

Urban Inclusion Assessment: A Scoping Review of Concepts, Measures, and Persistent Gaps

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Abstract

Rapid urbanization is intensifying socio-spatial inequality within cities, and a growing body of scholarship seeks to define and measure urban inclusion; yet this literature has not previously been mapped comprehensively. This scoping review, conducted and reported in accordance with the PRISMA extension for Scoping Reviews (PRISMA-ScR), systematically maps academic scholarship on urban inclusion measurement published between 2005 and 2025. Four bibliographic databases (Scopus, Google Scholar, Lens.org, and OpenAlex) were searched, yielding 9,015 records; after deduplication, automated filtering, and application of the 2005–2025 eligibility window, 1,344 unique records were screened, 311 were assessed at full text, and 189 articles were included. The full deduplicated corpus of 1,344 documents was characterized through bibliometric analysis. Three findings structure the results. First, production has accelerated sharply: annual output rose from an average of approximately 23 documents per year in a foundational period (2005–2015) to approximately 161 per year in the contemporary period (2021–2025), with 2025 alone contributing 23.2% of the corpus. Second, knowledge production is geographically concentrated: the United States, China, and Europe account for 60% of attributed corresponding authorships, while Sub-Saharan Africa accounts for 5%. Third, literature has matured thematically, evolving from single-dimension, infrastructure-focused assessment toward multidimensional, rights-based, and capabilities-oriented frameworks converging on five recurring dimensions: economic, social, spatial, environmental, and institutional. Against this maturation, the synthesis identifies four persistent, interrelated gaps in the scholarship: a disconnect between theoretical traditions and measurement practice; the geographic and epistemic concentration of knowledge production; aggregation blindness toward intra-urban and intersectional exclusion; and an outcome-centric, data-intensive measurement orientation that neglects process and feasibility. These gaps constitute an evidence-based agenda for the next generation of urban inclusion assessment.

Keywords: Urban Inclusion; Scoping Review; PRISMA-ScR; Urban Indicators; Spatial Equity; Bibliometric Analysis; Sustainable Cities

1. Introduction

1.1. Rationale

The twenty-first century is defined by an unprecedented urban transition, with projections indicating that nearly 68% of the global population will reside in cities by 2050 [1]. While cities generate more than 80% of global GDP, rapid urbanization has simultaneously exacerbated spatial segregation, socioeconomic inequality, and environmental degradation [2]. The promise of the “urban advantage” remains unevenly distributed, and managing this challenge requires robust tools for assessing the state of inclusion within urban environments. A substantial body of scholarship has emerged over the past two decades to define, conceptualize, and measure urban inclusion; however, this literature is dispersed across disciplines, theoretical traditions, and measurement paradigms, and it has not previously been mapped comprehensively and systematically.

Urban inclusion is a multidimensional concept that transcends mere physical access to city spaces. It encompasses the “right to the city” [3,4], ensuring that all residents - regardless of socioeconomic status, gender, race, or (dis)ability - can participate fully in the social, economic, and political life of the city. The World Bank [5] identifies three foundational dimensions - spatial, social, and economic inclusion - while UN-Habitat [6] adds political inclusion, emphasizing participatory governance and rights-based approaches. Beyond these rights-based foundations, the capabilities approach [7,8] reframes inclusion as the real freedoms individuals have to convert resources into lives they value; spatial justice scholarship [9,10] locates inclusion in the equitable distribution of resources and opportunities across urban space; and environmental justice scholarship treats fair access to clean air, safe housing, and green space as constitutive of inclusion [11,12], foregrounding recognition and participation in environmental decision-making [13]. Recent work has further emphasized spatially explicit measurement of distributional equity and accessibility [14–16], and social impact assessment has emerged as a tool for operationalizing socioeconomic sustainability within urban development [17].

Despite this conceptual richness, recent critical scholarship observes that efforts to monitor equitable urban development frequently lack explicit theoretical frameworks to guide the selection of dimensions and indicators, and that approaches remain difficult to compare across settings [18]. What is missing is a systematic map of the field itself: how urban inclusion has been conceptualized, which dimensions and variables recur across the scholarship, which methods and data sources are employed, and where the persistent gaps lie. Given the multidimensional, contested, and evolving nature of urban inclusion - spanning diverse theoretical traditions, disciplinary perspectives, and geographic contexts - a scoping review is the appropriate method for mapping this expansive and heterogeneous literature [19], since the aim is to characterize a broad evidence base and identify gaps rather than to answer a narrow effectiveness question suited to a systematic review [20]. The present article reports the scoping review in full, in accordance with PRISMA-ScR, including a bibliometric characterization of the wider corpus from which the included studies were drawn.

1.2. Objectives and Review Questions

The objective of this scoping review is to systematically map academic scholarship on urban inclusion and its measurements published between 2005 and 2025, in order to characterize the field’s conceptual foundations, measurement practices, and persistent gaps. The review addresses four questions:

RQ1: How is urban inclusion defined and conceptualized in the academic literature, and which theoretical traditions ground its measurement? RQ2: Which dimensions, sectors, and variables are used to capture the multidimensional nature of urban inclusion? RQ3: Which methodological approaches and data sources are employed in urban inclusion assessment? RQ4: What conceptual, methodological, empirical, and practical gaps persist in current approaches to measuring urban inclusion?

2. Methods

2.1. Protocol and Registration

The review was conducted and is reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [21], drawing on the methodological guidance of Arksey and O’Malley [22], Levac et al. [23], and the JBI manual [19]. A review protocol was developed a priori (January 2026) defining the review’s scope, eligibility criteria, information sources, search strategy, selection process, data-charting methods, and synthesis approach; the completed PRISMA-ScR checklist is provided in Appendix A. The review question was structured using the Population–Concept–Context (PCC) framework: urban populations and areas (Population); urban inclusion and its conceptualization and measurement (Concept); and urban contexts globally, across diverse governance, data, and development conditions, 2005–2025 (Context). The protocol was not registered in a public registry; registration is optional for scoping reviews [21].

2.2. Eligibility Criteria

Eligibility criteria were defined a priori and, consistent with scoping review methodology, refined iteratively as familiarity with the literature developed [22,23]. This review is restricted to academic literature; practical grey-literature assessment tools were outside the scope of this review and are not examined here. Table 1 summarizes the criteria.

Domain	Included	Excluded
Concept	Studies explicitly addressing urban inclusion or a closely related concept: social inclusion in urban contexts, spatial inclusion or equity, inclusive cities, urban equity, socioeconomic impact assessment in urban settings, or equitable urban planning.	Studies addressing rural inclusion, environmental sustainability, or economic development without an explicit social/spatial-inclusion focus; unrelated domains (e.g., clinical or purely educational inclusion).
Content	Theoretical frameworks, conceptual definitions, empirical indicators, measurement methodologies, or assessment approaches (conceptual and empirical works alike).	Purely theoretical or philosophical papers without indicators, frameworks, or empirical analysis; abstracts, editorials, and opinion pieces without substantive methodological content.
Scale	City, neighborhood, metropolitan, or intra-urban scale.	Purely national or regional scale without urban disaggregation.
Publication	Peer-reviewed articles, conference papers, books, or book chapters, published in English, 2005–2025.	Non-English sources without English documentation; publications outside the 2005–2025 window.

Table 1. Inclusion and exclusion criteria. (Source: Authors)

2.3. Information Sources and Search Strategy

Comprehensive searches were conducted across four bibliographic databases selected to maximize coverage of urban studies, planning, geography, sociology, and sustainability literature: Scopus (Elsevier), Google Scholar (broad coverage including working papers and institutional repositories), Lens.org (scholarly database emphasizing open-access literature), and OpenAlex (open bibliographic database). The search combined three concept blocks with field and date/language limits, adapted syntactically to each platform (Table 2). Reference lists of key included studies were additionally checked for relevant records.

Block	Terms
Primary concept	“Urban inclusion” OR “social inclusion” OR “spatial inclusion” OR “inclusive city” OR “inclusive cities” OR “urban equity” OR “socioeconomic impact assessment” OR “equitable urban planning”
Context	urban (required in all records)
Methodological	variable* OR indicator* OR index* OR framework* OR assessment*
Search fields	Title, Abstract, Keywords
Filters	Language: English; date filter 2005–2025

Table 2. Search strategy (adapted syntactically for each database). (Source: Authors)

2.4. Selection of Sources of Evidence

All retrieved records were managed using Mendeley Desktop (v1.19.8) as the primary reference library and Zotero (v6.0.30) for harvesting Google Scholar results. A comprehensive deduplication process was conducted using multiple matching criteria (DOI, title, and author matching, with manual verification of near-duplicates such as preprints and conference versions of the same work; where duplicates were identified, the record with the most complete metadata was retained). Automated filters were applied for language, date range, and publication type.

Screening proceeded in two stages - title and abstract, followed by full-text eligibility assessment - and was conducted by the authors. Rayyan.AI was used to organize the screening workflow, with its AI-assisted relevance prioritization ordering records for review; all inclusion and exclusion decisions were made by the authors. Records for which title and abstract were insufficient to determine eligibility proceeded to full-text assessment. Reasons for exclusion at the full-text stage were recorded against the eligibility criteria and are reported in the flow diagram (Figure 1).

2.5. Data Charting

A data-charting form was developed a priori and refined iteratively during charting, consistent with scoping review guidance [22,23]. For each included article, the following were charted: bibliographic information (authors, year, source, geographic focus); definitions and conceptualizations of urban inclusion; theoretical framing; dimensions, sectors, and variables addressed; indicators and their operationalization; methodological approach and data sources; and urban scale of analysis. Charting was conducted by the authors, with entries reviewed for consistency across the team.

2.6. Synthesis of Results

Consistent with scoping review methodology, synthesis was descriptive and thematic rather than meta-analytic [22]. Four complementary strategies were employed. First, bibliometric analysis using the bibliometrix R package (v4.1.3) [24] and its Biblioshiny interface characterized the full deduplicated corpus of 1,344 records - the broader literature from which the 189 included articles were drawn - in terms of temporal trends, document types, geographic distribution, and collaboration patterns; the consolidated corpus was exported in January 2026, and corpus statistics were computed over the 2005–2025 window. Second, thematic synthesis [25] was applied to the included articles to identify definitions, conceptualizations, theoretical frameworks, dimensions, variables, and indicators. Third, typological analysis characterized the methodological approaches employed across the literature. Fourth, gap analysis systematically identified conceptual, methodological, empirical, and practical limitations in current approaches. Consistent with the mapping purpose of scoping reviews, no critical appraisal of the methodological quality of individual included articles was undertaken [19,20].

3. Results

3.1. Selection of Sources of Evidence

Database searches identified 9,015 records (Scopus: 2,120; Google Scholar: 4,740; Lens.org: 2,155; OpenAlex records aggregated within these totals following cross-database consolidation - per-database counts to be verified against search logs). Of these, 7,671 were removed before screening: 7,148 duplicates, 510 records excluded by automated language, date, and publication-type filters, and 13 records dated 2026 - captured because the executed search extended into early 2026 - excluded under the 2005–2025 eligibility window. This left 1,344 unique records for title and abstract screening. After 1,033 exclusions at title and abstract, 311 reports were assessed at full text, of which 122 were excluded, resulting in 189 articles included in the synthesis. Figure 1 presents the PRISMA-ScR flow diagram. The full deduplicated corpus of 1,344 records was retained for bibliometric characterization (Section 3.2).

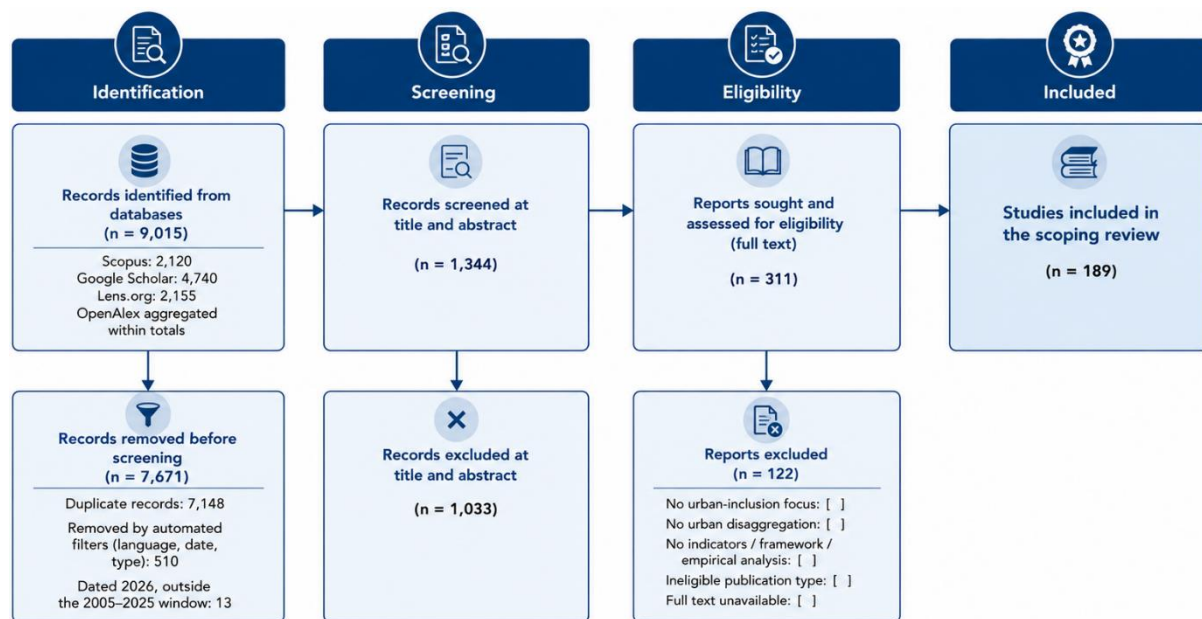


Figure 1. PRISMA-ScR flow diagram of the study selection process. Bracketed full-text exclusion counts are to be completed from the screening records. (Source: Authors)

3.2. Characteristics of the Corpus and Included Studies

Table 3 summarizes the bibliometric characteristics of the deduplicated corpus ($n = 1,344$; 2005–2025). The corpus comprises 1,207 journal articles (89.8%), 118 reviews (8.8%), 6 conference papers, and 13 other outputs (editorials, notes, errata, one letter, and one retracted item), published across 636 sources by 4,597 indexed author identifiers. Documents average 23.2 citations each, with 3.51 co-authors per document and international co-authorship on 29.4% of documents; 226 documents (16.8%) are single-authored. Published output grew at a compound annual rate of 21.8% between 2005 and 2025.

Characteristic	Value
Timespan	2005–2025
Documents	1,344
Sources (journals, books, etc.)	636
Document types	Articles: 1,207; Reviews: 118; Conference papers: 6; Other: 13
Indexed author identifiers	4,597
Single-authored documents	226 (16.8%)
Co-authors per document	3.51
International co-authorships	29.4%
Average citations per document	23.2
Compound annual growth of output (2005–2025)	21.8%
Author keywords / index keywords	4,718 / 5,912

Table 3. Main characteristics of the bibliometric corpus ($n = 1,344$), computed from the consolidated corpus export over the 2005–2025 window. International co-authorship is affiliation-based; author counts reflect indexed author identifiers. (Source: Authors)

The 189 included articles span four overlapping thematic categories: conceptual and definitional papers ($n = 47$), articulating definitions, theoretical frameworks, or conceptual models; indicator-development studies ($n = 68$), proposing or validating measures of urban inclusion dimensions; empirical assessment studies ($n = 52$), applying frameworks or indicators to specific urban contexts; and methodological and framework papers ($n = 22$), critiquing or synthesizing measurement approaches. Methodologically, the included articles comprise quantitative indicator-based studies ($n = 98$, 51.9%), qualitative conceptual studies ($n = 47$, 24.9%), and mixed-methods designs ($n = 44$, 23.3%); their geographic focus divides between Global North contexts ($n = 94$, 49.7%), Global South contexts ($n = 68$, 36.0%), and comparative or multi-regional designs ($n = 27$, 14.3%).

3.3. Temporal Production Trends

Annual scientific production reveals three distinct phases that together tile the corpus exactly (Figure 2). A foundational period (2005–2015) produced 249 documents, averaging approximately 23 per year. A consolidation period (2016–2020) generated 289 documents (approximately 58 per year), coinciding with the adoption of the Sustainable Development Goals (2015) and the New Urban Agenda (2016) [6]. The contemporary period (2021–2025) yielded 806 documents (approximately 161 per year) - a roughly seven-fold increase in annual output relative to the foundational period - with production rising continuously to a peak of 312 documents in 2025, which alone accounts for 23.2% of the entire corpus. This trajectory indicates that global policy frameworks catalyzed, and continue to catalyze, research activity in urban inclusion measurement, and that the field is expanding rather than plateauing.

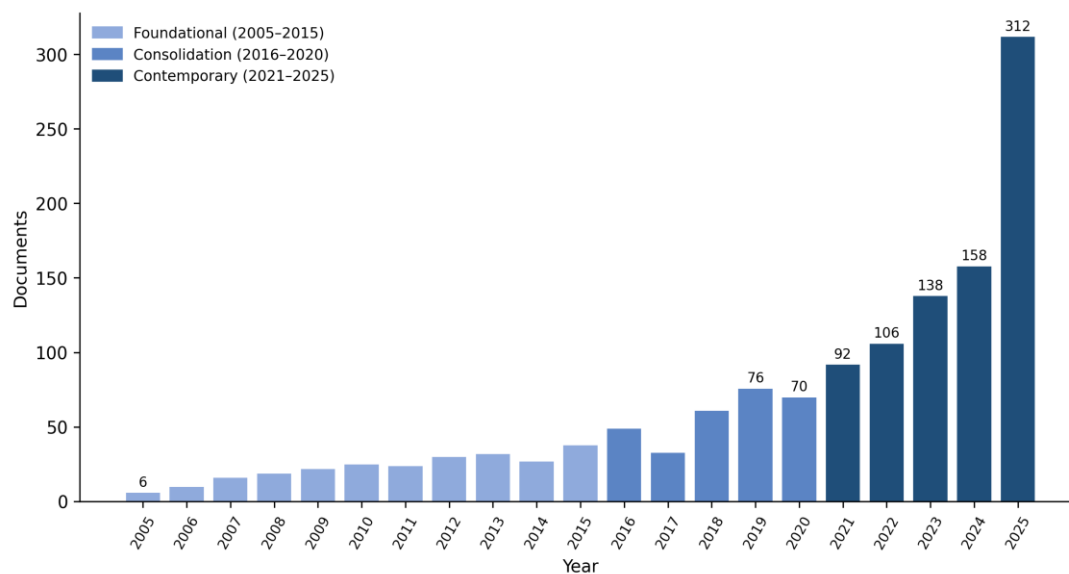


Figure 2. Annual scientific production on urban inclusion, 2005–2025 ($n = 1,344$). (Source: Authors, from the consolidated corpus export)

3.4. Geographic Distribution and Collaboration Patterns

Author affiliations in the corpus span 96 countries, with corresponding authors drawn from 81. Knowledge production is nonetheless heavily concentrated. Among the 1,156 documents with an attributed corresponding-author country, the leading producers are the USA (172 documents; 12.7%), China (109; 8.0%), the United Kingdom (97; 7.1%), Australia (68; 5.0%), and India (63; 4.6%); the USA, China, and Europe together account for 60.0% of attributed corresponding authorships. Sub-Saharan Africa accounts for 58 documents (5.0%), led by South Africa (22), with Ethiopia and Ghana (8 each) the next most productive; intra-regional output remains sparse. Figure 3 shows the top fifteen corresponding-author countries, distinguishing single-country (SCP) from multiple-country (MCP) publications, and Table 4 reports production and citation impact for the ten leading countries.

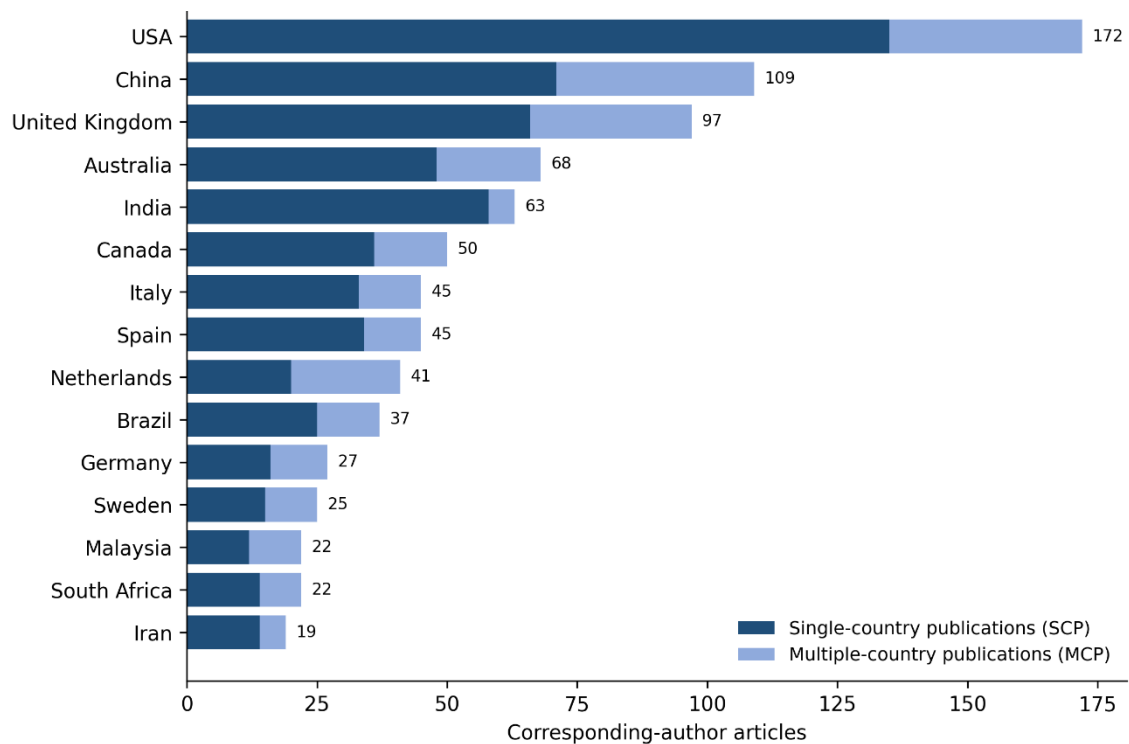


Figure 3. Top 15 corresponding-author countries: single-country (SCP) and multiple-country (MCP) publications. (Source: Authors, from Biblioshiny data)

Country	Articles (corr. author)	Total citations	Avg. citations/article
USA	172	5,062	29.4
China	109	1,852	17.0
United Kingdom	97	2,866	29.5
Australia	68	2,298	33.8
India	63	611	9.7
Canada	50	1,695	33.9
Italy	45	1,449	32.2
Spain	45	893	19.8
Netherlands	41	1,259	30.7
Brazil	37	621	16.8

Table 4. Production and citation impact of the ten leading corresponding-author countries. (Source: Authors, using Biblioshiny)

Citation impact reinforces the concentration: the USA (5,062 total citations), the United Kingdom (2,866), and Australia (2,298) lead in aggregate influence, while some smaller research communities achieve high per-article visibility (Ireland: 74.7 average citations across 11 articles; Denmark: 60.0 across 9; Uganda: 99.7 across 3; Chad: 140.0 from a single article), suggesting that selective publications from smaller communities can attain substantial impact. India's comparatively low average (9.7 citations per article) against Sweden's 36.7 indicates persistent disparities in scholarly visibility even where output is growing. Collaboration patterns are similarly uneven: several European countries publish predominantly through international collaboration (Belgium: 80.0% MCP; Denmark: 55.6%; Netherlands: 51.2%), whereas the largest producers are more insular (India: 92.1% single-country publications; USA: 78.5%; China: 65.1%).

These patterns matter for measurement. The scholarship informing dominant conceptions of urban inclusion has been produced largely in contexts of formalized property systems, robust census data, and established state service provision - conditions that differ markedly from the rapidly urbanizing settings where inclusion challenges are frequently most acute. Concepts and indicators developed under such conditions risk encoding assumptions specific to the Global North; applied elsewhere without reconceptualization, they may measure “deficits” against ill-fitting benchmarks rather than recognizing informal systems as legitimate urban formations. This asymmetry is examined further in the gap analysis (Section 4) and discussion (Section 5).

3.5. Conceptualizations and Theoretical Traditions

Thematic synthesis of the included articles identified a layered conceptual landscape in which urban inclusion is defined with varying breadth but grounded in a recurring set of theoretical traditions, often implicitly rather than explicitly. Four traditions dominate. First, rights-based approaches, anchored in the “right to the city” [3,4] and codified in international policy through the New Urban Agenda [6], treat inclusion as a normative entitlement - an obligation of urban governance rather than an aspiration - and link measurement to universal access to housing, services, and participation in public life [5]. Second, capabilities approaches [7,8] shift attention from the distribution of resources to the real freedoms residents have to convert resources into valued functionings, directing measurement toward outcomes and the conditions that enable or constrain participation. Third, spatial justice and just-city scholarship [9,10] locates inclusion in the geography of the city itself, emphasizing the equitable distribution of opportunities and burdens across urban space and the fairness of the processes shaping that distribution. Fourth, environmental justice scholarship [11–13] extends this reasoning to environmental burdens and benefits, treating fair access to clean air, safe housing, and green space as constitutive of inclusion and foregrounding recognition and procedural standing for affected communities.

Across the review period, conceptualizations broadened in two directions. Early scholarship predominantly framed inclusion through spatial access to infrastructure and services, reflecting urbanization priorities of the 2000s; later work increasingly integrated social equity, economic opportunity, environmental justice, and governance as interdependent dimensions, a shift that accelerated after 2016 alongside the localization of SDG 11. In parallel, intersectionality [26] entered the measurement literature, with studies demonstrating that disadvantages compound - for example, in the layered barriers facing low-income residents of color in accessing urban green space [27] - and arguing that aggregate measures conceal precisely those experiencing the deepest exclusion. The contemporary literature thus converges on an understanding of urban inclusion as a multidimensional process, encompassing equitable access to resources, opportunities, and decision-making, fostered by institutions that actively dismantle systemic barriers to participation.

3.6. Dimensional Convergence

Despite heterogeneous definitions and disciplinary origins, the literature converges on five recurring analytical dimensions. A social dimension - near-universal across the reviewed scholarship - encompasses equity, diversity, social cohesion, safety, cultural participation, and freedom from discrimination. A spatial dimension addresses physical access to services and amenities, spatial distribution, neighborhood characteristics, and urban form. An economic dimension addresses employment, income, affordability, and economic opportunity. An environmental dimension covers green-space access, environmental quality, climate resilience, and environmental justice, and grew markedly in prominence after 2016. An institutional or governance dimension - participatory governance, transparency, accountability, and institutional capacity - appears increasingly in contemporary work, though it remains the least consistently operationalized. The recurrence of these five dimensions across otherwise diverse studies represents an empirically grounded consensus on the constituent elements of inclusive cities, while their uneven operationalization motivates the gaps identified in Section 4.

3.7. Methodological Approaches

Methodologically, the literature spans four broad families. Composite-indicator and index-construction studies aggregate multiple measures into summary scores, confronting familiar trade-offs between comparability and contextual sensitivity in weighting and normalization. Spatially explicit approaches - accessibility modeling, geospatial equity analysis, and satellite-supported measurement - have expanded rapidly, enabling neighborhood-scale analysis of service access and environmental exposure [14,15,27]. Perception-based and participatory approaches incorporate residents' lived experience through surveys, citizen-generated data, and co-produced indicators, responding to critiques of technocratic measurement. Finally, mixed-methods designs combining quantitative indicators with qualitative inquiry have grown steadily, reflecting recognition that exclusion is experienced as a single reality that purely quantitative instruments capture only partially. Data sources correspondingly diversify across censuses and administrative records, household surveys, remote sensing, and - increasingly - novel digital sources, though the literature repeatedly notes that data-intensive methods remain least feasible precisely where inclusion challenges are greatest (Section 4.4).

4. Persistent Gaps in Urban Inclusion Scholarship

The synthesis identified four persistent, interrelated gaps in the academic literature on urban inclusion measurement. These are gaps of the scholarship itself - in how the field theorizes, produces, scales, and orients its measurement - rather than an appraisal of any particular assessment instrument. Figure 4 traces the analytic pathway from the review's evidence base to these gaps, and Table 5 summarizes them.

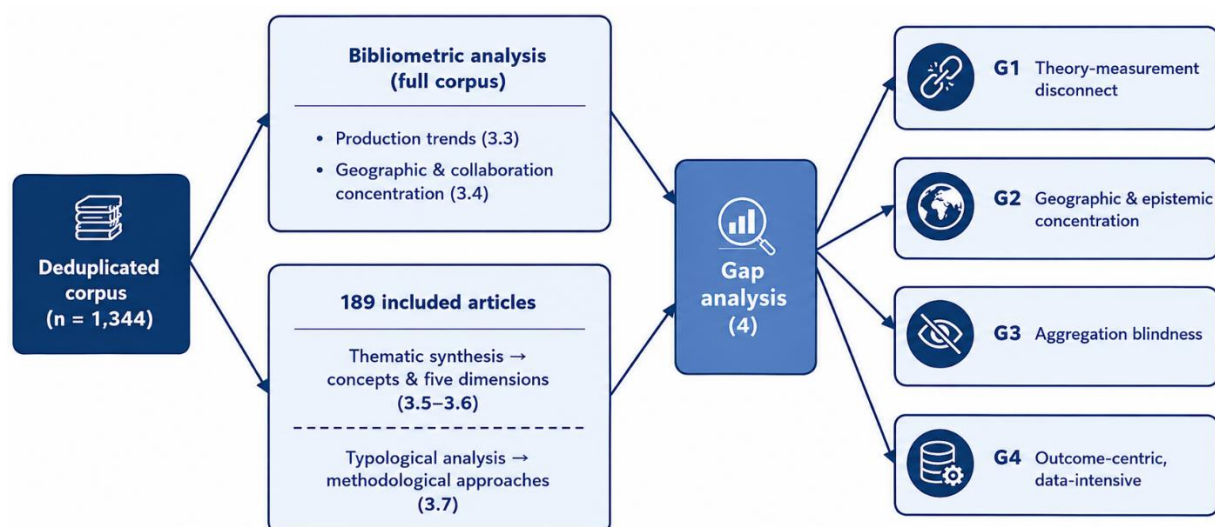


Figure 4. Analytic pathway from the review's bibliometric and thematic evidence to the four persistent gaps. (Source: Authors)

4.1. Gap 1: The Theory–Measurement Disconnect

The literature is theoretically rich but measures atheoretically. Section 3.5 documented four well-developed traditions - rights-based, capabilities, spatial justice, and environmental justice - yet most measurement-oriented studies draw on them only implicitly, without articulating how theory informs the selection of dimensions or the prioritization of indicators. The disconnect propagates into operationalization: shared constructs are measured in divergent ways - housing affordability, for example, appears variously as a rent-to-income ratio (typically with a 30% threshold), as housing cost burden, or as residual income after housing costs - operationalizations that can classify the same household differently, while standardization efforts such as ISO 37120 [28] have gained little

traction in the scholarly literature. Recent critical work reaches the same diagnosis from an independent evidence base, identifying the absence of explicit theoretical frameworks for selecting dimensions and indicators as a first-order obstacle to monitoring equitable urban development [18]. The consequence is a field whose findings are difficult to compare, accumulate, or contest: without explicit grounding, indicator choices risk becoming ad hoc, context-bound, and vulnerable to political influence.

4.2. Gap 2: Geographic and Epistemic Concentration of Knowledge Production

The bibliometric evidence assembled in this review (Section 3.4) documents a structural asymmetry in who produces urban inclusion scholarship. The USA, China, and Europe account for 60.0% of attributed corresponding authorships, Sub-Saharan Africa for 5.0%, and the largest producers publish predominantly without international collaboration (India: 92.1% single-country publications; USA: 78.5%). This asymmetry is epistemic, not merely demographic: the concepts, constructs, and indicators that define the field have been developed largely under conditions of formalized property systems, robust census infrastructure, and established state service provision. Phenomena central to rapidly urbanizing contexts - informal-economy participation, informal housing and service provision, community-based and hybrid governance, and energy and digital affordability - are correspondingly undertheorized and undermeasured, and frameworks presented as globally applicable risk measuring informal urban systems as “deficits” against ill-fitting benchmarks rather than as legitimate formations requiring appropriate measurement constructs. The gap is thus double: underrepresentation of Global South scholarship in production, and underrepresentation of Global South urban realities in what the field measures at all.

4.3. Gap 3: Aggregation Blindness Toward Intra-Urban and Intersectional Exclusion

Measurement in the literature is predominantly aggregated - across space and across social groups - at scales that conceal the exclusion it seeks to reveal. Spatially, city-level measurement dominates: aggregate scores can indicate “inclusion” while specific neighborhoods experience systematic exclusion, and although the spatially explicit strand demonstrates both the feasibility and the diagnostic value of neighborhood-scale analysis [14,15,27], sub-city granularity remains the exception rather than the norm. Socially, few studies disaggregate indicators systematically by intersecting characteristics - income, gender, race or ethnicity, age, disability, and migration status - even though intersectional analysis demonstrates that disadvantages compound, as in the layered barriers facing low-income women or refugees in informal settlements [26,27]. These are two faces of a single failure: measurement averaged over space and over groups cannot identify where exclusion concentrates or who experiences it most deeply, making disaggregation - spatial and social alike - a condition of validity rather than an optional refinement.

4.4. Gap 4: Outcome-Centric, Data-Intensive Measurement

The literature measures states of inclusion far more than the processes that produce them, and does so through methods that are least feasible where inclusion challenges are greatest. Outcome indicators - housing quality, service access, environmental exposure - dominate, while process indicators capturing participatory budgeting, inclusive planning procedures, grievance-redress systems, and community-engagement quality are largely absent; this contrasts with social impact assessment practice, in which assessment is conducted iteratively across development stages precisely to anticipate and mitigate impacts before they materialize [17]. At the same time, the field’s methodological frontier is data-intensive - satellite-supported, survey-heavy, and analytically demanding - creating a paradox in which cities with outdated censuses, incomplete administrative records, and limited data infrastructure cannot apply the very approaches developed to measure exclusion, and the literature offers little guidance on proxy indicators, community-generated data, or tiered designs suited to data-scarce environments. Together, the outcome orientation and the data-intensity of current scholarship limit its utility for identifying implementation barriers and for monitoring inclusion where it is most contested.

Gap	Core deficiency
1. Theory–measurement disconnect	Measurement rarely grounded explicitly in the field’s theoretical traditions; shared constructs operationalized inconsistently, preventing comparison and accumulation [18,28].
2. Geographic and epistemic concentration	Knowledge production concentrated in the USA, China, and Europe (60.0% of attributed corresponding authorships); informality, community-based provision, and hybrid governance undertheorized and undermeasured.
3. Aggregation blindness	City-scale and group-aggregated measurement conceals intra-urban and intersectional exclusion; spatial and social disaggregation remain exceptional [14,15,26,27].
4. Outcome-centric, data-intensive orientation	Processes producing inclusion go unmeasured [17], and dominant methods are least feasible in data-scarce settings where challenges are greatest.

Table 5. Four persistent gaps in urban inclusion scholarship identified through the synthesis. (Source: Authors)

5. Discussion

5.1. Principal Findings

This review provides, to the authors’ knowledge, the first comprehensive PRISMA-ScR map of academic scholarship on urban inclusion measurement across two decades. Three principal findings emerge. First, the field is expanding rapidly and asymmetrically: a seven-fold increase in annual output between the foundational and contemporary periods coexists with a concentration of corresponding authorship in the USA, China, and Europe (60.0%) and marginal Sub-Saharan African representation (5.0%). Second, the literature has matured conceptually, converging on a multidimensional understanding of inclusion structured by five recurring dimensions and grounded - usually implicitly - in rights-based, capabilities, spatial justice, and environmental justice traditions. Third, this maturation is incomplete: four persistent, interrelated gaps - the theory–measurement disconnect, the geographic and epistemic concentration of knowledge production, aggregation blindness, and an outcome-centric, data-intensive measurement orientation - continue to limit the validity, comparability, and practical reach of the scholarship.

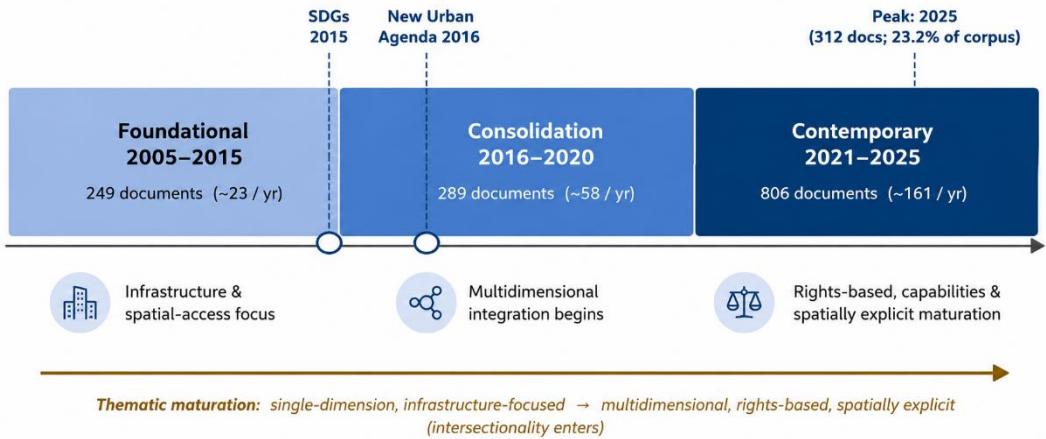


Figure 5. Urban inclusion scholarship (2005–2025): production phases, policy milestones, and thematic maturation. (Source: Authors)

These conclusions are convergent with, and complementary to, recent critical assessments reached through different methods. Cash-Gibson et al. [18], analyzing monitoring reports from European cities, independently identified the absence of explicit theoretical frameworks and the difficulty of cross-setting comparison as central challenges; the present review demonstrates that these challenges characterize the global academic literature as a whole, not only European monitoring practice, and situates them within a broader structure of interrelated gaps that includes the field’s own geography of knowledge production.

5.2. Implications for Measurement and SDG 11 Monitoring

The findings carry direct implications for Sustainable Development Goal 11 monitoring. The tendency of aggregated indicators to obscure intra-urban and intersectional inequality (Gap 3) is a recognized weakness of current SDG 11 monitoring; addressing it requires neighborhood-scale spatial disaggregation and systematic equity disaggregation across social groups as design defaults. The concentration of knowledge production (Gap 2) adds an epistemic caution: frameworks presented as globally applicable risk encoding Global North assumptions and measuring informal urban systems as deficits. Future measurement should therefore treat informality, community-based service provision, and hybrid governance as core objects rather than peripheral concerns; make theoretical grounding and operational definitions explicit to enable comparison (Gap 1); and build tiered designs - including proxy and community-generated data - feasible under diverse data conditions while extending measurement from outcomes to the processes that produce them (Gap 4).

6. Limitations

Several limitations qualify the findings. First, restriction to English-language sources may omit relevant scholarship in other languages, potentially compounding the geographic concentration the bibliometric analysis itself documents. Second, screening and charting were conducted by the author team—supported by Rayyan’s AI-assisted relevance prioritization rather than dual independent screening with inter-rater reliability statistics—so single-team screening carries a risk of selection error, although all decisions followed pre-defined criteria. Third, the corpus was consolidated into a single harmonized export and metadata completeness varies across databases; corpus-level and geographic statistics (Section 3.4) should be read as characterizing the deduplicated retrieval set rather than the whole field. Fourth, grey-literature assessment tools were excluded by design, so the review maps scholarly rather than operational practice. Fifth, consistent with scoping review methodology, no critical appraisal of individual studies was undertaken [19,20]; the synthesis maps rather than evaluates the evidence. Finally, the protocol was not registered publicly, though it was developed a priori and reported in full in the Methods and Appendix A.

7. Conclusions and Future Research

Two decades of scholarship have transformed urban inclusion from a loose aspiration into a maturing measurement field, converging on a multidimensional construct spanning economic, social, spatial, environmental, and institutional dimensions. Yet the field remains structurally limited in four respects: measurement practice disconnected from theory; knowledge production geographically and epistemically concentrated; aggregated designs that conceal the intra-urban and intersectional exclusion they seek to reveal; and an outcome-centric, data-intensive orientation that neglects both the processes producing inclusion and the settings least able to supply data. Together these gaps constitute an evidence-based agenda for the field. Future research should prioritize: explicit articulation of the theories grounding dimension and indicator choices, with shared operationalizations of core constructs; measures adequate to informality, community-based provision, and hybrid governance, developed within the contexts they describe; neighborhood-scale, equity-disaggregated designs as defaults; and tiered, process-sensitive approaches - including proxy and community-generated data - feasible in data-scarce settings. Progress here would strengthen both the scholarly field and the practical monitoring of SDG 11’s commitment to inclusive, safe, resilient, and sustainable cities.

Declarations

Conflicts of interest. The authors declare no conflicts of interest.

Ethical approval. Not applicable.

Funding. The authors received no funding for this research.

Appendix A. PRISMA-ScR Checklist

Item	PRISMA-ScR requirement	Location	Notes
1	Identify the report as a scoping review in the title.	Title	
2	Structured summary: background, objectives, eligibility, sources, charting, results, conclusions.	Abstract	
3	Describe the rationale for the review; explain why review questions suit a scoping approach.	S1.1	
4	State the questions and objectives of the review.	S1.2	
5	Indicate whether a protocol exists and where it can be accessed; registration information.	S2.1	Protocol developed a priori (January 2026); available from the corresponding author; not registered - rationale stated.
6	Specify characteristics of sources used as eligibility criteria, with rationale.	S2.2; Table 1	
7	Describe all information sources and the date of the most recent search.	S2.3	Four databases; search January 2026.
8	Present the full search strategy for at least one database.	S2.3; Table 2	Concept blocks, fields, and filters reported; adapted per platform.
9	State the process for selecting sources of evidence.	S2.4; Figure 1	Two-stage screening by the authors; Rayyan.AI relevance prioritization for ordering only.
10	Describe methods of charting data, including calibration and independence.	S2.5	Form developed a priori and refined iteratively; entries reviewed across the team.
11	List and define all variables for which data were sought.	S2.5	
12	If done, rationale for critical appraisal of individual sources; describe methods.	S2.6; S6	Not undertaken - consistent with the mapping purpose of scoping reviews; rationale stated.
13	Describe the methods of handling and summarizing the charted data.	S2.6	
14	Give numbers of sources screened, assessed, and included, with reasons for exclusions; flow diagram.	S3.1; Figure 1	Full-text exclusion counts by reason to be completed from screening records.
15	For each source of evidence, present characteristics for which data were charted.	S3.2; Table 3	Included articles characterized in aggregate, consistent with the mapping purpose; the list of the 189 included articles is available from the corresponding author on request.
16	If done, present data on critical appraisal of included sources.	-	Not applicable (see item 12).
17	For each included source, present the relevant charted data.	S3.2–3.7	Presented thematically and in aggregate.
18	Summarize and/or present the charting results as they relate to the questions and objectives.	S3.3–3.7; S4; Tables 3–5; Figures 2–5	
19	Summarize the main results, link to the questions and objectives, and consider relevance to key groups.	S5.1–5.2	
20	Discuss the limitations of the scoping review process.	S6	
21	General interpretation of the results, with implications and/or next steps.	S5; S7	
22	Describe sources of funding for the included sources and for the scoping review; role of funders.	Declarations	No external funding for the review; funding of individual included sources was not charted.

Table A1. PRISMA-ScR checklist mapped to the manuscript. (Source: Authors, per Tricco et al. 2018 [21])

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