records and minimize potential errors. This structured approach not only ensured precise data extraction but also enhanced the diversity of sources and the scope of examined topics.

Additionally, qualitative content analysis was used to complement the quantitative analysis. In this phase, selected articles were examined in greater depth to clarify the semantic relationships between the concepts of challenge and crisis. Qualitative content analysis helps not only in identifying quantitative associations between terms but also in better understanding their semantic depth and contextual applications.

Finally, to enhance the generalizability of the findings, a comparative analysis between the results of this study and previous research was conducted. This comparison helped

identify convergences and divergences in the scientific literature and positioned the study's findings within a broader research framework. The implementation of these multi-layered validation measures ensured that the findings of this study are scientifically robust and applicable for future research on urban challenges and crises.

3. Findings and Results

3.1. Macro-Level Analysis of the Literature

Based on the data extracted from the Scopus database, a total of 5,204 scientific documents related to urban studies challenges have been recorded. The earliest scientific document in this field was published in 1939 in the *Journal of the American Planning Association* and examined the challenges of rebuilding American cities in adaptation to modern conditions (Picard, 1939). The analysis of publication trends indicates that until the 1970s, most research on this topic was published in the same journal. Over time, the content of these studies gradually expanded from an examination of urban reconstruction challenges to topics such as urban education and various dimensions of urban development. This trend suggests that research on urban challenges has reflected the changing social and economic needs of urban societies, encompassing a diverse range of thematic and situational challenges based on temporal and spatial conditions.

Regarding urban crises, an analysis of 2,116 scientific documents indicates that the earliest study in this field dates back to 1939, focusing on crises resulting from the Industrial Revolution (Smith, 1939). Similar to research on urban challenges, until the mid-1970s, all publications on urban crises were primarily featured in the *Journal of the American Planning Association* and the *Journal of Urban Affairs*, with a predominant focus on crises induced by industrialization.

Figure 1 presents a summary of bibliometric statistics on the published studies related to urban challenges and crises. Graphs a1 and a2 illustrate the development trends in the publication of scientific documents concerning "challenge" and "crisis", based on two factors: the distribution of scientific journals over an 81-year period and the cumulative number of publications for each year from 1939 to 2020 (with 2020 data covering only the first eight months of the year). The data indicate that from 1939 to 1970, the maximum number of published scientific documents per year did not exceed one document, and this number remained below ten publications per year until the 1980s.

The upward trend in graph a1 shows that from 2006 onward, the number of published studies on urban challenges surpassed 100 articles per year, with a steeper increase leading to 528 scientific documents published in this field in 2019. The increasing number of studies on urban challenges indicates growing research attention toward the potential of this field in addressing urban problems and environmental changes.

In the urban crisis domain, for the first time in 2012, the number of published articles in this field exceeded 100 per year, with the highest number of publications recorded in 2017, reaching 217 articles. After this peak, the publication trend declined. It appears that increased research focus on managing urban changes and challenges—through strategic approaches emphasizing power, skills, and existing capabilities—has contributed to preventing the emergence of complex problems and mitigating urban crises by transforming them into manageable challenges.

More than half of the studies on urban challenges and crises fall within the social sciences, followed by environmental sciences, which has also contributed significantly to the study of these issues. Additionally, 90% of the published articles in this field are written in English, followed by Spanish as the second most common language. Furthermore, approximately 90% of the published documents in this domain are presented in the form of scientific articles.

3.2. Geographical Distribution of Research

An analysis of the geographical distribution of the studies indicates that the United States has the highest global share in this field, with 1,512 articles on urban challenges and 632 articles on urban crises, placing it significantly ahead of the second-ranking country, the United Kingdom (graphs b1 and b2). This finding highlights the United States' leading role in urban studies and planning research, particularly in producing scientific knowledge related to urban crisis and challenge management.

An examination of institutional affiliations of researchers (graphs c1 and c2) reveals that University College London (UCL) holds the top position, with 77 articles on urban challenges and 44 articles on urban crises. This emphasizes the university's academic focus on urban management and planning research.

3.3. *Leading Researchers in the Field*

The analysis of prominent researchers indicates that Rogerson, with 23 scientific documents related to urban challenges, has significantly higher research activity in this area than other scholars (graphs d1 and d2). The most frequent keywords in his studies include South Africa, local economic development, and urban tourism. Additionally, Cutter and Immergluck are among the most active researchers in the field of urban crises, each with more than 20 scientific documents. Cutter’s research focuses on contemporary urban crises, while Immergluck’s studies primarily examine the housing market in the United States.

1. *Cities*
2. *Urban Studies*
3. *Habitat International*

Conversely, the three leading journals in the urban crisis domain are:

1. *International Journal of Urban and Regional Research*
2. *Urban Studies*
3. *City*

This analysis highlights that prominent journals in urban studies—particularly *Urban Studies*—have played a significant role in producing and disseminating scientific knowledge in both urban challenges and urban crises.

3.4. *Leading Academic Journals in the Field*

An analysis of publication sources indicates that the top three journals in the urban challenges domain are:

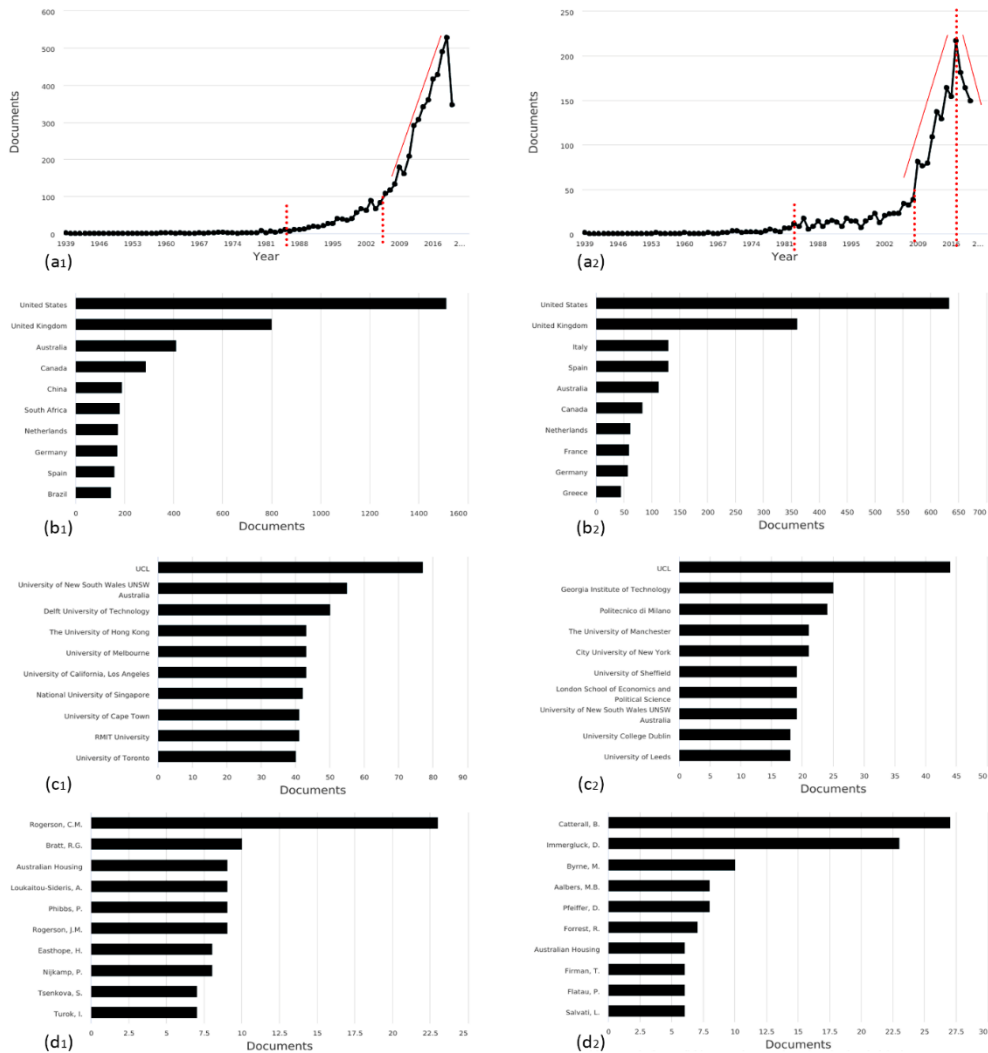


Figure 1. Summary of Bibliometric Statistics on Published Scientific Documents Related to Urban Challenges and Crises

3.5. *Co-Occurrence Analysis of Keywords*

Further bibliometric aspects of published research on challenges and crises in urban studies were examined using the VOSviewer bibliometric analysis software. From the 5,204 scientific documents extracted from the database, only English-language articles containing the keyword "challenge" in their title, abstract, or keywords were selected. Subsequently, the authors' keywords in these studies were analyzed. The heatmap in Figure 2 illustrates the results of the analysis of 3,344 scientific documents, highlighting the most frequently occurring keywords.

For this analysis, a minimum keyword occurrence threshold of 15 times was set, and from 6,962 keywords, 73 frequently occurring terms were selected for heatmap visualization. Since the color intensity on the heatmap indicates keyword frequency, the red areas represent the most concentrated urban planning challenges. The findings show that housing (including its derivatives such as public housing, social housing, and affordable housing) is the most frequently occurring concept among the examined keywords. Following housing, terms such as sustainability, climate change, resilience, and poverty (including sub-concepts like vulnerability and homelessness) emerge as key urban challenges in urban studies. Other critical concepts related to urban challenges include urban development, urbanization, smart cities, urban infrastructure, and transportation, alongside economic development, social justice, migration, and urban identity.

Given the concept and application of the term challenge, the keywords used in these studies not only identify issues requiring urban management skills, capabilities, and power but also highlight urban potentials and assets that facilitate challenge management. Emphasizing citizen education to enhance public participation and strengthen social capital, alongside effective urban governance and sound policymaking, is recognized as a fundamental necessity in these studies.

Regarding frequently analyzed case studies, in addition to developing countries, urban suburbs and deteriorated urban fabrics facing challenges such as gentrification, urban renewal, and regeneration have been widely examined. China, South Africa, and India have been identified as key focal points for research on urban challenges. Analyzing keyword relationships reveals that spatial proximity between words in the heatmap aligns with the number of shared occurrences in articles; the greater the shared frequency of keywords, the stronger the thematic relationship between them.

The analysis of urban crises based on Scopus data was conducted next. From the 1,308 selected scientific documents, author keywords were analyzed using VOSviewer. A minimum keyword occurrence threshold of five times was set, and from 2,812 keywords, 111 frequently occurring terms were selected for heatmap visualization. The findings indicate that the housing crisis (covering topics such as the housing market, homeownership, social housing, and affordable housing) is the most frequently used concept. Following housing, financial and economic crises have attracted the most research attention, forming the three primary categories of urban crises.

Additionally, resilience and issues related to deteriorated urban areas, such as gentrification and urban regeneration, are also recognized as urban crises. Certain social crises, including inequality, poverty, homelessness, migration, and refugees, frequently appear as recurrent themes. As previously mentioned, a crisis is defined as an extremely dangerous and difficult situation that requires serious attention, major decision-making, and effective interventions to resolve issues and restore stability. Therefore, comprehensive governmental support in the form of effective urban policies is an undeniable necessity in addressing these crises. Failure to properly manage urban crises can lead to increased social unrest. Accordingly, some studies in this field have highlighted urban rights and the necessity of preserving social justice in crisis management.

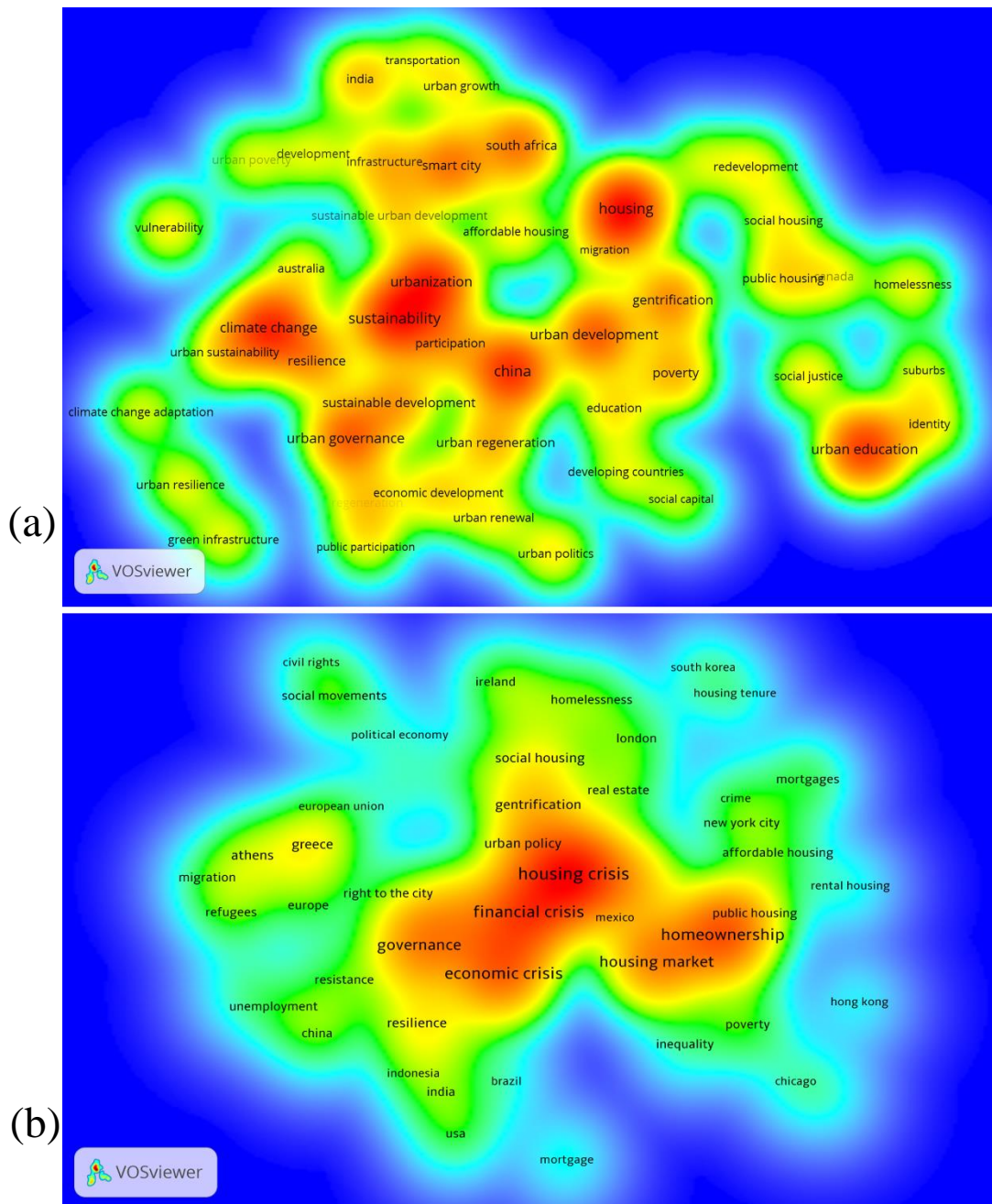


Figure 2. Heatmap of Frequently Occurring Keywords in Articles on a) Urban Challenges and b) Urban Crises

3.6. Comparative Analysis of Heatmaps for Urban Challenges and Crises

The comparison of heatmaps for urban challenges and crises reveals significant differences in conceptual dimensions and managerial approaches. Topics categorized under urban challenges include a broader range of terms than those classified as urban crises. Consistent with the concept of a challenge, these articles emphasize urban assets and

social potentials in their keyword selection for challenge management. In contrast, due to their severity and urgency, urban crises are primarily associated with governmental policies and fundamental interventions.

Housing has emerged as the most frequently analyzed topic in both urban challenges and crises, reflecting substantial scholarly attention. The findings suggest that depending on the time period, geographical context, and

available capacities, housing can be a manageable challenge or an acute crisis.

3.7. *Conceptual Transition of Key Urban Challenges and Crises Over Time*

To examine these concepts further, the temporal distribution of urban challenges and crises research by specific time periods and active research countries was analyzed. Figure 3 presents the network of key terms in studies on a) urban challenges and b) urban crises, using a color gradient to highlight the peak publication periods for each concept.

To analyze the evolution of challenging and crisis-related topics, the 2012–2016 period was selected as the reference timeframe in VOSviewer, and frequently occurring keywords were categorized based on publication volume in each time period. The comparative analysis of urban challenges and crises yields the following insights:

1. **Transition from Challenge to Crisis:** Housing, as the most frequently occurring term in research on urban challenges and crises, was categorized as a challenge by researchers during 2014–2015. During this period, scholars expected housing issues to be solvable through domestic capabilities and existing capacities. However, in the subsequent period, most housing-related studies classified it as a crisis, incorporating terms such as rental housing, affordable housing, housing tenure, and the housing market under urban crises. This shift suggests that urban experts have increasingly perceived the housing situation as worsening over time, necessitating government intervention and fundamental policy changes. This conceptual transition from challenge to crisis is also evident for social housing, as well as poverty, homelessness, vulnerability, and social justice, which were previously studied as challenges before 2016 but have since been increasingly framed within urban crisis research.
2. **Transition from Crisis to Challenge:** Before 2016, terms related to government and governance were classified as urban crises. However, over time, as governmental capacities in institutional synergy and challenge management became recognized, these topics were increasingly framed as key strategies for managing urban challenges. A similar transition is observable for migration-related issues.
3. **Topics Predominantly Classified as Challenges:** Informal settlements, smart cities, sustainability, climate change, developing countries, and transportation are frequently occurring terms in urban studies that have been categorized as urban challenges. Based on the definition of a challenge, these topics appear manageable through urban capacities. Given the importance of social capital as a primary urban asset in challenge management, urban education and public participation for social development are also frequently occurring themes in urban challenge research.
4. **Topics Predominantly Classified as Crises:** Economic crises and financial crises are among the most frequently mentioned urban crises, with 2014–2016 marking their peak publication period. Unemployment and crime are also frequent urban crisis topics, classified as social issues exacerbated by economic and financial crises. Additionally, social movements are identified as a consequence of urban crises, particularly in cases of unresolved socio-economic disparities.
5. **Topics Categorized as Both Challenges and Crises:** Resilience and gentrification have been categorized under both urban challenges and crises since 2017. Their classification appears dependent on the internal capacities of a given city or country. However, other aspects of deteriorated urban fabrics, such as urban renewal and regeneration, remain frequently examined within urban challenge research, as scholars worldwide explore various urban capacities for improving deteriorated areas.

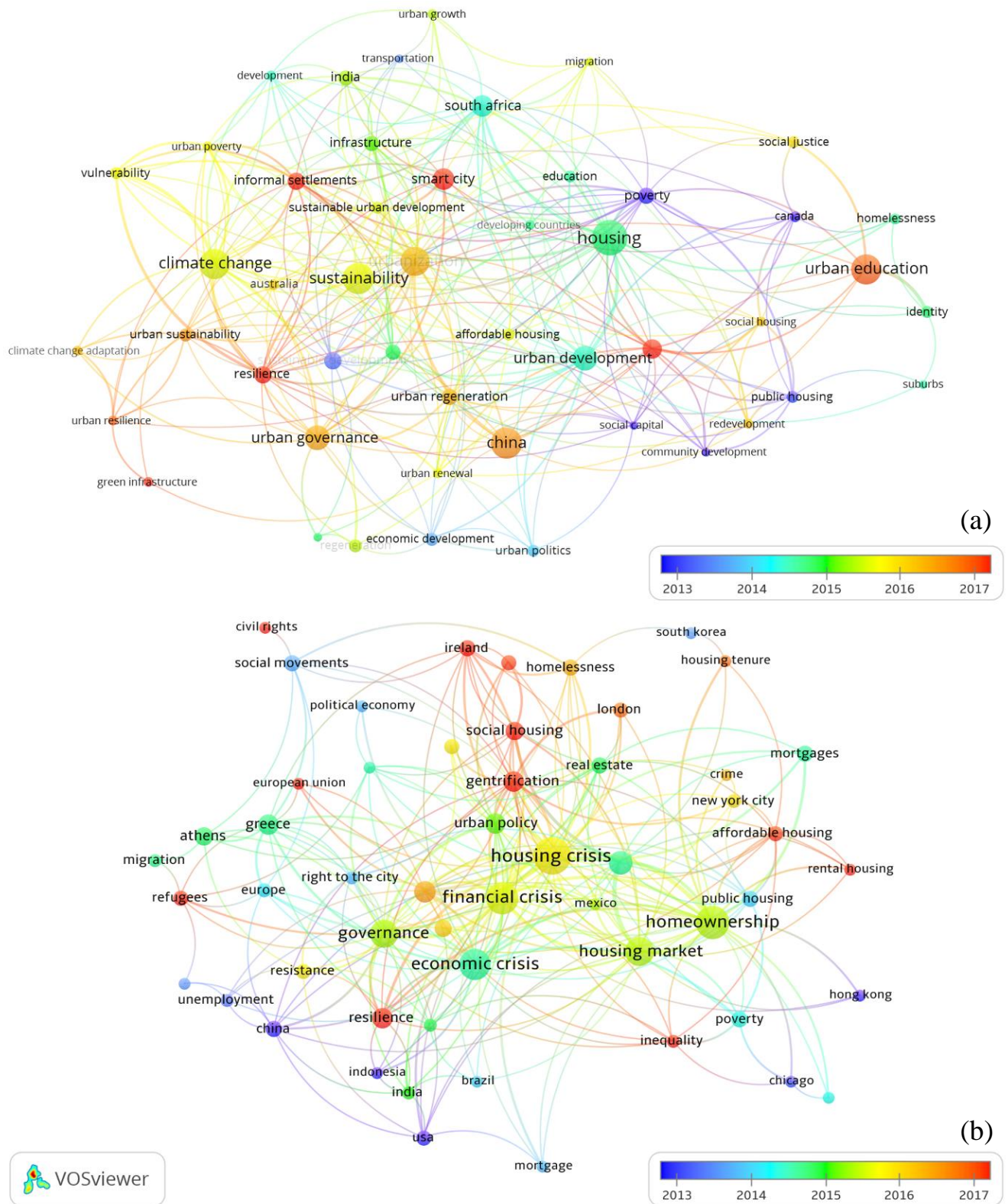


Figure 3. Network of Key Terms in a) Urban Challenges and b) Urban Crises, Categorized by Peak Publication Periods

3.8. Comparative Analysis of the Geographical Distribution of Research on Urban Challenges and Crises

To analyze and assess countries' research priorities regarding urban challenges and crises and to conduct a comparative study across different regions of the world, frequently occurring keywords and the volume of scientific publications were examined separately for each country. Figure 4 illustrates the geographical distribution of scientific documents published from different regions based on Scopus data.

The findings indicate that researchers in the United States have made the greatest contributions to both urban challenges and crises research. Following the United States, the United Kingdom ranks second, but the number of published articles in this country is nearly half of the scientific output of the United States. Notably, nearly 60% of all published studies in these two domains belong to just three countries: the United States, the United Kingdom, and Australia. This concentration suggests a knowledge monopoly in urban studies, particularly in developed and English-speaking countries.

Despite the global spread of urban challenges and crises, the research output from other geographical regions is significantly lower compared to these three countries. Among the 99 countries registered in Scopus that have conducted research on urban challenges, 57 countries have published fewer than 10 articles. This disparity highlights the research concentration in developed nations and the clear gap in knowledge production on urban challenges in developing countries. Among them, Iran, with 14 published articles on urban challenges, ranks 37th, indicating that, despite gradual growth in scientific production, Iran still has a limited presence in the global literature on urban challenges.

A similar trend is observed in urban crises research. Among the 76 countries actively publishing in this field, 57 countries have published fewer than 10 articles, and 25 countries have produced only one article on urban crises. The low research volume in this field underscores the concentration of scientific output in a limited number of countries. Similarly, Iran, with five published articles on urban crises, ranks 32nd, demonstrating a need for greater research focus on critical urban issues in Iran and the expansion of comparative studies with other active countries in this field.

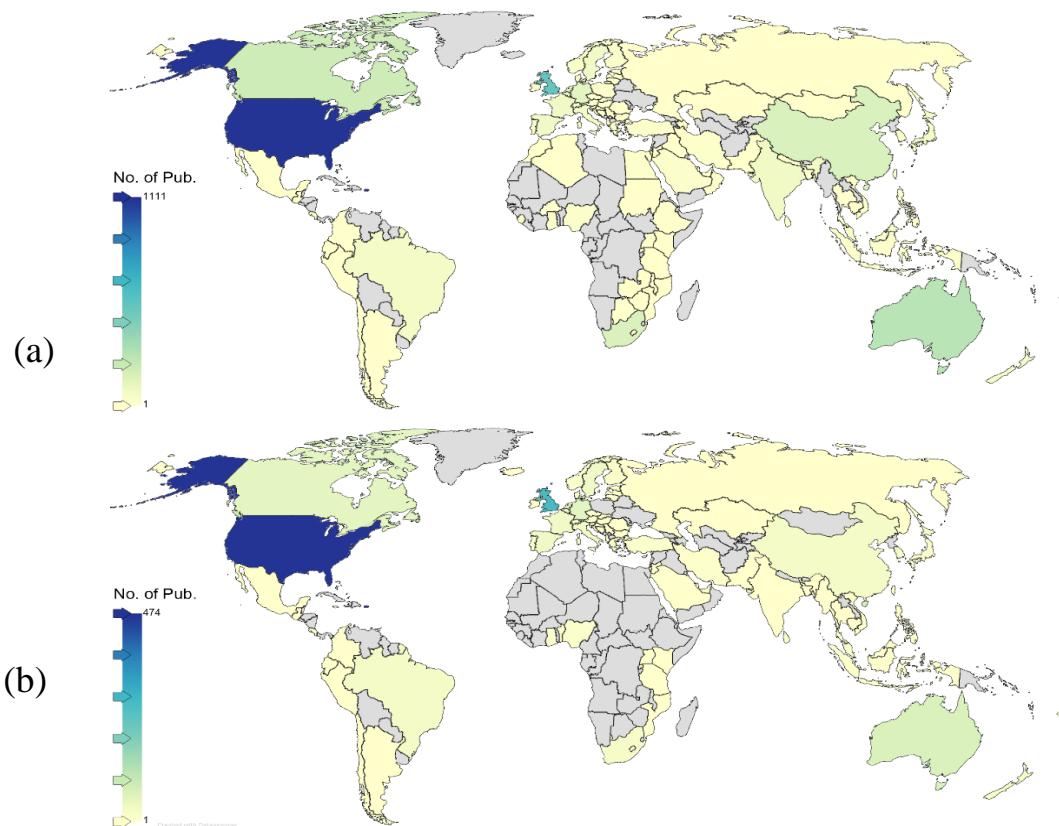


Figure 4. Distribution of Scientific Publications on a) Urban Challenges and b) Urban Crises Across Different Countries

3.9. *Comparative Analysis of Urban Challenges and Crises Across Different Countries*

To conduct a comparative analysis of urban challenges and crises across different countries, the most frequently occurring global keywords in studies related to each active country were examined and compared. This analysis not only reveals different research approaches toward urban issues but also provides a framework for understanding the capacities, strengths, and critical issues in each country.

According to the radial charts in Figure 5, the thematic distribution of urban challenges research covers a wide range of issues, reflecting the variations in research priorities among different countries based on their local capacities and needs. In contrast, urban crises research in most countries focuses on a limited set of specific topics, suggesting a universal nature of urban crises and emphasizing the necessity for international cooperation in crisis management and mitigation.

Sustainability challenges, housing, and urbanization are the most frequently recurring themes in the top 10 research-active countries in urban challenges studies. Additionally, urban education and citizen participation, along with effective local government policies, have been highlighted as key strategies for managing urban challenges in the reviewed articles. Social justice, particularly issues related to poverty and homelessness, has received significant attention in most countries. However, South Africa has particularly focused on social inequality alongside informal settlements.

Meanwhile, climate change has been identified as a major challenge, accounting for a substantial portion of research

output in Germany and the United Kingdom. Canada exhibits the most balanced thematic distribution among all research-active countries, whereas the Netherlands is primarily concentrated on a few specific topics.

Beyond these global recurring themes, certain localized topics have received particular attention in different countries, reflecting their specific regional challenges. Examples include racism in the United States and the Netherlands, water supply in Australia and Germany, social capital in the United States and the United Kingdom, waste management in South Africa, the Netherlands, and the United States, public health in the United States, Canada, South Africa, the Netherlands, and France, rural areas in China and Hong Kong, information and communication technology (ICT) in the United States and the Netherlands, and industrialization in China, South Africa, the Netherlands, and Hong Kong. These topics represent key urban challenges as perceived by researchers in the top 10 research-active countries in this field.

In urban crisis research, the financial crisis is by far the most frequently studied global urban crisis. Following this, housing and economic crises have received the most research attention. Greece is the only country that has prioritized employment and labor market issues as the main focus of its urban crisis research, while Ireland has placed greater emphasis on the housing market and associated crises compared to other countries.

Due to their urgent and complex nature, urban crises require immediate and effective policy responses. Recent analyses suggest that scientific research has increasingly emphasized the need for interventionist approaches and crisis management strategies to address urban challenges.

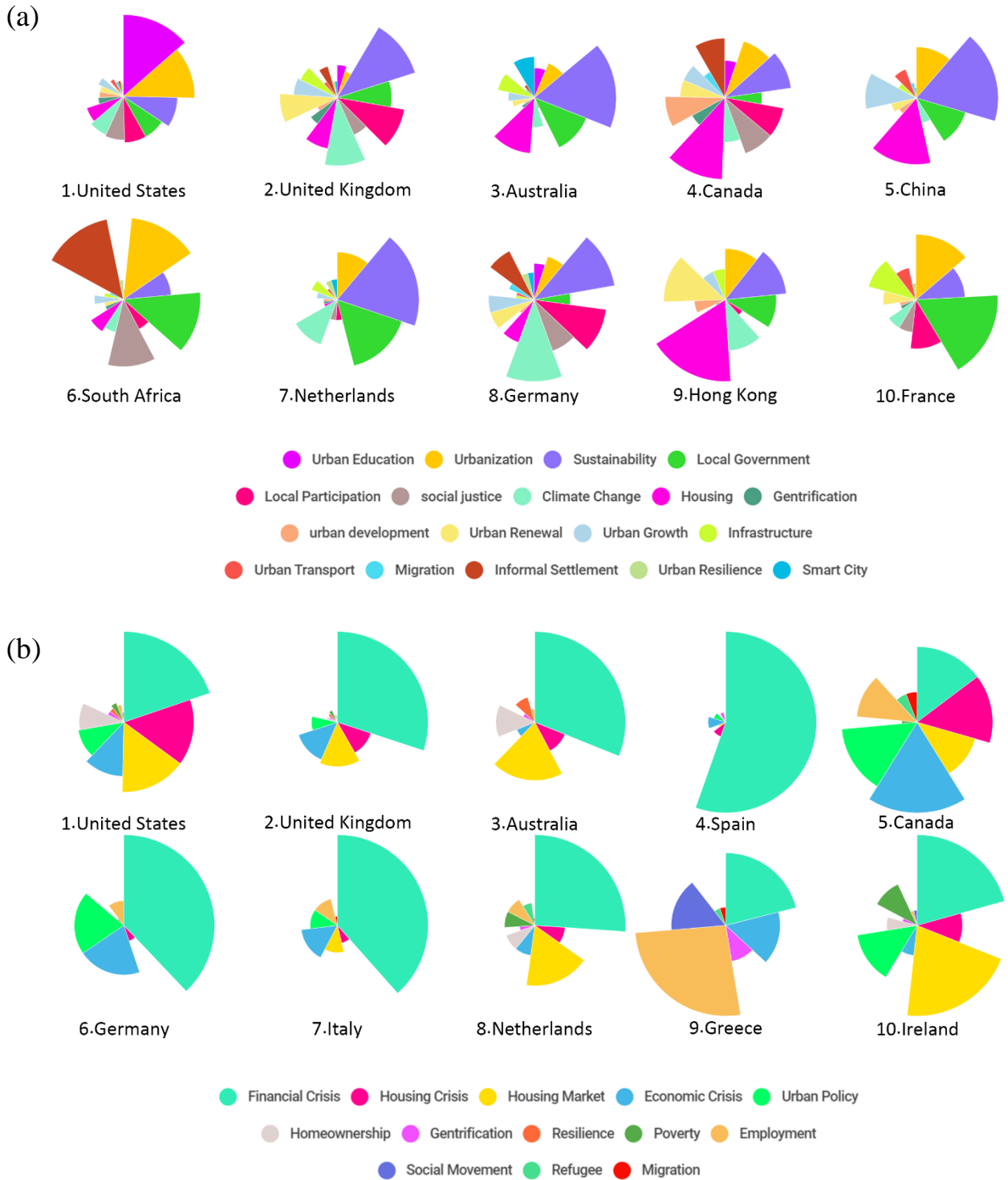


Figure 5. Relative Distribution of a) Urban Challenge Topics and b) Urban Crisis Topics in Scientific Publications of Research-Active Countries

4. Discussion and Conclusion

This study aimed to analyze and compare urban challenges and crises at a global level and to identify

different research approaches among countries. The findings indicate a geographical concentration in knowledge production related to urban challenges and crises, as well as significant differences in research priorities between developed nations and other regions of the world. This

section discusses the results, aligns them with previous studies, examines the role of creative approaches in managing urban challenges and crises, and provides practical recommendations for policymakers and researchers.

The findings reveal that the United States, the United Kingdom, and Australia account for a major share of scientific output in urban challenges and crises research. This geographical concentration is consistent with previous studies, which emphasize that developed countries serve as the primary hubs for urban knowledge production. In contrast, developing countries, despite facing more complex and severe challenges, contribute minimally to global research [15]. This imbalance not only influences the globalization of urban policies but also reduces the applicability of models developed in developed nations to less-developed countries, given their institutional and economic differences [16]. This knowledge disparity underscores the urgent need to support local research and develop creative, region-specific approaches. Creative urban management approaches, emphasizing smart localization and social innovation, can offer context-specific solutions for each region [17]. Such approaches not only enhance crisis management effectiveness but also strengthen local communities' capabilities to address urban challenges [18].

The findings further indicate that sustainability challenges, housing, and urbanization are the most frequently studied topics in global research. These results align with Turok's (2016) study, which emphasizes the importance of urban growth management and sustainability in mitigating increasing pressures on cities [19]. Creative approaches to managing these challenges emphasize the use of innovative technologies, citizen participation, and policy innovation [20]. For instance, smart cities and digital solutions can facilitate efficient resource management and improve quality of life in response to sustainability challenges [21].

Moreover, the analysis reveals that financial crises, economic crises, and housing crises are the most significant global urban crises. These findings are consistent with Peck (2012) and Aalbers (2016), who identified financial crises as key drivers of urban instability [22, 23]. In this context, innovative urban finance strategies, such as public-private partnerships (PPP) and social investments, can help reduce urban vulnerabilities and effectively manage crises [24].

The study also highlights that certain challenges are context-specific and have received particular attention in different countries. For instance, South Africa has focused

on social justice challenges and informal settlements, while Germany and the United Kingdom have prioritized climate change issues. This diversity of topics supports Singhdo's (2009) argument that urban challenges are inherently local and cannot be addressed with a one-size-fits-all approach. At the same time, certain crises, such as climate change and financial crises, have transnational implications and require international cooperation for resolution [25]. Creative urban management can facilitate the integration of local strategies with global collaboration, providing a comprehensive framework for addressing complex urban challenges. Initiatives such as UNESCO's Creative Cities Network exemplify international cooperation efforts aimed at sharing creative experiences and promoting sustainable urban development [26].

Additionally, the findings indicate that urban crises, particularly financial crises, are highly responsive to urban policies and require innovative and flexible strategies. Creative governance policies, which emphasize social innovation, participatory economies, and organizational flexibility, can enhance urban resilience and mitigate the negative impacts of crises [27]. For instance, in response to economic crises, many cities have leveraged participatory economies and digital platforms to create new revenue sources and strengthen urban resilience [28].

Overall, the study demonstrates that urban challenges and crises are multifaceted and complex phenomena, and different countries prioritize research areas based on their unique institutional and socio-economic contexts. Creative approaches, emphasizing innovation, flexibility, and social participation, can serve as effective strategies for managing urban challenges. Policymakers should adopt creative strategies and foster international collaborations, particularly in addressing transnational crises, to achieve urban resilience and sustainable management.

This study conducted a scientometric analysis of urban studies challenges and crises, with a particular emphasis on creative approaches in urban management. Using content analysis of scientific documents and data from the Scopus citation database, this study examined research patterns, geographical distribution of scientific output, and thematic diversity in urban challenges and crises research. The findings offer a comprehensive overview of the current state of knowledge in this field, highlighting research gaps and overlooked areas.

The results indicate that scientific output on urban challenges and crises is predominantly concentrated in developed countries, particularly the United States, the

United Kingdom, and Australia. This geographical concentration reflects the dominance of advanced nations in urban knowledge production and the marginalization of developing countries in scientific discourse. Conversely, developing countries, despite facing more severe and complex urban challenges, contribute minimally to the production of urban knowledge. This scientific imbalance increases the risk of implementing urban policies without considering local differences, emphasizing the need for regional and localized approaches.

In terms of content, urban challenges research exhibits greater thematic diversity than urban crisis research. Topics such as sustainability, housing, urbanization, and citizen participation emerged as frequently discussed issues in the analyzed documents. This thematic diversity highlights the complex and multidimensional nature of urban challenges, necessitating multifaceted approaches in urban management. In contrast, urban crisis research is predominantly focused on economic and environmental issues, reinforcing the notion that urban crises have global implications and require international cooperation and holistic approaches for effective management.

Based on the findings, creative approaches to urban management can play a significant role in mitigating the impacts of urban challenges and crises. These approaches leverage innovation, technology, and cross-sectoral collaboration to develop adaptive and flexible solutions. Urban policymakers can enhance urban resilience, increase citizen participation, and strengthen international cooperation networks by adopting creative strategies for addressing complex urban challenges. This study demonstrates that integrating creative approaches with traditional urban management strategies can lead to more effective and sustainable policies.

Despite its contributions, this study has certain limitations. One key limitation is its reliance on Scopus data, which may exclude articles published in local languages or other databases. Additionally, the focus on keyword frequency analysis means that qualitative dimensions and theoretical approaches have not been deeply explored. Moreover, variations in access to scientific resources and differences in the research infrastructure across countries may have influenced the geographical distribution of publications and the study's findings.

For future research, it is recommended that both quantitative and qualitative approaches be employed to enable a deeper exploration of theoretical and policy dimensions of urban challenges and crises. Comparative

studies between developed and developing countries can provide valuable insights into both local and global solutions for urban management. Additionally, further research should focus on evaluating the impact of creative approaches on urban resilience through comprehensive interdisciplinary studies.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

All procedures performed in this study were under the ethical standards.

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