

Social Capital and Walkability

Subjects: [Behavioral Sciences](#) | [Social Issues](#)

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Empirical evidence suggests that it is possible to socially renew neighbourhoods through the formation of social capital (SC) as an effect of walking. The characteristics of the built environment that influence walkability and SC have been relatively well established by previous research, but contrasts remain. Therefore, this document seeks to investigate the relationship between SC and walkability, through a Scoping Review of empirical studies published in indexed journals in the Web of Science and Scopus. The findings indicate that the formation of SC as an effect of walking is associated with land use and the design of neighbourhood facilities; the provision of urban furniture (benches) and green spaces; and that the design and configuration of the neighbourhoods affects SC even more than the excess density. In addition, the methodological strategies used to arrive at these results were reviewed. The conclusions suggest the need to study this issue from an updated perspective, where new neighbourhood interaction systems can be tracked (that provide new indicators), using advanced tools and technologies that help streamline and make measurements more objective.

social capital

walkability

pedestrian environment

1. Social Capital

Social capital (SC) is a broad multidimensional concept, that has been widely defined over the years in response to the variety of perspectives and theoretical interpretations from which it has been approached. This has led to conceptual ambiguities.

Hanifan ^[1] was the first to define the concept of SC defining it as: “those intangible elements that count to a great extent in people’s daily lives, goodwill, camaraderie, understanding and social interaction between individuals and families” (pp. 130–138). Ultimately, Bourdieu ^[2] will define it as the sum of the real and potential resources accumulated in an individual or group through a continuous network that is formed through mutual relationships between people. After Bourdieu’s definition, other authors will make their definitions, Coleman ^[3], through a systematic approach, describes it as a complex element that promotes individual behaviour in a social structure, and its specific components are social relations and norms. Putnam ^[4] describes it as the characteristics of the networks of social life, norms, and trust that allow people to act together more effectively to pursue shared goals. He also introduced two forms of SC, *bonding*, and *bridging*. According to Putnam ^[5], *bonding* is more likely characterised as strong ties and connecting people with similar characteristics, while *bridging* connects heterogeneous groups of people and is characterised by weak ties. Later, Szreter and Woolcock ^[6] proposed *linking* SC to refer to the relationships between people in formal institutions.

Although Putnam's definition is probably the most popular perhaps due to it being the one that provides a suitable overview, it has received criticism due to its lack of rigor and for having a general perspective. This usually generates confusion about the difference between the sources, forms, and consequences of SC. Being able to distinguish between these elements can be difficult since most social phenomena involve complicated cyclic, relational and mutual causality [7].

Added to this, are the complexities that stem from the multiple theoretical perspectives from which SC has been defined and approached. According to Claridge [7], the definition of SC must match the way it is contextualised and operationalised, what is important is the clarity and coherence of the approach and the ability to explain and justify it.

With this in mind, extensive specialised literature has shown that the characteristics of communities with pedestrian-oriented design have been significantly correlated with various indicators of SC.

This is corroborated by authors such as Leyden [8]. The author found that people who lived in walkable neighbourhoods were more likely to know their neighbours, participate politically, trust others, and be socially engaged. This study surveyed SC and the *Neighbour Walkability Measure* of residents living in traditional, mixed-use, pedestrian-oriented, and suburban neighbourhoods. The results found that people who live in mixed-use, walkable neighbourhoods have higher levels of SC compared to those who live in car-facing suburbs.

In turn, Lund [9] found that the factors of the pedestrian environment significantly influence the sense of community. Through surveys in eight neighbourhoods, she analysed the role of the built environment and user perceptions in predicting walkability. Results showed that friendly cityscapes, locating everyday amenities like parks and retail stores within a neighbourhood could increase pedestrian travel and neighbour interaction within a community.

Similarly, Kim and Kaplan [10] found that the physical characteristics of the built environment such as open spaces that promote walkability play an important role in increasing the probability of social interactions and therefore the sense of community. Through surveys and questionnaires to residents of neighbourhoods of the new urbanism and a traditional suburb, they analysed four domains of the sense of community, each in terms of 17 different aspects of the physical environment. Natural features and open spaces played a particularly important role in the sense of community.

Nevertheless, it is necessary to mention that even when positive correlations were found between walkability and SC, they do not indicate causality. In certain cases, the authors agreed that walkability is more complex than is usually defined and that the factors that influence neighbourhood sociability extend beyond issues of urban form. As Field [11] mentioned, in some cases, we can ensure that optimal conditions exist, but we cannot force people to like each other and forge meaningful relationships.

2. Walkability

Walkability describes the extent to which cities, neighbourhoods, pedestrian paths, or streets are pleasant and interesting, and therefore invite walking itineraries ^[12].

For Giles-Corti et al. ^[13], walking emerges as a multidimensional behavioural category that involves different aspects of urban practices and dimensions. They have described three dimensions: (1) a utilitarian dimension (where walking is a necessary activity); (2) a leisure dimension (where walking is an optional and recreational activity); and (3) a social dimension (where walking is a vector of contact and interaction between individuals). In relation to the social dimension, authors such as Zhu et al. ^[14], have mentioned that walkable neighbourhoods, social interactions, and neighbourhood cohesion have synergistic and mutually reinforcing relationships. This implies that planning efforts to promote physical activity could help address important public policy objectives related to social outcomes such as neighbourhood cohesion and social interactions.

In this vein, there is increasing interest in analysing walkability from a broader framework that includes the category of community. Zuniga-Teran et al. ^[15], in their study on the design of healthy communities, propose a theoretical Walkability Framework in which they showed the interrelation between nine categories of neighbourhood design that, when combined, result in walkability. This classification includes the category of community that was measured through the variables: *presence of spaces that facilitate social interactions* and *spaces that promote community participation* (community centres, squares, churches). Results for this category showed that neighbourhoods with easily accessible and nearby green spaces provide spaces for community activities that can encourage recreational walks.

For their part, Li et al. ^[16] analysed the association between the ability to walk and mental well-being, for this, they used the Well-Being Index adapted from the World Health Organization (WHO-5), with which they measured the variable of mental well-being and its relationship with walkability. They found that accessibility to walk in the neighbourhood is positively associated with mental well-being, mitigation of environmental stressors, social cohesion, and a sense of community. It should also be said that it has been found that neighbourhoods with heavy traffic, noise, and limited access to urban amenities are associated with low levels of sense of community, which leads to poor mental health ^[17].

In response, various mobility plans and programmes have been implemented worldwide under the concept called Healthy Cities, which places people at the centre of the planning process and gives rise to cities with inclusive mobility where people choose to walk, bike, and use public transportation. According to the WHO ^[18]: “A Healthy City is continuously creating and improving physical and social environments and expanding community resources that allow people to support each other to perform all life functions and develop their full potential” (p. 13).

3. Empirical Dimension: Relationships between Social Capital and Walkability

3.1. Mixed Land Use and Municipal Infrastructure

The characteristics of the physical environment that influence the formation of SC have been relatively well established by previous research, however, there are exceptions. On the one hand, studies have been found that provide significant empirical evidence and, on the other, those that consider that these associations between the walkability of a neighbourhood and the sense of community are modest. Each of the findings corresponds to specific sociodemographic and physical environment characteristics that influence SC. The findings differ depending on the housing prototype, urban infrastructure, housing density, neighbourhood configuration and scale, the specific population group, among other factors.

The most outstanding findings are those that highlight that the design of the land use and a neighbourhood's equipment provide the means to allow people to get to know each other, which theoretically impacts SC. In other words, it is more common to find positive manifestations of SC in compact and diverse neighbourhoods, which promote walkability. According to Rogers et al. ^[19], a neighbourhood that provides residents with easy access to municipal infrastructure such as post offices, parks, playgrounds, coffee shops, restaurants, barbershops, and club hangouts may have higher SC values.

Following this, Cheshmehzangi ^[20] addresses the idea that walkability can be motivated by better-integrated mobility and land-use patterns that influence the movement of people and its relationship with social land uses. In addition, it has been found that the cumulative presence of characteristics of the physical environment that provide semi-private spaces for informal interaction, such as front porches, continuous sidewalks, and street pacification, promotes neighbourhoods; which is understood as a reciprocal relationship and trust according to Wilkerson et al. ^[21].

For their part, Karuppannan and Sivam ^[22], detected that social interactions within communities are greater when the houses are located around the public sphere. Their study demonstrated that the provision of high-quality and well-located open spaces at the district level, mixed land uses, and good pedestrian accessibility to the public realm and social infrastructure play an important role in increasing the social sustainability of the neighbourhood. Social sustainability is a condition that can improve life within communities and that has a series of characteristics such as equity of access to services, equity between generations, political participation of citizens, as well as a sense of community responsibility that allows the awareness of social sustainability to be transmitted ^[23].

Beyond social factors, the economic values of a neighbourhood can be formed and adapted due to the pedestrian movements that promote mixed and diverse cities. According to Barnett ^[24], walkable communities are equitable by putting people before cars. When people turn to a motorised form of transport, it is easier to travel longer distances and therefore the viability of local shopping centres is threatened. In contrast, when people walk to their local stores, they tend to develop business loyalty, which promotes local commerce and helps stabilise the local economy. In this regard, authors such as Zordan et al. ^[25] warn about the valuable social role that spaces dedicated to the sale of food that are found on the ground floor of buildings in residential areas have, which promotes the idea that when people walk to get food, they have the opportunity to interact. This characteristic has more impact even when the shops have frontages to the street instead of parking areas according to Wood et al. ^[26].

Likewise, given the synergy that exists between leisure walks and commercial practices, it is also necessary to pay attention to the creation of pedestrian-friendly neighbourhood environments that promote leisure. Kim and Yang [27], analysed the relationship between the experience of walking for various purposes and individual perceptions of SC through surveys. The results showed that there are relationships between leisure walks and levels of neighbourhood trust and the creation of social networks.

Another substantial finding in this area is made by Kwon et al. [28], who showed that the characteristics of the neighbourhood that promote walkability were positively related to the use of community currency (CC) and the activities derived from them. A CC is a complementary currency created and marketed by a local community as a means of exchange; in addition, it can be used interchangeably with money. CC users living in walkable neighbourhoods showed significantly higher levels of community attachment compared to their counterparts. The results of this study suggest that neighbourhood physical settings can work to deter or promote CC participation, and that an effective CC promotion strategy is to target CC communities.

3.2. Urban Furniture and Green Spaces

On several occasions, the design of a neighbourhood's built environment has been found to play an important role in creating SC. Rogers et al. [29], from their social sustainability approach, find positive correlations between accessibility for pedestrians and SC. This study shows that sidewalks and lighting were the most frequently mentioned built environment terms that could be improved to encourage more walking.

An age group that has been much analysed lately by SC researchers is older adults, who are prone to sedentary behaviours negatively associated with social interactions according to Van Holle et al. [30]. The findings of these authors show that urban furniture plays a very important role in the development of SC in older adults. According to Ottoni [31], benches specifically contribute positively to the mobility experiences of this group by improving the use and enjoyment of green and blue spaces, as well as serving as an incentive for mobility and favouring social cohesion and SC. Along the same lines, Hong et al. [32] warn that elements of green spaces such as natural views can be beneficial for SC of the neighbourhood of older adults. Likewise, Hwang et al. [33], found that the existence and access to open-air spaces, such as green spaces and places to exercise, are decisive for improving SC indicators in the elderly.

Consequently, Van den Berg [34] indicates that policymakers and urban planners should aim to increase the walkability and social cohesion of the neighbourhood, paying due attention to neighbourhoods with a high percentage of the elderly population.

3.3. Urban Density

Urban density is often a matter of debate when studying walkability and SC. Oidjarv [35], found correlations between walkability in the neighbourhood and informal problem solving; that is, the more residents walk through the neighbourhood, the greater the probability of talking to other neighbours about community problems and offering help or receiving assistance from other neighbours. Although the correlation was only marginally

significant, the author suggests that it could be hypothesised that increased walkability in the community, combined with an increase in population density, will promote the formation of close social ties among community residents; this is due to the increase in informal interactions of neighbours.

For its part, the theory suggests that the dense and mixed city is the necessary formula to achieve a vibrant and pedestrian-friendly urban community. In the last three decades, various models of sustainable urban development and growth have prescribed the forms and patterns of urban expansion that can be economically, environmentally, and socially sustainable. These include the Urban Village [\[36\]](#), Transit-Oriented Development [\[37\]](#), New Urbanism [\[38\]](#), Smart Growth [\[39\]](#), and the Compact City [\[40\]](#).

In contrast to what has been exposed by these models, some authors consider that the densest and most vulnerable social neighbourhoods in cities are often considered places where traffic, crime, and less desirable neighbours are concentrated [\[41\]](#)[\[42\]](#). This can cause people to be afraid to walk in the community, so they have limited social interaction and therefore a lesser sense of community.

According to Jun and Hur [\[43\]](#), this inconsistency could be explained by paying attention to the way in which we express and measure walkability, that is to say, physical walkability (objective measures) is not the same as perceived (the method that groups several individuals and builds a theoretical concept). The level of socioeconomic disadvantage is often high in neighbourhoods where physical walkability is high. On the contrary, residents of neighbourhoods with higher perceived walkability could have a higher socioeconomic level; therefore, they are more likely to take leisure walks and interact with their neighbours, which would generate a greater sense of community even when their objective measurements of walkability are lower.

For their part, French et al. [\[44\]](#), find a negative correlation between residential density and the sense of community. They attribute this to the fact that a neighbourhood where land uses attract more “strangers” can detract from the sense of community since it is difficult for residents to distinguish who belongs to the neighbourhood from who does not. Therefore, although the built environment may not directly affect the sense of community, it can influence the perceptions of residents, which in turn affects the sense of community.

Vulnerable groups are commonly excluded from living in well-designed urban areas, which is reflected in neighbourhood problems and a lack of a sense of community. Raman [\[45\]](#), finds that in high-density neighbourhoods, common spaces play a very important role in promoting social interaction. This study shows that social interaction improves positively when living in places that are spatially well integrated with the rest of the neighbourhood. The spatial centrality and accessibility of common spaces are crucial for the success of a neighbourhood as a facilitator of social activities. This is compatible with the finding of Karuppannan and Sivam [\[22\]](#) regarding the increase in social interactions caused by the location of the houses around open public spaces.

In this sense, the design and configuration of neighbourhoods have a greater impact on the construction of SC than excess density. In other words, neighbourhood problems derived from excess density can be reduced by

projecting quality common public spaces that promote the creation of social networks and trust between neighbours.

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