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Factors affecting walkability of neighborhoods

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Abstract

Planning and designing for walking is crucial for promoting a healthy public life, creating sustainable neighborhoods, enhancing social life and economy. This research paper identifies the factors that contribute to increased urban walkability in order to improve neighborhood sustainability and public life. For the research to gauge the perception of walkability, a case study was conducted in a neighborhood that provided an opportunity to analyze the walking behavior of pedestrians in a variety of urban built environment. Mehrauli, one of the most traditional settlements in New Delhi, India, was taken up for primary case study as it functioned like an urban laboratory with both traditional and modern settlements in the same vicinity. Streets selected based on varying levels of usage by pedestrians were studied through activity mapping and public surveys to understand the underlying factors that led to certain streets being rendered more walkable than the others. The results showed that the most important factors affecting pedestrians' perception of walkbility were related to the built envelop on either side of the streets. Factors relating to urban morphology like enclosure, block length and edge conditions were found crucial in creating the perception of a walkable neighborhood.

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Keywords: walkability; sustainable neighborhoods; urban morphology; social life; public health

1. Introduction

Walking is the oldest form of urban transport, and until the advent of major transformations in transport technology in the nineteenth century, most cities were structured in ways that supported walkability (Newman and Kenworthy

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1999). As individual private car transport became widespread during the twentieth century, public transport and urban walkability became less apparent as major priorities of transport planning and urban design. As concern for future urban sustainability increases, walking is again being recognised as an important mode of urban transport. Much of the renewed attention on urban walkability is associated with concerns that car dependent cities will not be sustainable in the future, due to energy costs, fuel availability, congestion, pollution and other environmental impacts. The reported benefits of walking are not new; it's common knowledge that we benefit physically when we are active. It's a free activity that can increase personal well-being and longevity of good health.

According to *the American Journal of Public Health*, pedestrian oriented neighbourhoods also increase individual and collective social capital. Social capital is an umbrella term that measures things like involvement in local government and community trust. Greater social capital has been linked with better community health, decreased crime rates and even increased economic activity. In pedestrian oriented communities that are highly walkable, residents are likely to walk to places such as corner markets, restaurants, schools, places of worship, public parks and other establishments necessary for life. While walking about their neighbourhood, residents can interact with their surroundings more regularly and thus feel more connected to and responsible for their physical community. Furthermore, residents will also interact more frequently with their neighbours, creating a denser community network which can increase individual peace of mind, community trust and may decrease crime rates. In the traditional settlements buildings opened out directly on the streets as there were no huge setbacks. People took the ownership of the whole street on which they lived. All the windows and balconies looked on to the street making it even safer. As Jane Jacobs said it put *Eyes on the Street*. This morphology acted like a catalyst in promoting street activity. Through literature review and also through an empirical study, this paper tries to investigate the concept of walkability by trying to understand the different ways the built environment influences walking. The knowledge that this paper tries to produce is not only whether or not, but more on how and why the built environment influences walking behaviour.

2. Walkability and built environment

Face-to-face human interactions in a neighborhood are extremely relevant for supporting livability, safety and control, economic development, participation, and identity (Jacobs, 1961;Goffman, 1963, 1967; Lemert and Branaman, 1997). Many researchers like Oscar Newman, William Whyte and Jan Gehl focus their research on the observation of people in real-life situations to determine how the *built environment* impacts *social wellness* (Newman, 1973; Gehl, 1987, c. 1980; Whyte, 1988). The results of their studies helped guide designers to rethink the impact of their plans upon real life.

Whyte (1980) pointed out that people-watching is one of the primary activities shared by different classes of people in public spaces. Simple amusements, such as walking, talking, eating, and sports, also give a street diverse life. Whyte describes that, in democratic streets, a social connection links ground floor building uses to the adjacent street space. A truly walkable street has a healthy relationship between the private or semi-public life inside buildings and the public world outside. Whyte argues that "dead" uses, such as businesses without display windows, banks, offices, parking garages, and storage areas with blank walls, should not be placed along the public street. On the other hand, uses, such as news-stands or restaurants can enhance walkability. In residential neighborhoods, the placement of kitchen windows, as well as other building elements, such as ledges encourage sitting and can enhance the social life of the street and thus make it more walkable. Whyte's recommendations for providing "sittable space" (1980) have also been considered useful to the design and management of the streets. Jan Gehl's works (Gehl, 1980; Gehl, 2010) are also one of the most cited works of literature concerning designing the city for pedestrians. Gehl