

Review Of Walkability Enhancing Neighbourhood Environment Attributes In Urban Tropics

Udya Abeysinghe¹, Shamain Saparamadu², and Chamali Hewawasam³

Abstract

The usage of private vehicles has grown rapidly, especially in urban areas of developing countries, which has led to many environmental and socio-economic issues such as congestion, high fuel consumption, and air pollution. Traffic congestion and delays continue to be a problem in mega, large, and even small cities due to the excessive volume of private cars. An important strategy to reduce the use of private cars is by offering high-quality public transport services and by encouraging pedestrian mobility. Improving walkability could discourage the use of motorized vehicles, and that will reduce greenhouse gas emissions, improve air quality, decrease congestion, and be beneficial for human health. Walkability is defined as the quality of a neighbourhood that supports and encourages people to access their destinations on foot. A better understanding of what factors create a more walkable environment would enable planners and engineers to develop more comprehensive and practical urban transportation plans that ultimately lead to a user-friendly city for walking, which is lagging in developing countries. The objectives of the study are to explore the most significant walkability-enhancing Neighborhood Environment Attributes (NEAs) in urban areas of Sri Lanka. To identify the Strengths, Weaknesses, Opportunities, and Threats (SWOT) in existing transportation policies in the country for effective integration of walkability-enhancing NEAs. Proposing how to integrate them into transport planning. As the literature review, SCIEDIRECT and GOOGLE SCHOLAR databases were chosen to study the peer-reviewed documents published between 1993 and 2021 May in the tropical context. The first step in the selection involved literature on walking/ walkability research. Then, articles that related to NEAs on walking preference/ influence were selected. A brief review of the abstracts and introductions served to exclude non-related articles. Thirdly, screened articles were thoroughly studied, and a set of NEAs were identified using 56 published research papers. As the fourth step, a field survey was conducted at Nugegoda, Wijerama (n=372), and a set of significant attributes and elements were identified. Pedestrians were randomly stopped and were asked to scale NEAs identified from the literature review from 1 to 5 (1=strongly disagree to 5=strongly agree), with higher scores indicating a more favourable value. Photographing was avoided during the field observation and surveying since it might hinder the privacy of the participants, and photographs were taken on separate occasions. The 3 main attributes and 24 elements under them were identified as the most significant NEAs in the urban Sri Lankan context. The road is safe from crime (53.5%), the road is full of people (48.4%), and the availability of residences along the street (39.5%), were identified as the most significant factors as most participants strongly agreed (5) which encourage the walkability, while block size, block length, and number of dead ends, were identified as insignificant. A comprehensive review of existing urban and transport policies, acts, and plans was reviewed, and a SWOT analysis was conducted. Based on the findings, an innovative framework was proposed to integrate walkability-enhancing NEAs into urban planning in Sri Lanka effectively. The review could be helpful for researchers and urban planners in developing walkability studies and in defining policies to improve walkability. Further, this

will provide additional insights into how built NEAs influence walkability and identify gaps and issues that should be analyzed in-depth in the future. Nevertheless, results can be utilized to develop a walkability index for the country as well.

Keywords: *Walkability-Framework, Sustainable Mobility, Urban Transportation, Urban Planning*

Authors Details;

1. Research Scholar, Department of Town and Country Planning, University of Moratuwa, Sri Lanka. abeysingheum.21@uom.lk
2. Senior Lecturer, Institute of Technology University of Moratuwa, Sri Lanka. saparamadud@itum.mrt.ac.lk
3. Senior Lecturer, Department of Town and Country Planning, University of Moratuwa, Sri Lanka. chamalih@uom.lk