Exploring the Inclusive City: Definitions and Dimensions

Danni Liang, Martin de Jong, and Daan Schraven

Abstract The political and public interest in issues of inclusion and inclusiveness has grown steadily in recent years. Keeping different segments of society together in the aftermath of a neo-liberal era where much of the social tissue underlying market operations has been eaten up by the prevalence of those same market values is a key concern to many public and private actors. The popularity of the label 'inclusive city' can also be observed in its increased use among municipal governments worldwide for city branding purposes and its surge in the academic literature. Its relevance notwithstanding, the meaning of the term 'inclusive' is not always clearly defined and often multi-dimensional. In this chapter, a state-of-the art overview will be offered of what is currently known about this city label in the academic literature and look both at journal articles and books in the timeframe 2000–2022. Key finding in this study, which builds on and further develops earlier work is that based on both bibliometric research of academic articles and a systematic review of books, book chapters and grey literature, we find six different dimensions of inclusion (spatial, social, environmental, economic, political and cultural) with their own connotations and associations. Taking this variety into account is essential to a more sophisticated understanding of what developing an inclusive city entails and what variations and variety of developmental paths exist.

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1 Introduction

Municipalities increasingly brand themselves as 'inclusive', sometimes as just that and sometimes in combination with other attractive labels such as 'inclusive smart' or 'sustainable and inclusive'. This same trend can be observed in bibliometric studies that show a surge in its use in recent years, although as such the 'smart city' and the 'sustainable city' remain the most popular categories by far [56].

Growing attention paid to 'inclusion' and 'inclusiveness' is not unique to the fields of urban studies and environmental policy; it has become of key importance in a great variety of fields and can be seen as the almost logical result of decades in which market domination, shareholder value, economic growth and allocative efficiency prevailed over government intervention, balancing stakeholder interests, quality of life more broadly defined and distributional effects. Maintaining in place what are often called 'neo-liberal policies' as the dominant political and administrative ideology in most countries worldwide has gone at the expense of the solidity and solidarity of social tissue. The consequences of these policies have become apparent in many cities, especially in Anglo-Saxon countries where their influence was at its strongest, but also elsewhere. Public infrastructures suffer from lack of proper upkeep, housing prices have gone through the roof leading to the dramatic appearance of homelessness, cleanliness of public space leaves to be desired and segregation has led to growing interethnic tensions. More generally, the gap between haves and have-nots has grown quite significantly and substantial portions of the underprivileged struggle to find decently paid employment or otherwise have difficulties to get by in times of high inflation. Exclusion has thus become an undeniable phenomenon, but that does not yet answer the question which categories or types of people are excluded, and from which benefits, facilities or privileges exactly they are excluded.

It is the aim of this chapter to address that last topic by examining through both a quantitative and a qualitative literature review what leading authors in the field have written on it and how their findings can be systematized and classified. Some authors have made dedicated efforts to establish conceptual frameworks of inclusive urban development by means of quantitative approaches and mathematical models; others have placed particular emphasis on different areas within the broader field of sustainable urban development, such as inclusive economic growth, spatial accessibility, cultural diversity and social cohesion; yet another group has focused on policy outcomes and policy impacts from the perspective of public policy and policy analysis. In spite of the insights offered by abovementioned contributions, knowledge of how the inclusive city can be defined, what various dimensions it has and how it can be realized have not been systematically examined.

Knowledge on the concept of the inclusive city is fragmented, which may well lead to high but unfounded expectations or ill-guided policy actions. That knowledge

gap can be seen as the starting point for this contribution. One can only develop an inclusive city if one knows what it is, what aspects there are to it and through what policy actions these can be synthesized or traded off against each other. Below the main definitions of the concept 'inclusive city' will be mapped, the various conceptual dimensions explored and the interrelationships between relevant keywords related to the concept analysed.

In Sect. 2, we will briefly outline our methodological approach. In the third section of this chapter, the bibliometric method is used to tease out the various dimensions of the inclusive city and identify the interrelationships that exist between different keywords related to it. A qualitative analysis is then used in Sect. 4 to review the concept of the inclusive city and explore relevant definitions discerned in it. Finally, concluding Sect. 5 takes stock of the findings in the previous sections and maps them and synthesises them into a graphical display with six different dimensions of the inclusive city and their respective policy-relevant connotations.

2 Methodological Approach

2.1 Research Design

This survey into the concept 'inclusive city' leans strongly on a previous study with a specific research framework presented earlier in [40]. However, it provides an update and upgrade of it, not only because its bibliometric study and qualitative literature survey include the years 2021 and 2022, but in addition to that, recent shifts in attention to aspects of the inclusive city are also discussed at length. The bibliometric part of the analysis evolved in three steps:

- High-frequency keywords in the field of inclusive cities were counted and analysed so that key research contents and topics of this field were obtained.
- A co-occurrence analysis was conducted to reveal the interrelationships between high-frequency keywords within the research domain of inclusive cities.
- A cluster analysis was performed using SPSS to identify clusters in the field and to further deepen the conceptual underpinnings of the concept 'inclusive city'.

Following that, the bibliometric analysis was complemented with a qualitative review of academic books, policy reports, lecture notes and grey literature, to further deconstruct the concept and gain additional theoretical knowledge of it (Fig. 1).

2.2 Data Collection

The research design started with data collection for the bibliometric analysis. In our search strategy, the focus was on the inclusive city concept as a vehicle of sustainable

urban development. As a novel concept, 'inclusive city' could be recognized in the title, abstract and as an author keyword as part of the academic literature. In order to systematically capture the relevant research on inclusive cities, we collected bibliometric data on articles using the following search query:

> TITLE-ABS (*"inclusive city"* OR *"inclusive cities"*) OR AUTHKEY (*"inclusive city"* OR *"inclusive cities"*) AND DOCTYPE (ar OR re) AND PUBYEAR < 2023 AND PUBYEAR > 1999 AND LANGUAGE (English)

A few implicit decisions were made with regards to this query:

First, Scopus was used to compile the library of academic articles referring to inclusive city as a concept. For one thing, Scopus indexes a larger number of journals than Web of Science, and includes more international and open access journals [4]. Also, Scopus fits the aim of this study because of its comprehensiveness in covering a wide range of journals, thereby ring-fencing a multitude of possible dimensions that the inclusive city could target.

Second, the analysis was centred on academic journal articles and reviews in the English language within the timeframe 2000–2022. Academic papers and reviews offer a stable, verified and accessible account of the academic literature, which helps to initially profile and subsequently review the different angles of attention to the inclusive city through key words. The longitudinal scale of the data sample allowed for exploration of the knowledge of the inclusive city concept. Title, abstract and author keywords are three bibliometric locations that convey the essence of a published study and therefore largely reflect the position of the inclusive city within relevant research fields. Based on the search strategy and the above criteria, 184 publications from Scopus database were finally retrieved for subsequent bibliometric analysis.

The next step aimed to uncover the definitions and conceptual meaning of the inclusive city concept: a qualitative survey independent from the bibliometric analysis. Books, book chapters and valuable reports provide more clarity on conceptual underpinnings of the inclusive city, which are different from the documents used in the bibliometric analysis. We collected books and book chapters in the English language in the Scopus database from 2000 to 2022 with the following search query:

> TITLE-ABS ("inclusive city" OR "inclusive cities") OR AUTHKEY ("inclusive city" OR "inclusive cities") AND DOCTYPE (bk OR ch) AND PUBYEAR < 2023 AND LANGUAGE (English)

Books and book chapters were selected for in-depth review, if these were cited at least more than once. In this way, the input of these sources could at least be assumed to have some academic resonance. Relevant books on the topic 'inclusive city' through Amazon Books were also collected as a data source of this study.

Additionally, we collected a selection of valuable reports from the official websites of leading international organizations and institutions (i.e., United Nations, the World Bank, OECD and Asian Development Bank) for qualitative analysis. A total of 20 books, 11 book chapters and 11 reports were selected for further inspection (see Table 1). When listing the sources in Table 1, we followed the order of their year of publication first, and then the order of the document types.

Table 1 Overview of selected books, book chapters and reports for qualitative review

Author	Year	Title	Type
D. Westendorff	2004	From Unsustainable to Inclusive Cities	Book
P. Herrle, U. Walther	2005	Socially Inclusive Cities: Emerging Concepts and Practice	Book
A. Laquian, L. Hanley	2007	The Inclusive City: Infrastructure and Public Services for the Urban Poor in Asia	Book
F. Steinberg, M. Lindfield	2011	Inclusive Cities	Book
C. Whitzman, C. Legacy, C. Andrew et al	2013	Building Inclusive Cities: Women's Safety and the Right to the City	Book
R. Hambleton	2014	Leading the Inclusive City: Place-based Innovation for a Bounded Planet	Book
J. Gupta, K. Pfeffer, H. Verrest et al	2015	Geographies of Urban Governance: Advanced Theories, Methods and Practices	Book
N. Espino	2015	Building the Inclusive City: Theory and Practice for Confronting Urban Segregation	Book
S. Venkateswar, S. Bandyopadhyay	2016	Globalisation and the Challenges of Development in Contemporary India (Dynamics of Asian Development)	Book
D. Zuberi, A. Taylor	2017	(Re)Generating Inclusive Cities: Poverty and Planning in Urban North America	Book
S. Attia, Z. Shafik, A. Ibrahim	2018	New Cities and Community Extensions in Egypt and the Middle East: Visions and Challenges	Book
J. Salahub, M. Gottsbacher, J. de Boer	2018	Social Theories of Urban Violence in the Global South: Towards Safe and Inclusive Cities	Book
N. Pokhrel	2019	Transforming Kolkata: A Partnership for a More Sustainable, Inclusive, and Resilient City	Book
V. Bharne, S. Khandekar	2019	Affordable Housing: Inclusive Cities	Book
J. Salahub, M. Gottsbacher, J. De Boer et al	2019	Reducing Urban Violence in the Global South: Towards Safe and Inclusive Cities	Book
D. Kundu, R. Sietchiping, M. Kinyanjui	2020	Developing National Urban Policies: Ways Forward to Green and Smart Cities	Book
V. Pineda	2020	Building the Inclusive City: Governance, Access, and the Urban Transformation of Dubai	Book
B. Dahiya, A. Das	2020	New Urban Agenda in Asia–Pacific: Governance for Sustainable and Inclusive Cities	Book
A. Anttiroiko, M. De Jong	2020	The Inclusive City: The Theory and Practice of Creating Urban Prosperity for all	Book

(continued)

Table 1 (continued)

Author	Year	Title	Type
T. P. Uteng, H. R. Christensen, L. Levin	2020	Gendering Smart Mobilities	Book
K. Viswanath	2013	Gender Inclusive Cities Programme: Implementing Change for Women's Safety	Book chapter
C. Andrew, C. Legacy	2013	The Role of Partnerships in Creating Inclusive Cities	Book chapter
A. Schippers, L. Van Heumen	2014	The Inclusive City through the Lens of Quality of Life	Book chapter
A. Schippers, L. Van Heumen	2014	The inclusive city through the lens of quality of life	Book chapter
N. Sridharan	2015	Can Smart City Be an Inclusive City? - Spatial Targeting (ST) and Spatial Data Infrastructure (SDI)	Book chapter
V. Walters	2016	Urban Neoliberalism and the Right to Water and Sanitation for Bangalore's Poor	Book chapter
A. Morgan	2019	"Dad, Do Not Cry": Imagination and creativity on their own terms in inclusive cities and communities	Book chapter
V. R. Sharma, Chandrakanta	2019	Perspective on Resilient Cities: Introduction and Overview	Book chapter
B. Dahiya, A. Das	2020	New Urban Agenda in Asia–Pacific: Governance for Sustainable and Inclusive Cities	Book chapter
A. A. Popoola, N. V. Blamah, C. Mosima et al	2021	The Language of Struggle and Radical Activism as an Inclusive City Tool Among the Neglected Urban Poor of South Africa	Book chapter
R. Sultana, A. Asad	2021	Evaluation of Urbanites' Perception About Livable City Using Analytic Hierarchy Process (AHP): A Case Study of Dhaka City	Book chapter
United Nations Centre for Human Settlements	2001	The State of the World's Cities	Report
Asian Development Bank	2010	Access to Justice for the Urban Poor: Toward Inclusive Cities	Report
World Bank	2015	Inclusive Economic Growth in America's Cities: What's the Playbook and the Score?	Report
United Nations General Assembly	2015	Transforming our world: the 2030 Agenda for Sustainable Development	Report
World Bank	2015	World-Inclusive Cities Approach Paper	Report
UN-Habitat III	2015	Habitat-III-Issue-Paper-1_Inclusive-Cities	Report
OECD	2016	Making Cities Work for All: Data and Actions for Inclusive Growth	Report
UN-Habitat III	2017	The New urban agenda	Report
Asian Development Bank	2017	Enabling Inclusive Cities: Tool Kit for Inclusive Urban Development	Report

(continued)

Table 1 (continued)

Author	Year	Title	Type
United Nations	2020	The policy Guidelines for Inclusive Sustainable Development Goals	Report
Asian Development Bank	2022	Inclusive Cities-Urban Area Guidelines	Report

2.3 Methods

In order to explore the knowledge distribution structure in the inclusive city research domain and deepen our comprehension of the concept, we statistically analysed and summarized the number of high-frequency keywords, the frequency as well as the betweenness of each keyword in an article or a review. The results of the high-frequency analysis convey information about the variety in focus and the state of the inclusive city research field, where high frequency of occurrence and high betweenness of keywords can both indicate a high importance of the keywords. More specifically, the frequency of keywords is positively correlated with their research popularity. The betweenness of a keyword represents the strength of its connection to other keywords, meaning that higher betweenness implies more connections to keywords. In other words, the keywords act as a hub in the research field and play a "bridging" role in the development of research topics. Before the calculation, irrelevant and meaningless keywords were removed to make the results of the analysis more accurate and rigorous; and some keywords with similar academic meanings and relatively low frequency of occurrence (no more than 3 occurrences) were combined and renamed to avoid unexpected omissions in the summary of high-frequency keywords and potential misunderstanding. Table 2 shows the result of that procedure in which 25 renamed keywords were obtained.

Following the above *keyword co-occurrence analysis*, the frequency of two keywords simultaneously appearing in the same article was counted, thus revealing the correlation strength of different keywords in an article. The more frequently two keywords simultaneously appeared in the same document, the more explicitly the connection between the two keywords has been made. The size of nodes in the co-occurrence network is determined by the occurrences of keywords. A larger node reflects a higher correlation with the research topic: the inclusive city. In addition, the line between two nodes is called a link, indicating the strength of the co-occurrence relationships between different keywords. We used the visualisation software of VOSviewer to construct a co-occurrence network of keywords in order to present and reveal the interrelationships between different keywords [23].

During the next step, the analysis focused on exploring different clusters composed of closely linked high-frequency keywords by means of a *cluster analysis*, identifying the conceptual structure of the inclusive city concept. Cluster analysis is a way of grouping cases of data based on the similarity of responses to several variables, and its principle is to give the keywords within the same category as high a homogeneity as

Table 2 Complete list of merged and renamed keywords

Renamed keywords	Included original keywords	Reasons for combination
Accessibility	Accessibility; accessibility strategies in 2030;	Similar academic meaning
Environment	Environment; environments; built environment; environment equity; living environment; walking environment	
Governance	Urban governance; inclusive governance; land governance; governance; multi-level governance;	
Inclusion	Inclusion; inclusiveness; disability inclusion; social inclusion;	
Housing	Affordable housing; housing; social housing; housing policies; public housing; housing cooperatives	
Public space	Public space; public spaces; urban open space; open space;	
Rights	Rights; human rights; right to the city; empowerment; language rights; right to housing;	
Sustainability	Sustainability; sustainable; social sustainability;	
SDGs	sdg; sdgs; sdgs 11 & 10.2;	Differences in singular and plural forms, but similarities in academic meaning
Urbanization	Urbanization; urbanisation;	
Inclusive city	Inclusive city; inclusive cities;	
Smart city	Smart city; smart cities;	
Neighbourhood	Neighbourhood; neighbourhoods;	
Planning	Planning; participatory-collaborative planning; modern planning; urban planning; city planning; planning interventions; planning and design; green-oriented urban planning; land use planning; citizen-centric urban planning; smart urban planning; technology-aided urban planning	Similar academic meaning and relatively low frequency of occurrences (no more than 3 occurrences)
Community	Community art; community capital; community organizations; community savings; community-based organizations; gated communities;	
Migration	Migratory phenomena; migration; international migration;	
Citizenship	Citizenship; citizens' perception; citizen–state relations;	

(continued)

Table 2 (continued)

Renamed keywords	Included original keywords	Reasons for combination
Participation	Participation; participatory process;	
Transport	Green transportation; transport inequality; transport policy; sustainable transport; commuting burden; tramway; traffic congestion; railway; congestion tax;	
Economic regeneration	Economic regeneration; informal economy; employment; local economy	
Infrastructure	Urban green infrastructure; urban infrastructure; inclusive infrastructure; living infrastructure; urban green infrastructure; soft infrastructure; smart infrastructure; infrastructure of mobility;	
Segregation	Urban segregation; socio-spatial segregation; segregation;	
Finance	Innovative finance; alternative finance; local finance; municipal finance; housing finance;	
Engagement	Social engagement; community engagement; engagement channels;	
Mobility	Mobility; mobility of care; mobility planning; independent mobility; children's independent mobility; urban mobility	

possible, while the heterogeneity between categories is as high as possible. Therefore, the aim of using cluster analysis in this study was to identify groups of keywords, that are connected based on a stronger association with each other than to other keywords from other clusters. In this article, hierarchical clustering was utilized because it can help uncover various aspects of the inclusive city concept when it is not clear how many clusters are distinguished, and it is an aid in exploring the hierarchical relationship between clusters. Ward's method was used to join cases into clusters such that the variance within a cluster was minimized. A more detailed explanation of this application can be found in in [40].

3 Quantitative Findings

3.1 Publication Activities in the Inclusive City Literature

Analysing numerical changes in the literature on inclusive cities through the years helps to portray overall trends in the field as well as conceptual hot spots within the domain. To assess the basic publishing activities in the inclusive city literature and their evolution over time, the annual number of publications in our dataset in Scopus from 2000 to 2022 was first counted (see Fig. 2). We can see from Fig. 2 that the annual numbers of publications in this research field generally show a trend of slow fluctuation followed by rapid growth over time. The number of publications has been steadily increasing, which reflects widespread interest among scholars in studies related to the inclusive city. Specifically, although the quantity of annual publications was overall relatively small, it increased slightly between 2000 and 2016 (reaching an incidental small peak in 2010) and then saw a steep incline from 2016 on. In terms of the volume and incremental growth rates, the rise in the period 2010–2017 and even more so in 2018–2022 turns out to several times the previous increase. It is obvious that research on the inclusive city has received growing attention in recent years and as a research topic it has acquired strong momentum.

Figure 3 clearly shows the distribution across different disciplines relevant to research on the inclusive city from 2000 to 2022. With the emergence of new research findings in recent years, scholars from different disciplines have begun to introduce

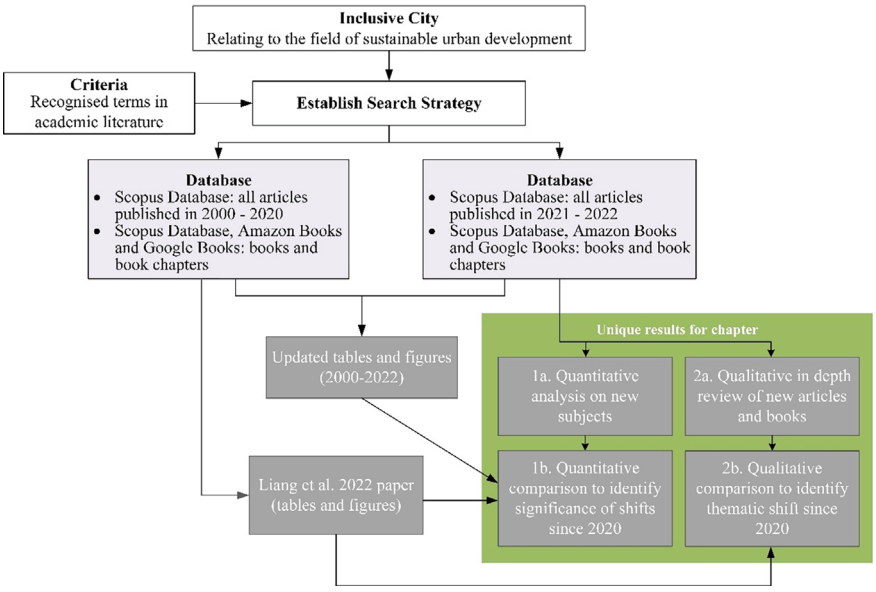

Fig. 1 Research design

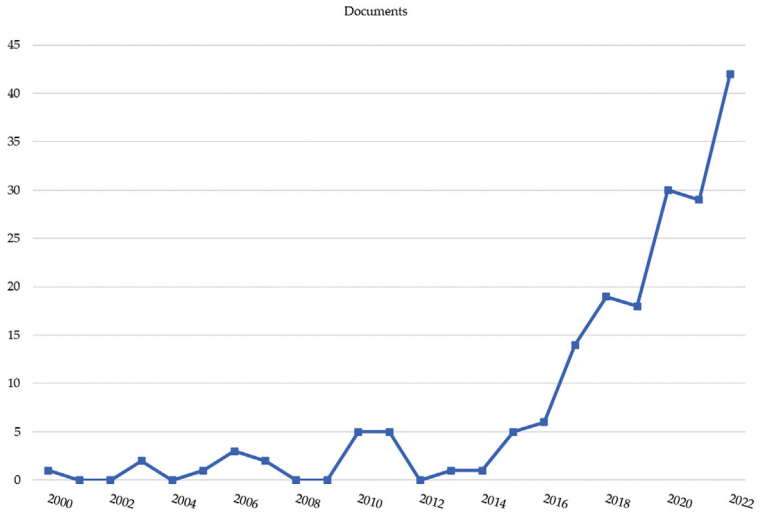

Fig. 2 Total number of publications about inclusive cities research (2000–2022)

multiple perspectives of the inclusive city. Clearly, the largest number of publications on inclusive cities appeared in the category social sciences, with 83.70%, followed by environmental science, with 34.78%, which is general agreement with [40]. The difference is that the number of publications on inclusive cities in the discipline of engineering has now reached the third highest level. It is noteworthy that the sum of the publications in each discipline is greater than 100%, indicating that inclusive cities are a multidisciplinary and cross-cutting research field.

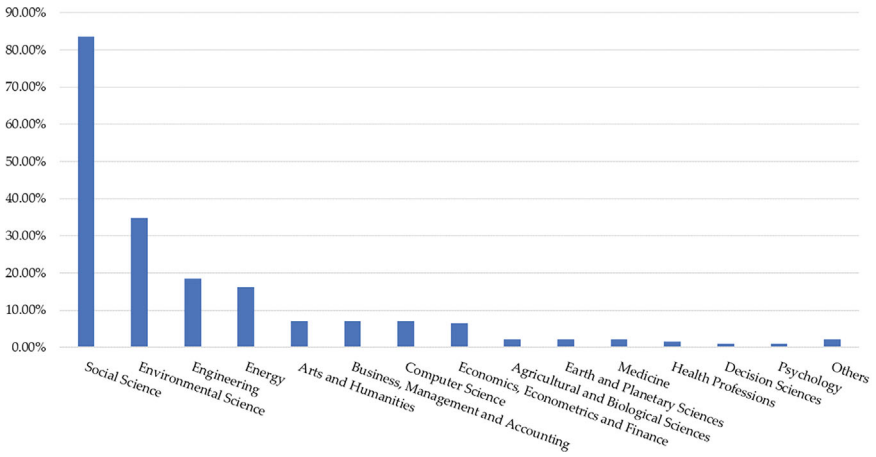

Fig. 3 Disciplines and their publication numbers regarding the inclusive city (2000–2022)

Table 3 High-frequency keywords related to the inclusive city

Keyword	Frequency	Betweenness	Keyword	Frequency	Betweenness
Inclusive city	45	0.20	Disability	7	0.00
Planning	22	0.04	Infrastructure	7	0.00
Inclusion	20	0.06	South Africa	6	0.01
Governance	16	0.11	Environment	6	0.03
Smart city	15	0.04	Segregation	6	0.00
Public space	13	0.03	Mobility	6	0.01
Sustainability	13	0.04	Community	6	0.01
Accessibility	12	0.01	Innovation	5	0.01
Housing	11	0.04	Resilience	5	0.01
Migration	11	0.01	Finance	5	0.01
Informal	11	0.04	Economic regeneration	5	0.00
Participation	11	0.03	Urbanization	5	0.00
Rights	10	0.02	Gender	5	0.00
Transport	10	0.00	Urban regeneration	5	0.00
Land use	8	0.01	engagement	5	0.01
SDGs	7	0.01	India	4	0.00

The reason why we chose high-frequency keywords in the following steps is that they represent a high concentration and the core content in the literature and offer an indication of the direction in which this emerging research domain is moving. The keywords in Table 3 represent the topics that received the most attention in articles about the inclusive city. Among them, keywords such as planning, inclusion, governance, smart city, public space, sustainability and accessibility, show higher frequencies of occurrence and stronger levels of co-occurrence and thus occupy the more central positions in the network of relations. In contrast to [40], some new high-frequency keywords have emerged, such as disability, resilience, urbanization, gender and urban regeneration, indicating that the above topics have gradually become new research hotspots in recent years and providing fresh additional perspectives to make sense of the inclusive city concept. Overall, these keywords reflect the meaning of inclusive cities as well as core issues and insights in the research domain. However, a richer picture can be obtained if their underlying relationships are further explored with co-occurrence analysis.

3.2 Co-occurrence of High-Frequency Keywords

In order to examine the relationships between these high-frequency keywords related to inclusive cities, we established a co-occurrence network displayed in Fig. 4. We can see from it that “inclusive city” itself had the largest node, followed by

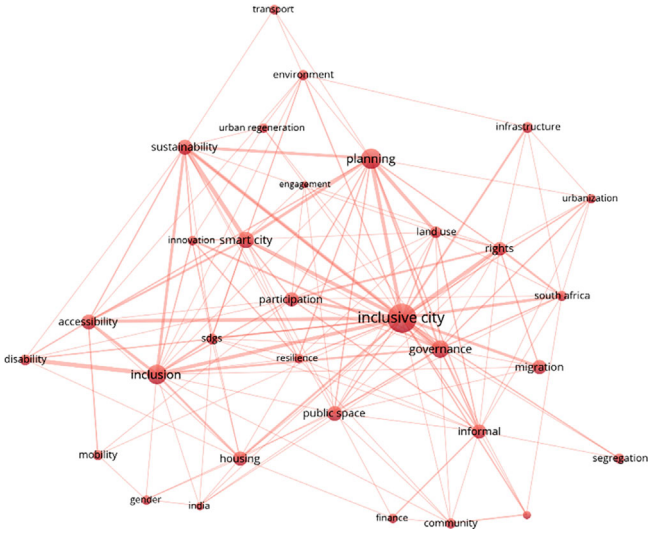

Fig. 4 Co-occurrence network of high-frequency keywords

"planning", "governance", "inclusion", "sustainability", "smart city", "accessibility","public space", "rights" and "migration". It should be noted that "inclusive city" is the central node in the network and that it has close connections with "governance", "sustainability", "planning" and "public space". In addition, "sustainability", "planning" and "governance" are seen as research focuses that play a vital role in the inclusive cities research domain. On the whole, the high-frequency keywords in the field are strongly linked and correlated, indicating that the research hotspots have grown increasingly focused and that the research field has been strengthened in scope, relevance and depth.

Closely related high-frequency keywords can be associated by cluster analysis so as to form various classes and show the structure of relevant topics in the research field. As output of the cluster analysis, we developed a tree diagram demonstrating the structure and relationships between different keywords (see Fig. 5). Each case began as a cluster and subsequently the two most similar cases were found (e.g., urbanization and land use) by looking at the square Euclidean distances between pairs of cases. The next case merged was the one with the highest similarity to urbanization or land use, and so on (e.g., migration, South Africa, rights). Finally, all high-frequency keywords could be divided into seven topics at the threshold of 10. However, the clustering results obtained in this study differ from those in [40]. Table 4 shows a further comparison of the clustering results between the two studies.

Our 1st cluster has been labelled "Migration and rights" as it included the following keywords: "land use, South Africa, inclusive city, migration, rights, urbanization", reflecting the core content of both the clusters of "Space and rights" and"-Sustainable migration" obtained in [40]. The 2nd cluster was named "Segregation and economic regeneration" as it contained the following keywords: "community,

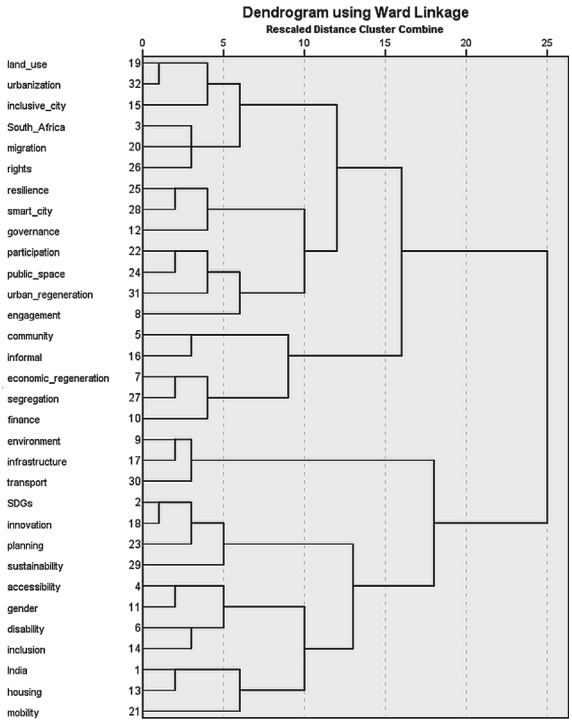

Fig. 5 The tree diagram of cluster analysis

finance, informal, economic regeneration, segregation", indicating the intension of the two clusters named "Community and finance" and "Segregation and economic regeneration" obtained in [40]. The 3rd cluster was entitled "Smart governance and urban resilience" since it contained the following keywords: "governance", "engagement", "public space", "smart city", "resilience", "participation" and "urban regeneration". Our 4th cluster can be summarized as "Infrastructure and environment" which is consistent with the clustering results of [40], it included as keywords: "transport", "environment", "infrastructure". The 5th cluster received the denomination "Sustainable innovation and planning" as it included four keywords: "SDGs", "innovation", "planning", "sustainability". The 6th cluster was named "Accessibility and inclusion" as it included the following keywords: "accessibility", "disability" and "gender inclusion". Finally, the last cluster became known as "Mobility and housing" as it contained the three keywords: "India", "housing" and "mobility".

Following the size of the nodes, the strength of the correlation shown in Fig. 4 and the comparison between the clustering results of the two studies shown in Table 4, the main content of each of seven clusters can be outlined. The clusters can be described as follows:

Cluster 1 (Migration and rights): Rights, migration and land use in the process of urbanization are all closely related to the inclusive city. In recent years, migration has become a global phenomenon [60]. Particularly in South Africa, factors such as

Table 4 Comparison of the clustering results of the two studies

Topics (2000–2022)	Keywords	Topics (2000–2020)	Keywords
Migration and rights	Land use, South Africa, inclusive city, migration, rights, urbanization **[urbanization is an addition to** [40]**]**	• Space and rights	Public space, housing, rights, land use
		• Sustainable migration	Migration, sustainable development
Segregation and economic regeneration	Community, finance, informal, economic regeneration, segregation	• Community and finance	Community, finance, informal
		• Segregation and economic regeneration	segregation, South Africa, inclusive city, economic regeneration
Smart governance and urban resilience	Governance, engagement, resilience, public space, participation, smart city, urban regeneration [**resilience, urban regeneration are additions to** [40]**]**	Smart participation and citizenship	Smart city, accessibility, participation, mobility, engagement, citizenship
Infrastructure and environment	Transport, infrastructure, environment	Infrastructure and environment	Planning, infrastructure, transport, environment
Sustainable innovation and planning	SDGs, innovation, planning, sustainability	Sustainable innovation and governance	Governance, innovation, sustainability, inclusion, SDGs
Accessibility of women and the disabled	Accessibility, disability, gender, inclusion **[all are new additions to** [40]**]**		
Space and mobility	India, housing, mobility [a**ll are new additions to** [40]**]**		

nationality, race, gender and language frequently act as barriers that prevent immigrants from accessing a variety of public services and resources, which is closely linked to its history of immigration and its unprecedented urbanization [25]. In addition, the land use planning environment in South Africa is plagued by complex challenges, mainly due to weak enforcement provisions, low levels of participation as well as complexities regarding entitlements and claims on land [50]. Considering the social complexities involved, these processes are now mainly driven by experts. Instead, ensuring that the diverse rights, interests, and claims of broader stakeholder groups are adequately addressed should be prioritized. In addition, judicial vindication of the right to use land can provide impoverished and vulnerable populations

to gain a foothold in urban areas, which is essential for South Africa's sustainable development.

Cluster 2 (Segregation and economic regeneration): Different from [40], this cluster includes a greater variety of aspects. In fact, segregation is considered a major obstacle to the creation of inclusive cities, while exclusion at the economic level is a serious threat to growth in urban prosperity, citizen well-being and social stability. In the post-pandemic era, global cities face specific problems in need of resolution, such as shortage of food production, low levels of local economic development and job creation for marginalized populations and high vacancy rates among commercial buildings [43]. Many community-based financing initiatives are good examples. In practice, community finance has provided support to enable individuals and organizations in creating wealth among disadvantaged communities and support them in acquiring better access to credit facilities, which indirectly affects their socioeconomic and political status [2, 35, 36].

Cluster 3 (Smart governance and urban resilience): Urban regeneration and resilience have become rising topics of interest in research on inclusive cities in the last two years [3, 41, 48]. The damage caused by COVID-19 to the natural and human environments as well as to social and economic development in cities worldwide has forced all to consider how cities can recover, thereby achieving more liveable and inclusive cities. This will largely depend on existing policies, planning, finance, digital infrastructure and governance systems [70]. Smartness in governance is actually reflected in the use of technology and data in ways that promote public participation, urban services and urban design, resulting in more efficient and effective decision-making. This includes ensuring the participation and collaboration of different stakeholders in the design of urban space [63]. This makes it easier for citizens to communicate with local governments through continuous upgrades in data systems and platforms and provides early prediction and warnings of social risks by collecting monitoring data from various sectors. In this regard, smart and digital solutions reflect the need for governance.

Cluster 4 (Infrastructure and environment): The role of the physical environment and infrastructure in promoting intergroup social inclusion has drawn a lot of attention. Well-designed urban neighbourhoods, when equipped with streets, squares, parks, markets, public transport and other infrastructures, provide abundant opportunities for public encounters among people from different backgrounds [27, 33, 71]. In the past two years, climate change and rapid urbanization have exacerbated global warming, leading to more extreme weather events. Major changes in the urban environment have increased the thermal vulnerability of urban residents, and different urban infrastructures enable different types of response to it. More proactive interventions have been proposed, such as early warning systems for the elderly and community-specific green infrastructure programmes [32].

Cluster 5 (Sustainable innovation and planning): The link between sustainability and innovation is often two-way: innovation can be considered a means to realize sustainability, just as sustainability can be described as a main purpose for innovation in urban areas. The primary aim of sustainable innovation is to significantly reduce negative environmental impact and promote sustainability. As an effective

green governance model, it is applied to explore the possibility of strengthening environmental inclusion through innovative models, methods and technologies to ease the tension between expansive human aspirations and the deteriorating natural environment [39].

Cluster 6 (Accessibility of women and the disabled): There has been a significant increase in attention to the inclusion of disability and gender in the past two years. Despite a number of initiatives implemented by relevant institutions to support the disabled in many countries, this segment of the population still faces persistent barriers across all areas of urban life [30]. This is largely due to a lack of in-depth dialogue among policy makers and the community of the disabled or a lack of understanding regarding the interaction between disabled people and the built environment [64]. In the context of rising numbers of people with disabilities worldwide, the shift from traditional decision-making by major institutions to participatory consultation within communities has also rapidly promoted their inclusion. In addition, a gendered perspective is needed for inclusive and smart cities [18]. The importance of listening to the voices of those concerned and understanding what makes for a livable city to them is widely acknowledged in academic studies [58]. Greater understanding of how women and people with disabilities gain access (or not) to public space, infrastructures, and services provided in/by them is critical to boosting equality for them.

Cluster 7 (Space and mobility): Exclusion from housing and motorized mobility were particular acute during the COVID-19 pandemic. In many developing countries, challenges to access poor women have to housing not only remain, but they have in fact been exacerbated [1]. In other words, those gender-blind interventions have failed to take cognizance of the gendered impact of the pandemic on their housing experience (as was observed in South African cities, where women's exclusion from affordable housing during after COVID-19 became particularly pronounced [19]. Likewise, many studies emphasize the comprehension and configuration of mobility in relation to inclusion. Viewed from this perspective, promoting transit-oriented development, making investments in publicly funded transportation, and installing secure non-motorized infrastructure facilities are essential steps toward advancing mobility justice and building an inclusive city for all [45].

4 Qualitative Findings

Bibliometric findings provide an excellent opportunity to create a multidimensional depiction of the inclusive city, but certain questions, such as whether different perspectives lead to different understandings of the inclusive city are best answered through a qualitative review of the literature.

The term inclusive city was first promoted by the United Nations in 2001 and described as a place where everyone, regardless of their economic status, gender, race, ethnicity or religion, is enabled and empowered to fully participate in the social, economic and political opportunities that are on offer [66]. Subsequently, some key

drivers of inclusive urban development aimed at putting people and their immediate needs at the forefront were proposed by UN-Habitat and the World Bank [65, 74]. This includes aspects such as political commitment, participation and social innovation, high-quality basic services, inclusive spatial planning, accountability and governance, financial and technical assistance and building partnerships. The OECD further provided a multidimensional framework for inclusion with two indicator domains: human and social capital (income, jobs and education) and urban environment (housing, transport, environment, safety, social support and subjective well-being) [46]. Notably, global commitment to sustainable urban development was reaffirmed through the adoption of the New Urban Agenda in 2016. Moreover, the Asian Development Bank developed an integrated framework with four critical aspects, accessibility, affordability, resilience and sustainability to describe specific characteristics of the inclusive city [59]. Based on the approved standard and international practices, the guidelines the ADB provided in 2022 focused on the importance of engaging in inclusive design solutions for people with disabilities, the elderly and children. These documents may not have been the most sophisticated analytical depictions of the inclusive city as a concept, but they were extremely instrumental in coining it as a crucial one for future policy initiatives.

The theory and practice of inclusive cities have also received growing attention in academic work. Discussions of exclusion and inclusion have largely focused on how social status and power are distributed unequally nowadays. As noted by [24], segregation and exclusion go hand in hand and create the setting in which inequality is reflected in urban space [24]. He expresses the opinion that "social disparities require physical segregation" which is at the heart of much of contemporary urban development. In other words, one's position in social space is believed to reflect one's level of wealth and status [24]. However, the interaction between people with different levels of wealth, power and social status as well as their mutual understanding have been reduced as a result of this spatial separation. Therefore, Espino makes it clear that differences in status and social class translate into a form of exclusion and that combating social and spatial segregation is key to creating a more equitable urban society.

Urban violence resulting from a lack of social inclusion can be seen as the other form of exclusion. More precisely, it is caused by political and social confrontations between different population groups and the destruction of ancient social norms that used to rule urban life, without these being substituted by new rules [17]. Curbing urban violence cannot depend on the wealth or poverty of the city but should be the result of the validity of the social pact, public policies, and societal norms. Spatial equality and social inclusion will only emerge from new behavioral norms and changes in institutional rules of the game for urban governance, preferably without resort to any forms of urban violence (i.e. gendered violence, state violence and interpersonal violence) [52, 53].

In addition to the two aspects mentioned above, exclusion is often frequently discussed along with urban poverty. Exclusion caused by unbalanced growth appears to have been particularly pronounced during the global COVID-19 pandemic. It worsened the living conditions of marginalized urban communities by making their

work uncertain and led to severe wage-cuts, thus aggravating income inequality and urban poverty. In the post-pandemic era, tendencies to social, economic and spatial polarization caused by urban poverty and exclusion can be countered by specific efforts, such as the creation of new types of businesses, adaptation to new ways of working and living and improvements on social governance models [22].

The multidimensionality of inclusiveness in urban development needs to be disentangled before it can be used to help cities in shaping policy initiatives or developmental projects [6]. Some authors describe this unpacking as a process. For example, [15] noted that inclusion in the context of construction management is a "process of valuing, respecting and supporting members of an entity" (p. 243) whereas [42] mentioned that it is a "way to increase efficiency in city management and service delivery across urban and peri-urban areas" (p. 277). The deliverable in following this process is meant to be new norms of practice and a change in institutional procedures in city governance. [29] examined the links between inclusion, inequality and place from a "rights-based" perspective and emphasizes human's relationships with the natural environment. In itself, it is apparent that the political, social, economic and environmental dimensions are all main aspects of the inclusive city. Besides, [37] further argued that promoting inclusive and sustainable development should also take into account the cultural dimension of cities based on a participatory process, push factors (subsidies and institutional framework) and societal mobilization.

[9] explain that the inclusive city consists of citizen-centric democratic governance processes, in which governments and other stakeholders need to consider various claims to inclusion put on the table by different groups. They argue that modernity has led to a redefinition of inclusion as an absolute moral imperative that the government and other stakeholders should realize together. Thus, it leads to the need for well-considered and practical tradeoffs based on stakeholder-oriented governance and moral leadership. This point of view also appears in other studies, such as [20].

Similarly, how inclusive urban development as a paradigm shift affects the most vulnerable people and ecological standards and how persistent imbalances in power perpetuate inequality and injustice are described and debated in various academic publications, where it is argued that inclusive cities are to offer a broad range of choices for development, governance and management [20, 28]. They offer a variety of suggestions for inclusive urban development through good governance, networks, instruments and policies largely aimed at the realization of SDGs [28].

Going beyond [40], in this study we explored the most recent interpretations of the inclusive city concept as a supplement and enrichment of previous studies. In terms of urban resilience and regeneration, [12] emphasize that inclusion can primarily be seen as a systemic approach adopted by public and private organizations to help people recover their capabilities, pursue their most important goals and thus pave the road to realizing this ideal. They make inclusive city practical through the notion of recovery and explicitly state that "Inclusive Cities is an initiative to support the creation of Recovery-Oriented Systems of Care at a city level, that starts with but extends beyond substance using populations" [12].

From the perspective of culture, an inclusive city should be open to different subcultures and be the connection point between these different groups. Due to

the rubbing of different subcultures against each other, everyone slowly becomes part of a shared society. The design and the activities in the public space and the programming of the buildings ensure that the subcultures enter into contact with, and learn from, each other. Some authors propose that the design of public space plays a role in making inclusive cities possible and offer concrete suggestions. For example, [75] gives the example of more explicitly involving women and girls in the design of public space. Interestingly, [16] expand the function by stating that spatial design is required to foster the inclusive city both from a social and from an environmental standpoint. They state that "the objective of an 'inclusive city' is often related to social issues, which might easily lead to the exclusion of ecological values,the opposite approach may prove equally exclusive. Inclusivity also means creating room for the unexpected … [and] … is inherent to a complete understanding of landscape architecture" [16].

Local governments would do well to strengthen and advocate an inclusive participatory approach in providing access to basic social benefits, such as housing, various infrastructures and public space to make them more accessible to vulnerable groups such as the elderly and the disabled [47, 51, 64]. Identifying active citizenship, empowerment and partnerships between mainstream organizations and people with disabilities are recognized as the most important criteria for social inclusion [55]. Gendered inclusion has also attracted special attention [44, 69, 73]. These authors examine contemporary urban movements as gendered resistance to reclaim space and inclusivity at different scales, and provide a theoretical framework to describe gendered resistance as a means to realize inclusive and sustainable urban spaces [21]. The role of partnerships in creating safe communities for women is of great importance. Such partnerships between women-centered groups, local governments and other relevant partners advance women's interests through closer collaboration [7].

And last but not least, technology-driven urban planning and governance of infrastructures and public services have brought about a dramatic change in the urban development paradigm. When specific social objectives and regulatory frameworks are in focus, the use of data-based tools largely contributes to making cities more inclusive by enhancing spatial inclusiveness and improving the efficiency of urban governance [67]. Besides, it is suggested that innovative modes of action should be adopted and the use of new technologies and digital policies adjusted in such a way that socioeconomic disparities and environmental crises are addressed in unconventional ways [10].

Although authors above differ in their disciplinary perspectives and levels of moral indignation and idealism, we can see a consensus that the inclusive city concept mainly encompasses a social, spatial, environmental, political, economic and a cultural dimension. Below, we offer an overview of which dimension(s) and key terms can be found in the work of which authors (see Table 5).

Table 5 Key terms of each dimension from all authors

	Dimension	Key terms
1	Spatial inclusion	Affordable housing [13, 37, 38, 53, 62, 68], public space [10, 28, 47, 49, 68, 73], transportation and other basic infrastructures [31, 38, 47, 73], spatial justice [47], infrastructure needs [51], service delivery [51], urban spaces [21], disability [34]; gender [26]; gendered resistances [21]; vulnerabilities [26]
2	Social inclusion	Right to the city [24, 38, 47, 49, 73], a sense of security [24, 53, 73]; citizens' rights [24], human rights [47], social justice [9, 13, 47, 62], social equity [72], social participation [38, 47, 55, 68], public services [38, 47, 53], access to information [47], quality of life [38, 55], access to basic services [20]; housing [51]
3	Environmental inclusion	Environmental sustainability [72], solid waste management [38, 49], reduce water loss, make up for lost water and conserve water [49], the natural and reproductive qualities of urban space [9], urban greening [8]; resilience [57]; land clean-up and greening [8]
4	Economic inclusion	Employment [73], inclusive growth [9, 72], shared prosperity [9], diversion of economy [10], green growth [37]
5	Political inclusion	Political participation [47, 55], political empowerment [9, 24, 55, 72], active citizenship [55]; civic participation [11]; stakeholders [11]
6	Cultural inclusion	Diversity [14]; belonging [14]

5 Discussion

The combination of quantitative analysis of academic articles and qualitative analysis of international policy reports and scientific books allows us to extract the following six dimensions of the inclusive city:

Cluster 1, 3 and 7, albeit covering different aspects, all fit in the 1st dimension of *spatial inclusion.* It is often seen as a process of equal access to the essential living environment encompassing land, streets, housing and public infrastructure and facilities for all individuals. Spatial inclusion often depends on the degree to which public space, physically and socially, is open to all. Disabled inclusion and gendered inclusion are two typical facets of spatial inclusion. People with disabilities and women are often highly implicated in the design of the built environment, public transportation and urban form so that they are able to occupy and use urban spaces without fear or discrimination. Paying special attention to each stage of urban planning and enhancing their experience of urban space would give them opportunities shape the urban environment in which they live, which greatly contributes to creating a more accessible, sustainable and inclusive city. For greater universal inclusivity, the focus should be placed on the different needs of the groups. Innovative technologies are playing an incremental yet vital role in addressing the conflict between the

rapid expansion of urban land and the provision of adequate space for citizens in an inclusive city.

Second, clusters 1 and 3 from the bibliometric analysis and dimension 2 from the qualitative review primarily cover aspects of *social inclusion.* What social inclusion focuses on is equal development opportunities and attending to social members' needs [5]. Sustainable migration and public participation are two significant characteristics of social inclusion, the former being reflected in the entitlement to decent and affordable accommodation and protection from forced eviction (showing some overlap with spatial inclusion) and the latter denoting the public's concern about social affairs and the level of social acceptance and integration. In addition, all individuals and social groups should have equal access to social resources (e.g., employment, insurance, education, information), and their rights should be protected and secured in situations of vulnerability with diseases, crime, violence, food and accidents.

Third, cluster 3 and 4 match dimension 3 quite well. *Environmental inclusion* implies meeting the needs of current generations for natural sources and environment without compromising the interests of future generations. Meanwhile, it emphasizes close and inseparable relationships between the allocation of resources, environmental pollution and responsibilities [54]. Nowadays, a growing number of local governments have called on the city council, public and private organizations, social communities, employers and the public to work together to promote and facilitate sustained recovery. It shows that local governments give full play to the vital role of the broader public and social organizations in addressing environmental issues (e.g., climate change, air pollution and sewage disposal). It aims to make regeneration visible, to celebrate it and to create a safe environment supportive to urban recovery.

Fourth, cluster 2 from the bibliometric analysis and dimension 1 from the qualitative review neatly fit together in a dimension on *economic inclusion.* Economic inclusion makes it possible for all people, especially the disadvantaged and low-income groups, to share in rising prosperity, i.e. to share in and contribute to gains in welfare and well-being [61]. In fact, in terms of labor market relations and resource allocation, economic inclusion is also considered as a process of eliminating economic inequities caused by rapid urbanization and industrialization along with changing technologies and demand for various skills through a series of policy reforms encompassing equal access to job opportunities, labor market information and reasonable distribution of income. For instance, local governments can step up investment in manufacturing and utilities, encourage migrants to establish new linkages with industries in cities, provide employment opportunities and vocational training for young, women and those in underdeveloped regions, and strengthen their supervision of harmful effects of market activities. More specifically, the informal economy (e.g., street vending) can be seen in a new light, i.e. as a way to promote urban economic regeneration.

Fifth, clusters 3 and 7 match dimension 5 of *political inclusion*, which can be defined as a rational and non-discriminatory citizen-state relationship based on civil and political rights, more precisely a citizen's sense of belonging and identity and his/her empowerment (especially in Western countries). It is thus primarily related to major issues of democratic institutions, human rights, political participation, and

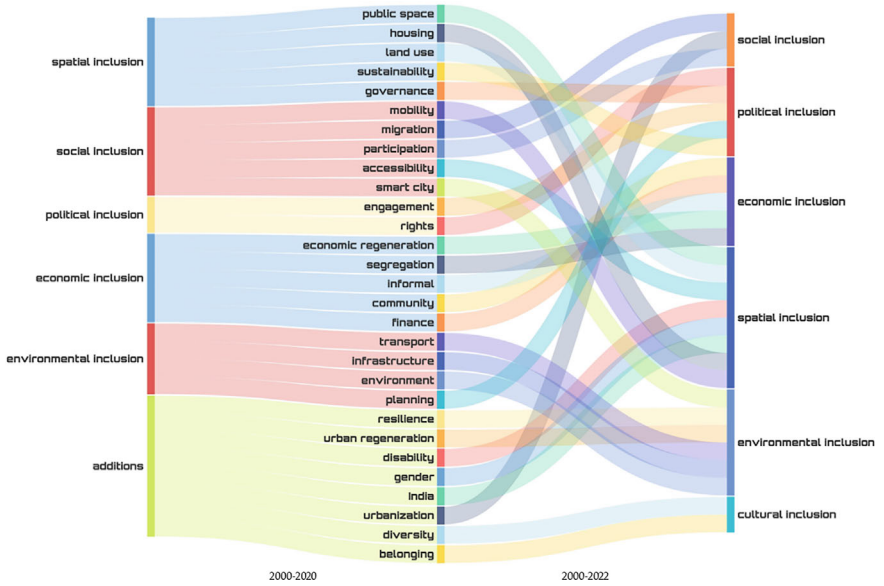

Fig. 6 Changes in the dimensions and connotations of the inclusive city

national identity. It provides channels for effective communication between local governments and citizens and creates a way for citizens to make their claims.

Seventh, cluster 7 can be seen as dimension 6 of *cultural inclusion.* Increasingly urbanized and multicultural existence and its spatial structures and complications require us to reexamine urban inclusion. It can be seen as a new perspective for reading how inclusive city is for various groups with different patterns of values and norms. Cultural heterogeneity and diversity within cities is to be taken into account in the urban policy-making process, so that personal cultural belonging can enable people to garner mutual recognition and respect.

Figure 6 is a graphic display of the dimensions identified above that takes the focal points that have emerged in the last two years into account. It also presents the similarities and differences of dimensions and connotations of inclusive cities between this study and [40]. Nonetheless, overall, we can conclude that the quantitative and qualitative analyses result in rather similar outcomes.

Although the above six dimensions above can be clearly distinguished from each other, they are interwoven and mutually complementary: there are synergistic effects between them in enhancing inclusiveness of the city as a whole. Creating an inclusive city can be seen as a complex practice both intellectually and politically, because it is comprised of different dimensions for which a form of coordination is to be found in governance, policy making and management to accommodate various partly divergent stakeholder interests.

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