

DOI: 10.5281/zenodo.12426683

PUBLIC SPACE AND SOCIAL COHESION: A SYSTEMATIC REVIEW ACROSS METHODS AND CONTEXTS

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Received: 02/12/2025

Accepted: 31/01/2026

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ABSTRACT

Public spaces are critical social infrastructures for cities facing diversity, inequality, and environmental stress. This systematic literature review synthesizes empirical evidence on how public space attributes and governance shape intergroup contact and social cohesion outcomes. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), peer-reviewed studies were systematically searched, screened, and quality-appraised, covering qualitative, quantitative, mixed-method, and computational designs across multiple public-space types and geographic settings. Across contexts, accessibility, perceived publicness, environmental quality, greenness, comfort, and multifunctionality were most consistently associated with higher trust, belonging, place attachment, participation, and bridging social ties. These associations are rarely direct; they are mediated by the quality of intergroup encounters, perceived safety, emotional attachment, and opportunities for participation, stewardship, and co-presence. Governance arrangements and socio-spatial inequality act as key moderators, helping to explain divergent results in segregated, gated, or highly surveilled environments. The review also found substantial heterogeneity in how social cohesion is defined and measured, limiting comparability and cumulative knowledge. Overall, the evidence supports a mechanism-based view of public space as a relational and institutional process, rather than merely a physical setting. Cohesion gains are most likely when inclusive design is paired with equitable access and governance that enables shared use and participation, alongside more harmonized multi-method measurements in future research.

KEYWORDS: Public space; Social cohesion; Social sustainability; Intergroup contact; Urban design

1. INTRODUCTION

Public spaces, including parks, streets, squares, green corridors, markets, campuses, and other everyday public realms, are widely recognized as essential components of urban life. Beyond their physical and functional roles, contemporary scholarship increasingly frames public space as social infrastructure: settings that enable everyday co-presence, interaction, and the formation of social ties that support social cohesion and sustainability (Aelbrecht & Stevens, 2023; Atalay & Gülersoy, 2023; Dash & Thilagam, 2021). Social cohesion is commonly understood as the degree to which individuals and groups within a community trust one another, feel a sense of belonging, participate in shared activities, and maintain bridging social ties across social differences (Figueiredo *et al.*, 2020; Figueiredo *et al.*, 2025). Public spaces provide both material and symbolic arenas where these relational processes are enacted, negotiated and occasionally contested in everyday urban life.

The policy relevance of social cohesion has intensified amid accelerating urban diversity, migration, socio-spatial inequality and environmental stress. Rapid urbanization and demographic changes have increased cultural heterogeneity while simultaneously deepening inequalities in access to urban resources (O'Donnell *et al.*, 2023; Qi *et al.*, 2024). In this context, public spaces are often among the few shared arenas where heterogeneous populations may encounter each other under relatively open and informal conditions (Dong *et al.*, 2022; Pérez-Paredes & Krstikj, 2020). Consequently, urban policy agendas increasingly position public spaces as strategic levers for promoting inclusion, resilience, and social sustainability, particularly in cities experiencing fragmentation, segregation, or declining trust (Atalay & Gülersoy, 2023; Dipeolu *et al.*, 2024).

Empirical studies have demonstrated that public spaces can support social sustainability by facilitating interaction, cultural exchange, and everyday practices of belonging. Streets and parks enhance opportunities for informal encounters and contribute to physical and mental well-being (Itair *et al.*, 2023; Silva *et al.*, 2024; Haro *et al.*, 2024). Equitable access to well-designed and well-maintained public spaces is associated with stronger perceptions of inclusion, especially in socioeconomically disadvantaged neighborhoods (Dong *et al.*, 2022; Dipeolu *et al.*, 2024). Participatory approaches, such as placemaking and tactical urbanism, further strengthen collective ownership and social ties through active community

involvement (Dash & Thilagam, 2023; Shah *et al.*, 2023; Dewi *et al.*, 2022). However, urban inequality, segregation, and privatization may constrain access and use, potentially reinforcing exclusion rather than cohesion (Grabkowska & Szmytkowska, 2021; Nadeem *et al.*, 2023; Pérez-Paredes & Krstikj, 2020; Qi *et al.*, 2024; Trevisan, 2024; Dipeolu *et al.*, 2024).

A growing body of empirical research links the everyday use of public spaces to social cohesion outcomes such as trust, belonging, and social interaction. Frequent engagement with parks, green spaces, and walkable streets is consistently associated with higher perceived community trust and social connectedness (Kuzuoglu *et al.*, 2024; Haro *et al.*, 2024). Access to urban green spaces is also linked to improved well-being and stronger social relationships, particularly when these spaces are perceived as safe, inclusive, and meaningful (Souza, 2024; Mazaheri, 2026). Community-led events and temporary interventions, including festivals, play streets, and urban living labs, further reinforce collective efficacy and neighborhood ties, highlighting public space as a platform for cohesion-building practices (Robazza *et al.*, 2024; Perrigo *et al.*, 2025).

Recent global disruptions have amplified the importance of public spaces for social cohesion. The COVID-19 pandemic emphasized the role of adaptable outdoor spaces as relatively safe environments for social interaction during periods of restriction and isolation (Low, 2020; Mathews, 2022; Strupat, 2022). Simultaneously, climate-related stresses have increased attention to green infrastructure and nature-based solutions that enhance both environmental resilience and social connectivity (Orsetti *et al.*, 2022; Sharifi & Khavarian-Garmsir, 2020). These challenges underscore the need to understand how public space design, accessibility, and governance support cohesion under conditions of uncertainty.

Despite this expanding literature, the evidence remains fragmented. Social cohesion is defined and operationalized in diverse ways, ranging from the psychological dimensions of trust and belonging to the sociological constructs of participation, collective efficacy, and social capital (Miller *et al.*, 2020; Wan *et al.*, 2021; Horsham *et al.*, 2024). Studies employ varied indicators, limiting their comparability and cumulative insight (Figueiredo *et al.*, 2025; Aelbrecht & Stevens, 2023). Moreover, while attributes such as accessibility, greenness, amenities, and safety have been frequently examined, mediating mechanisms and contextual factors—including intergroup contact quality, governance, surveillance, and inequality—

remain unevenly addressed (Wan et al., 2021; Qi et al., 2024; Grabkowska & Szmytkowska, 2021; Breedvelt et al., 2022).

Despite the expanding body of research linking public spaces to social cohesion, existing evidence remains fragmented across disciplines, methods, and spatial contexts, limiting cumulative theory building and policy translation. This Systematic Literature Review advances the field in three key ways. First, it moves beyond attribute-based associations by synthesizing evidence on the mechanisms through which public space design and qualities translate into cohesion outcomes, demonstrating that intergroup encounter quality, perceived safety, place attachment, participation, and stewardship operate as critical mediators rather than secondary effects. Second, the review systematically maps how social cohesion is operationalized and measured across qualitative, quantitative, and computational studies, revealing substantial heterogeneity and frequent reliance on proxy indicators that constrain comparability and causal interpretations. Third, by integrating governance arrangements and socio-spatial inequality into the synthesis, the review identifies governance as a decisive contextual moderator that shapes whether public spaces function as inclusive social infrastructure or reproduce avoidance and exclusion. Collectively, these contributions reconceptualize public space as a relational and institutional process rather than a purely physical setting, offering a mechanism-based framework to inform future research, design practices, and inclusive urban policies.

This review adopts an explicitly interdisciplinary scope, drawing on urban design and planning, geography, sociology, public health, environmental psychology, and urban data science. It synthesizes empirical studies and high-quality reviews examining public spaces across diverse contexts in the Global North and South, encompassing formal and informal settings, as well as open-access and controlled environments (Qi et al., 2024; Wan et al., 2021). By integrating insights across disciplines and methodologies, this review seeks to harmonize fragmented evidence and provide a coherent foundation for theory, policy, and practice.

Guided by this aim, the review addresses four research questions: which public space attributes are most consistently associated with social cohesion; through which mechanisms do these attributes influence cohesion; under what contextual and governance conditions do these effects vary; and how do methodological approaches and operationalizations shape observed relationships and

evidence quality? The paper proceeds with a review of the methodology, theoretical foundations, thematic synthesis, discussion of implications, and concluding reflections on contributions and future research directions.

2. METHODS

This Systematic Literature Review (SLR) was conducted in accordance with established best practices for evidence synthesis in interdisciplinary urban and social research, emphasizing transparency, reproducibility, and methodological rigor. The review protocol follows the PRISMA 2020 guidelines to ensure systematic reporting across all stages of identification, screening, and synthesis of empirical studies examining the relationship between public spaces and social cohesion (Page et al., 2021; Mogo et al., 2022).

2.1. Search Strategy

The literature search was primarily conducted using Scopus, complemented by Web of Science and PubMed, to ensure comprehensive coverage of peer-reviewed research across urban studies, social sciences, public health, and environmental psychology (Qi et al., 2024). Scopus served as the core database because of its broad disciplinary scope and strong indexing of urban design, planning, and social cohesion scholarship, while the additional databases reduced the risk of omitting relevant interdisciplinary studies, particularly those linking the built environment and health. Boolean search strings were developed iteratively through preliminary scoping and prior reviews, combining key constructs related to public spaces, social cohesion, and urban contexts. A representative search string included terms such as “public space,” “park,” “street,” or “public realm” combined with “social cohesion,” “trust,” or “belonging,” and urban descriptors. This strategy aligns with the approaches commonly adopted in comparable reviews (Qi et al., 2024). Backward and forward snowballing of key articles was also used to identify additional relevant studies.

2.2. Eligibility Criteria

Clear eligibility criteria were defined before screening. The included studies were peer-reviewed journal articles written in English, published between 2000 and 2023, and employed qualitative, quantitative, or mixed-methods designs that explicitly examined public spaces in relation to social cohesion or related constructs (Qi et al., 2024). The exclusion criteria removed non-peer-reviewed materials, studies lacking empirical evidence or

methodological transparency, and those not directly addressing social or relational outcomes (Gao et al., 2025; Faedda et al., 2022). This process ensured a robust and relevant final corpus for analysis.

2.3. Screening and Selection Process

The screening and selection process followed a PRISMA-compliant workflow comprising identification, screening, eligibility assessment and inclusion (Page et al., 2021). Retrieved records were exported, de-duplicated, and screened by title and

abstract to remove irrelevant studies from the review. Full-text articles were then assessed against predefined eligibility criteria, and the reasons for exclusion were systematically documented. The process and outcomes are summarized in the PRISMA flow diagram (Figure 1), which details the records identified, screened, excluded, and included. Adherence to PRISMA enhances transparency and enables the evaluation of potential selection bias (Mogo et al., 2022; Smith et al., 2024).

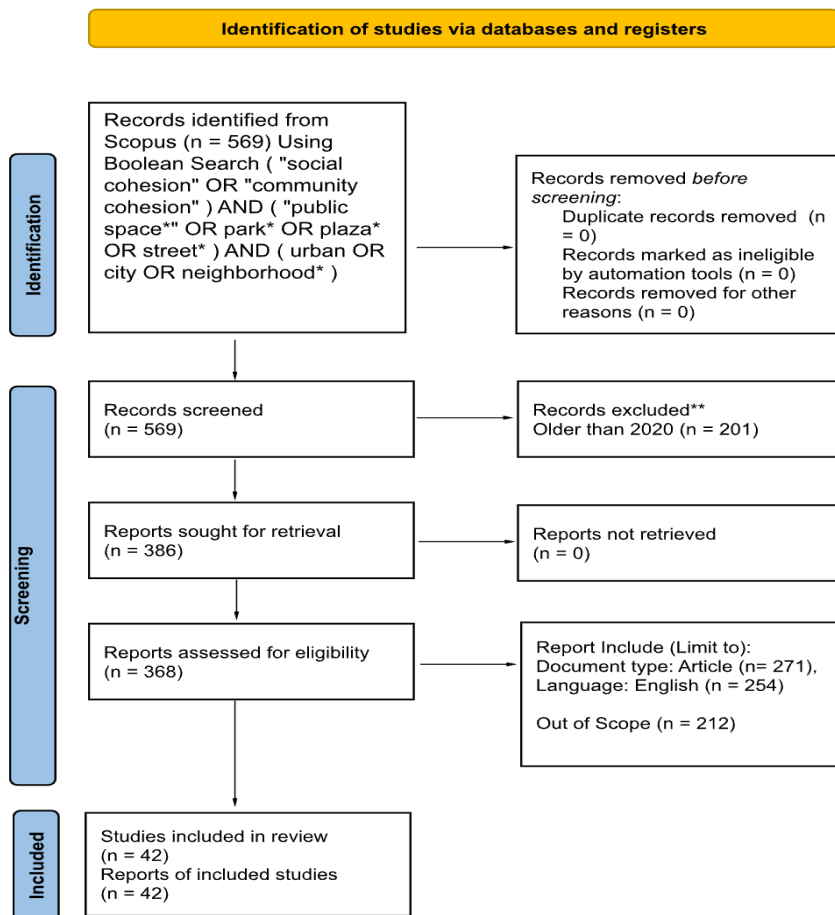


Figure 1: The PRISMA flow diagram detailing the screening and selection process of literature

2.4. Quality Assessment and Data Extraction

Quality appraisal was undertaken to assess the methodological rigor of the included studies and to support synthesis across diverse research designs. Given the interdisciplinary scope of the literature, multiple appraisal tools were used. Mixed-methods studies were evaluated using the Mixed Methods Appraisal Tool (MMAT), which offers design-specific criteria for qualitative, quantitative, and mixed-methods research within a unified framework, enabling consistent assessment and cross-study comparisons (Samaranayake et al., 2022; O’Mahony et al., 2020; Sebalj et al., 2024; Gilchrist et al., 2024).

Qualitative studies were appraised using established reporting and synthesis guidelines, including the Consolidated Criteria for Reporting Qualitative Research (COREQ) and the Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) framework (Au et al., 2021; Au et al., 2024). These tools emphasize rigor, reflexivity, and transparency, ensuring that the interpretive findings on public space and social cohesion are grounded in robust qualitative practices.

Following the appraisal, a standardized data extraction protocol was applied. The extracted data included study context, population characteristics,

public space typologies and attributes, conceptualization and measurement of social cohesion, analytical methods, key findings, and reported limitations. To enhance comparability, constructs related to publicness and social cohesion were coded using a common analytical framework. This systematic appraisal and extraction process provided a reliable methodological foundation for the subsequent thematic synthesis and strengthened the reproducibility of the review's findings.

3. THEORETICAL BACKGROUND

This section establishes the theoretical foundations underpinning the relationship between public spaces and social cohesion, drawing on interdisciplinary perspectives from urban studies, sociology, environmental psychology, and planning. It synthesizes key theories, traces the historical evolution of the concept, and highlights ongoing debates and controversies that shape contemporary research and practice. Together, these perspectives provide a conceptual lens through which the empirical findings of this Systematic Literature Review (SLR) are interpreted.

3.1 *Relevant Theories and Models*

3.1.1. *Intergroup Contact Theory and Public Space*

Intergroup contact theory provides a key framework for explaining how public spaces foster or hinder social cohesion. The theory argues that the interaction between members of different social groups can reduce prejudice and improve relations when conditions such as equal status, shared goals, cooperation, and institutional support are present. In public space contexts, these conditions are not inherent but are shaped by spatial design, accessibility, governance, and everyday patterns of use (Fahmy et al., 2025; Schreiber et al., 2024).

Empirical applications of intergroup contact theory show that inclusive public spaces – defined by openness, accessibility, mixed uses, and perceived safety – facilitate repeated informal encounters that normalize diversity and gradually strengthen social cohesion (Fahmy et al., 2025). Design features such as spatial permeability, seating arrangements that support co-presence, and programming that attracts heterogeneous users help enable contact under relatively equal and non-confrontational conditions. Conversely, poorly designed or underutilized public spaces may reinforce social divisions by encouraging parallel use, avoidance, or conflict, thereby undermining cohesion objectives (Madsen et al., 2025; Fahmy et al., 2025). Overall, intergroup contact

theory emphasizes the conditional nature of cohesion outcomes in public spaces and highlights the critical roles of design and governance in shaping daily social interactions.

3.1.2. *Social Capital, Place Attachment, and Person-Environment Fit*

Beyond direct interaction, several complementary theories explain how public spaces contribute to social cohesion through relational and emotional pathways. Social capital theory highlights the role of social networks, trust, and norms of reciprocity in supporting collective actions and community resilience. Public spaces serve as key arenas for generating both bonding and bridging social capital by providing settings for repeated encounters, shared activities and informal exchanges (Souza, 2024). When designed to support diverse uses and participation, public spaces can strengthen trust across social boundaries and enhance the collective capacity.

Place attachment theory addresses the emotional dimension of cohesion by focusing on the bonds that individuals form with specific places. Well-designed and well-maintained public spaces foster feelings of comfort, pride, and belonging, encouraging a sense of ownership and responsibility toward shared environments (Low 2020). These emotional ties increase the frequency of use and motivate pro-social behaviors, such as stewardship and participation, which, in turn, reinforce social cohesion.

Closely related is the concept of person-environment fit, which examines how the alignment between users' needs, abilities, and values, and environmental characteristics shapes behavior and well-being. Public spaces that accommodate diverse users across age, gender, cultural backgrounds, and physical abilities are more likely to promote social engagement and inclusion (Souza, 2024; Leila & Boudjemâ, 2025). When users perceive that a space meets their needs, they are more inclined to linger, interact, and participate in communal life. Collectively, these theories demonstrate that social cohesion in public spaces emerges not only from interactions but also from trust-building processes, emotional attachment, and inclusive design.

3.2. *Historical Development of the Topic*

3.2.1. *From Functionalist Planning to Placemaking and Social Infrastructure*

The conceptualization of public spaces has evolved significantly over time. Early urban planning approaches were predominantly functionalist, prioritizing efficiency, circulation, and land-use

separation, with public spaces often treated as residual areas for traffic or formal civic functions, and limited attention to social interaction (Dash & Thilagam, 2023; Dunaevska *et al.*, 2024). Social outcomes, such as cohesion and belonging, were therefore implicit rather than explicit objectives. From the late twentieth century, critiques of functionalism and concerns over urban decline and social fragmentation prompted a shift toward human-centered approaches. Placemaking has emerged as a key paradigm, emphasizing community co-production, cultural expression, and locally grounded design, and reframing public spaces as active settings for social interaction and identity formation (Borini & Campioli, 2024; Wardhani & Wastunimpuna, 2025).

3.2.2. Integrating Social Cohesion and Sustainability in Urban Design

Historical efforts to integrate social cohesion into urban design have been shaped by broader sociopolitical movements and academic debates. Community-oriented policies, civil rights movements, and responses to urban inequality in the late twentieth century emphasized planning approaches that addressed social justice, equity, and inclusion alongside physical development (Nursanty, 2023; Lin *et al.*, 2023). Simultaneously, the sustainability agenda has broadened urban planning to include social sustainability, positioning cohesion as a core concern. Consequently, public spaces are viewed as vital social infrastructure that supports community resilience, collective identity, and social support networks, generating long-term social benefits through interaction, inclusion, and adaptive capacity (MENG *et al.*, 2020; Nahdatunnisa *et al.*, 2024).

3.3. Debates and Controversies

3.3.1. Inclusion versus Control in Public Space

A central debate in public space scholarship concerns the tension between inclusion and control. Practices such as privatization, gating, and intensified surveillance are often justified by safety or efficiency goals but raise concerns about access, equity, and social cohesion (Grabkowska & Szymkowska, 2021; Breedvelt *et al.*, 2022). Gated communities may reduce crime or perceived disorder internally; however, they also physically and symbolically segregate urban populations, limiting opportunities for interaction and weakening wider social ties (Nadeem *et al.*, 2023). Surveillance technologies pose similar dilemmas: while monitoring can increase perceived safety for some

users, it may generate mistrust and exclusion for others, particularly marginalized groups (Mathews 2022). Critics argue that such practices risk transforming public spaces into sites of regulation rather than encounters. In response, inclusive design advocates emphasize openness, accessibility, and communal engagement, framing public spaces as democratic arenas vital for social interaction and collective life (Patrick & McKinnon, 2022).

3.3.2. Measurement Validity and Conceptual Fragmentation

A major controversy in public-space research concerns the measurement validity of social cohesion, particularly in cross-cultural and interdisciplinary studies. The absence of a universally accepted definition has led to diverse operationalizations using indicators such as trust, belonging, participation, interaction frequency, and social capital, limiting comparability across contexts (Wan *et al.* 2021). Disciplinary differences further fragment the interpretations of cohesion in public-space settings. Therefore, scholars emphasize the need for greater conceptual clarity and methodological alignment through integrative frameworks that respect cultural specificity while enabling robust synthesis and generalization (Horsham *et al.*, 2024).

4. REVIEW OF THEMES/FINDINGS

4.1. Measuring Social Cohesion in Public Space

The first thematic cluster synthesizes how social cohesion is conceptualized and empirically measured in public-space research, revealing substantial methodological diversity and emerging convergence. Across the reviewed studies, social cohesion was operationalized through behavioral, perceptual, relational, and proxy indicators, reflecting disciplinary traditions and data constraints. As summarized in Table 1, no single metric predominates; instead, cohesion is commonly triangulated through inclusiveness, interaction intensity, place attachment, participation, trust, and access to shared space.

Recent studies have increasingly complemented survey-based approaches with large-scale computational methods. Zhang, Chen, and Huang (2025), for example, analyzed approximately 11,000 hours of crowdsourced street video using a vision-language model to infer demographic diversity, inclusiveness, and activity diversity in street spaces. Although these indicators do not directly measure cohesion, they provide quantifiable proxies for inclusive and equitable use, which are key preconditions for cohesion. Similarly, Kaufmann *et*

al. (2025) assessed 10-minute walking access to parks across OECD metropolitan regions, generating spatial equity metrics that reveal systematic disparities in access to common meeting grounds necessary for repeated social encounters.

Survey-based and statistical modeling approaches remain central to capturing the subjective dimensions of cohesion. Zeng et al. (2025), using questionnaire data from approximately 305 respondents and structural equation modeling, operationalized “publicness” through inclusivity, accessibility, and collective interest representation, demonstrating significant pathways linking publicness to activity diversity, vitality, and perceived social cohesion. Likewise, Hou et al. (2025), drawing on surveys of 487 residents in Tianjin, showed that public space provision and facility quality strengthen place attachment and participation intentions, which function as measurable precursors to cohesion. Overall, these studies indicate that social cohesion is most often assessed indirectly through attitudinal and behavioral dimensions rather than as a single, unified construct.

The first thematic cluster synthesizes how social cohesion is conceptualized and empirically measured in public space research, revealing considerable methodological diversity alongside emerging points of convergence. Across the reviewed studies, social cohesion was operationalized using behavioral, perceptual, relational, and proxy indicators, shaped by disciplinary traditions and data availability. As summarized in Table 1, no single metric dominates; instead, cohesion is typically triangulated through measures of inclusiveness, interaction intensity, place attachment, participation, trust, and access to shared space.

Table 1: Empirical evidence on public-space attributes and intergroup contact shaping social cohesion (cross-method, multi-context)

Refs.	Research context (public space + setting)	Methodology (data + analysis)	Key findings (cohesion/contact mechanisms)	Strengths / limitations
Zhang, Chen & Huang (2025)	Public street spaces; city-scale street network	~11,000h crowdsourced videos; VLM-based detection of users/activities	Reveals demographic disparities and inclusiveness gaps; inequities constrain cohesion potential	High-resolution behavioral data; cohesion inferred via proxies
Fahmy, Safey Eldeen & Abdelwahab (2025)	Digla Square, Cairo	Interviews + observation; grounded theory	Everyday routines and appropriation enable meaningful intergroup contact	Deep mechanism insight; context-specific
Zeng et al. (2025)	Multiple public spaces; Hong Kong	Survey (n≈305); CFA/SEM	Publicness → activities/vitality → social cohesion	Robust modeling; perceptual measures
Zhu et al. (2025)	Community parks; Harbin	Behavioral mapping + spatial analysis	Group activity spaces shape interaction density and proximity	Fine-grained behavior; interaction ≠ cohesion
Al-Homoud & Al-Zghoul (2025)	Neighborhood streets; Amman	GIS + survey; statistical models	Walkability supports socio-spatial bridging	Integrated methods; cross-sectional
Hou et al. (2025)	Community public spaces; Tianjin	Survey (n≈487); regression	Facilities → attachment → participation	Participation as cohesion precursor

Recent scholarship increasingly complements conventional survey-based approaches with large-scale computational techniques. Zhang, Chen, and Huang (2025), for instance, analyzed approximately 11,000 hours of crowdsourced street video using a vision-language model to infer demographic diversity, inclusiveness, and activity diversity in public street spaces. While these indicators do not directly capture social cohesion, they provide quantifiable proxies for inclusive and equitable use, conditions widely recognized as foundational for cohesion. Similarly, Kaufmann et al. (2025) examined 10-minute walking access to parks across OECD metropolitan regions, generating comparable spatial equity metrics that reveal systematic disparities in access to common meeting grounds required for repeated social encounters.

Despite these advances, survey-based and statistical modeling approaches remain central to capturing the subjective dimensions of cohesion. Zeng et al. (2025), using questionnaire data from approximately 305 respondents and structural equation modeling, operationalized “publicness” through inclusivity, accessibility, and representation of collective interests, and demonstrated significant pathways linking publicness to activity diversity, vitality, and perceived social cohesion. Likewise, Hou et al. (2025), drawing on surveys of 487 residents in Tianjin, showed that public space provision and facility quality enhance place attachment and participation intentions, which act as measurable precursors to cohesion. Collectively, these studies indicate that social cohesion is most often assessed indirectly through attitudinal and behavioral dimensions rather than as a single, unified construct.

Refs.	Research context (public space + setting)	Methodology (data + analysis)	Key findings (cohesion/contact mechanisms)	Strengths / limitations
Ahirrao & Khan (2021)	Urban open spaces; Nagpur	Mixed methods; POSI index	POs support cohesion but show access gaps	Practice-ready index
Li et al. (2021)	Neighborhood green space; Houston	Survey + NDVI; GLMM/SEM	Cohesion correlated but not mediating distress	Context-specific (disaster)
Zhang et al. (2022)	Citywide green exposure; Nanjing	Multi-metric exposure + SEM	Cohesion one of multiple mediators	Metric sensitivity
Kaufmann et al. (2025)	Parks; OECD metro areas	Big data + travel-time modeling	Reveals inequities in park access	Access ≠ use
Hasdell & Chen (2022)	Informal markets; Hong Kong	Prolonged observation	Informal exchange builds cohesion	Qualitative, non-standardized
Matos (2025)	Community street art; Portugal	Qualitative project analysis	Co-production enhances engagement/cohesion	Attribution challenges

4.2. Public-Space Attributes and Design Qualities Shaping Social Cohesion

This thematic section synthesizes empirical evidence on how public space attributes and built-environment design shape social cohesion, demonstrating that cohesion depends not merely on the presence of public space but on its accessibility, configuration, environmental quality, and capacity to support everyday social practices. As summarized in Table 2, design attributes influence cohesion through intermediate processes such as interaction frequency, place attachment, participation, and perceived inclusiveness, while also exhibiting a strong contextual variation.

Several studies have operationalized public space quality using composite indices or post-occupancy evaluations. Ahirrao and Khan (2021), applying the Public Open Space Index (POSI) in Nagpur, found that spaces scoring higher in inclusiveness, engagement, and facility adequacy were more likely to support social cohesion and community engagement, although deficits in equitable access and long-term management limited these effects. Similarly, Jiang et al. (2021) evaluated the Parkhill Commons micro-renewal project in Shenzhen and showed that targeted design interventions, such as activity zoning, greening, and service facilities, enhanced spatial vitality and strengthened community attachment and cohesion, highlighting the value of small-scale, design-led renewal.

Qualitative and perceptual studies further emphasize spatial configuration and experiential quality. Chen (2025), studying intercultural placemaking sites in Bologna, identified enclosure, perceived safety, natural elements, and multifunctional layouts as key enablers of intercultural encounters. These findings align with those of Zhu et al. (2025), who demonstrated that facilities, paving quality, lighting, and interface

conditions in community parks in Harbin significantly influenced interaction distance, crowd density, and social activeness. Walkability and connectivity show more nuanced effects: while Koohsari et al. (2021) found negative associations with social cohesion in Japanese cities, positive relationships were reported in Amman and Lisbon when connectivity was paired with sociable destinations and comfortable microspaces (Al-Homoud & Al-Zghoul, 2025; Ribeiro et al., 2021).

Environmental quality, particularly greenery and perceptual experience, emerges as a consistent factor shaping cohesion-related processes. Liu et al. (2020), using multilevel structural equation modeling in Guangzhou, demonstrated that street-level greenery and blue-space visibility strengthened place attachment and community participation, mediating positive mental health outcomes. Similarly, a Utah-based park quality study (2023) employing hierarchical linear modeling found that overall park quality—including aesthetics, maintenance, and cleanliness—was the strongest predictor of social interaction, whereas the quantity of facilities had limited explanatory power. These findings indicate that perceived quality and care are more influential for cohesive use than quantitative provision.

Equity-oriented research cautions against equating spatial proximity to social benefits. Otero Peña et al. (2021), analyzing 54 parks and survey data from 904 residents in low-income neighborhoods in New York City, found that facilities and programming increased park use, while aggressive policing reduced it; importantly, park use was positively associated with social cohesion and trust. Saxon (2021), using smartphone-based mobility data across major U.S. cities, showed that conventional access models overestimate realized park use for minority populations, masking inequities in who benefits from public space investments. These findings highlight

the importance of distinguishing between potential and realized access.

User-specific needs further refine the design implications. Ziaesaeidi (2025) found that youth preferred parks balancing physical activity, socialization, and nature, while Rahimi et al. (2021) linked park design to perceived social capital with demographic variation. At the urban scale, Medellín’s “social urbanism” illustrates how

integrated public-space investment supports social integration (Meninato & Marinic, 2024), whereas U.S. play-street initiatives demonstrate that low-cost, temporary interventions can foster neighbor interaction and trust (2021). Overall, the evidence shows that public space design influences cohesion through interacting pathways shaped by context, equity, and governance, rather than linear design effects alone.

Table 2: Public-Space Attributes and Built-Environment Design Pathways Shaping Social Cohesion

Refs.	Geographical scope & setting	Analytical framework (attributes / constructs)	Results (cohesion-relevant outcomes)	Design / planning implications
Ahirrao & Khan (2021)	Nagpur, India; urban open spaces	Public Open Space Index (POSI): inclusiveness, engagement, facilities, sustainability	POSS support cohesion and engagement but show access and management gaps	Prioritize inclusive access and participatory management
Jiang et al. (2021)	Shenzhen, China; Parkhill Commons	Micro-renewal design; POE (survey + observation)	Improved vitality, attachment, and cohesion	Use scalable micro-renewal strategies
Chen (2025)	Bologna, Italy; intercultural public spaces	Enclosure, safety, natural elements, multifunctionality	Attributes facilitate intercultural encounters and cohesion	Design for comfortable co-presence
Zhu et al. (2025)	Harbin, China; community parks	Activity-space morphology; spatial-behavioral analysis	Environment shapes interaction density and proximity	Provide supportive facilities and interfaces
Koohsari et al. (2021)	Japan; adults 40–69 (n≈1,010)	Objective/perceived walkability metrics	Objective walkability negatively linked to cohesion	Pair connectivity with sociable destinations
Ribeiro et al. (2021)	Lisbon, Portugal; historic blocks	Space syntax simulation	Added passages improve access and interaction potential	Retrofit permeability in historic fabrics
Liu et al. (2020)	Guangzhou, China; neighborhoods	Street-view greenery + SEM	Greenery enhances attachment and participation	Design visible everyday nature
Utah park-quality study (2023)	Utah, USA; parks	HLM linking quality to interaction	Quality strongest predictor of interaction	Invest in maintenance and aesthetics
Otero Peña et al. (2021)	NYC, USA; low-income areas (n=904)	Multilevel models; facilities, events, policing	Use ↑ cohesion; policing ↓ use	Pair upgrades with inclusive programming
Saxon (2021)	USA; 20 largest cities	Smartphone mobility data	Access models overestimate minority use	Use realized-use metrics
Ziaesaeidi (2025)	Queensland, Australia; youth (n=192)	Visual preference survey	Social-nature balance preferred	Design socially flexible parks
Rahimi et al. (2021)	Tehran, Iran; parks (n≈330)	Design indicators & social capital	Design linked to cohesion/control	Address demographic differences
Meninato & Marinic (2024)	Medellín, Colombia; city scale	Social urbanism framework	Reduced violence, stronger integration	Integrate design with transit & participation
Rural Play Streets (2021)	Rural USA; community streets	Temporary street activation	Increased interaction and trust	Scale tactical urbanism

4.3. Intergroup Contact, Safety, and Avoidance in Public-Space Encounters

This thematic section synthesizes evidence that intergroup contact, safety, and avoidance are key mechanisms that determine whether public spaces foster social cohesion or become sites of division. Across the studies summarized in Table 3, a consistent finding is that co-presence alone is insufficient; cohesion emerges only when encounters are perceived as safe, meaningful and institutionally supported. Affective atmospheres, governance arrangements, and temporal dynamics strongly

influence the unfolding of intergroup encounters in public space settings.

Empirical studies from gated and segregated contexts illustrate how avoidance behaviors can undermine cohesion, despite spatial opportunities for encounters. Li, Zheng, and Loopmans (2025), examining gated social-housing estates in Nanjing, show that interactions are filtered through rules, authority structures, and everyday affect, producing patterned avoidance rather than engagement. Residents strategically manage proximity, indicating that cohesion depends not only on spatial design but

also on governance regimes that shape the emotional climate. These findings align with Karaoğlu's (2024) policy analysis in Barcelona, which shows how intercultural policy often frames public spaces as sites of potential conflict requiring regulation, privileging control over spontaneous sociality, and limiting trust formation.

Systematic observational studies provide a quantitative basis for these insights. Dionísio *et al.* (2024), using structured observations in public spaces across Belgium and Portugal, documented frequent patterns of parallel use between migrants and native residents, with proximity rarely translating into meaningful interaction. Their comparative, multi-site approach highlights that cohesion-relevant contact is contingent on the activity type, time of day, and spatial configuration. Daly's (2020) analysis of Superkilen similarly demonstrates that even diversity-oriented iconic design projects do not automatically produce cohesive encounters; instead, material arrangements and representational strategies shape who interacts, how, and under what symbolic conditions.

Safety and fear function as critical gatekeeping mechanisms that structure public space use and intergroup contact. Abraham, Ceccato, and Näsman (2026) examined men's experiences in public places in Stockholm and demonstrated that perceived fear directly shapes avoidance behaviors, influencing when and where individuals engage in public life. Although focused on a specific demographic, their findings illustrate how safety perceptions regulate presence and indirectly condition opportunities for intergroup contact and social cohesion. Related dynamics are evident in Zavos' (2020) ethnographic study of British Asian street kitchens, which shows

that everyday material practices can reproduce symbolic boundaries and social differences despite physical proximity, challenging the assumption that informal settings automatically foster cohesion.

Temporal and generational dimensions further complicate the contact-cohesion relationships. Remennick (2026), analyzing intergroup relations between ex-Soviet immigrants and Mizrahi Israelis in urban peripheries, demonstrates that attitudes and interactions evolve across generations, suggesting that cohesion outcomes may emerge only over an extended time horizon. This perspective challenges the short-term evaluations of public space interventions and highlights the importance of life course and cohort effects.

At the synthesis level, Simões Aelbrecht and Stevens (2023) integrated such empirical findings into an interdisciplinary framework linking public space attributes, encounter dimensions, and social cohesion outcomes, bridging sociological and built-environment perspectives. Collectively, the studies in Table 3 show that intergroup contact in public spaces is a conditional and negotiated process moderated by fear, governance, symbolism, and the passage of time. Overall, the evidence demonstrates that social cohesion cannot be reduced to spatial provision or proximity alone; it depends on encounter quality, low levels of pervasive fear, and institutional and normative support that legitimizes diversity and daily interaction. When avoidance dominates—through gating, surveillance, or symbolic exclusion—the potential of public spaces to build cohesion is substantially weakened, underscoring the need to address governance and social conditions alongside design.

Table 3: Theme 4.3 – Intergroup Contact, Avoidance, and Safety in Public-Space Encounters

Refs.	Sample / Case	Variables / Concepts Examined	Outcomes	Critical Notes
Li, Zheng & Loopmans (2025)	Gated social-housing estates; Nanjing, China	Affect, avoidance, authority, spaces of encounter	Governance and emotional climates produce patterned avoidance, limiting cohesion	Distinguishes contact opportunity vs. actualization
Dionísio <i>et al.</i> (2024)	Migrants and natives; Belgium & Portugal	Intergroup interaction vs. parallel use; place identity	Shared space often yields co-presence without contact	Sensitive to time/activity/site
Daly (2020)	Superkilen public space project	Intercultural encounter; material assemblages	Design mediates encounter quality and symbolism	Highlights material agency
Karaoğlu (2024)	Intercultural City Programme; Barcelona	Policy problematisations; managed encounter	Policy frames may constrain spontaneous cohesion	Policy-practice gap
Abraham <i>et al.</i> (2026)	Men in public places; Stockholm	Fear, safety perception, avoidance	Fear limits participation and encounter	Safety as precondition
Remennick (2026)	Urban periphery; intergroup generations	Intergroup encounter over time	Cohesion evolves across cohorts	Temporal dynamics
Zavos (2020)	British Asian street kitchens	Material practice; everyday difference	Proximity can reproduce boundaries	Meaning over form
Simões Aelbrecht & Stevens (2023)	Interdisciplinary review	Encounter dimensions; person-environment relations	Integrative framework for cohesion	Secondary synthesis

4.4. Governance, Participation, and Stewardship in Public Space

This thematic section synthesizes evidence of how governance arrangements, participation mechanisms, and stewardship practices shape the capacity of public spaces to generate and sustain social cohesion. Across the studies summarized in Table 4, cohesion emerges not solely from spatial design or encounter opportunities but from institutionalized processes that enable recognition, shared responsibility, and collective action. Governance structures mediate who has a voice, who participates, and whose interests are represented, thereby determining whether public spaces function as inclusive social infrastructure or become contested and exclusionary environments.

Empirical research on co-governance and shared management demonstrates strong links between participatory governance and cohesion-related results. Liu et al. (2025), examining urban parks in high-density contexts, show that co-governance combining state oversight with community self-organization enhances belonging and rights-based participation, reinforcing cohesion through recognition and association. Similarly, Pham and Lachapelle (2026), studying Montréal's Green Alley program, found that community-led stewardship activities—such as planting, maintenance, and neighborhood meetings—strengthen neighbor ties and localized social networks, while also revealing participation biases related to homeownership, education, and prior social connections. These findings highlight both the cohesion-building potential and the equity challenges of participatory governance.

Polycentric and collaborative governance models further extend this insight. Hajzeri and Shackleton (2025), by analyzing fruit-tree initiatives across London boroughs, show that collaboration among municipalities, NGOs, and community groups supports cohesion through socially engaging green infrastructure, food-sharing practices, and civic education. Likewise, Gupta et al. (2025), focusing on edible streets in Oxford, demonstrate that collective growing initiatives foster shared identity and resilience narratives but are constrained by the complexity of policies, skill gaps, and unequal access to resources. Quantitative evidence indicates that even small-scale street-level governance interventions can yield measurable cohesion benefits

when supported by appropriate institutional frameworks.

Community-based placemaking traditions in the Global South offer important insights into the governance-cohesion relationships. Medina et al. (2025), examining *minga* practices in peripheral neighbourhoods of Quito, show that autonomous, community-led interventions generate stronger belonging, pride, and shared responsibility than institution-led “mega-mingas,” highlighting the centrality of community ownership for durable cohesion. Youth-focused governance initiatives further reinforce this dynamic. Studies by Moreno Álvarez (2025) and Herlekar (2025) demonstrate that youth participation in public-space programs builds trust, intergenerational networks, and program legitimacy, although sustained institutional openness and effective communication are necessary to maintain engagement beyond the pilot phases.

However, not all governance mechanisms support cohesion. Volinz, Steenhout, and Melgaço (2025), analyzing municipal reporting apps in Brussels, show how participatory technologies can evolve into lateral surveillance, increasing the risks of profiling, neighbor conflict, and erosion of trust in shared spaces. Similarly, Alarabi (2025) illustrates how regulatory complexity and infrastructure deficits in Riyadh constrain inclusive participation, even though cultural events have strong cohesion-building potential.

Governance intersects with participation intentions and place attachment. Hou et al. (2025), drawing on survey data from 487 residents in Tianjin, found that public space usability and alignment with residents' needs strengthen place attachment and willingness to participate, functioning as precursors to collective action and cohesion. Yiu (2025) further demonstrated in Hong Kong that commoning practices, such as community farming and biodiversity monitoring, foster a shared identity and bottom-up policy dialogue through everyday stewardship.

Overall, the evidence in Table 4 shows that governance and stewardship are decisive mediators of public space provision and cohesion outcomes. Cohesion is strongest when participation is meaningful, authority is shared, and long-term support structures exist, whereas control-oriented or symbolic participation risks undermining trust and cohesion.

Table 4: Theme 4.4 – Governance, Participation, and Stewardship Mechanisms Shaping Social Cohesion in Public Space

Refs.	Public space / setting	Governance mode	Participation / stewardship mechanism	Cohesion-related outcomes	Barriers / enablers + implications
Liu et al. (2025)	Urban parks; high-density city	Co-governance (state + community)	Collective action, park co-management	Sense of belonging, inclusion	Enable shared authority
Pham & Lachapelle (2026)	Green alleys; Montréal	Community-led	Volunteer stewardship, committees	Neighbor ties, cohesion	Participation bias
Hajzeri & Shackleton (2025)	Public spaces; London	Polycentric	Cross-sector collaboration	Engagement, food security	Funding consistency
Gupta et al. (2025)	Edible streets; Oxford	Community-led + policy	Collective growing	Shared identity, resilience	Policy friction
Medina et al. (2025)	Neighborhood spaces; Quito	Community vs institutional	Minga collective work	Belonging, pride	Sustaining engagement
Moreno Álvarez (2025)	Youth spaces; Envigado	Multi-actor	Youth participation	Trust, networks	Institutional openness
Herlekar (2025)	Multi-city youth programs	Program governance	Strategic communication	Coalition building	Momentum maintenance
Volinz et al. (2025)	Municipal spaces; Brussels	Platform governance	Citizen reporting apps	Reduced trust risk	Need safeguards
Alarabi (2025)	Neighborhood parks; Riyadh	Municipal regulation	Cultural events	Engagement, diversity	Regulatory barriers
Yiu (2025)	Community spaces; Hong Kong	Community-based planning	Commoning practices	Shared identity	Resource allocation
Hou et al. (2025)	Community spaces; Tianjin	Neighborhood governance	Participation intention	Attachment, cohesion	Context sensitivity

5. DISCUSSION

This discussion synthesizes the findings across the four thematic sections to examine how public space attributes, intergroup encounters, and governance mechanisms collectively shape social cohesion. Overall, the evidence confirms that public spaces can support social sustainability, but only under specific spatial, social, and institutional conditions. Public space interventions do not generate uniform outcomes; instead, their effects are highly context-dependent, explaining both convergence and divergence across empirical studies.

In Themes 4.1 and 4.2, strong convergence emerged regarding the role of accessibility, design quality, and environmental amenities—particularly green spaces—in fostering social interaction and community bonds. Quantitative and mixed-method studies have consistently shown that well-maintained parks, streets, and neighborhood spaces facilitate everyday encounters that enhance belonging, trust, and participation (Kumar & Shukla, 2024; Kumar & Shukla, 2022). The evidence summarized in Table 2 further indicates that perceived quality, including cleanliness, aesthetics, and comfort, often matters more than the quantity of facilities, reinforcing the view that cohesion is shaped by experiential qualities rather than spatial provision alone. However, these positive effects are not

universal; similar design attributes may produce weaker or negative outcomes in places where socio-economic inequality, fear, or exclusionary practices prevail (Lima et al., 2020).

Themes 4.3 and 4.4 highlight the decisive role of context, particularly segregation, governance regimes, and inequality, in mediating the public space–social cohesion relationship. In segregated or poorly governed settings, public spaces may reinforce division rather than bridge it, as users avoid spaces that are perceived as unsafe, unwelcoming, or externally controlled (Xu et al., 2022; Nguyen et al., 2021). Evidence from gated, surveilled, and unequally accessible environments shows how intergroup contact is often neutralized by avoidance, fear, or symbolic exclusion, underscoring governance as a key determinant of whether public spaces function as inclusive commons or de facto gated territories (Bracken et al., 2021, 2022).

Methodologically, the synthesis has persistent limitations. Many studies rely on cross-sectional designs, constraining causal inference (Sønderlund et al., 2025), while self-reported data raise the risk of social desirability bias (Peña et al., 2021). Although observational, spatial, and big-data approaches address some gaps, they often depend on proxy indicators that incompletely capture the relational cohesion. Moreover, the literature remains

predominantly urban-focused, with rural and peri-urban contexts underrepresented, limiting the geographic and cultural generalizability of the findings (Sharifi & Khavarian-Garmsir, 2020).

From a theoretical perspective, the findings support integrative frameworks that combine intergroup contact theory, social capital theory, and place attachment theory. The evidence in Tables 1–4 demonstrates that spatial design influences social cohesion primarily through mediating mechanisms, such as encounter quality, attachment, participation, and stewardship, rather than direct effects alone (Zhang et al., 2024; Pérez-Paredes & Krstikj, 2020). This reinforces the view that public space functions as a relational and institutional process, not merely a physical setting, and that theories neglecting governance and affective dimensions risk overstating the cohesion-building potential of design intervention.

The policy implications of this synthesis are significant. Planning authorities should prioritize not only the provision of public spaces, but also their equitable distribution, long-term maintenance, and governance to ensure inclusive access and sustained use (Bachtarzi et al., 2021). Governance-focused evidence indicates that participatory and co-governance models can transform public spaces into platforms for trust building and collective action when participation is meaningful and inclusive. Conversely, symbolic participation or surveillance-oriented management risks undermining cohesion, underscoring the need for accountability and community empowerment in public space policy.

The design implications emphasize inclusivity, multifunctionality, and adaptability. Public spaces that accommodate diverse activities and user groups across age, gender, culture, and ability are more likely to support meaningful interactions and social sustainability (Tahroodi & Ujang, 2021). Flexible layouts, visible care, and the integration of natural elements encourage lingering and co-presence, whereas programming and events activate spaces and broaden participation. Ongoing stakeholder engagement throughout the planning, design, and management processes is essential to align public spaces with local needs and adapt them over time (Hayduk & Walker, 2021).

Overall, this discussion highlights that public spaces contribute to social cohesion by intersecting spatial, social, and institutional pathways. While design quality and accessibility are necessary conditions, governance, equity, and lived experiences ultimately determine whether public spaces foster connection or reproduce division.

6. CONCLUSION

This Systematic Literature Review examined how public spaces contribute to social cohesion by synthesizing evidence across diverse methods, theoretical perspectives, and spatial contexts. The review demonstrates that public spaces can function as powerful drivers of social sustainability, but only when their physical attributes, social mechanisms, and governance arrangements align. Accessibility, publicness, environmental quality, and multifunctionality consistently emerge as enabling conditions; however, their effects are mediated by intergroup contact quality, place attachment, participation, and perceived safety.

A key contribution of this review is that social cohesion does not arise automatically from spatial proximity or design provision alone. Instead, cohesion is produced through relational and institutional processes shaped by governance regimes, socioeconomic inequality, and lived experiences. In segregated or poorly governed contexts, public spaces may reproduce exclusion and avoidance, thereby limiting their potential to build cohesion. Conversely, participatory governance, stewardship, and co-production can transform public spaces into inclusive social infrastructures that support trust, belonging, and collective action.

This review also identifies important gaps in the literature. These include inconsistent operationalization of social cohesion, limited longitudinal and causal evidence, underrepresentation of rural and peri-urban contexts, and insufficient attention to equity and distributional impacts of social cohesion. Addressing these gaps will require harmonized measurement frameworks, mixed-method and longitudinal designs, and greater sensitivity to cultural and institutional contexts.

Overall, this SLR contributes to theory by advancing a mechanism-based understanding of public space and social cohesion, methodology by mapping measurement diversity, and practice by offering evidence-informed implications for inclusive urban design and governance. Future research and policy efforts should treat public spaces not merely as physical assets but as socially produced and collectively governed foundations for cohesive and resilient communities.

Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

During the preparation of this work, the author(s) used OpenAI ChatGPT to enhance the clarity of the writing. After using this tool/service, the author(s) reviewed and edited the content as needed and took (s) full responsibility for the content of the published

article.

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