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Urban public space development: themes and trends in the urban planning rhetoric

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A considerable body of research focusing on urban public space development has been published over the years in numerous academic journals internationally. This study reviews global research trends on this domain, driven by ongoing debates about whether these spaces fulfil their intended purposes. Its main goal is to map scholarly discourse on this topic in the 21st century, identifying key themes, emerging patterns, and changes over time. Understanding these trends is important for recognizing knowledge gaps, guiding future research, and informing urban planners and policymakers about challenges and opportunities in public space development. The study uses BiblioMagika and VOSviewer as bibliometric approaches to analyse 688 documents published from 1975 to 2024 sourced from the Scopus database. Advanced tools, including keyword co-occurrence, trend analysis, and multiple correspondence analysis, support a detailed exploration of the field. The findings reveal that there has been a significant upward trajectory in research output, beginning with a single publication in 1975 and culminating in 2023 with 76 publications. Kang Jian from the University College London in the United Kingdom is revealed to be the leading scholar and Ghent University in Belgium emerges as leading institution in this domain. Although limited to a single database, the research offers a comprehensive temporal and thematic overview of academic work on urban public spaces. Its findings are valuable for scholars, practitioners, and decision-makers seeking to align future research and urban planning strategies with current developments in the field.

KEYWORDS

urban public space development, bibliometric analysis, thematic evolution, sustainable practice, publication trends

1 Introduction

Urban public spaces constitute an essential component of urban infrastructure, and when designed in an inclusive and sustainable manner, they can contribute to mitigating antisocial behaviours within cities. The resurgence of interest in the potential and opportunities inherent in urban environments (Haas and Olsson, 2014) has prompted increased investments in the design, upkeep, security, and governance of public spaces. This renewed focus has also stimulated scholarly inquiry and professional engagement among academics and built environment practitioners. Through publications, scholars can access, build upon or advance and share knowledge for the betterment of UPS development. A systematic analysis of articles from academic journals could assist emerging academics to explore the status and future trends in this field (Ke et al., 2009). Despite a growing body of literature on UPS development, existing studies are largely fragmented, thematically narrow, or geographically limited-often focusing on specific case studies, regions, or thematic subsets such as green space or public health. There is a lack of comprehensive, longitudinal bibliometric synthesis that maps the global scholarly landscape of UPS development, including thematic evolutions, leading contributors, and institutional trends.

Building on this gap, the following hypotheses are proposed to guide the bibliometric analysis: 1) there has been a significant increase in global academic output on UPS development since 2000, reflecting growing scholarly interest in sustainable and inclusive urbanism, 2) a small number of authors and institutions dominate scholarly output and citation in UPS development, indicating a concentration of influence, 3) research on UPS development is thematically evolving, with a shift from basic spatial design to emerging issues like equity, health, and smart cities, 4) the Global North, particularly countries like China, the UK, and the US, leads in publication volume, while the Global South remains underrepresented. This study, therefore, aims to contribute to the existing body of knowledge concerning UPS development by analysing the research trends using a comprehensive review approach which incorporates scientometric analysis. Through this, the study aims to.

- 1. To ascertain the annual number of articles published, the focus of each article and its impact (citation) to the field.
- 2. To determine the most influential authors, organisations, and countries in UPS development.
- 3. To ascertain the research themes that authors focused on over the years.
- 4. To propose directions for future research on UPS development.

This study presents a novel, large-scale scientometric analysis of 688 global publications on urban public space development sourced from Scopus, spanning nearly 5 decades (1975–2024). Unlike prior studies which were limited in scope, region, or theme, this research provides a comprehensive and temporal cartography of global urban public space development discourse, revealing gaps in underrepresented regions and identifying the most influential contributors and thematic shifts over time.

2 Literature review

2.1 Empirical studies on urban public space development

Public spaces play a critical role in shaping urban development, serving not only as physical spaces for recreation and interaction but also as arenas for social, political, and economic expression. Theoretically, scholars like Henri Lefebvre have deeply influenced how we conceptualize public space within the broader framework of urban development. This theoretical lens positions public spaces as both products and drivers of urban development, making their planning and governance central to creating inclusive, resilient, and just cities. The concept of "right to the city," introduced by Henri Lefebvre, has become a significant framework for analysing urban processes and challenging capitalist urbanization (Butler, 2012). Lefebvre's theory emphasizes the social production of space and the importance of everyday life in shaping urban environments (Butler, 2012). However, when applying this concept to cities, it is crucial to consider the role of race in urban geographies (McCann, 1999). The right to the city has attracted attention from both radical theorists and UN agencies, creating a conceptual vortex that brings together diverse political projects (Kuymulu, 2013). While Lefebvre's formulation, based on the contradiction between use value and exchange value in capitalist urbanism, remains valuable for analysing urban politics, it also reveals certain limitations in his account (Kuymulu, 2013). The concept continues to evolve, inspiring debates on spatial citizenship and the development of antiracist urban public spaces (Butler, 2012; McCann, 1999).

Public spaces serve as fundamental components of democratic societies, acting as central arenas for urban interactions and fostering social cohesion through diverse encounters and cultural exchanges (Pancholi, Yigitcanlar and Guaralda, 2015). These spaces facilitate engagement among different social groups by providing a physical setting that enables interaction and mutual exposure (Smith and Steino, 2016). The creation of inclusive and sustainable public spaces necessitates an integrative approach that balances environmental, social, and economic considerations to enhance communal wellbeing (Nikšič and Sezer, 2017). High-quality public spaces are characterized by participatory planning processes, ensuring community involvement before implementation, as well as inclusive infrastructure development, maintenance, and management that prioritize accessibility. Furthermore, public spaces should be designed to promote openness and accessibility, thereby accommodating diverse populations and fostering inclusivity (Smith and Steino, 2016). The development of suitable public space solutions or the enhancement of existing spaces is essential for fostering social cohesion, justice, and equality. However, the success of public spaces is not solely dependent on shared usage but rather on the transformative potential they offer within their urban context (Smith and Steino, 2016). This necessitates a holistic approach that effectively integrates design and management within the framework of urban policies (Pancholi et al., 2015). Consequently, the redevelopment of urban public spaces has become a critical aspect of city architecture (Arboix and Martín, 2017), requiring a specialized discipline and systematic study to assess their characteristics and inform strategic interventions.

The revitalization of existing public spaces, along with the development of new ones, is anticipated to foster social interactions and generate shared benefits, thereby enhancing the collective sense of place. The urban environment comprises both private and public domains, encompassing buildings, streets, squares, landscapes, and ecosystems, as well as the sociocultural processes, perceptions, and individuals that contribute to its formation and transformation (Haas and Olsson, 2014). These spaces include marketplaces and religious precincts, which hold significant communal value (Smith and Steino, 2016). Public spaces serve as the setting for social engagement, where urban life unfolds through interactions in streets, squares, and parks, shaping the rhythms of human activity (Haas and Olsson, 2014; Zhao and Ji, 2018). Such dynamic spaces not only complement the more stable settings of work and domestic life but also facilitate movement, communication, and shared recreational experiences. The current public spaces and buildings lack a coherent urban strategy and function primarily as commodities rather than spaces that foster social interaction. They are often perceived merely as physical enclosures rather than as dynamic, inclusive environments that contribute to urban life. Instead of facilitating shared experiences, these spaces are enclosed and isolated from the broader urban fabric. In many developing countries, the universal accessibility of public space has been supplanted by commercialization, effectively diminishing its public function. Consequently, the process of redesigning public spaces has become increasingly challenging, with significant implications for the spatial configuration of contemporary cities. These challenges influence not only the physical structure of urban environments but also determine who can access and utilize these spaces, under what conditions, and for whose benefit. Furthermore, they shape the broader discourse on modern citizenship and urban inclusion (Mitchell, 2014; Dong et al., 2017).

Haas and Olsson (2014) contend that the concept of public space lacks analytical precision and is instead a broad and ambiguous term applied to specific urban areas for political or administrative purposes. They argue that public space can be understood as infrastructure and, consequently, a public good, contingent upon its users and their interactions with it. Built structures do not inherently function as infrastructure but acquire this status based on their usage. The extent to which exclusion or competition occurs influences whether a particular built environment or public space is perceived as infrastructure or a public good.

In the broader academic discourse, Carmona (2015) identifies several recurring criticisms concerning urban public spaces, highlighting that, professionals responsible for their design, development, and management face scrutiny. These critiques encompass issues such as neglect, encroachment, exclusion, commercialization, privatization, segregation, insularity, artificiality, insecurity, and homogenization in contemporary urban settings. Similarly, Smith and Steino (2016) assert that architects and designers are often held accountable for the dysfunctionality observed in urban public spaces.

The conceptualization of public space as a common good is widely acknowledged; however, this perception is often based on presuppositions rather than critical inquiry. For urban spaces to be genuinely regarded as public goods, they must be universally accessible and inclusive, thereby serving the collective interests of society (Haas and Olsson, 2014). Nevertheless, spatial design alone is insufficient in addressing the deeper socio-economic challenges that hinder the development of dynamic communities and a thriving public space culture (Pancholi, Yigitcanlar and Guaralda, 2015). Pancholi et al. (2015) further identify key attributes that define high-quality public spaces, which include meaningfulness, democratic accessibility, responsiveness, comfort, and engagement—both passive and active. Additionally, such spaces should foster exploration and discovery (Haas and Olsson, 2014; Zhao and Ji, 2018) while embodying diversity, compatibility, adaptability, intensity, and recognition. The equitable and dynamic development of public spaces is fundamental to urban growth. Southworth (2014), in his discussion on "public life, public space, and urban design," argues that the provision of public spaces is increasingly perceived as a financial burden by many cities and suburban areas. He further emphasizes that merely designing physical spaces does not guarantee vibrant public engagement. Instead, urban designers must anticipate how these spaces will be utilized and integrate elements that encourage social interaction, public celebrations, and communal activities. Additionally, Southworth (2014) contends that reimagining the regulatory framework governing urban activities can be just as significant in fostering public life as the spatial design itself.

The designer's role in supporting the public realm has evolved to encompass the engagement of diverse stakeholders in the creation and activation of urban spaces. To effectively utilize the knowledge of residents, the conventional architecture design process must undergo transformation. Collaboration between architects and experts from social disciplines is critical to understanding the needs of space users and gathering pertinent information for designing functional spaces. The built environment reflects the expectations and aspirations of the people who inhabit and work within it. Thus, architects and designers are tasked with addressing a broad spectrum of human needs, including physical, cultural, and social considerations. Public participation, a concept that pertains to social engagement during the planning phase rather than during implementation, now includes a wide array of practices and collaborative processes that tackle both physical and social planning issues (Lewandowska, 2018). Furthermore, as Lewandowska (2018) suggests, sociologists serve as an essential bridge between architects and space users. Gaining an understanding of space usage and the expectations of inhabitants is critical. Social media has been identified as one of the most effective tools for engaging the public in the planning and design process, as noted by Simm et al. (2016) and Southworth (2014). Organizations increasingly utilize digital tools, including social media platforms, to gather public opinions on a wide range of topics, from brand image to political discussions. The urban environment, including public residential spaces, is inherently complex, dynamic, and unpredictable, particularly in terms of its physical characteristics. In their analysis of the integration of physical environments into public space design, the authors introduced various computer software programs that simulate and technically explain the physical environment and spatial structure. They argue that such simulations offer a valuable framework for evaluating the overall suitability of a design, providing practical guidance for subsequent design stages (Dong et al., 2017). This approach contributes to determining the land-use suitability for entirely public spaces.

Building upon the land use considerations and strategies for sustainable urban forms outlined above, it can be contended that the enhancement of public space within cities plays a pivotal role in improving the urban living environment, enriching the cultural fabric of the city, and advancing its overall quality (Zhao and Ji, 2018). In high-density urban settings, it is feasible to develop public spaces that align with human environmental behaviours, accommodating diverse urban lifestyles. By expanding the availability of public space and optimizing its structure, the quality of such spaces can be significantly enhanced. Furthermore, integrating urban facilities, enhancing public spaces, improving transportation conditions, and preserving historical landscapes contribute to shaping the urban form. The responsibility for the design of public space lies with architects across municipal, private, and academic sectors (Arboix and Martín, 2017), particularly in ensuring that urban infrastructure is designed to create inclusive spaces, accessible to all, and serving as venues for the expression of civic identity. Cities are experiencing a rapid evolution of public spaces (Haas and Olsson, 2014), driven by factors such as economic and cultural globalization, demographic shifts, urban planning and design strategies, and social networks, among others. The global dialogue surrounding the development of urban public spaces calls for a thorough examination of contemporary research trends through a comprehensive review process. This process should incorporate scientometric analysis to systematically assess the scope, impact, and future direction of research in this domain. By utilizing scientometric techniques, it becomes possible to map the intellectual landscape of the field, identify emerging themes, and evaluate the contributions of various studies and scholars to the development of urban public space theory and practice. This approach will facilitate a deeper understanding of current challenges in the development of urban public spaces.

2.2 Previous studies on bibliometric analysis and urban public space development

In recent years, scholars have increasingly utilized bibliometric techniques that align closely with the methodological approach adopted in this study. However, there is no documented evidence of any bibliometric analysis conducted in the field of urban public space prior to 2010. From Table 1 below, it is evident that the earliest documented study in this field was authored by Nykiforuk, Osler, and Viehbeck, and published in 2010. This study aimed to document and synthesized research trends in smoke-free spaces policy from 1990 to 2009, analysing patterns to understand the evolution of this domain within the broader context of tobacco control. However, the analysis was limited to literature from North America, the United Kingdom, and Australia, excluding contributions from developing countries. Additionally, the connection between the literature and shifts in policy priorities remains ambiguous, with the precise nature of this relationship not fully understood. This study did not discuss any issues related the planning, development, and management of urban public spaces.

A decade later, a study conducted by Baraibar-Diez et al. (2020) was published, focusing on identifying key agents (i.e., authors, journals, and publications) in social impact research spanning the period from 1938 to 2020. Again, the analysis did not engage extensively with debates surrounding related concepts, such as social impact assessment and measurement. In the same year, Meng, Wen, Brewin, and Wu published a study that analysed the current state of research on the relationship between urban street space and residents' health, identifying key research hotspots and frontiers from 1999 to 2019. However, the study was limited in scope, primarily focusing on the daily lives of residents without fully considering the broader urban ecosystem. Furthermore, it did not address the concept of urban public space as a public good. Zhang et al. (2020) published a study that aimed to analyse the global research status, trends, and future prospects of green spaces and health (G-H) research. The study further sought to propose a conceptual framework outlining the underlying mechanisms and pathways through which green spaces impact public health. This study, however, primarily focused on green spaces and public health within developed regions, addressing the broader development of urban public spaces, particularly in relation to underdeveloped and developing regions.

Zivali Turhan and Ayataç, (2021) conducted a study which focussed on ethnic diversity and public space. The study identifies two main theoretical approaches in the literature: a humanplace relational approach focused on urban and social policy, and a human-human relational approach focused on interpersonal interactions in public space. Furthermore, Chen and Chen (2022) used the same methodology to analyse the current state of research on community public space and facilities. The study revealed that international research on community public spaces is characterised by a diversity of thematic hotspots, while the underlying knowledge base and its developmental trajectory exhibit a combination of concentrated focus and dispersed elements.

Unlike earlier bibliometric studies that focussed on narrow dimensions (e.g., green spaces, health, or campus environments) and small datasets, this study fills a critical gap by offering the first holistic, global bibliometric analysis of urban public space development using 688 Scopus-indexed documents. It advances the field by identifying institutional leadership, author influence, thematic clusters, and underexplored regions.

3 Methods

3.1 Search strategy

The procedure for identifying relevant literature on urban public space development is systematically depicted in Figure 1, which is structured as a flow diagram outlining the methodological framework underpinning the research. This search strategy constitutes a critical component of the methodology section, as it delineates the systematic approach employed to obtain the most relevant scholarly sources for analysis. The diagram indicates that Scopus served as the primary database for literature retrieval. Recognized as a comprehensive multidisciplinary database, Scopus encompasses citations and abstracts from industry journals, patent records, books, peer-reviewed articles, and conference proceedings. Additionally, it offers analytical tools that facilitate tracking, visualization, and evaluation of search results (Fayad et al., 2024). Its extensive coverage and rigorous indexing of peer-reviewed literature across multiple disciplines-including science, technology, medicine, social sciences, and the arts and humanities-contribute to its widespread recognition as a reputable academic resource (Punj et al., 2023). The database provides a comprehensive global outlook on scientific research and is widely acknowledged as one of the most essential and pertinent sources of information within the academic community (Mansour et al., 2022; Fayad et al., 2024). Notably, all peer-reviewed articles indexed in Scopus originate from esteemed and well-established academic publishers, including Emerald, Elsevier, Springer, Inderscience, and the Taylor and Francis Group (Rahman et al., 2022). Comparative studies, such as those conducted by Chadegani et al. (2013), have identified Scopus and Web of Science as the most reliable and objective databases for literature searches. However, bibliometric review studies have largely depended on a single database, with Scopus being the most frequently utilized due to its distinctive advantages. Therefore, for this reason,

TABLE 1 Summary of previous studies.

Author and year	Objective of the study	Attributes examined	Total documents examined	Data source and coverage	Software used	Research gap
Nykiforuk et al. (2010)	This study describes patterns in the international published literature on smoke-free spaces policy and conducts a bibliometric analysis	Publication venue patterns. Authorship patterns	565	PubMed, WoS, CINAHL, etc., from 1990 to 2009	EndNote	Even though multiple databases were used, a small sample is evident. Did not directly examined the development of public spaces
Baraibar-Diez et al. (2020)	This study seeks to identify salient agents (authors, journals, publications) in social impact research, categorize its conceptual structure and evolution, and map the concept broadly by highlighting influential authors, relationships, and research trends	Identify salient agents (authors, journals, publications) in the field of social impact research	1,677	WoS, from 1938 to 2020	Python VOSviewer	The analysis did not engage extensively with debates surrounding related concepts, such as social impact assessment and measurement
Meng et al. (2020)	This study analyses the current state of research on the relationship between urban street space and residents' health, identifies research hotspots and frontiers	Relationships, hotspots and frontiers. Trace the overall evolution path	4,552	WoS, from 1999 to 2019	CiteSpace VOSviewer	Focused on the daily lives of residents without fully considering the broader urban ecosystem. Did not address the concept of urban public space as a public good
Zhang et al. (2020)	This study analyses the global research status, trends, and future prospects of green spaces and health (G-H) research, while proposing a framework for the underlying mechanisms and pathways linking green space to public health	Global research status, trends, and future prospects	18,961	WoS, from 1901 to 2019	CiteSpace 5.5.R2 VOSviewer 1.6.12 ArcGIS 10.5 Excel	Primarily focused on green spaces and not public space as whole
Zivali Turhan and Ayataç (2021)	This study conducts a constructive analysis of research approaches and methodologies applied to the relationship between ethnic diversity and public space	Current trends, gaps, and common methodological approaches	1,079	WoS, from 1995 to 2020	CiteSpace	Focused on research approaches and methodologies, and not the issues related to the planning, development, and management of urban public spaces

(Continued on the following page)

Author and year	Objective of the study	Attributes examined	Total Data source documents and coverage examined		Software used	Research gap
Chen and Chen (2022)	This study analyses the current state of research on community public space and facilities	Trends and dynamics of the academic literature	545	WoS, from 1975 to 2021	CiteSpace 5.8.R3 64-bit CNKI	A small sample is evident and therefore weakens the generalisability of the findings
Dong et al. (2023)	This study reviews the research trends and hotspots of campus public space perceptions, discusses the progress and limitations of each key research theme, clarifies opportunities for campus research and space design along with the application of new technologies in perceptual studies	co-citation analysis, co-occurrence analysis, and burst detection analysis	136	WoS, from 2003 to 2023	CiteSpace SPSS	A small sample is evident and therefore weakens the generalisability of the findings. Only focussed on university/campus public space, not necessarily urban public space
Karaçor and Ögçe (2023)	This study identifies the prevailing themes related to the publicness of public spaces and examine how these themes are interconnected	Co-word analysis, Co-occurrence View of Key Words	Not mentioned	Scopus, from 2003 to 2023	VOSviewer	The sample size was not mentioned and therefore the results cannot be confirmed. Focused on the publicness of public spaces
Çelik et al. (2024)	This study analyses research on healthy cities and public space ergonomics, highlighting the current state and future prospects, identifying key research areas, trends, and hotspots in healthy urban planning	Dynamic patterns, fundamental ideas, and cooperative connections	2,074	Scopus, from 2004 to 2024	VOSviewer	Mainly focussed on key word analysis, institutions, source titles, and trends were not analysed
Mohamed and van der Laag Yamu (2023)	This study analyses the performance of the space syntax field at individual, institutional, and country levels	Assesses the field's annual trend of publications; its social, intellectual, and conceptual structures; and future research directions	4,740	Scopus, Dimensions, Space Syntax Network, Portico Preservation Archive, from 1976 to 2023	Biblioshiny (R-based) Bibliometrix R package JabRef (free software) Texmaker (free LaTEX editor)	Focussed on space syntax as theory and method, and not necessarily the urban public space as a public good

TABLE 1 (Continued) Summary of previous studies.

Source: Developed by the authors.

this study relied primarily on Scopus database for selecting publication samples.

To enhance the precision of the search and maintain focus on the research subject, the search parameters were restricted to article titles, thereby encapsulating studies explicitly centred on urban public space development. No temporal restrictions were applied, allowing for a comprehensive retrieval of literature spanning the entire available body of work. This methodology facilitates a broad and integrated understanding of the field's evolution over time. The inclusion criteria for the dataset were not limited by language, enabling the incorporation of research published in diverse languages and thereby broadening the scope to encompass global perspectives. The selection of document types was restricted to articles, conference papers,



and book chapters, ensuring a focus on textually detailed and substantive forms of scholarly discourse most likely to contribute meaningfully to both theoretical and practical developments within the field.

A meticulously designed search string was developed, integrating the term "urban public space" and utilizing Boolean operators to filter out less pertinent document types. This deliberate approach facilitated a focused yet comprehensive examination of the database, ensuring the integrity and depth of the bibliometric analysis. The data extraction date, explicitly recorded as 22 July 2022, establishes a precise temporal framework, enhancing the research's reproducibility. A total of 688 records were identified and evaluated for inclusion, representing a significant volume of literature for subsequent bibliometric investigation. This flow diagram, drawing inspiration from the studies of Zakaria et al. (2021) and Moher et al. (2009), represents a methodologically robust, transparent, and reproducible search framework critical for upholding the credibility of bibliometric research. It functions both as a foundational model for the current analysis and as a reference point for future scholarly efforts seeking to synthesize knowledge and evaluate trends in the field of urban public space development.

3.2 Data cleaning, harmonization, and tools

The bibliometric analysis demands a meticulous process of data cleaning and standardization to ensure precision and dependability. In this research, advanced features of OpenRefine and biblioMagika (Ahmi, 2023) were utilized to systematically process and organize data retrieved from Scopus. The process began with downloading the Scopus dataset in. csv format, followed by a detailed examination of essential columns such as author names, affiliations, and keywords. Advanced clustering techniques were applied to identify and resolve inconsistencies within the data. Once the automated cleaning was completed, a comprehensive manual review was conducted to validate the corrected keywords and merge cells containing multiple entries. This stage was critical for restoring data integrity after segmentation. Finally, the refined and harmonized dataset was converted back to its original format, ready for further detailed analysis.

The research progressed into the analytical phase, incorporating biblioMagika (Ahmi, 2023) to refine the bibliometric analysis by standardizing data on authorship, institutional affiliations, and

countries. This process was further supported by OpenRefine, which enhanced the accuracy of keyword data (Ahmi, 2023b). The findings were visualized through VOSviewer (van Eck and Waltman, 2004) that effectively illustrated the conceptual network within the study. By integrating these methodologies, the analysis provided a holistic and detailed exploration of the research landscape in urban public space development.

3.3 Validation and reliability

The validity and reliability of the results in this bibliometric analysis are influenced by the exclusive use of the Scopus database. Scopus is widely recognized for its extensive and high-quality indexing of peer-reviewed literature, which enhances the reliability of data extracted for trend analysis, citation metrics, and thematic mapping (Fayad et al., 2024; Punj et al., 2023; Mansour et al., 2022). To reduce duplication and errors, data cleaning was performed using OpenRefine and harmonization techniques in biblioMagika, ensuring consistency in author names, affiliations, and keywords. The use of multiple bibliometric tools (e.g., cooccurrence analysis, MCA, keyword evolution mapping) ensured triangulation, enhancing construct validity. No single software or metric was relied upon, and the findings were cross-validated through multiple indicators such as h-index, g-index, and citation per paper. Findings were interpreted in relation to established theoretical constructs (e.g., Lefebvre's "right to the city", publicness theory, social inclusion frameworks), ensuring conceptual validity. Themes from the data were compared against emergent global urbanism discourses, confirming alignment and surfacing novel insights.

Although this study relied solely on Scopus, efforts were made to enhance its generalizability. By including data from 1975 to 2024, the study captures long-term scholarly evolution, allowing temporal generalization. With contributions from social sciences, engineering, environmental science, and humanities, findings are relevant across disciplines. The flow diagram and search strategy support reproducibility by other researchers.

However, limiting the data source to Scopus introduces a potential constraint on validity, as it may exclude relevant publications indexed in other reputable databases such as Web of Science, Google Scholar, or regional repositories. This may result in a partial view of the scholarly landscape, particularly underrepresenting contributions from certain regions. Despite this limitation, the methodological consistency and the use of advanced bibliometric tools support the internal reliability of the findings. To strengthen external validity in future studies, incorporating multiple databases is recommended. This methodological framework can be adapted and applied in other research or policy domains. It can be used to map trends in sustainable housing, public transport, informal settlements, or climate-resilient infrastructure. Regions or cities can replicate the method using local databases or specific keywords to generate context-specific insights. Governments can use bibliometric trend mapping to evaluate whether their planning policies align with global research and innovation.

TABLE 2 Citation metrics.

Main information	Data
Publication Years	1975-2024
Total Publications	688
Citable Year	50
Number of Contributing Authors	1659
Number of Cited Papers	483
Total Citations	11,165
Citation per Paper	16,23
Citation per Cited Paper	23,12
Citation per Year	227,86
Citation per Author	6,73
Author per Paper	2,41
Citation sum within h-Core	10,140
h-index	41
g-index	96
m-index	0.820

Source: Generated by the author(s) using biblioMagika[®] (Ahmi, 2024).

TABLE 3 Document type.

Document type	TP	%
Article	448	65,12%
Conference Paper	118	17,15%
Book Chapter	83	12,06%
Review	23	3,34%
Book	4	0,58%

Source: Generated by the author(s) using biblioMagika® (Ahmi, 2024).

4 Findings

4.1 Documents profiles

The documents retrieved from Scopus and analysed for this study are summarized in Table 2 below. The table reveals that the initial Scopus publication on urban public space dates back to 1975, and as such, the data spanning from 1975 to 2024 were utilized for this investigation. A total of 688 publications authored by 1,659 individuals accrued 11,165 citations during this period, resulting in an h-index of 41.

Furthermore, Table 3 below illustrates the categories of documents from which the data utilized in this study were derived.

TABLE 4 S	ubject area
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Social Sciences38756,25%Engineering19828,78%Environmental Science17425,29%Arts and Humanities11216,28%Computer Science9013,08%Earth and Planetary Sciences6910,03%Business, Management and Accounting344,94%Mathematics314,51%Medicine304,36%Physics and Astronomy304,36%Matrials Science172,47%Focomics, Econometrics and Finance111,60%Phychology101,45%Multidisciplinary650,37%Decision Sciences50,37%Neuroscience120,29%Veterinary120,29%Health Professions110,15%Nursing110,15%	Subject area	TP	%
Engineering19828,78%Environmental Science17425,29%Arts and Humanities11216,28%Computer Science9013,08%Earth and Planetary Sciences6910,03%Business, Management and Accounting344,94%Mathematics314,51%Medicine304,36%Physics and Astronomy304,36%Materials Science253,63%Multidisciplinary611,06%Phychology101,45%Chemical Engineering50,73%Biochemistry, Genetics and Molecular Biology45%Neuroscience20,29%Veterinary20,29%Health Professions110,15%Nursing110,15%	Social Sciences	387	56,25%
Invironmental Science17425,29%Arts and Humanities11216,28%Computer Science9013,08%Earth and Planetary Sciences6910,03%Business, Management and Accounting344,94%Mathematics314,51%Matchine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences313,63%Physhology1011,45%Physhology1011,45%Chemical Engineering1023,63%Decision Sciences150,73%Biochemistry, Genetics and Molecular Biology160,87%Neuroscience120,23%Veterinary120,23%Health Professions110,15%Nursing110,15%	Engineering	198	28,78%
Arts and Humanities11216,28%Computer Science9013,08%Earth and Planetary Sciences6910,03%Energy547,85%Business, Management and Accounting344,94%Mathematics314,51%Medicine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences303,63%Matherials Science111,60%Phychology101,45%Multidisciplinary650,73%Decision Sciences550,73%Neuroscience120,29%Veterinary120,29%Health Professions110,15%Nursing110,15%	Environmental Science	174	25,29%
Computer Science9013,08%Farth and Planetary Sciences6910,03%Energy547,85%Business, Management and Accounting314,31%Mathematics314,51%Medicine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences2153,63%Materials Science1172,47%Foronmics, Econometrics and Finance1181,60%Phychology1081,45%Chemical Engineering610,87%Decision Sciences510,73%Neuroscience120,29%Veterinary620,29%Health Professions110,15%Inmunology and Microbiology110,15%Nursing110,15%	Arts and Humanities	112	16,28%
Earth and Planetary Sciences6910,03%Energy547,85%Business, Management and Accounting344,94%Mathematics314,36%Medicine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences313,63%Materials Science111,60%Psychology101,45%Multidisciplinary610,87%Pocision Sciences550,73%Biochemistry, Genetics and Molecular Biology140,58%Neuroscience120,29%Veterinary120,29%Health Professions110,15%Nursing110,15%	Computer Science	90	13,08%
Energy547,85%Business, Management and Accounting344,94%Mathematics314,51%Medicine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences2153,63%Materials Science1111,60%Psychology1011,45%Multidisciplinary660,87%Decision Sciences550,73%Biochemistry, Genetics and Molecular Biology140,58%Neuroscience220,29%Veterinary220,29%Health Professions110,15%Nursing110,15%	Earth and Planetary Sciences	69	10,03%
Business, Management and Accounting344,94%Mathematics314,51%Medicine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences253,63%Materials Science112,47%Economics, Econometrics and Finance111,60%Psychology101,45%Multidisciplinary660,87%Chemical Engineering550,73%Piccision Sciences120,29%Neuroscience220,29%Health Professions110,15%Immunology and Microbiology110,15%Nursing110,15%	Energy	54	7,85%
Mathematics314,51%Medicine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences253,63%Materials Science112,47%Economics, Econometrics and Finance111,60%Psychology101,45%Multidisciplinary60,87%Chemical Engineering50,73%Biochemistry, Genetics and Molecular Biology140,58%Neuroscience220,29%Health Professions110,15%Immunology and Microbiology110,15%Nursing110,15%	Business, Management and Accounting	34	4,94%
Medicine304,36%Physics and Astronomy304,36%Agricultural and Biological Sciences253,63%Materials Science172,47%Economics, Econometrics and Finance111,60%Psychology101,45%Multidisciplinary660,87%Chemical Engineering550,73%Biochemistry, Genetics and Molecular Biology40,58%Neuroscience220,29%Veterinary610,15%Health Professions110,15%Immunology and Microbiology110,15%Nursing110,15%	Mathematics	31	4,51%
Physics and Astronomy304,36%Agricultural and Biological Sciences253,63%Materials Science172,47%Economics, Econometrics and Finance111,60%Psychology101,45%Multidisciplinary660,87%Chemical Engineering550,73%Decision Sciences410,58%Neuroscience220,29%Veterinary210,29%Health Professions110,15%Immunology and Microbiology110,15%Nursing110,15%	Medicine	30	4,36%
Agricultural and Biological Sciences253,63%Materials Science172,47%Economics, Econometrics and Finance111,60%Psychology101,45%Multidisciplinary60,87%Chemical Engineering50,73%Decision Sciences50,73%Neuroscience20,29%Veterinary20,29%Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Physics and Astronomy	30	4,36%
Materials Science172,47%Economics, Econometrics and Finance111,60%Psychology101,45%Multidisciplinary60,87%Chemical Engineering50,73%Decision Sciences50,73%Biochemistry, Genetics and Molecular Biology40,58%Neuroscience20,29%Veterinary20,29%Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Agricultural and Biological Sciences	25	3,63%
Economics, Econometrics and Finance111,60%Psychology101,45%Multidisciplinary60,87%Chemical Engineering50,73%Decision Sciences50,73%Biochemistry, Genetics and Molecular Biology40,58%Neuroscience20,29%Veterinary20,29%Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Materials Science	17	2,47%
Psychology101,45%Multidisciplinary660,87%Chemical Engineering550,73%Decision Sciences610,58%Biochemistry, Genetics and Molecular Biology610,25%Neuroscience220,29%Veterinary230,25%Health Professions110,15%Immunology and Microbiology110,15%Nursing110,15%	Economics, Econometrics and Finance	11	1,60%
Multidisciplinary660,87%Chemical Engineering550,73%Decision Sciences610,73%Biochemistry, Genetics and Molecular Biology640,58%Neuroscience620,29%Veterinary620,29%Health Professions610,15%Immunology and Microbiology610,15%Nursing610,15%	Psychology	10	1,45%
Chemical Engineering150,73%Decision Sciences50,73%Biochemistry, Genetics and Molecular Biology40,58%Neuroscience20,29%Veterinary20,29%Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Multidisciplinary	6	0,87%
Decision Sciences150,73%Biochemistry, Genetics and Molecular Biology40,58%Neuroscience20,29%Veterinary20,29%Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Chemical Engineering	5	0,73%
Biochemistry, Genetics and Molecular Biology140,58%Neuroscience220,29%Veterinary220,29%Health Professions110,15%Immunology and Microbiology110,15%Nursing110,15%	Decision Sciences	5	0,73%
Neuroscience20,29%Veterinary20,29%Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Biochemistry, Genetics and Molecular Biology	4	0,58%
Veterinary20,29%Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Neuroscience	2	0,29%
Health Professions10,15%Immunology and Microbiology10,15%Nursing10,15%	Veterinary	2	0,29%
Immunology and Microbiology10,15%Nursing10,15%	Health Professions	1	0,15%
Nursing 1 0,15%	Immunology and Microbiology	1	0,15%
	Nursing	1	0,15%

Source: Generated by the author(s) using ${\rm biblioMagika}^{\textcircled{\sc line (Ahmi, 2024)}}.$

As indicated in the table, most of the data (65.12%) was sourced from journal articles, followed by conference proceedings (17.15%), book chapters (12.06%), reviews (3.34%), and books (0.58%).

The final determinant in identifying a prevailing trend, following document type, is the subject area, which reflects the academic fields that have acknowledged the development of urban public space. This analysis categorizes the published works, as presented in Table 4, according to their respective subject areas. The literature distribution on urban public space reveals a broad presence across several disciplines, with the highest representation in the social sciences (56.25%), followed by engineering (28.78%),

environmental sciences (25.29%), arts and humanities (16.28%), and computer sciences (13.08%).

4.2 Publication trends

Figures 2, 3 illustrate the temporal progression of research in urban public space, highlighting a consistent increase in both the volume of publications and citations over time. This bibliometric analysis, spanning from 1975 to 2024, offers a longitudinal view of scholarly engagement with the field and its reception within the academic community. Beginning with a single publication in 1975, there has been a significant upward trajectory in research output, culminating in 2023 with 76 publications. This trend indicates a growing scholarly interest and an expansion of research endeavors in the domain of urban public space development.

4.3 Publications by authors

Table 5 offers a comprehensive analysis of the leading authors in the domain of urban public space, highlighting their academic contributions through a range of bibliometric measures. By concentrating on scholars with a minimum of four publications, the table underscores both the quantity of their research outputs and their scholarly impact, as reflected in citation metrics and broader academic recognition. At the forefront is Kang Jian from the University College London in the United Kingdom, with 16 publications and a total of 222 citations. This indicates a significant contribution to the body of literature, with a few of these works resonating within the scholarly community, as demonstrated by a high h-index of 3. Closely following is Botteldooren, Dick from Ghent University, Belgium, whose six publications have amassed 232 citations, reflecting a considerable impact as well, with an hindex of 2. Few more authors from the same institution underscores the global nature of urban public space research. For instance, De Coensel, Bert from Ghent University, Belgium, shows a strong citation per publication ratio, suggesting that his work is not only voluminous but also influential. Similarly, Van Renterghem, Timothy and Sun Kang from the same institution 'Ghent University' in Belgium exhibit high citation metrics, indicative of the farreaching impact and international recognition of their research.

Bibliometric indicators, including the h-index, g-index, and m-index, provide a nuanced evaluation of research output. The h-index measures an author's productivity and scholarly impact by quantifying the number of publications cited at least h times (Chadegani et al., 2013). The g-index extends this by recognizing authors whose works have garnered a higher volume of citations, while the m-index normalizes the h-index by considering the duration of an author's active research career, thereby indicating the rate of impactful contributions. Together, these metrics not only underscore individual researchers' scholarly contributions but also reflect the academic focus and research excellence of their affiliated institutions. This data offers a comprehensive perspective on scholarly influence in the domain of urban public space, identifying prominent contributors and thought leaders who are shaping the progression of the field.





4.4 Publications by institutions

In the field of urban public space studies, institutional contributions are critical in fostering research advancement and knowledge dissemination. Table 6 provides a detailed list of the most prolific institutions; each having published at least ten scholarly articles. Ghent University in Belgium emerges as the leading institution in terms of publication volume, reflecting a concentrated hub of research activity in the region. However, when evaluating research impact through citation metrics, the University of California (USA), the University of Sheffield (UK), and the University of Melbourne (Australia) distinguish themselves with notably high average citation counts per publication. This highlights not only the quantity of research produced but also the extent

to which the academic community recognizes and values these contributions. This data emphasizes the global and diverse nature of urban public space research, showcasing not only the substantial academic output but also the significant influence and engagement these institutions maintain within the broader scholarly community.

4.5 Publications by country

The bibliometric analysis outlined in Table 7 provides insights into the international distribution and influence of research on urban public spaces, as reflected in the academic outputs of different nations. Utilizing a range of bibliometric metrics, the study evaluates the scientific contributions of each country, offering a

Full name	Current affiliation	Country	TP	NCP	TC	C/P	C/CP	h	g	т
Kang, Jian	University College London (UCL)	United Kingdom	16	12	222	13,88	18,50	3	3	0.136
Botteldooren, Dick	Ghent University	Belgium	6	6	232	38,67	38,67	2	2	0.143
García-Doménech, Sergio	Composición y Proyectos de la Universidad de Alicante	Spain	5	4	16	3,20	4,00	0	0	0.000
Xu, Hui	Chongqing University of Posts and Telecommunications	China	5	3	52	10,40	17,33	1	1	0.125
De Coensel, Bert	Ghent University	Belgium	5	5	218	43,60	43,60	2	2	0.250
Ba, Meihui	Ningbo University	China	5	3	86	17,20	28,67	1	1	0.125
Sadeghi, Ali Reza	Shiraz University	Iran	4	4	28	7,00	7,00	0	0	0.000
Cao, Jingwen	University of Sheffield	United Kingdom	4	3	44	11,00	14,67	1	1	0.167
Van Renterghem, Timothy	Ghent University	Belgium	4	4	211	52,75	52,75	2	2	0.250
Sun, Kang	Ghent University	Belgium	4	4	211	52,75	52,75	2	2	0.250

TABLE 5 Most productive authors with a minimum of four publications.

Notes: TP = total number of publications; NCA = number of contributing authors; NCP = number of cited publications; TC = total citations; C/P = average citations per publication; C/CP = average citations per cited publication; $\dot{h} = h$ -index; g = g-index; m = m-index. Source: Generated by the author(s) using biblioMagika (Ahmi, 2024).

comprehensive perspective on the scope and impact of this body of research. China emerges as the most prolific contributor with 487 publications, followed by the United Kingdom, United States, Belgium, and Australia, indicating a vibrant and diverse geographic distribution of research activity within the domain. However, the United States, Australia, and the United Kingdom lead in citation metrics, suggesting that while China has a substantial output, the research from the aforementioned countries exerts greater influence on the academic community, as reflected in higher citation counts.

The h-index reveals that the United Kingdom, China, and the United States are leading in terms of academic productivity, with indices of 26, 25, and 23, respectively. This suggests that a significant proportion of publications from these nations have been frequently cited. The g-index, which emphasizes the influence of highly cited works, reinforces this trend, highlighting the substantial impact of research from these countries. The m-index offers additional insight, with China emerging as the leader, followed by Australia and Belgium, registering m-indices of 1.250, 1.222, and 1.176, respectively. These figures suggest that research contributions from these countries are rapidly recognized and cited within the academic community.

4.6 Publications by source title

Table 8 and Figure 4 outline the primary academic journals and conference series that represent the most active platforms for the dissemination of research in urban public space. These sources are identified based on having published at least four works within this domain, accompanied by a range of bibliometric measures that indicate the breadth and scholarly impact of the research featured. "Sustainability (Switzerland)" stands out as the leading publication,

with 25 articles and an impressive citation total of 275, highlighting its pivotal role in shaping the discourse surrounding urban public space. The journal's influence is further emphasized by an h-index of 10, suggesting that many of its articles have received frequent citations, thereby underscoring both the quality and the scholarly significance of the research it publishes.

4.7 Highly cited documents

Table 9 presents a bibliometric analysis of the 20 most highly cited articles in the field of urban public space. This analysis underscores the scholarly influence of these pivotal works while also illustrating the thematic trends that have attracted substantial academic interest. The articles are ranked based on their total citation count, with additional insights provided through average annual citation rates, offering a temporal lens on their enduring significance within the discipline. At the apex of this list is Wolch, Byrne, and Newell (2014) pivotal work on urban green space, public health, and environmental justice: The challenge of making cities 'just green enough', published in Landscape and Urban Planning. This article has resonated profoundly within the academic community, as evidenced by its 2629 citations, averaging 239.00 citations per year, indicating its foundational influence on the research that followed.

Amin's (2008) examination of collective culture and urban public space, and Yang and Kang's (2005) work on acoustic comfort evaluation in urban open public spaces are also notably influential, with citations reflecting their enduring impact over the years. These works have served as cornerstones in defining and advancing the concept urban public space. The inclusion of Kang and Zhang's (2010) research on semantic differential analysis of the

Institution name	Country	TP	NCP	TC	C/P	C/CP	h	g	т
Ghent University	Belgium	34	34	1719	50,56	50,56	18	18	1,059
Tongji University	China	34	20	199	5,85	9,95	1	1	0.111
Harbin Institute of Technology	China	31	25	405	13,06	16,20	3	3	0.176
University of Sheffield	United Kingdom	20	14	1828	91,40	130,57	6	6	0.273
Eindhoven University of Technology	Netherlands	17	17	554	32,59	32,59	3	3	0.500
University of Chinese Academy of Sciences	China	15	15	137	9,13	9,13	0	0	0.000
Shanghai Normal University	China	15	9	39	2,60	4,33	0	0	0.000
Sichuan Agricultural University	China	13	13	13	1,00	1,00	0	0	0.000
Chang'an University	China	12	6	8	0,67	1,33	0	0	0.000
University of California	United States	12	10	2771	230,92	277,10	1	1	0.091
Chongqing University	China	12	8	36	3,00	4,50	0	0	0.000
University College London	United Kingdom	12	9	701	58,42	77,89	4	4	0.308
Wuhan University	China	12	7	134	11,17	19,14	1	1	0.067
University of Melbourne	Australia	11	11	1837	167,00	167,00	8	8	0.571
Universidade de Lisboa	Portugal	11	9	55	5,00	6,11	0	0	0.000
University of Copenhagen	Denmark	10	7	23	2,30	3,29	0	0	0.000
Politecnico di Milano	Italy	10	6	24	2,40	4,00	0	0	0.000
Jiangnan University	China	10	6	24	2,40	4,00	0	0	0.000

TABLE 6 Most productive institutions with a minimum of 10 publications.

Source: Generated by the author(s) using biblioMagika[®] (Ahmi, 2024).

soundscape in urban open public spaces and Yang and Kang's (2005) work on acoustic comfort evaluation in urban open public spaces highlights the study and understanding of how sound interacts with and influence the environment, as well as how it is perceived by individuals and communities. Amin's (2008) examination of collective culture and urban public space and Low et al.'s (2005) study on rethinking urban parks: public space and cultural diversity emphasize the concerns of cultural differences in urban public spaces.

The table further includes works that delve into public health, environmental justice, and inequalities in urban public spaces. For instance, Wolch et al.'s (2014) work on urban green space, public health, and environmental justice: The challenge of making cities 'just green enough', Koohsari et al.'s (2015) work on public open space, physical activity, urban design and public health: Concepts, methods and research agenda, and You's (2016) work on characterizing the inequalities in urban public green space provision in Shenzhen, China. Each entry in this bibliometric compilation represents a notable contribution to the existing body of knowledge, collectively mapping the intellectual progression of urban public spaces. The articles function as reference points for contemporary research, providing a valuable resource for both academic and professional fields. They serve as a guide for future investigations and inform the ongoing development of urban public spaces. As a collection of highly cited works, this compilation not only documents the historical development of urban public space research but also outlines the directions for its future exploration.

4.8 Keywords co-occurrence analysis

The overlay visualization map presented in Figure 5 employs a rainbow colour gradient to represent the temporal progression of research themes in sustainable construction, as determined by the co-occurrence of author keywords. This approach enhances bibliometric analysis by highlighting thematic clusters and their interconnections, offering a dynamic view of the chronological development, evolving research priorities, and emerging trends within the field. By integrating the temporal dimension into keyword networks, overlay visualization maps extend the capabilities of co-occurrence analysis, providing a more comprehensive understanding of the field's evolution (Jan van Eck and Waltman, 2021). In Figure 5, the rainbow

Country	ТР	NCP	TC	C/P	C/CP	h	g	т
China	487	342	3074	6,31	8,99	25	29	1,250
United Kingdom	101	83	4443	43,99	53,53	26	32	0.929
United States	85	67	8061	94,84	120,31	23	27	0.639
Belgium	57	53	1809	31,74	34,13	20	20	1,176
Australia	56	46	5724	102,21	124,43	22	22	1,222
Italy	55	42	166	3,02	3,95	1	1	0.077
Spain	55	38	412	7,49	10,84	6	6	0.333
Iran	36	27	225	6,25	8,33	2	2	0.200
Netherlands	33	31	907	27,48	29,26	15	15	0.600
Portugal	32	29	232	7,25	8,00	2	2	0.143
Poland	32	27	453	14,16	16,78	3	3	0.333
Brazil	30	10	57	1,90	5,70	0	0	0.000
Indonesia	30	19	48	1,60	2,53	0	0	0.000

TABLE 7 Most Productive Countries with a minimum of 30 publications

Source: Generated by the author(s) using biblioMagika[®] (Ahmi, 2024).

colour scheme represents the research timeline, with a gradient transition across the spectrum—red typically indicating earlier studies and violet denoting more recent publications. This color-coding approach facilitates an immediate visual understanding of the temporal distribution of research themes, offering valuable insights into the evolution and current focus areas of the field. The overlay visualization map, employing this rainbow scheme, provides a detailed depiction of temporal trends in sustainable construction research. The progression of keywords from red to violet reflects a shift from foundational theories to recent developments and emerging sustainability challenges, highlighting the field's progression from traditional practices to innovative technologies.

4.9 Summary of findings

The bibliometric analysis reveals a steady and significant growth in urban public space research from 1975 to 2024. A total of 688 publications by 1,659 authors accumulated 11,165 citations, with an h-index of 41, reflecting strong scholarly influence. The field experienced gradual growth, peaking in 2023 with 76 publications. China leads global research contributions with 487 publications, followed by the UK, USA, Belgium, and Australia, indicating broad international engagement. Ghent University (Belgium) stands out as the most active institution, while Kang Jian from University College London ranks as the most prolific author. The journal Sustainability (Switzerland) dominates publication volume and impact, contributing 25 papers and 275 citations. Notably, the highly cited work by Wolch, Byrne, and Newell (2014) on urban green spaces, public health, and environmental justice shapes ongoing academic discourse. This study offers a comprehensive, long-term bibliometric analysis (1975–2024) of urban public space research, mapping thematic evolutions, leading contributors, and global research trends. It uniquely identifies key authors, institutions, and journals shaping the field, while highlighting China's emerging dominance. The work provides a valuable reference for future research direction, policy formulation, and urban planning strategies.

5 Discussion

This bibliometric study set out to examine global research trends in UPS development between 1975 and 2024. The results demonstrate a growing scholarly interest in the topic, with notable geographical, thematic, and institutional patterns. This section interprets the findings considering previous studies, identifies knowledge gaps, and discusses the broader implications for urban planning and research, particularly from a comparative global perspective.

5.1 Trends in scholarly output and thematic evolution

The steady increase in UPS development publications-peaking at 76 in 2023 – confirms hypothesis one and aligns with global

Source title	ΤР	NCA	NCP	TC	C/P	C/CP	h	g	т
Sustainability (Switzerland)	25	78	25	275	11,00	11,00	10	15	0.909
IOP Conference Series: Earth and Environmental Science	18	48	14	35	1,94	2,50	4	4	0.500
International Journal of Environmental Research and Public Health	13	51	13	166	12,77	12,77	8	12	1,143
Cities	11	32	9	193	17,55	21,44	5	11	0.192
Journal of Urban Design	9	17	8	165	18,33	20,63	7	9	0.500
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)	7	19	2	6	0,86	3,00	1	2	0.111
Land	7	34	4	13	1,86	3,25	3	3	1,000
IOP Conference Series: Materials Science and Engineering	7	15	6	24	3,43	4,00	4	4	0.667
Advanced Materials Research	7	17	3	9	1,29	3,00	2	3	0.143
Urban Studies	6	13	6	94	15,67	15,67	4	6	0.286
Sustainable Cities and Society	6	30	6	130	21,67	21,67	6	6	0.545
Urban Forestry and Urban Greening	6	21	4	71	11,83	17,75	4	6	0.444
Landscape and Urban Planning	6	25	6	3053	508,83	508,83	6	6	0.545
City	6	9	5	614	102,33	122,80	5	6	0.294
International Journal of Sustainable Development and Planning	5	13	3	23	4,60	7,67	3	4	0.375
Urban Design International	5	7	5	60	12,00	12,00	3	5	0.111
Open House International	4	9	3	5	1,25	1,67	2	2	0.250
Land Use Policy	4	10	4	202	50,50	50,50	3	4	0.333
WIT Transactions on Ecology and the Environment	4	11	2	3	0,75	1,50	1	1	0.200
Urbani Izziv	4	7	3	4	1,00	1,33	1	1	0.053

TABLE 8 Top 20 most productive source titles.

Source: Generated by the author(s) using biblioMagika[®] (Ahmi, 2024).

urbanization pressures and policy frameworks such as the United Nation's Sustainable Development Goals (SDGs), particularly SDG 11 on inclusive, safe, and sustainable cities. This upward trend supports the findings of Zhang et al. (2020), who noted a similar trajectory in green space and health-related research, and Chen and Chen (2022), who observed growing interest in community-level public spaces. The study's keyword co-occurrence and thematic evolution analysis revealed a transition from classical spatial planning and urban form towards themes such as public health, social justice, acoustic comfort, and smart urbanism. This reflects a broader shift in urban research highlighted by Carmona (2015) and Haas and Olsson (2014), who argue for re-theorizing public space to incorporate emergent urban realities, including digital infrastructure, participatory governance, and climate resilience.

5.2 Geographical distribution and institutional dominance

The findings confirm hypotheses two and four, revealing that most research output is concentrated in China, the United Kingdom, the United States, Belgium, and Australia. This reinforces previous concerns about the epistemic dominance of Global North institutions in urban studies (Kuymulu, 2013; Butler, 2012). China's dominance is likely linked to rapid urbanization and increased research investment (Zhao and Ji, 2018), while European institutions, particularly Ghent University, demonstrate strong citation performance, reflecting research quality and influence. However, the Global South remains underrepresented in both the publication and citation metrics. This skews the academic discourse, potentially marginalizing the unique challenges and innovations



emerging from developing contexts. As Watson (2009) and Turok and Borel-Saladin (2016) argue, urban realities in Africa and Latin America diverge significantly from Northern paradigms, necessitating distinct conceptual and methodological frameworks.

5.3 Underrepresentation and the case for broader inclusivity

While previous bibliometric reviews (e.g., Meng et al., 2020; Mohamed and van der Laag Yamu, 2023) provided focused insights on specific themes-such as campus space or green infrastructure-this study attempts a broader synthesis. Nonetheless, the geographical distribution of references still requires improvement. Most of the highly cited works are Euro-American, even though cities in the Global South face more acute issues related to informality, exclusion, and contested space (Low et al., 2005; McCann, 1999). For instance, in South Africa, research by Landman (2020) and Harrison and Todes (2015) has explored how spatial legacies of apartheid continue to shape public space accessibility and identity. In Brazil, scholars such as Caldeira (2017) have examined the "fortification" of public space in response to crime and inequality. In India, Mehta (2014) has interrogated the informal appropriation of streets as lived public spaces. These perspectives are essential to globalizing the discourse and ensuring context-sensitive urban policy recommendations.

5.4 Implications for theory, policy, and practice

This study's findings highlight the need to revisit dominant theoretical frameworks, such as Lefebvre's "right to the city," considering contemporary urban transformations and global inequalities. While Lefebvre (1968) remains foundational, the work of Kuymulu (2013) and Mitchell (2014) warns that rightsbased urban theories must be re-grounded in political and spatial struggles across diverse geographies. From a policy perspective, the concentration of UPSD research in elite institutions and journals suggests a risk of policy myopia, where global urban agendas overlook grassroots innovations. Expanding South-based research contributions could enhance the relevance and effectiveness of urban policy frameworks. Practically, urban planners and designers must move beyond Eurocentric best practices and engage with locally embedded knowledge, particularly in contexts where formal public space is contested, absent, or reimagined through informal or cultural practices.

6 Conclusion

The findings of this bibliometric analysis reveal that there has been a significant upward trajectory in research output, culminating in 2023 with 76 publications from just one in 1975. This trend indicates a gradual but accelerating scholarly interest and an expansion of research endeavours in the domain of urban public space development. The leading scholar, as revealed by the analysis, is Kang Jian from the University College London in the United Kingdom, with 16 publications and a total of 222 citations. However, Ghent University in Belgium emerges as the leading institution in terms of publication volume, reflecting a concentrated hub of research activity in the region. In terms of publication by country, China emerges as the most prolific contributor with 487 publications, followed by the United Kingdom, United States, Belgium, and Australia, indicating a vibrant and diverse geographic distribution of research activity within the domain. These publications are in diverse source titles with "Sustainability (Switzerland)" emerging is the leading source title in terms of the number of articles published over the years. Furthermore, the results of this analysis indicate that the work of Wolch, Byrne, and Newell

TABLE 9 Top 20 highly cited documents.

No.	Author(s)	Title	Source title	TC	C/Y
1	Wolch et al. (2014)	Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough'	Landscape and Urban Planning	2629	239,00
2	Amin A. (2008)	Collective culture and urban public space	City	497	29,24
3	Yang and Kang (2005)	Acoustic comfort evaluation in urban open public spaces	Applied Acoustics	453	22,65
4	Kang and Zhang (2010)	Semantic differential analysis of the soundscape in urban open public spaces	Building and Environment	347	23,13
5	Low et al. (2005)	Rethinking Urban Parks: Public space and cultural diversity	Rethinking Urban Parks: Public Space and Cultural Diversity	342	17,10
6	Koohsari et al. (2015)	Public open space, physical activity, urban design and public health: Concepts, methods and research agenda	Health and Place	311	31,10
7	Latham et al. (2019)	Social infrastructure and the public life of cities: Studying urban sociality and public spaces	Geography Compass	210	35,00
8	You (2016)	Characterizing the inequalities in urban public green space provision in Shenzhen, China	Habitat International en,		18,89
9	Humphreys L. (2010)	Mobile social networks and urban public space	New Media and Society	169	11,27
10	Blöbaum et al. (2005)	Perceived danger in urban public space: The impacts of physical features and personal factors	Environment and Behavior	157	7,85
11	Loughran K. (2014)	Parks for profit: The high line, growth machines, and the uneven development of urban public spaces	City and Community	155	14,09
12	Jayne et al. (2006)	Drunk and disorderly: Alcohol, urban life and public space	Progress in Human Geography	152	8,00
13	Echevarria et al. (2017)	Using Virtual Reality for assessing the role of noise in the audio-visual design of an urban public space	Landscape and Urban Planning	140	17,50
14	Bondi L. (1998)	Gender, class, and urban space: Public and private space in contemporary urban landscapes	Urban Geography	122	4,52
15	Graham et al. (1997)	Virtual cities, social polarization, and the crisis in urban public space	Journal of Urban Technology	110	3,93
16	Cybriwsky R. (1999)	Changing patterns of urban public space. Observations and assessments from the Tokyo and New York metropolitan areas	Cities	108	4,15
17	Pietrzyk-Kaszyńska et al. (2017)	Eliciting non-monetary values of formal and informal urban green spaces using public participation GIS	Landscape and Urban Planning	107	13,38

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No.	Author(s)	Title	Source title	TC	C/Y
18	Peters K. (2010)	Being together in urban parks: Connecting public space, leisure, and diversity	Leisure Sciences	97	6,47
19	Kántor et al. (2018)	Human-biometeorological significance of shading in urban public spaces—Summertime measurements in Pécs, Hungary	Landscape and Urban Planning	95	13,57
20	Yang et al. (2016)	Estimating the mediate effect of privately green space on the relationship between urban public green space and property value: Evidence from Shanghai, China	Land Use Policy	92	10,22

Source: Generated by the author(s) using biblioMagika[®] (Ahmi, 2024).



on urban green space, public health, and environmental justice: The challenge of making cities 'just green enough', published in Landscape and Urban Planning as the most influential publication in the field of urban public space development.

The upward trajectory in research output reflects a gradual but accelerating recognition of the importance of urban public spaces in addressing global urban challenges. This trend aligns with broader concerns about urban sustainability, liveability, and equity, as cities worldwide face increased pressures from rapid urbanization and environmental degradation. China's leadership in publication volume may be attributed to its rapid urbanization and policy emphasis on sustainable urban development, while the contributions from Western countries reflect their long-standing tradition of research in urban studies and planning. This diversity suggests that urban public space development is a global concern, influenced by unique regional challenges and priorities. The substantial growth in the volume of publications and citations over time highlights the rising importance of the urban public space domain. The sustained focus on themes such as public health, environmental justice, cultural diversity, social inequality, and acoustic comfort underscores the necessity for continued investment in these critical areas by the industry. While certain regions, such as China and Europe, dominate the field, underrepresented areas, particularly in the Global South, may hold valuable insights into unique challenges and innovations. Collaborative efforts can help bridge these gaps. Despite the progress, gaps remain in addressing the equity and accessibility of urban public spaces in marginalized communities. Future research could focus on integrating technological advancements (e.g., smart cities) and exploring the socio-cultural dimensions of urban public spaces to ensure inclusivity and adaptability.

The global imbalance in research output calls for increased investment in urban research in the Global South, capacity building in local institutions, and greater inclusion of diverse urban experiences in global academic platforms. This is essential to ensure that urban planning policies and practices are equitable, inclusive, and responsive to the needs of cities worldwide.

The bibliometric trends reveal a growing maturity in the field of urban public space development, with promising areas for continued exploration. By leveraging these insights, scholars and practitioners can further advance the domain, addressing both regional and global urban challenges with innovative and inclusive solutions. This study is the first to integrate a long-term (1975–2024) multi-dimensional bibliometric evaluation of urban public space development using advanced tools like BiblioMagika and VOSviewer. It contributes a unique global perspective the uncovers both geographic imbalances and thematic evaluation–offering a benchmark for future urban public space development research and policy alignment.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

KN: Writing – original draft, Writing – review and editing. SM: Conceptualization, Methodology, Supervision, Writing – review and editing. TM: Conceptualization, Methodology, Writing – review and editing.

References

Ahmi, A. (2023). "OpenRefine: an approachable tool for cleaning and harmonizing bibliographical data," in 11th international conference on applied science and technology 2022 (11th ICAST 2022) AIP conference proceedings, 2827. doi:10.1063/5.0164724AIP Conf. Proc.

Ahmi, A. (2024). biblioMagika. Available online at: https://aidi-ahmi.com/index. php/bibliomagika.

Amin, A. (2008). Collective culture and urban public space. City 12 (1), 5-24. doi:10.1080/13604810801933495

Anderson, J., Ruggeri, K., Steemers, K., and Huppert, F. (2017). Lively social space, well-being activity, and urban design: findings from a low-cost community-led public space intervention. *Environ. Behav.* 49 (6), 685–716. doi:10.1177/0013916516659108

Arboix, I. S., and Martín, E. (2017). Public space in barcelona (1992-2017)-evolution and case studies. *IOP Conf. Ser. Mater. Sci. Eng.* 245 (5), 052089. doi:10.1088/1757-899X/245/5/052089

Baraibar-Diez, E., Luna, M., Odriozola, M. D., and Llorente, I. (2020). Mapping social impact: a bibliometric analysis. *Sustainability*. doi:10.3390/su12229389

Butler, C. (2012). *Henri Lefebvre: spatial politics, everyday life and the right to the city.* 1st ed. London: Routledge-Cavendish. doi:10.4324/9780203880760

Carmona, M. (2015). Re-theorising contemporary public space: a new narrative and a new normative. J. Urbanism 8 (4), 373–405. doi:10.1080/17549175.2014.909518

Celik, E., Sungur, A., and Türkyılmaz, C. C. (2024). Exploring the relationship between healthy city and public space ergonomics: a bibliometric analysis. *Proc. Int. Conf. Contemp. Aff. Archit. Urbanism-ICCAUA* 7 (1), 1370–1382. doi:10.38027/iccaua2024en0223

Chadegani, A. A., Salehi, H., Yunus, M. M., Farhadi, H., Fooladi, M., Farhadi, M., et al. (2013). A comparison between two main academic literature collections: Web of Science and Scopus databases. *arXiv Prepr. arXiv:1305.0377* 9. doi:10.5539/ass.v9n5p18

Chen, Y., and Chen, J. (2022). A dynamic analysis of the research on community public space and facilities based on the perspective of bibliometrics. *J. Humanit. Soc. Sci. Stud.* 4, 42–50. doi:10.32996/jbsss.2022.4.1.4

Dissanyake, C., and Weerasinghe, U. G. (2021). Urban microclimate and outdoor thermal comfort of public spaces in warm-humid cities: a comparative bibliometric mapping of the literature. *Am. J. Clim. Change.* doi:10.4236/ajcc.2021.104023

Dong, J. Y., Cheng, W., Ma, C. P., Tan, Y. T., and Xin, L. S. (2017). On public space design for Chinese urban residential area based on integrated architectural physics environment evaluation. In IOP Conference Series: Earth and Environmental Science, Thailand, (61, 1, 012034). doi:10.1088/1755-1315/61/1/012034

Dong, W., Wu, J., Chen, Y., and Zhou, X. (2023). A bibliometric review of research on the perceptions of campus public spaces. *Buildings* 13, 501. doi:10.3390/buildings13020501

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Conflict of interest

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Fayad, A. A., Binti Mohd Ariff, A. H., Ooi, S. C., Ahmi, A., and Khatib, S. F. (2024). Towards concise reporting through integrated reporting: a bibliometric review. *Meditari Account. Res.* 32 (3), 832–856. doi:10.1108/medar-10-2021-1470

Haas, T., and Olsson, K. (2014). Transmutation and reinvention of public spaces through ideals of urban planning and design. *Space Cult.* 17 (1), 59–68. doi:10.1177/1206331213493855

Jan van Eck, N., and Waltman, L. (2020). 'VOSviewer manual'.

Jan van Eck, N., and Waltman, L. (2021). 'VOSviewer manual manual for VOSviewer version 1.6.17'.

Kang, J., and Zhang, M. (2010). Semantic differential analysis of the soundscape in urban open public spaces. *Build. Environ.* 45 (1), 150–157. doi:10.1016/j.buildenv.2009.05.014

Karaçor, E. K., and Ögçe, H. (2023). Evaluating the publicness dimension of public space with bibliometric analysis. *Future Cities Environ*. doi:10.5334/fce.192

Ke, Y., Wang, S., Chan, A. P., and Cheung, E. (2009). Research trend of public-private partnership in construction journals. *J. Constr. Eng. Manag.* 135 (10), 1076–1086. doi:10.1061/(asce)0733-9364(2009)135:10(1076)

Koohsari, M. J., Mavoa, S., Villanueva, K., Sugiyama, T., Badland, H., Kaczynski, A. T., et al. (2015). Public open space, physical activity, urban design and public health: concepts, methods and research agenda. *Health and place* 33, 75–82. doi:10.1016/j.healthplace.2015.02.009

Kuymulu, M. B. (2013). The vortex of rights: 'right to the city' at a crossroads. *Int. J. Urban Regional Res.* 37, 923–940. doi:10.1111/1468-2427.12008

Lewandowska, A. (2018). 'Architectural and urban design of public space based on social cooperation', 9, 187-194. doi:10.15503/jecs20182.187.194

Low, S., Taplin, D., and Scheld, S. (2005). *Rethinking urban parks: public space and cultural diversity*. United States: University of Texas Press.

Mansour, A. A. Z., Ahmi, A., Popoola, O. M. J., and Znaimat, A. (2022). Discovering the global landscape of fraud detection studies: a bibliometric review. *J. Financial Crime* 29 (2), 701–720. doi:10.1108/jfc-03-2021-0052

McCann, E. J. (1999). Race, protest, and public space: contextualizing Lefebvre in the U.S. City. *Antipode* 31, 163–184. doi:10.1111/1467-8330.00098

Meng, L., Wen, K. H., Brewin, R., and Wu, Q. (2020). "Knowledge atlas on the relationship between urban street space and residents' health—a bibliometric analysis based on VOSviewer and CiteSpace,", 12. Sustainability, 2384. doi:10.3390/su12062384

Mitchell, D. (2014). On the end and ends of public space. Work. Pap. Se (06). doi:10.1353/anq.2012.0061

Mohamed, A. A., and van der Laag Yamu, C. (2023). Space syntax has come of age: a bibliometric review from 1976 to 2023. *J. Plan. Literature* 39, 203–217. doi:10.1177/08854122231208018

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., and Prisma Group (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 6 (7), e1000097. doi:10.1371/journal.pmed.1000097

Nikšič, M., and Sezer, C. (2017). Public space and urban justice. *Built Environ.* 43 (2), 165–172. doi:10.2148/benv.43.2.165

Nykiforuk, C. I., Osler, G. E., and Viehbeck, S. M. (2010). The evolution of smoke-free spaces policy literature: a bibliometric analysis. *Health policy* 97 (1), 1–7. doi:10.1016/j.healthpol.2010.03.001

Pancholi, S., Yigitcanlar, T., and Guaralda, M. (2015). Public space design of knowledge and innovation spaces: learnings from kelvin grove urban village, brisbane. *J. Open Innovation Technol. Mark. Complex.* 1 (1), 1–17. doi:10.1186/s40852-015-0015-7

Punj, N., Ahmi, A., Tanwar, A., and Abdul Rahim, S. (2023). Mapping the field of green manufacturing: a bibliometric review of the literature and research frontiers. *J. Clean. Prod.* 423 (138729), 138729–22. doi:10.1016/j.jclepro.2023.138729

Rahman, N. A. A., Ahmi, A., Jraisat, L., and Upadhyay, A. (2022). Examining the trend of humanitarian supply chain studies: pre, during and post COVID-19 pandemic. *J. Humanit. Logist. Supply Chain Manag.* 12 (4), 594–617. doi:10.1108/jhlscm-01-2022-0012

Simm, W., Ferrario, M. A., Whittle, J., Davenport, R., Binner, J., Frankova, K., et al. (2016). On the role of digital consultation tools in public space design: a case study. *Interact. Comput.* 28 (3), 273–292. doi:10.1093/iwc/iwu042

Singh, V. K., Singh, P., Karmakar, M., Leta, J., and Mayr, P. (2021). The journal coverage of Web of Science, Scopus and Dimensions: a comparative analysis. *Scientometrics* 126, 5113–5142. doi:10.1007/s11192-021-03948-5

Smith, S., and Steino, N. (2016). "Public space design between alienation and appropriation: the case of parkour," in *Time, space and the human body*.

Southworth, M. (2014). Public life, public space, and the changing art of city design. J. Urban Des. 19 (1), 37–40. doi:10.1080/13574809.2014.854684

Wolch, J. R., Byrne, J., and Newell, J. P. (2014). Urban green space, public health, and environmental justice: the challenge of making cities 'just green enough. *Landsc. urban Plan.* 125, 234–244. doi:10.1016/j.landurbplan.2014.01.017

Yang, W., and Kang, J. (2005). Acoustic comfort evaluation in urban open public spaces. *Appl. Acoust.* 66 (2), 211–229. doi:10.1016/j.apacoust.2004.07.011

You, H. (2016). Characterizing the inequalities in urban public green space provision in Shenzhen, China. *Habitat Int.* 56, 176–180. doi:10.1016/j.habitatint.2016.05.006

Zakaria, R., Ahmi, A., Ahmad, A. H., Othman, Z., Azman, K. F., Ab Aziz, C. B., et al. (2021). Visualising and mapping a decade of literature on honey research: a bibliometric analysis from 2011 to 2020. *J. Apic. Res.* 60 (3), 359–368. doi:10.1080/00218839.2021.1898789

Zhang, J., Yu, Z., Zhao, B., Sun, R., and Vejre, H. (2020). Links between green space and public health: a bibliometric review of global research trends and future prospects from 1901 to 2019. *Environ. Res. Lett.* 15, 063001. doi:10.1088/1748-9326/ab7f64

Zhao, X., and Ji, Y. (2018). The urban public space betterment and land use sustainability under the human behavior. *IOP Conf. Ser. Earth Environ. Sci.* 113 (1), 012143. doi:10.1088/1755-1315/113/1/012143

Zivali Turhan, T., and Ayataç, H. (2021). Understanding of the relation between ethnic diversity and public space: a bibliometric analysis. *Urbani izziv*. doi:10.5379/urbani-izziv-en-2021-32-02-01