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Review

Understanding the factors of accessibility to the neighborhood green spaces that contribute to social cohesion: A systematic literature review

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Abstract: Green spaces are vital for urban health and quality of life, promoting social cohesiveness and interpersonal dynamics. However, 56% of the world's population lives in cities without green spaces, affecting their health and psychological well-being. The limited number of neighborhood parks highlights the need to consider accessibility and its relationship with social cohesiveness. Social cohesion is crucial for community well-being and is linked to public spaces, especially in urban areas. Neighborhood green spaces promote social connections, reduce inequalities, and enhance community health. This research acknowledges the connection between accessibility and urban green spaces, but does not directly evaluate its impact. This systematic literature review aims to understand the factors of accessibility to neighborhood green spaces that contribute to social cohesion and their impact on physical and mental well-being, highlighting the lack of research on the interdependencies between these variables and their combined impact. The study utilized a keyword search on databases like Scopus, Research Gate, Google Scholar, Elsevier, Lens.org, and PubMed to identify 123 empirical research studies published between 2013 and 2022, conducted by 213 authors in 5 countries and 66 journals. The findings explore the factors influencing social cohesion, including socio-demographics, physical characteristics, non-physical variables, environmental perceptions, and usage patterns. It uses Vos viewer keyword co-occurrences analysis to create clusters, proposes a model to understand how these factors are linked to accessibility and directly influence social cohesion and provides insights into the relationship between these factors. Understanding these factors is essential for urban planning and policy-making.

Keywords: neighborhood green spaces; parks; social cohesion; human health; wellbeing physical characteristics; environmental perceptions and accessibility

1. Introduction

A healthy social life is frequently regarded as necessary public spaces, including parks (Montgomery, 2013). According to Gehl and Svarre (2013), those who live in these shared areas have the opportunity to engage with the outdoor environment for longer. Alternative locations for urban community gateways are thought to exist in green places (Malek et al., 2012). According to Urban and Regional Development Plans Formulation and Implementation (URDPFI) criteria, they are divided into mini parks (upto1.25 acres), housing area parks (1.25 to 2.5 acres), neighborhood parks (2.5 to 5 acres), community parks (5 to 20 acres), and larger parks, including district parks, regional or metropolitan parks, and natural parks. It's critical that urban green spaces serve various citizen needs and activities and are easily accessible (Miller, 2018). Green spaces are crucial for urban health and quality of life, as they enable equitable

access for the population. Social cohesiveness, a sense of connectedness among individuals, is linked to physical and psychological health benefits (Jennings and Bamkole, 2019). However, 56% of the world's population, or 4.4 billion people, live in cities lacking green spaces. The number of neighborhood parks is limited, and social cohesion in urban cities is reducing due to increased gadget use, lack of interest, and inadequate infrastructure for parks, playgrounds, open spaces, and green spaces. Furthermore, to this People's everyday lives had to be substantially altered during the COVID-19 lockdowns since key urban nodes and locations where daily activities are typically conducted were closed. As a result, regular everyday life under lockdown was marked by decreased mobility, extended stays at home, telework or job losses, strained social ties, and decreased levels of physical activity—all of which had an impact on mental health (Berdejo-Espinola et al., 2022).

This research answers the questions how can we revive social interaction? How does social cohesion benefit? Is it directly connected to health and well-being? How to improve accessibility? Which are the important parameter of social interaction? Accessibility can be defined as quality of being easy to approach, reach and enter whereas feelings of trust, acceptance, belonging, and connectivity contributes to social cohesiveness and are frequently associated with pleasant social interactions. These positive social dimensions may promote positive health outcomes and accessibility to the green space (Jennings and Bamkole, 2019). This study aims to examine the factors that determine neighborhood green space accessibility and to comprehend the impact of social cohesiveness on health and well-being. The objectives are to identify the determinants of accessibility to neighborhood green spaces and understand the Components of Neighborhood Green Spaces. And to understand the relationship between accessibility and social cohesiveness and its influence on health and well-being.

2. Materials and methods

2.1. Search strategy

In August 2022, a comprehensive review of the literature was carried out utilizing reputable databases like Scopus, Research Gate, Google Scholar, Elsevier, Lens.org, and PubMed. Finding empirical research papers in English-language, peer-reviewed journals was the goal (2013–2022). That investigate the impact of accessibility to neighborhood green spaces on social cohesion. Advanced search queries with the "Sorting" field tag and specific keywords were employed. Boolean operators OR and AND were used to refine search results. For further details, a backward and forward reference search was carried out in the full texts of the included studies.

2.2. Search query

Topic terms for a search query First group of search terms: "urban green space*" OR "urban public open space*" OR "urban public green space" OR "green space" OR "open green space" OR "open area" OR "open space" OR "neighborhood green space" OR "neighborhood park" OR "greenspace" OR "neighborhood space" OR "neighborhood greenness" OR "greenness" OR "urban greenspace" OR "public

greenspace" OR "green common space" OR "urban park" OR "natural outdoor environment*" OR "community garden" "AND" "accessibility" OR "access to" AND "social cohesion" OR "social coherence" OR "social tie" OR "social capital" OR "social connectedness" OR "social interaction" OR "social interaction" OR "social integration" OR "social contact" AND "well-being. Note: * refers to any group of characters that can be used to find any word ending.

2.3. Eligibility and study selection

There were three steps in the process of selecting studies. First, database search results from Scopus, Research Gate, Google Scholar, Elsevier, and Lens.org were refined using "Web of Science Categories," excluding irrelevant categories such as Biology and Neuroscience. The filter "Species" was applied to focus on human studies. Second, title and abstract screening excluded dissertations, conference abstracts, editorials, and out-of-scope studies, following the PRISMA 2020 article selection flow diagram, **Figure 1**. This screening was performed in Scopus by filtering for "Journal Article." The third stage involved a full-text assessment applied to outcomes from both databases. Inclusion criteria for the literature review required studies to involve accessibility to public urban green spaces, employ both quantitative and qualitative survey methods, measure social cohesion or similar behaviours, and explore the physical characteristics, environmental perceptions, and well-being across different age groups.

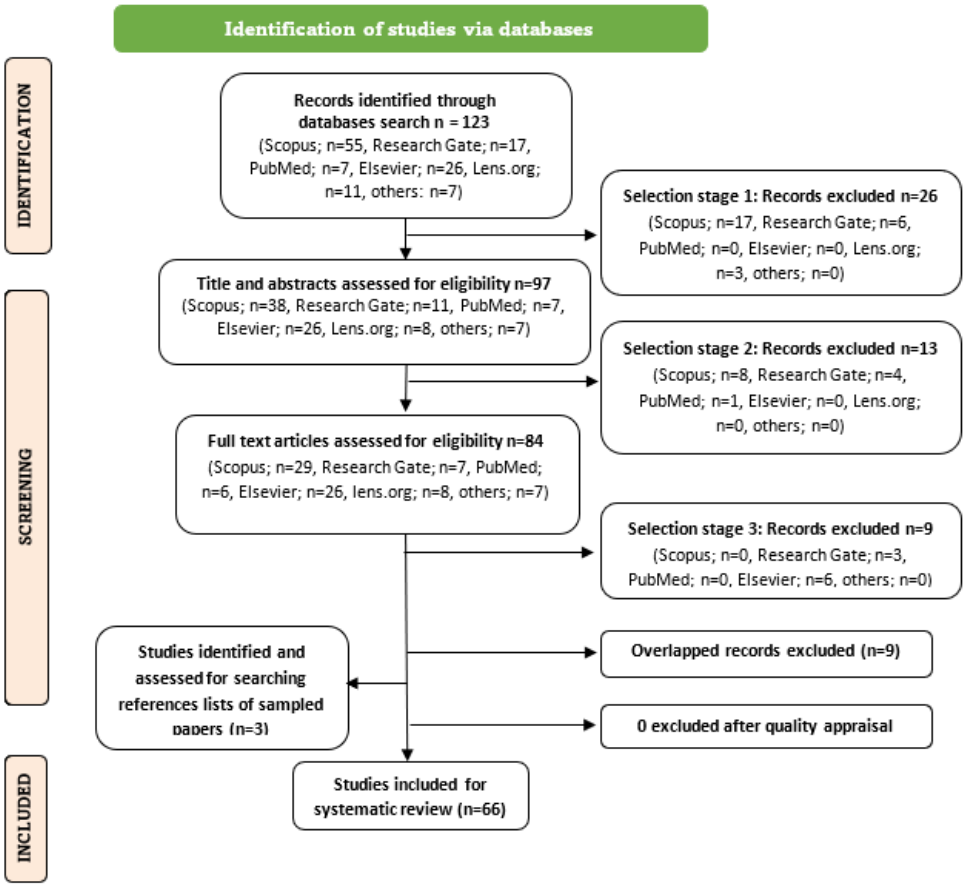

Figure 1. PRISMA 2020 article selection flow diagram.

2.4. Quality assessment

Using the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018), which was designed for systematic reviews involving qualitative, quantitative, and mixed methods studies, the methodological quality of the included studies was evaluated. Five criteria were applied to assess each study category. Reviewers rated criteria as "Yes" (criterion met), "No" (criterion not met), or "may be" (insufficient information for evaluation). The "Yes" scores for every study were added together to determine a quality score.

2.5. Data abstraction

From of each study, the following descriptive items were extracted: (i) authors (ii) author(s) ID; (iii) Title (iv) year of publication; (v) source title (vi) Volume (vii) Issue (viii) Cited by (ix) DOI (x) Link (xi) Abstract (xii) Author Keywords (xiii)Document Type (xiv) Publication Stage (xv) Open Access.

Then, the relevant research were examined to extract characteristics of urban public green spaces that are associated with social cohesiveness or comparable behaviors. In the meantime, the connections between the components that were identified and social cohesion were worked out. The goal of the procedure was to investigate the fundamental mechanisms by which social cohesion is influenced by green spaces, which in turn affects physical health and physiological well-being. Accessibility is also a component of social cohesiveness in green areas. A second author reviewed the research selection, quality evaluation, and data extraction work done by one of the authors to guarantee the quality of the data extraction.

3. Results and discussion

3.1. Study characteristics

This research looked at 123 studies conducted by 213 authors of 5 countries from 21 countries. They have been published in 66 journals. The average number of citations each article obtained was 8. There were 179 keywords and 500 references in total as shown in **Table 1**. The annual article publications were also analyzed from timespan 2010–2022; **Figure 2**. These are 120 studies before to COVID-19 pandemic and three further studies following the necessary shutdown. Analysis conducted during Covid aids in understanding the pandemic measures that influenced people's access and well-being during the outbreak.

Table 1. Most relevant sources of the article publications.

Sources of articles	No. of articles
Urban Forestry and Urban Greening	10
Landscape and Urban Planning	7
Sustainability (Switzerland)	6
Int. Journal of Environmental Research and Public Health	4
Social Science and Medicine	3
Frontiers In Ecology and Evolution	2

Table 1. (*Continued*).

Sources of articles	No. of articles
International Journal of Architectural Research	2
Cities	1
Ecological Indicators	1
Economic Analysis and Policy	1
ECS Transitions	1
Environmental Justice	1
Environmental Research Letters	1
Espace-populations-societies	1
Informatics	1
Health and Place	1
Act Scientiarum Polonorum, Administration Locorum	1
Annals Of Applied Sports Science	1
International Journal of Research and Science Innovations	1
Journal of Environmental Management	1
Journal of Place Management and Development	1
IOP Conference Series: Earth and Environment Science	1
Procedia-social and Behaviour Sciences	1
Science of the Total Environment	1
Travel Behaviour and Society	1
Urban Design International	1
Visitor Studies	1
World Sustainability Series	1

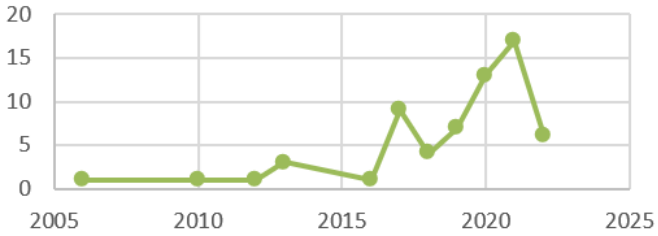

Figure 2. Annual article publication.

Table 1 shows the most relevant sources of the articles. It summarizes the journals which have the most number of articles published. Thus, Urban Forestry & Urban Greening has published the highest number of articles (10). Landscape and Urban Planning published 7, Sustainability published six articles. International Journal of Environmental Research and Public Health 4, social science and medicine 3, Frontiers in ecology and evolution and International Journal of Architecture Research 2 and other articles such as ecology indicators, Environmental Justice, Health, and Place and article each.

3.2. Method of analysis

The bibliometric analyses carried out with VOS viewer were used as the analysis

technique. The Center for Science and Technology Studies at Leiden University in the Netherlands explains that VOS viewer is a software tool for constructing and visualizing bibliometric networks. **Figure 3** displays seven distinct clusters, each representing a specific article. Each article employs its own methodology to investigate the impact of access to urban parks. The keywords listed in **Table 2** are associated with the respective articles within the same clusters.

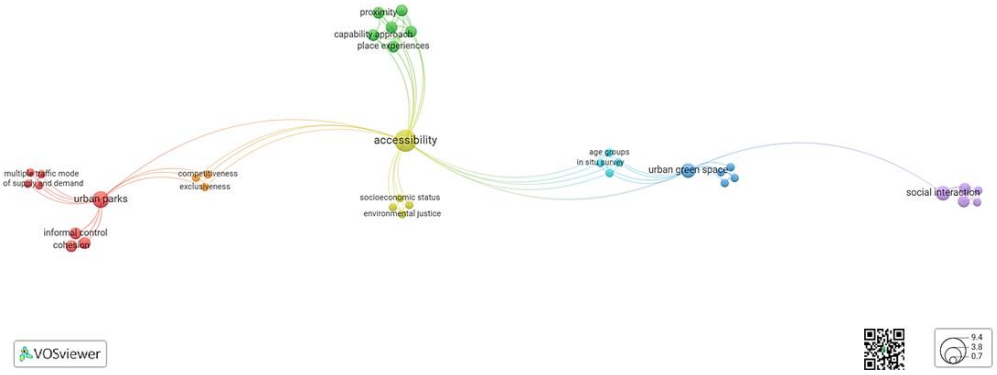

Figure 3. Keyword co-occurrences Network visualization (from VOSViewer).

Table 2. Keywords categorized as clusters (from VOSViewer).

Cluster	Common theme	Keywords
1. Red (9 items)	Urban parks	Cohesion, informal control, multiple traffic mode of supply and demand
2. Green (8 items)	Proximity	Capability approach, perceived neighbourhood, place experiences, proximity, relational approach, social inequalities
3. Dark Blue (7 items)	Urban green space	Park accessibilities, COVID-19, pocket parks
4. Yellow (5 items)	Accessibility	Socioeconomic status, green space, park provision
5. Violet (2 items)	Social interaction	Legibility, environmental justice, green space, park provision, socioeconomic status
6. Light Blue (2 items)	Age groups	In situ surveys, park management, sustainable development
7. Orange (2 items)	Competitiveness	Exclusiveness, Quasi-public goods

3.2.1. Red Cluster-Urban parks

- Cohesion: Urban parks play a vital role in urban societies, contributing significantly to community development and social cohesion by offering spaces for social interactions. Social cohesiveness is defined as shared norms and values, pleasant interactions and connections among individuals, and emotions of acceptance and belonging n neighbourhood contexts. Various terms, such as social support, social contact, and social connections, social interaction are used to express the significance of people' relationships with others in their own communities (Wan et al., 2021). These environments serve as settings where individuals of various age groups, genders, educational backgrounds, and economic statuses engage in both individual and collective passive and active activities, thereby fostering social capital. The accessibility of urban parks is a crucial aspect underlying these dynamics. The presence of social cohesion in public spaces, particularly in urban parks, is a key determinant of the health and well-being of urban residents (Heo et al., 2021).

- Informal control reduces health-damaging behaviors within urban parks. It is to maintain social order and keep the area free from criminal and delinquent behaviors, informal control may also increase in response to satisfaction and attachment with formal control. Health-harming behaviors in urban parks can be reduced by informal control. Increased formal control could lead to feelings of satisfaction and connection. Through an appropriate platform for active involvement, social leverage—which has been defined as social inclusion—can be attained (Rahimi, Tarashkar, and Jahantab, 2021).
- The multiple traffic mode of supply and demand. The traffic intake of an urban park is solely determined by the pedestrian weights, non-motorized weights, and public weights, which are all connected to the park hierarchy. among the three modes of transportation in urban parks, the degree of spatial equality was higher for non-motorized travel than for the Other two modes. In terms of urban park hierarchy, district-level parks had substantially more spatial equality than those at the neighborhood and street levels (Guo et al., 2020).

3.2.2. Green cluster: Proximity

- Perceived neighborhood: Perception is defined in terms of sensory and area based. Numerous studies have explored the relationship between physical activity and the neighborhood environment, investigating how proximity influences individual and household characteristics. These characteristics include factors such as sex, age, occupation, income, and vehicle ownership, as well as neighborhood features like density, traffic safety, transit options, open spaces, intersections, and land use (Ki and Lee, 2021; Frank et al., 2005; Kaczynski et al., 2014; Li et al., 2005; McCormack and Shiell, 2011; Saelens and Handy, 2008; Sung and Lee, 2015).
- Place experiences: Place experience refers to people's personal perceptions and emotional responses to a certain site, which include sensory stimulation, and social interactions. Frequent park visits and closer proximity are linked to higher informal social control and social leverage. Improving park accessibility, providing facilities for people with disabilities, and promoting visits through natural attractions and a sense of security can enhance social capital (Rahimi, Tarashkar, and Jahantab, 2021). Each green space, within a specific urban context, has unique environmental characteristics influencing how people experience its benefits (Hoyle et al., 2019).
- Proximity: Spatial proximity is the accessibility to parks based on distances, utilizing either Euclidean distance or street network distance. The selection of the distance metric can impact the ranking of spatial proximity (Heo et al., 2021).
- Capability approach: it refers to improving individuals' opportunities and freedoms to engage in meaningful activities, interactions, and relationships within the settings, prioritizing their ability to access and use green spaces for personal and collective well-being, encouraging inclusive participation, and promoting a sense of belonging and connection among diverse communities. Therefore, understanding the vital link between social cohesion and urban green spaces is essential for holistic health approaches (Jennings and Bamkole, 2019). Green space utilization is associated with improved overall physical, mental, and

emotional well-being (Grilli et al., 2020). Parks, particularly those emphasizing nature, contribute to better mental health and serve as venues for recreation and athletics. To support good mental health, having ample public green space in nearby neighborhoods within walking distance is crucial (Wood et al., 2017).

3.2.3. Dark blue cluster: Urban green space

- Urban green space**:** It is an urban environment that is often associated with higher levels of physical activity, recreation, and aesthetic enjoyment, biodiversity. Proximity to home, distance to the nearest urban green space, its size, and specific features have all been positively linked to increased physical activity levels (Schipperijin et al., 2022).
- Pocket parks: Pocket parks, sometimes known as vest-pocket parks or miniparks, are typically made out of empty lots and can be found in a variety of urban settings, including commercial districts and, most frequently, residential neighborhoods. A pocketpark often occupies 1–4 house lots or less than 1–3 acres (4000–12,000 m^2). It can improve residents' health and social cohesion. Once considered desirable, they are now deemed a necessary 'lifeline' amid the COVID-19 pandemic. Recognizing the long-overlooked value of accessible urban green spaces, implementing strategies like introducing more pocket parks can contribute to a better post-COVID-19 future (Liu and Wang, 2021).
- COVID-19: During the pandemic, urban residents preferred larger nature parks, close to the city center, over smaller urban parks (Frontiers in Ecology and Evolution, 2022). Surprisingly, the situation didn't always have negative impacts, as residents used green areas to alleviate COVID-19-related stress. The circumstances of the pandemic could prompt a reevaluation of the meaning and value of green spaces. While green area management in the "new normal" is evolving, residents' awareness can be raised by visiting such areas during this crisis period (Berdejo-Espinola et al., 2022). For instance, OlszewskaGuizzo et al. (2021) suggests that COVID-19 restriction periods may have contributed to a heightened risk of mental health disorders, such as depression and/or reduced cognitive functioning and that green spaces are a way to offset the neuropsychological effects of such periods. In view of this, multiple studies have highlighted increased frequency of green space use during periods of COVID-19 restrictions (Berdejo-Espinola et al., 2022) and suggested this is due to their multifunctionality and their capacity to mitigate some of the negative effects of the COVID-19 pandemic on human health and wellbeing.
- Social inequalities: A paradigm that evaluates people's freedom and well-being by emphasizing their capacity to select and reach worthwhile functions and capabilities—rather than concentrating just on their material resources or utility developed by economist Amartya Sen and philosopher Martha Nussbaum. Differences in access to diverse urban green spaces are more noticeable in self-defined neighborhoods than in uniform buffer areas. Neglecting variations in people's location experiences may distort the evaluation of social inequalities in accessibility and, consequently, the impact of neighborhoods on health disparities. The root causes of social inequalities in the spatial accessibility to health-related resources lie in the disparities in the spatial distribution of resources (a primary

source of inequality) and in people's perceptions of neighborhoods (a secondary source of inequality) (Vallée et al., 2020).

3.2.4. Yellow cluster: Accessibility

- Accessibility: The accessibility of urban green spaces plays a pivotal role in improving the quality of urban life. It refers to how effortless it is for people or communities to access and make use of green spaces in urban settings, taking into account elements like accessibility by car, accessibility by public transportation, safety, affordability, and inclusivity to guarantee that all locals have equal opportunity to benefit from green spaces (Q. Chen et al., 2019). It positively impacts residents' physical and mental well-being, fosters social integration, reduces discomfort from traffic noise, and facilitates air exchange between the urban core and surrounding areas (Krzywnicka and Jankowska, 2021).
- Environmental justice: A study based on the accessibility of urban parks, measuring the number and total area of parks within administrative regions. Their findings revealed a positive association between the number of urban parks and individuals' engagement in physical activities and social solidarity (Uchiyama and Kohsaka, 2020).
- Green spaces: Urban green spaces serve various functions in cities, providing recreational opportunities and contributing to enhanced social interactions and community cohesiveness. Therefore, the location and size of urban green spaces should align with the dimensions of the city and its population (Krzywnicka and Jankowska, 2021).
- Human health: Integrating social cohesion benefits with environmental and public health frameworks informs how urban green spaces enhance well-being. For instance, the ecosystem services framework highlights nature's positive impact on health, while access to green spaces fosters positive social experiences linked to social capital. Studies note increased green space use during COVID-19 restrictions, emphasizing their multifunctionality in mitigating the pandemic's negative effects on health (Frontiers in Ecology and Evolution, 2022; Berdejo-Espinola et al., 2022; da Schio et al., 2021; Lu et al., 2021).
- Socio-economic status: To enhance green area accessibility for lower-income residents, it's crucial to consider diverse citizen opinions and implement targeted policies. Studies show that individuals with higher incomes find it easier to access green spaces, while those with lower incomes face challenges due to transportation limitations, time constraints, and entrance fees (Uchiyama and Kohsaka, 2020). Disparities in the harmful impacts of green space accessibility are evident among different socioeconomic groups, with low-SES and racially/ethnically minoritized individuals experiencing more adverse effects than privileged groups (Rigolon et al., 2021).

3.2.5. Violet Cluster: Social interaction

- Social interaction: Public space interactions involve not just spoken words but also nonverbal cues including body language, emotions on the face, and eye contact. A variety of relationships are developed in public spaces and stresses the importance of these varied contacts in forming social dynamics and relations

among people in urban settings (Peters, Elands, and Buijs, 2010). Enhanced accessibility in designated paths influences the intensity of passive social interactions in parks. Urban planners and designers can promote greater passive eye contact among visitors by improving local integration (LI) and visual accessibility along the routes. Enriching the visual aspects of areas along the path structure towards activities is identified as a crucial component for achieving this outcome (Mohammadi Tahroodi and Ujang, 2022).

- Park provisions: Park accessibility can be measured in three ways: by assessing park density in a defined area or per capita (e.g., park area per person), considering spatial proximity using travel costs like time and distance, and conceptualizing spatial accessibility through factors like park size, proximity, safety, and attractiveness. Studies on park provision inequity have mainly focused on the relationship between total park area or the proportion of area designated as parks within an administrative region and socioeconomic factors (Vallée et al., 2020).

3.2.6. Light Blue Cluster: Age groups

- In situ survey: A method that analyzes survey results from Focus Group and Individual Interviews, Observations, Questionnaires, and Semi-structured Interviews, employing techniques like Stratified Random and Snowball Sampling. Sociodemographic parameters such as age, gender, education, ethnicity, and socioeconomic status are considered, alongside physical and non-physical factors like proximity, entries, transportation, communication constraints, facilities, activities, vegetation, and water bodies. User patterns are assessed based on frequency rates and the number of visits per lifespan.
- Sustainable development: Urban green spaces are vital for biodiversity, environmental resilience, and well-being across diverse urban communities, aligning with the United Nations' Sustainable Development Goals for "Good health and well-being" (Goal 3) and "Sustainable cities and communities" (Goal 11). To address related challenges, science, policy, and administration require information on the Ecosystem Services (ES) potential, demand, and actual use of urban green spaces (Priess et al., 2021).

3.2.7. Orange cluster: Competitiveness

- Competitiveness and exclusiveness of urban green space: Recent studies on park accessibility lack consideration for the competitiveness and exclusiveness of neighbourhood green spaces. Exclusiveness refers to the capacity to manage access, whereas competitiveness in these areas concerns if more users lessen the satisfaction of others. Urban green areas show traits akin to public goods if they have both non-competitive and non-exclusive attributes. They can be classified as either quasi-public goods or private goods if they don't have one or both of these qualities. This study introduces an improved method, incorporating the quasi-public goods attribute of parks. It considers both service supply capacity and citizens' demand, alongside spatial travel cost influences. Empirical results from a case study show that this method provides a more accurate accessibility estimate than previous approaches, capturing the spatial distribution of parks.

Recommendations for enhancing park accessibility include increasing park numbers, reducing travel costs, improving service capacity, and decreasing population density within the park's service area (Q. Chen et al., 2019a).

3.3. Areas where empirical research is lacking

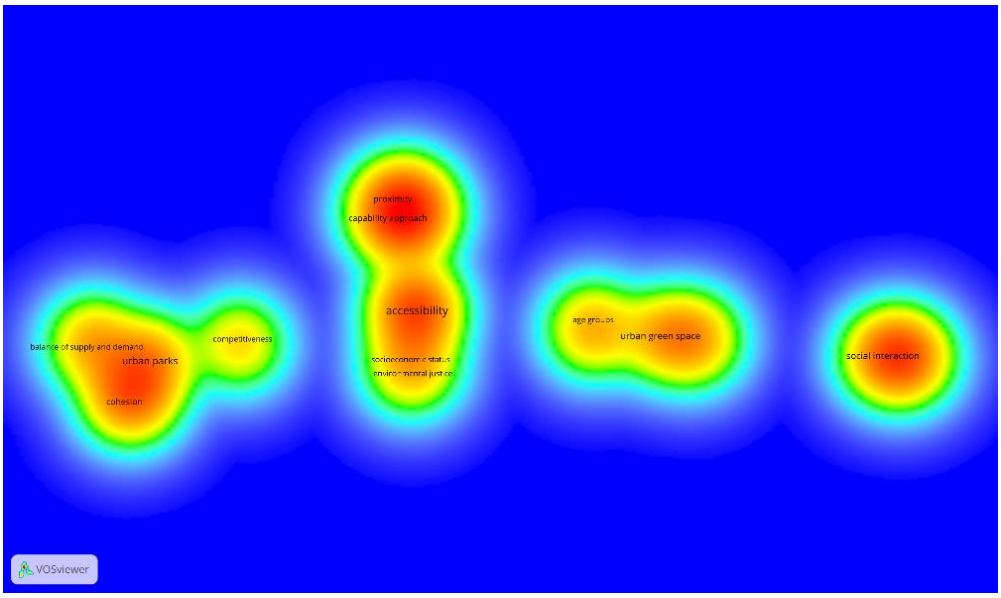

Figure 4. Keyword density visualization map.

Figure 5. Shows the following keywords that are most frequently used in following descending order: Urban > Green > Public > Accessibility > Cohesion > Spaces > Health > Parks > Wellbeing.

This section addresses the second objective of the study. Nodes with a red background signify sufficient research, indicating established knowledge, as described in the Vos viewer manual. Few of the criterions that signify sufficient research are include accessibility and inclusivity, perceived environment, social capital, equity and social justice, provisions, usage, proximity and cohesion Nodes with a green

background represent areas with less study, although they are not visible in **Figure 4**. Nodes with a yellow background indicate intermediate study levels. Notably, public open space, urban nature, and well-being emerge as the least studied areas in this map as well in word cloud generator in **Figure 5**. Conversely, ecosystem services, green space, public health, and social cohesion are highlighted as the most studied areas.

3.4. Description of outcome assessed

Commonly used terms describing the impact of people's relationships on accessibility to local parks include "social cohesion," "social interaction," and "socioeconomic justice." Additional concepts like informal control, capability approach, and social inequities are also explored. In-situ online surveys, various traffic modes, and park provisions are assessed using three general approaches: spatial proximity based on travel costs, spatial proximity based on park size, and factors like safety and attractiveness.

The research delves into the relationship between neighborhood factors (density, traffic safety, transportation, open space, intersection, and land use) and individual/household variables (sex, age, employment, income, and vehicle ownership). Emphasis is placed on how these factors influence users' health and wellness. The user pattern, tied to socio-demographic and physical factors impacting social cohesiveness, social capital, and overall health, is a key outcome. Detailed descriptive information on retrieved publications is presented in **Table 3**.

3.4.1. Descriptive information of retrieved publications

Table 3. Descriptive information of retrieved publications.

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
A Framework for Elder-Friendly Public Open Spaces from the Iranian Older Adults' perspectives: A Mixed-Method Study	(Lak et al., 2020)	Urban Forestry & Urban Greening	IR	SSI, QS	Physical variables: use of public open spaces urban neighbourhoods as well as identifying the association among the factors.	Grounded Theory (GT) and survey was conducted through a self-administered questionnaire.	Elderly people > 65	484
Access and Use of Green Areas during the COVID-19 Pandemic: Green Infrastructure Management in the "New Normal"	(Uchiyama and Kohsaka, 2020)	Sustainability	JPN	QS	Physical variables: health, planning, social justice, and equity.	Approach: Online Questionnaire survey (Answer: Yes/No) 1. Socioeconomic attributes 2. Environmental contexts 3. Status of access and use of green areas 4. Change in frequency of access and use of green areas:	Age groups: 5-year-old, 20–24-year-old, Males, Females, Elderly people >60	1244
Accessibility of public urban green space. A case study of Białystok city	(Krzywnicka and Jankowska, 2021)	Acta Scientiarum Polonorum Administratio Locorum	PLN	QNA	Parks, green squares (pocket parks, ornamental green squares, boulevards) and public forests.	Accessibility of managed and publicly available urban green spaces, referred to as public urban green spaces (PUGS), in four functional and spatial zones in the city of Białystok. The accessibility of PUGS was determined in view of their size and role in the urban spatial structure. Spatial data were processed in GIS and quantitative analyses.	PARKS	-
Activities, motivations, and satisfaction of urban parks visitors: A structural equation modelling analysis	(Halkos, Leonti, and Sardianou, 2021)	Economic Analysis and Policy	GC	SI	Breathe fresh air, enjoy the climate, view the scenery including viewing the beauty of the landscape /flora/fauna and the quietness it provides.	Approach: 1. factor analysis was used to extract the factors which led to visits to the park. 2.S*EM* was applied to identify the relationships between activities, motivations and visit satisfaction of visitors	18-68 year old	500
Analysing the effects of Green View Index of neighborhood streets on walking time using Google Street View and deep learning	(Ki and Lee, 2021)	Landscape and Urban Planning	K	GSV, GVI	Natural variables: Traditional greenery variables, pedestrian, green view index (GVI), street trees, green walls, lawns, and private greenery such as gardens and vegetation in apartment complexes.	The street Green View Index (GVI) and its associations with walking activities	Pedestrians	2350
Assessment of Digital Co-Creation for Public Open Spaces: Methodological Guidelines	(Skaržauskienė and Mačiulienė, 2019)	Informatics	LTU	ICT, QNA	Co-creation; public open spaces; assessment methods; ICT	Designing Indices for Social Phenomena, Digital Co-Creation Index, Assessment Results of ICT Supported Co-Creation for Open Public Spaces	stakeholders, local context and different social groups.	-
Association of street greenery and physical activity in older adults: A novel study using pedestrian-cantered photographs	(He et al., 2020)	Urban Forestry & Urban Greening	CHN	FG	Natural variables: Urban greenery, residents, Park area, population density, street connectivity, and land use mix within the buffer zone,	Streetscape photos, pedestrian-cantered street greenery exposure was extracted from these photos with the machine learning technique of convolutional neutral networks along with the pyramid pooling module	Urban residents living in neighbourhoods	1161 adults aged 60

Table 3. (*Continued*).

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
Associations between physical activity and characteristics of urban green space	(Schipperijn et al., 2013)	Urban Forestry & Urban Greening	DN	I	Physical activities	Relation between urban green space and outdoor physical activities	Danish adults in 2km radius	1350
Changes in Green Space Use During a COVID-19 Lockdown Are Associated with Both Individual and Green Space Characteristics	(Berdejo-Espinola et al., 2022)	Frontiers in Ecology and Evolution	AUS	QS	Dependent variables: Change in Frequency of Green Space Use During COVID-19 Lockdown, Change in Self-Perceived Benefits of Urban Green Spaces Change in Self-Perceived Benefits of Urban Green Spaces, Independent variables: biophysical factors, distance, facilities, Change of Urban Green Space Visited During Lockdown	Examine green space characteristics and sociodemographic factors	Urban parks, picnic grounds, pocket parks, riverside spaces, botanic gardens, nature reserves, and beaches	372
Comparative analysis of utilisation of open space at neighborhood level in three Asian cities: Singapore, Delhi and Kuala Lumpur	(Karuppannan and Sivam, 2013)	URBAN DESIGN International	IND, INS, SN	Comparative analysis	Physical and functional properties of open space	To understand the utilisation of open space at the neighborhood level to understand what level of open space is important across various contexts of cities and why.	Residential environment	-
Contribution of Design Indicators in Perception of Social Capital, and Interference of Socio-Demographic Information in the Process	(Rahimi, Tarashkar, and Jahantab, 2021)	Sustainability	IR	QS	Attributes: Social Capital, Social Capital within the Urban Areas, Personal Characteristics and Perception	Mutual relationship between informal social control and social leverage and inter-relationship between design indicators and perceived social capitals.	3 parks	330
Correlates of frequency of outdoor activities of older adults: Empirical evidence from Dalian, China	(Z. Liu, Kemperman, and Timmermans, 2021)	Travel Behaviour and Society	CHN	SI	User pattern: Gender, age, education level, monthly income level, household competition, environmental characteristics accessibility to local shops, distance to the nearest park, neighborhood aesthetics, social capital, social cohesion.	Zero-inflated count models	Older adults > 60 years	363
Do persons with low socioeconomic status have less access to greenspace? Application of accessibility index to urban parks in Seoul, South Korea	(Heo et al., 2021)	Environmental Research Letters	SK	QS	Number of urban parks; residential and special use parks, total number of urban parks per capita (m.sq. per person), avg. size of parks (Sq.M.), SES	Study regions, Data, Estimation of access to parks based on spatial characteristics of parks, Statistical analysis	Residential parks	424

Table 3. (*Continued*).

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
Do Visitor Experiences Differ Across Recreation Settings? Using Geographical Information Systems to Study the Setting-Experience Relationship	(Pietilä, 2017)	Visitor Studies	FN	OS	User pattern: Gender, education, age groups, nationality, previous park visits, length of visit	Measure both visitor experiences and recreation settings geographically as accurately as possible, using GIS	Visitors	1162
Ecosystem Service Use and the Motivations for Use in Central Parks in Three European Cities	(Priess et al., 2021)	Land	PG, GE, LTU	SI	Perceived accessibility: Availability and size (spatial factors), or green and grey features of the various UGS types	Social relations. Age of visitors, cultural setting, and distance	Kids, adults, aged groups	300
Engaging in social interaction: relationships between the accessibility of path structure and intensity of passive social interaction in urban parks	(Mohammadi Tahroodi and Ujang, 2022)	Archnet-IJAR: International Journal of Architectural Research	MA	MS	Social cohesion, social affiliation, and sense of communication.	The visual and physical accessibility attributes	-	-
Equality in access to urban green spaces: A case study in Hannover, Germany, with a focus on the elderly population	(Guo et al., 2020)	Urban Forestry & Urban Greening	GE	QS	Physical and natural variables: Vegetation types and water elements, natural attractiveness, street network, and the many-to-many relationship between the supply and demand locations	Understanding the spatial disparity in access to urban green and blue infrastructure (UGBI)	elderly people	-
Enhanced Public Open Spaces Planning in Saudi Arabia to Meet National Transformation Program Goals	(Sreetheran, 2017)	Current Urban Studies	SAU	Car survey, O	Pedestrian continuity, Parking, Special needs-friendly, Barrier-free	Sense of belonging	City dwellers	-
Exploring the disparities in park accessibility through mobile phone data: Evidence from Fuzhou of China	(Lin et al., 2021)	Journal of Environmental Management	CHN	OS	Urban Park, Mobile phone data, 2SFCA, geographically weighted regression	The traditional place-based or infrastructure-based approach	Urban residents' home to park within 2 KM	-
Exploring the urban park use, preference, and behaviours among the residents of Kuala Lumpur, Malaysia	(Sreetheran, 2017)	Urban Forestry & Urban Greening	MA	QS	Urban green space, cultural context	People use and perceive urban parks in their daily life	Aged between 18 to 73 years	669
Green Space and Health Equity: A Systematic Review on the Potential of Green Space to Reduce Health Disparities	(Rigolon et al., 2021)	International Journal of Environmental Research and Public Health	US	SI	Atopic disease; birth outcomes; cardiovascular disease; diabetes; green infrastructure; mortality; normalized difference vegetation index (NDVI); obesity	Health Disparities, Health Inequities, and Health Equity	106 (individual level study) and 97,574,613 (ecological study)	23033

Table 3. (*Continued*).

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
How to accurately identify the underserved areas of peri-urban parks? An integrated accessibility indicator	(J. Zhang, Cheng, and Zhao, 2021)	Ecological Indicators	CHN		Green coverage rate, park trail density, lighting, signage system, parking lots, playgrounds, sport/fitness facilities,	Peri-urban Park accessibility and monitoring underserved areas are lacking.	-	-
Inclusive Parks across Ages: Multifunction and Urban Open Space Management for Children, Adolescents, and the Elderly	(Sundevall and Jansson, 2020)	International Journal of Environmental Research and Public Health	SW	WI	Liveliness, contact with nature, social places	Need for high-quality parks that are inclusive and fit for multiple user groups.	children, adolescents, and the elderly	-
Is accessibility in the eye of the beholder? Social inequalities in spatial accessibility to health-related resources in Montréal, Canada	(Vallée et al., 2020)	Social Science & Medicine	CAN	OS	Political powers, social networks, regulation of various actors, and local interactions	Social gradients in spatial accessibility to health-related resources	Young adults at residential neighbourhood	1457
Legibility of neighborhood parks as a predicator for enhanced social interaction towards social sustainability	(Moulay, Ujang, and Said, 2017)	Cities	MYS	O, SRM	Variable: R square, variance inflation factor, Beta *P* value, Measured by the level of connectivity, number of entrances, frequency of use and the perceived safety	Relationship between legibility attributes (clear structure, visual obstacles, and accessibility) with social interaction (park engagement and the intensity of contact) within neighborhood parks.	Residents	378
Linking place attachment and social interaction: towards meaningful public places	(Ujang, Kozlowski, and Maulan, 2018)	Journal of Place Management and Development	MYS	VF, SS, AR	Proximity: Width and distance of walkways, streetways, transportation facilities and cultural orientation	Literature on the social aspect of public places, social interaction, and place attachment, inclusiveness, and connectedness	Shop-owners; workers; shopkeepers; shoppers; personnel; office workers; shoppers; local visitors; and students between 19 to 63 ages	16
Measurement of Urban Park Accessibility from the Quasi-Public Goods Perspective	(Q. Chen et al., 2019)	Sustainability	CHN	D, O, SR	Proximity: Minimum distance, travel distance (including simple buffer, cost-weighted distance, and network analysis methods), and the gravity model methods. Park size, facilities, park capacity	-	Comparison between Quasi-Public Goods Perspective and Pure Public Goods Perspective	424701
Modelling the dynamics and walking accessibility of urban open spaces under various policy scenarios	(Liang et al., 2021)	Landscape and Urban Planning	CHN	SR	Walking accessibility, population coverage rate	Social interactions	Users	8.39 million

Table 3. (*Continued*).

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
Objectively assessed neighborhood destination accessibility and physical activity in adults from 10 countries: An analysis of moderators and perceptions as mediators	(Cerin et al., 2018)	Social Science & Medicine	BE, CO, CZE, DK, CHN, MX, NZ, UK, US	SRS	Accelerometer, net residential density, intersection density, land use mix, ratio of retail and civic land area contained or intersected by residential buffer to total buffer area; public transport density; public park density; and street-network distance to nearest transport stop	-	aged 18–66 years from 14 cities	10,008
Public green spaces and positive mental health – investigating the relationship between access, quantity and types of parks and mental wellbeing	(Wood et al., 2017)	Health & Place	AUS	QS	Number of parks within the neighbourhood, Park area within the walking distance and service area, Park functions	Public green spaces for positive mental health and positive association. Assess optimism, perception of usefulness, confidence, social interaction, energy, and interest in new activities.	Residents, 1.6 km road network service area, which represents an approximate 10–15 min walk in all directions	492
Public Open Space in Realizing Sustainable Urban Development (Study: Environmental Park in East Jakarta, Indonesia)	(Firdaus et al., 2019)	IOP Conference Series: Earth and Environmental Science	ID	QS	Qualitative variation index (IQV)	Ability to bind the community through high participation in the community service.	Park users	11 parks considered
Quality of urban parks in the perception of city residents with mobility difficulties	(Błaszczyk et al., 2020)	PeerJ	PL	QS-Likert Scale, SS	Place accessibility=park use and infrastructure (park safety, maintenance, attractiveness, opportunities for socialisation, and neighborhood crime safety, aesthetics, quality of materials), Physical variables= transport and communication constraints, Proximity= distance, mobility for S-A Non-physical variables=facilities and activities Perceived accessibility= lighting, signage, locations of facilities, program and activities, landscape design, and maintenance frequency	Non-physical variable improves social interaction and parks offer opportunities for contact irrespective of non-spatial factors associated with socioeconomic constraints and personal capacities (i.e., health status, lifestyle, stage of life), Inclusivity and Universal design.	Groups were designed to include Especially abled	103
Re-examine the value of urban pocket parks under the impact of the COVID-19	(S. Liu and Wang, 2021)	Urban Forestry & Urban Greening	US	SR	Physical variables= Proximity/distance= Park use and infrastructure Non-physical variables=facilities and activities	Social interaction and social bond: Outdoor activities, physical exercise, relaxing and getting close to nature)	Users	-
Residents and urban green spaces: The case of Bari	(Sanesi and Chiarello, 2006)	Urban Forestry & Urban Greening	IT	TI SRM	Physical variables= transport Patterns, Park use= age, sex, marital status, area of residence Perceived accessibility= Size, maintenance, surveillance, planning, facilities	Social representations: constructed within their own social context	Residents	351

Table 3. (*Continued*).

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
Role of Parks as Recreational Spaces at Neighborhood Level in Indian Cities	(Turna and Bhandari, 2022)	ECS Transactions	IND	-	Physical variables= transport, proximity	Inclusivity and sociability	Residents	-
Social interactions in urban parks: Stimulating social cohesion?	(Peters, Elands, and Buijs, 2010)	Urban Forestry & Urban Greening	NLD	O, II	Physical variables= Park use Patterns= Park useage, sex, area of residence Perceived accessibility- facilities	Social cohesion: inclusivity, social interaction, and place attachment	Different ethnic groups	618
The Association between Green Space and Adolescents' Mental Well-Being: A Systematic Review	(Y. Zhang et al., 2020)	International Journal of Environmental Research and Public Health	NZ, AUS	SR	Area of park land divided by total land Normalized Difference Vegetation Index (NDVI)	Green space: associated with physical and mental well-being	Residents	13
The contribution of local parks to neighborhood social ties	(Kaźmierczak, 2013)	Landscape and Urban Planning	UK	QS, FG	Use pattern=Frequent visit to parks, Age, gender, ethnic group, employment status, facilities and activities (X^2)	Social ties and social interaction	Residents	1500
The Correlation Between Spatial Characteristics and Utilization of City Parks: A Focus on Neighborhood Parks in Seoul, Korea	(Nam and Kim, 2014)	Journal of Asian Architecture and Building Engineering	KR	Digital Mapping	Space syntax variables= Depth, Connectivity, Control value, Integration Internal Variable: facilities area and ratio, gate, parking lot, type of facilities Eternal variables: elevation, slope, land use, population and transportation	Friendly interactions: Role as a place of festivals and rallies	Residents	8979 ha area
The Making of a Quality Neighborhood Park: A Path Model Approach	(Malek, Mariapan, and Shariff, 2012)	Procedia - Social and Behavioural Sciences	MYS	-	Use pattern/frequency of use- facilities Maintenance and services, distance, park size.	Human interaction needs for social interaction, citizen participation, sense of community identity	Urban settlers	-
The motivation and factors influencing visits to small urban parks in Shanghai, China	(Wang et al., 2021)	Urban Forestry & Urban Greening	CHN	QS, II	Hierarchical regression model. socio-demographic variables: including age, gender, and income, Spatial attributes- Distance or proximity, frequency of use. Park features variables- facilities, maintenance, services Personal variables	Interaction: attachment through motivation and facilities.	aged 13 or older were selected from people visiting Small Urban Green Space	634
The Relationship between Social Cohesion and Urban Green Space: An Avenue for Health Promotion	(Jennings and Bamkole, 2019)	International Journal of Environmental Research and Public Health	USA	SR	Socio-demographic variables	Social interactions and inclusion: cultivate social cohesion in ways that enhance health and well-being. Social engagement: Increased physical activity. Social engagement, social support.	-	-
The Role of Environmental Features of Parks in Activation of Recreational Activities in Leisure Time	(Zohrevandian et al., 2017)	Annals of Applied Sport Science	IR	QS	Socio-demographic variables pedestrian paths, facilties, placement, management, location, security	Public welfare	Aged over 18 years	425

Table 3. (*Continued*).

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
The contribution of local parks to neighborhood social ties	(Kaźmierczak, 2013)	Landscape and Urban Planning	UK	QS, FG	Use pattern=Frequent visit to parks, Age, gender, ethnic group, employment status, facilities and activities (X^2)	Social ties and social interaction	Residents	1500
Underlying relationships between public urban green spaces and social cohesion: A systematic literature review	(Wan, Shen, and Choi, 2021)	City, Culture and Society	-	PRISMA	-	Social cohesion and its aspects of green spaces. Social cohesion has a promoter of green space.	-	-
Urban Green Space Design Affects Urban Residents' Social Interaction	(Rasidi, Jamirsah, and Said, 2012)	Procedia - Social and Behavioural Sciences	MYS	QS	Proximity or distance= Park uses Mode of transportation Physical and natural variables= activities, attractions, and settings.	Social interaction behaviour is dependent on vegetation density, animal populations, undulating landforms and water bodies	Urban residents	330
Urban Green Space Perception and Its Contribution to Well-Being	(Kothencz et al., 2017)	International Journal of Environmental Research and Public Health	HU	QS, geo-tagged photographs	Applied logistic regression analysis Frequency use Spatial patterns	Characteristics: Visitors level of satisfaction and quality of life	Urban residents	-
Urban Park facility use and intensity of seniors' physical activity – An examination combining accelerometer and GPS tracking	(Zhai et al., 2021)	Landscape and Urban Planning	CHN	accelerometers	Regression analysis Frequency use Facilities	-	Seniors-citizens	286
Urban Parks and Their Accessibility in Tehran, Iran	(Fasihi, 2019)	Environmental Justice	IR	Geographic Information System (GIS)	Proximity- radius method population density	-	Tehran city	8.7 million
Using a Spatial Interaction Model to Assess the Accessibility of District Parks in Hong Kong	(Tian, Jim, and Liu, 2017)	Sustainability	CHN	-	Spatial accessibility model Population and distance	Social benefits: Quality of life	Hong Kong district parks	-
Visitor access, use, and desired improvements in urban parks	(Talal and Santelmann, 2021)	Urban Forestry & Urban Greening	US	O, SSI	ANOVA analysis method socio-demographic variables facilities. Time	Interactions between adults, and adult child interactions, which all support physical and mental well-being.	Urban residents	15

Table 3. (*Continued*).

Title	Study	Publication	Location	Research methods	Considerations of Accessibility to green spaces	Social cohesion or similar behaviours	Study target	Sample size (n = users)
Which communities have better accessibility to green space? An investigation into environmental inequality using big data	(Y. Chen, Yue, and La Rosa, 2020)	Landscape and Urban Planning	CHN	-	Socio-demographic variables Amap- web-based navigation map	Sustainable urban development- recreational value and promotion of mental and physical health.	Residents	24.19 million

Note. Country code: AUS = Australia; BE=Belgium BR=Brazil; CAN = Canada; CHN = China; CO=Colombia; CZE=the Czech Republic; DK= Denmark; KR= South Korea; MYS = Malaysia; HU= Hungary; IR= Iran; ID= Indonesia; IND= India; IT= Italy; MX = Mexico; NLD = Netherlands; NZ= New Zealand; PL= Poland; UK = United Kingdom; US = United States.
Research methods code: AR= Audio Recording; D = Drawing; FG = Focus Group Interview; II = Individual Interview; O = Observation; QS = Questionnaire Survey; SSI = Semi-structured Interviews; SRM= Stratified Random Sampling SS= Snowball Sampling SR= Secondary Research TI= Telephone Interviews.

3.4.2. Description of outcome assessed based on the information of retrieved publications

Several aspects of the results were measured in the studies. For instance, Moreno-Mata (2018) examined how urban sprawl affected social accessibility to green spaces and spatial distribution, as well as how environmental justice was affected. Additionally, the study evaluated how accessible public parks and green spaces were to various social groups. Which socio-spatial areas need more parks or public green spaces? The methodology is based on the environmental justice approach and uses an indicator system to evaluate how people are distributed, disposed of, and able to access green spaces. The environmental justice approach focuses on treating everyone equally and involving them meaningfully in the decision making, application, and upholding of laws and regulations, regardless of their color, ethnicity, financial status, or social standing. The Correlation Between Spatial Characteristics and Utilization of City Parks: A Focus on Neighborhood Parks (Nam and Kim 2014a) investigate the influence of Space syntax variables such as Depth, Connectivity, Control value, Integration, Internal Variable; facilities area and ratio, gate, parking lot, type of facilities, Eternal variables; elevation, slope, land use, population and transportation and social cohesions on parks, specifically their role as spaces for festivals and rallies. It examines into how many aspects of green spaces—such as their location, size, shape, and accessibility—affect how locals utilize and interact with them, which in turn affects their quality of life and overall wellbeing. The study employs common methods such as visiting green spaces, surveys across various age groups, including questionnaires, stratified sampling, and observation surveys. These methods provide insights into dependent and independent variables affecting accessibility, with physical and non-physical factors, along with user habits, identified as mediators, and socio-demographic variables and perceived environment as moderators. The collected data is then analyzed to assess satisfaction levels and identify areas for improvement in park accessibility.

These variables act as determinants influencing social cohesiveness, encompassing terms like social cohesion, interaction, capital, and contacts. Factors explored include informal control, proximity, social disparities, sociodemographic aspects, socioeconomic position, physical elements, inclusiveness, exclusivity, and others impacting green space access. The collected data is analyzed to assess satisfaction levels and identify influencing factors.

4. Discussion

The objectives are achieved by identifying the determinants of accessibility to neighborhood green spaces, understand the components of neighborhood green spaces and to understand the relationship between accessibility and social cohesiveness and its influence on health and well-being.

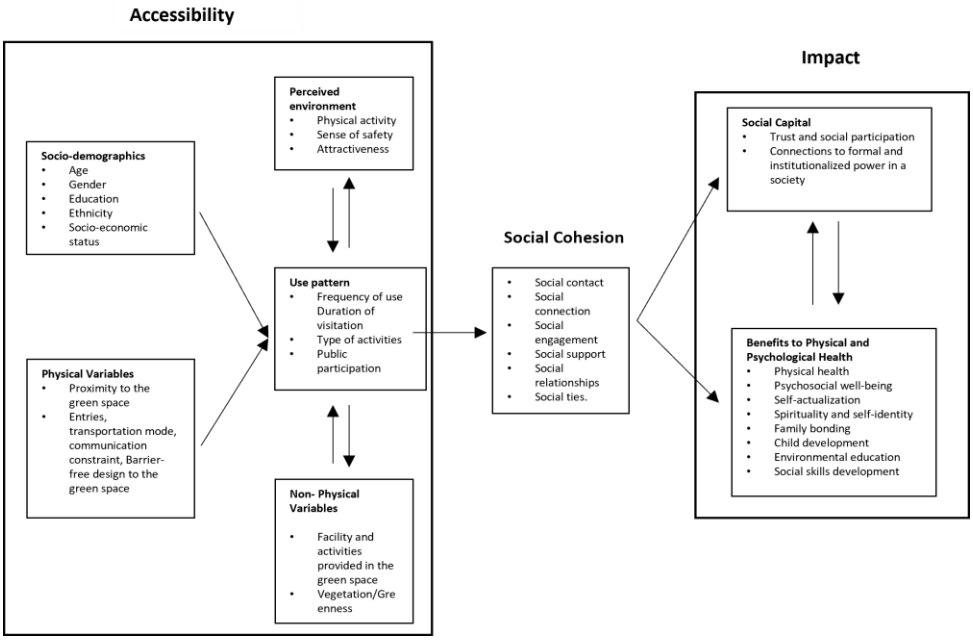

Figure 6. Conceptual framework (developed by the researcher).

Figure 6: The study reveals four factors that directly influence usage patterns in a neighborhood park: socio-demographics, physical characteristics, non-physical variables, and perceived surroundings. These factors determine the frequency of usage and the availability of green spaces. Socio-demographic factors cater to different age groups, genders, and ethnicities, impacting social cohesion. Physical factors facilitate access to green spaces, while attractiveness, safety, vegetation, and internal facilities allow inhabitants to use and socialize. The perceived environment and non-physical factors also influence usage patterns, as parks are well-maintained, facilitated, vegetated, and participatory when used frequently and people socialize. These factors, combined, determine accessibility for social cohesion in a neighborhood park. However, conflicting findings were produced due to different approaches to the problem.

Social cohesion, a key component of social capital, is a strategy that promotes connection, trust, belonging, and acceptance, thereby enhancing physical and psychological health by reducing symptoms like loneliness and social isolation, based on reciprocal elements and key criteria.

Research indicates that individuals who chose to visit a different green area during the lockdown compared to their usual choice had a reduction in the frequency of their visits. Conversely, individuals who maintained their usual visits to green spaces during the lockdown were more likely to increase the frequency of their visits. Alterations in the frequency of green space utilization were also linked to certain attributes of the green space that individuals often frequent. Blue spaces and accessibility (carparks/public transit) were shown to be positively correlated with higher frequency of usage, whereas foliage height variety was found to be negatively correlated with frequency of use. Our findings indicate that females had a greater tendency to modify their frequency of visiting green spaces during the COVID-19 pandemic, as compared to males. Additionally, females indicated a larger significance of green spaces for social and familial connections, as well as spiritual reasons, during

the pandemic in comparison to the pre-pandemic period. During the COVID-19 shutdown, males exhibited more significant increases than females in the significance of green space for nature interactions and mental health benefits compared to the period before.

The study has limitations that may lead to results that are not accurate or comprehensive. Keyword search has limitations in article collection, preventing researchers from finding relevant articles for a literature review. Additionally, certain identified components produced conflicting findings, potentially due to socio-demographic, socioeconomic, geographical, cultural, population, and sample size differences. Additionally, several publications were identified through references of literature that were overlooked or omitted due to the absence of certain key-words. Therefore, it is recommended to obtain articles from multiple sources for a more comprehensive and accurate study.

The studies evaluated are mostly cross-sectional, and the impact of accessibility on social cohesiveness is unknown. Future research should use qualitative methodologies to explore patterns of access to social cohesion. The study can be classified into mediators, moderators, and objective destination accessibility when focusing on specific age groups, ethnicity, and gender classification. Additionally, better findings between variables may be provided by proposing and implementing approaches that address potential overlooked relationships.

Qualitative investigations are crucial for comprehending the study constraints and suggestions associated with usage patterns in the investigation of accessibility to neighborhood green spaces and social cohesiveness. Researchers may enhance their understanding of individuals' unique experiences and viewpoints such as frequency of use, duration of visit, type of activities, and public participation in these settings by conducting comprehensive interviews, focus groups, and observations. This data may help in identifying obstacles to entry and involvement, as well as revealing possibilities for enhancing social unity within communities. In the end, qualitative research can provide information that can be used to create more specific and efficient treatments to tackle these problems and improve the overall well-being of residents.

The research on the factors influencing accessibility to neighborhood green spaces that contribute to social cohesion indicates that there are unexplored connections between variables in this domain. A future study should investigate these correlations in greater depth to gain a more comprehensive understanding of how the availability of green areas affects social cohesiveness. This may involve examining the impact of variables such as proximity to green spaces, the quality of green areas, and the presence of community initiatives or activities. Through the examination of these neglected connections, researchers may acquire a more comprehensive understanding of how the accessibility of green space might improve cohesiveness among neighborhoods.

The study outlines recommendations and guidelines for improving use patterns in green spaces, focusing on socio-demographic characteristics, perceived environment, and physical and non-physical variables. It suggests that age, gender, socioeconomic status, and ethnicity should be considered, with children (0–12 years),

teenagers (13–19 years), young and middle-aged people (20–60 years), and the elderly (60 and above) being considered.

The study also emphasizes the importance of providing play equipment, walking and cycling paths, seating places, yoga pavilions, kiosks, and barrier-free design for people with disabilities and the elderly. Gender affects visual access, restrooms, safety, and social environments, and the study suggests that areas for gatherings and festivals should be designated for residents from diverse backgrounds.

The study also suggests that adequate transportation and provisions, such as dedicated parking, road width, pick-up and drop-off facilities, and auto or bus stations, are needed to extend the reach of green space. The demand and supply ratio are determined by proximity and population, with walking distances of 10 minutes or 300 meters and 10–12 m^2 of green space devoted to residents being desirable considerations. Landscape aspects, such as hardscape, greenness, and waterbody, should attract animals, birds, and insects while minimizing barriers between the environment and humans. Encouraging the use of garbage bins, a ban on littering and smoking, and security and maintenance are also crucial for safety and hygiene.

5. Conclusion

The study examines the impact of physical, non-physical, sociodemographic, environment perceptions, usage patterns, and accessibility on social cohesion. It used the PRISMA technique to identify relevant publications and VOS viewer software to examine the relationship between factors. A descriptive table is created to outline requirements and variables needed for achieving objectives. Research on the connections between social cohesion and accessibility is beneficial for creating intervention strategies in urbanized cultures, and this approach helped develop research recommendations. The study of routes connecting accessibility and social cohesion can help develop intervention strategies for improving social interactions in urbanized cultures. The model also aids in developing guidelines for implementation or further research. A quality evaluation is conducted to score papers based on the criteria and characteristics covered in the study.

Table 4. Quality assessment of included studies that identify accessibility aspects to promote social cohesion (based on researchers findings).

Study	**Socio-demographic**						**Physical variables**		**Non-physical variables**		**User pattern**	**Data analysis**	**Quality Score**	**Quality Rating**
	1.1	**1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**2.1**	**2.2**	**3.1**	**3.2**	**4**	**5**		
(Lak et al. 2020)	+	+	+	+	+	+	+	+	+	+	+	+	5	HQ
(Uchiyama and Kohsaka 2020)	+	+	+	+	+	+	-	-	+	+	+	+	4	MQ
(Krzywnicka and Jankowska 2021)	-	-	-	-	-	-	+	+	+	+	-	-	2	LQ
(Halkos, Leonti, and Sardianou 2021)	+	+	+	+	+	-	-	+	+	+	+	+	4.5	HQ
(Ki and Lee 2021)	+	+	+	+	+	+	+	+	+	+	-	+	4	MQ
(Skaržauskienė and Mačiulienė 2019)	-	-	-	-	-	-	-	-	-	-	+	+	2	LQ
(He et al. 2020)	+	+	+	+	+	+	-	-	+	-	+	+	2.5	MQ
(Schipperijn et al. 2013)	-	-	-	-	-	-	+	+	+	+	+	-	3	MQ

Table 4. (*Continued*).

Study	Socio-demographic						Physical variables		Non-physical variables		User pattern	Data analysis	Quality Score	Quality Rating
	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	4	5		
(Berdejo-Espinola et al. 2022)	+	+	+	+	+	+	+	+	+	+	+	+	5	HQ
(Karuppannan and Sivam 2013)	+	+	-	-	+	+	+	+	-	-	+	-	2.5	MQ
(Rahimi, Tarashkar, and Jahantab 2021)	+	+	+	+	+	+	-	-	+	+	+	+	4	MQ
(Z. Liu, Kemperman, and Timmermans 2021)	+	+	+	+	+	+	-	-	-	+	+	+	3.5	MQ
(Heo et al. 2021)	-	-	-	-	-	-	+	+	+	+	+	+	4	MQ
(Pietilä 2017)	+	+	+	+	+	+	-	-	-	+	+	+	3.5	MQ
(Priess et al. 2021)	+	+	+	+	+	+	+	+	-	-	+	-	3.5	MQ
(Mohammadi Tahroodi and Ujang 2022)	-	-	-	-	-	-	+	+	+	+	+	-	3	MQ
(Guo et al. 2020)	+	+	+	+	+	+	-	-	+	+	+	-	3.5	MQ
(Sreetheran 2017)	+	+	+	-	-	-	-	-	+	+	-	-	1.5	LQ
(Lin et al. 2021)	-	-	-	-	-	-	+	+	+	+	+	-	3	MQ
(Sreetheran 2017)	+	+	+	+	+	+	-	+	+	+	-	-	2.5	MQ
(Rigolon et al. 2021)	+	+	+	+	+	+	+	+	+	+	+	+	5	HQ
(J. Zhang, Cheng, and Zhao 2021)	+	+	+	+	+	+	+	+	+	+	+	+	5	HQ
(Sundevall and Jansson 2020)	+	+	-	-	-	-	+	+	+	+	-	-	2.5	MQ
(Vallée et al. 2020)	+	+	+	+	+	+	-	-	-	-	+	-	2	LQ
(Rigolon et al. 2021)	+	+	+	+	+	-	-	+	+	-	-	-	2	LQ
(Moulay, Ujang, and Said 2017)	-	-	-	-	-	+	+	+	+	-	+	+	2	LQ
(Ujang, Kozlowski, and Maulan 2018)	-	-	-	-	-	-	+	+	+	-	-	-	1	LQ
(Q. Chen et al. 2019)	-	-	-	-	-	-	+	+	+	+	-	+	3	MQ
(Liang et al. 2021)	-	-	-	-	-	+	+	+	+	-	-	+	3	MQ
(Cerin et al. 2018)	-	-	-	-	-	+	+	+	+	+	+	+	4	MQ
(Wood et al. 2017)	-	-	-	-	-	-	+	+	+	+	-	-	4	MQ
(Firdaus et al. 2019)	-	-	-	-	-	+	+	+	+	-	-	+	3	MQ
(Błaszczyk et al. 2020)	-	-	-	-	-	+	+	+	+	+	+	+	4	MQ
(S. Liu and Wang 2021)	-	-	-	-	-	-	+	+	+	+	-	-	2	LQ
(Sanesi and Chiarello 2006)	+	+	+	+	+	+	+	+	+	+	+	-	4	MQ
(Turna and Bhandari 2022)	-	-	-	-	-	-	+	+	-	-	-	-	1	LQ
(Peters, Elands, and Buijs 2010)	+	+	+	+	+	+	+	+	+	+	+	-	4	MQ
(Y. Zhang et al. 2020)	-	-	-	-	-	-	-	-	-	+	+	+	1	LQ
(Kaźmierczak 2013)	+	+	+	+	+	+	+	+	+	-	+	+	4.5	HQ
(Nam and Kim 2014)	-	-	-	-	-	-	+	+	+	-	+	+	3	MQ
(Malek, Mariapan, and Shariff 2012)	-	-	-	-	-	-	+	+	+	-	+	+	3.5	MQ
(Wang et al. 2021)	+	+	+	+	+	+	-	+	+	+	+	+	4.5	HQ
(Jennings and Bamkole 2019)	+	+	+	+	+	+	-	-	-	-	-	-	1	LQ
(Zohrevandian et al. 2017)	+	+	+	+	+	+	+	+	+	-	-	-	2.5	MQ

Table 4. (*Continued*).

Study	Socio-demographic						Physical variables		Non-physical variables		User pattern	Data analysis	Quality Score	Quality Rating
	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	4	5		
(Wan, Shen, and Choi 2021)	+	-	-	-	-	-	-	-	+	+	-	-	1	LQ
(Rasidi, Jamirsah, and Said 2012)	-	-	-	-	-	-	+	+	+	+	+	-	3	MQ
(Kothencz et al. 2017)	-	-	-	-	-	-	-	-	+	-	+	+	2.5	MQ
(Zhai et al. 2021)	-	-	-	-	-	-	+	+	+	-	+	+	3.5	MQ
(Fasihi 2019)	-	-	-	-	-	-	+	-	+	-	-	+	2	LQ
(Tian, Jim, and Liu 2017)	-	-	-	-	-	-	+	-	+	-	-	+	2	LQ
(Talal and Santelmann 2021)	+	+	+	+	+	+	-	+	+	-	-	+	3	MQ
(Y. Chen, Yue, and La Rosa 2020)	+	+	+	+	+	+	-	-	-	-	-	+	2	LQ

Note. + = "Yes"; - = "No"; CT = "Can't tell". HQ = High quality; MQ = Medium quality; LQ = Low quality.
1.1. Age; 1.2. Gender; 1.3. Education; 1.4. Ethnicity; 1.5. Socio-economic status; 1.6. Perceived environment; 2.1. Proximity; 2.2. Entries, transportation facility and communication constraints, Barrier free design; 3.1 Facilities and activities; 3.2. Vegetation and waterbody; 4. User pattern (Frequency rate, no. of visits per lifespan); 5. Data analysis method.

Table 4 outlines criteria affecting access to social cohesiveness, including socio-demography, physical and non-physical usage patterns, and data analysis methods. These criteria are categorized into variables from **Table 4** and used to evaluate the quality of each research paper. Literature with all five criteria receives a score of 5, while those explaining four criteria receive a score of 4 and so on until the score is one. Literature with 4–5 criteria is considered high quality, while those with 2–4 criteria are medium quality. Literature with a 0–2 score is low quality.

Some literature earns a low-quality rating, but it provides a comprehensive description of social cohesiveness and its implications. It also provides critical terminology and concepts that impact accessibility and are useful for analysis. Medium or high-quality research papers include data analysis methods and briefly explain accessibility determinants. Criteria explaining a few variables are considered nil, as the weight of each variable depends on the total number of variables under the criteria. The method is followed to assess the quality of each paper and extract necessary literature.

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References

Berdejo-Espinola, V., Zahnow, R., Suárez-Castro, A. F., et al. (2022). Changes in Green Space Use During a COVID-19 Lockdown Are Associated With Both Individual and Green Space Characteristics. Frontiers in Ecology and Evolution, 10. https://doi.org/10.3389/fevo.2022.804443

Błaszczyk, M., Suchocka, M., Wojnowska-Heciak, M., et al. (2020). Quality of urban parks in the perception of city residents with mobility difficulties. PeerJ, 8, e10570. Portico. https://doi.org/10.7717/peerj.10570

Cerin, E., Conway, T. L., Adams, M. A., et al. (2018). Objectively-assessed neighbourhood destination accessibility and physical activity in adults from 10 countries: An analysis of moderators and perceptions as mediators. Social Science & Medicine, 211, 282–293. https://doi.org/10.1016/j.socscimed.2018.06.034

Chen, Q., Wang, C., Lou, G., et al. (2019). Measurement of Urban Park Accessibility from the Quasi-Public Goods Perspective. Sustainability, 11(17), 4573. https://doi.org/10.3390/su11174573

Chen, Y., Yue, W., & La Rosa, D. (2020). Which communities have better accessibility to green space? An investigation into environmental inequality using big data. Landscape and Urban Planning, 204, 103919. https://doi.org/10.1016/j.landurbplan.2020.103919

Fasihi, H. (2019). Urban Parks and Their Accessibility in Tehran, Iran. Environmental Justice, 12(6), 242–249. https://doi.org/10.1089/env.2019.0014

Firdaus, M. K., Sumabrata, J., Tampi, D. M., et al. (2019). Public Open Space in Realizing Sustainable Urban Development (Study: Environmental Park in East Jakarta, Indonesia). IOP Conference Series: Earth and Environmental Science, 264, 012005. https://doi.org/10.1088/1755-1315/264/1/012005

Guo, M., Liu, B., Tian, Y., et al. (2020). Equity to Urban Parks for Elderly Residents: Perspectives of Balance between Supply and Demand. International Journal of Environmental Research and Public Health, 17(22), 8506. https://doi.org/10.3390/ijerph17228506

Halkos, G., Leonti, A., & Sardianou, E. (2021). Activities, motivations and satisfaction of urban parks visitors: A structural equation modeling analysis. Economic Analysis and Policy, 70, 502–513. https://doi.org/10.1016/j.eap.2021.04.005

He, H., Lin, X., Yang, Y., et al. (2020). Association of street greenery and physical activity in older adults: A novel study using pedestrian-centered photographs. Urban Forestry & Urban Greening, 55, 126789. https://doi.org/10.1016/j.ufug.2020.126789

Heo, S., Nori-Sarma, A., Kim, S., et al. (2021). Do persons with low socioeconomic status have less access to greenspace? Application of accessibility index to urban parks in Seoul, South Korea. Environmental Research Letters, 16(8), 084027. https://doi.org/10.1088/1748-9326/ac12f1

Jennings, V., & Bamkole, O. (2019). The Relationship between Social Cohesion and Urban Green Space: An Avenue for Health Promotion. International Journal of Environmental Research and Public Health, 16(3), 452. https://doi.org/10.3390/ijerph16030452

Karuppannan, S., & Sivam, A. (2012). Comparative analysis of utilisation of open space at neighbourhood level in three Asian cities: Singapore, Delhi and Kuala Lumpur. URBAN DESIGN International, 18(2), 145–164. https://doi.org/10.1057/udi.2012.34

Kaźmierczak, A. (2013). The contribution of local parks to neighbourhood social ties. Landscape and Urban Planning, 109(1), 31–44. https://doi.org/10.1016/j.landurbplan.2012.05.007

Ki, D., & Lee, S. (2021). Analyzing the effects of Green View Index of neighborhood streets on walking time using Google Street View and deep learning. Landscape and Urban Planning, 205, 103920. https://doi.org/10.1016/j.landurbplan.2020.103920

Kothencz, G., Kolcsár, R., Cabrera-Barona, P., et al. (2017). Urban Green Space Perception and Its Contribution to Well-Being. International Journal of Environmental Research and Public Health, 14(7), 766. https://doi.org/10.3390/ijerph14070766

Krzywnicka, I., & Jankowska, P. (2021). accessibility of public urban green space. A case study of Białystok city. Acta Scientiarum Polonorum Administratio Locorum, 20(3), 203–214. https://doi.org/10.31648/aspal.6794

Lak, A., Aghamolaei, R., Baradaran, H. R., et al. (2020). A Framework for Elder-Friendly Public Open Spaces from the Iranian Older Adults' perspectives: A Mixed-Method Study. Urban Forestry & Urban Greening, 56, 126857. https://doi.org/10.1016/j.ufug.2020.126857

Liang, X., Tian, H., Li, X., et al. (2021). Modeling the dynamics and walking accessibility of urban open spaces under various policy scenarios. Landscape and Urban Planning, 207, 103993. https://doi.org/10.1016/j.landurbplan.2020.103993

Lin, Y., Zhou, Y., Lin, M., et al. (2021). Exploring the disparities in park accessibility through mobile phone data: Evidence from Fuzhou of China. Journal of Environmental Management, 281, 111849. https://doi.org/10.1016/j.jenvman.2020.111849

Liu, S., & Wang, X. (2021). Reexamine the value of urban pocket parks under the impact of the COVID-19. Urban Forestry & Urban Greening, 64, 127294. https://doi.org/10.1016/j.ufug.2021.127294

Liu, Z., Kemperman, A., & Timmermans, H. (2021). Correlates of frequency of outdoor activities of older adults: Empirical evidence from Dalian, China. Travel Behaviour and Society, 22, 108–116. https://doi.org/10.1016/j.tbs.2020.09.003

Malek, N. A., Mariapan, M., & Shariff, M. K. M. (2012). The Making of a Quality Neighbourhood Park: A Path Model Approach. Procedia - Social and Behavioral Sciences, 49, 202–214. https://doi.org/10.1016/j.sbspro.2012.07.019

Mohammadi Tahroodi, F., & Ujang, N. (2021). Engaging in social interaction: relationships between the accessibility of path structure and intensity of passive social interaction in urban parks. Archnet-IJAR: International Journal of Architectural Research, 16(1), 112–133. https://doi.org/10.1108/arch-04-2021-0100

Moulay, A., Ujang, N., & Said, I. (2017). Legibility of neighborhood parks as a predicator for enhanced social interaction towards social sustainability. Cities, 61, 58–64. https://doi.org/10.1016/j.cities.2016.11.007

Nam, J., & Kim, H. (2014). The Correlation Between Spatial Characteristics and Utilization of City Parks: A Focus on Neighborhood Parks in Seoul, Korea. Journal of Asian Architecture and Building Engineering, 13(2), 515–522. https://doi.org/10.3130/jaabe.13.515

Peters, K., Elands, B., & Buijs, A. (2010). Social interactions in urban parks: Stimulating social cohesion? Urban Forestry & Urban Greening, 9(2), 93–100. https://doi.org/10.1016/j.ufug.2009.11.003

Pietilä, M. (2017). Do Visitor Experiences Differ Across Recreation Settings? Using Geographical Information Systems to Study the Setting-Experience Relationship. Visitor Studies, 20(2), 187–201. https://doi.org/10.1080/10645578.2017.1404350

Priess, J., Pinto, L. V., Misiune, I., et al. (2021). Ecosystem Service Use and the Motivations for Use in Central Parks in Three European Cities. Land, 10(2), 154. https://doi.org/10.3390/land10020154

Rahimi, A., Tarashkar, M., & Jahantab, B. (2021). Contribution of Design Indicators in Perception of Social Capital, and Interference of Socio-Demographic Information in the Process. Sustainability, 13(7), 3589. https://doi.org/10.3390/su13073589

Rasidi, M. H., Jamirsah, N., & Said, I. (2012). Urban Green Space Design Affects Urban Residents' Social Interaction. Procedia - Social and Behavioral Sciences, 68, 464–480. https://doi.org/10.1016/j.sbspro.2012.12.242

Rigolon, A., Browning, M. H. E. M., McAnirlin, O., et al. (Violet). (2021). Green Space and Health Equity: A Systematic Review on the Potential of Green Space to Reduce Health Disparities. International Journal of Environmental Research and Public Health, 18(5), 2563. https://doi.org/10.3390/ijerph18052563

Sanesi, G., & Chiarello, F. (2006). Residents and urban green spaces: The case of Bari. Urban Forestry & Urban Greening, 4(3–4), 125–134. https://doi.org/10.1016/j.ufug.2005.12.001

Schipperijn, J., Bentsen, P., Troelsen, J., et al. (2013). Associations between physical activity and characteristics of urban green space. Urban Forestry & Urban Greening, 12(1), 109–116. https://doi.org/10.1016/j.ufug.2012.12.002

Skaržauskienė, A., & Mačiulienė, M. (2019). Assessment of Digital Co-Creation for Public Open Spaces: Methodological Guidelines. Informatics, 6(3), 39. https://doi.org/10.3390/informatics6030039

Sreetheran, M. (2017). Exploring the urban park use, preference and behaviours among the residents of Kuala Lumpur, Malaysia. Urban Forestry & Urban Greening, 25, 85–93. https://doi.org/10.1016/j.ufug.2017.05.003

Sundevall, E. P., & Jansson, M. (2020). Inclusive Parks across Ages: Multifunction and Urban Open Space Management for Children, Adolescents, and the Elderly. International Journal of Environmental Research and Public Health, 17(24), 9357. https://doi.org/10.3390/ijerph17249357

Talal, M. L., & Santelmann, M. V. (2021). Visitor access, use, and desired improvements in urban parks. Urban Forestry & Urban Greening, 63, 127216. https://doi.org/10.1016/j.ufug.2021.127216

Tian, Y., Jim, C., & Liu, Y. (2017). Using a Spatial Interaction Model to Assess the Accessibility of District Parks in Hong Kong. Sustainability, 9(11), 1924. https://doi.org/10.3390/su9111924

Turna, N., & Bhandari, H. (2022). Role of Parks as Recreational Spaces at Neighborhood Level in Indian Cities. ECS Transactions, 107(1), 8685–8694. https://doi.org/10.1149/10701.8685ecst

Uchiyama, Y., & Kohsaka, R. (2020). Access and Use of Green Areas during the COVID-19 Pandemic: Green Infrastructure Management in the "New Normal." Sustainability, 12(23), 9842. https://doi.org/10.3390/su12239842

Ujang, N., Kozlowski, M., & Maulan, S. (2018). Linking place attachment and social interaction: towards meaningful public places. Journal of Place Management and Development, 11(1), 115–129. https://doi.org/10.1108/jpmd-01-2017-0012

Vallée, J., Shareck, M., Le Roux, G., et al. (2020). Is accessibility in the eye of the beholder? Social inequalities in spatial accessibility to health-related resources in Montréal, Canada. Social Science & Medicine, 245, 112702. https://doi.org/10.1016/j.socscimed.2019.112702

Wan, C., Shen, G. Q., & Choi, S. (2021). Underlying relationships between public urban green spaces and social cohesion: A systematic literature review. City, Culture and Society, 24, 100383. https://doi.org/10.1016/j.ccs.2021.100383

Wang, P., Zhou, B., Han, L., et al. (2021). The motivation and factors influencing visits to small urban parks in Shanghai, China. Urban Forestry & Urban Greening, 60, 127086. https://doi.org/10.1016/j.ufug.2021.127086

Wood, L., Hooper, P., Foster, S., et al. (2017). Public green spaces and positive mental health – investigating the relationship between access, quantity and types of parks and mental wellbeing. Health & Place, 48, 63–71. https://doi.org/10.1016/j.healthplace.2017.09.002

Zhai, Y., Li, D., Wu, C., et al. (2021). Urban park facility use and intensity of seniors' physical activity – An examination combining accelerometer and GPS tracking. Landscape and Urban Planning, 205, 103950. https://doi.org/10.1016/j.landurbplan.2020.103950

Zhang, J., Cheng, Y., & Zhao, B. (2021). How to accurately identify the underserved areas of peri-urban parks? An integrated accessibility indicator. Ecological Indicators, 122, 107263. https://doi.org/10.1016/j.ecolind.2020.107263

Zhang, Y., Mavoa, S., Zhao, J., et al. (2020). The Association between Green Space and Adolescents' Mental Well-Being: A Systematic Review. International Journal of Environmental Research and Public Health, 17(18), 6640. https://doi.org/10.3390/ijerph17186640

Zohrevandian, K., Bastami, A., Naderloo, H., et al. (2017). The Role of Environmental Features of Parks in Activation of Recreational Activities in Leisure Time. Annals of Applied Sport Science, 5(1), 89–95. https://doi.org/10.18869/acadpub.aassjournal.5.1.89