

Pedestrian Facilities in Urban Environments Using "Walkability" Measures

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Pedestrian facilities in urban environment are sometimes less appealing in residential/recreational areas or insufficient to serve the peak hour pedestrian flows in commercial areas. There is no proper mechanism to evaluate the deficiencies in pedestrian facilities. Furthermore, increasing trend in motor vehicle use and pedestrian related accidents are the evidence of inadequate facilities for pedestrians. This research proposes a scoring model to evaluate pedestrian facilities in urban environment using "Walkability" measures. Walkability is an idea of quantifying the safety and desirability of walking routes. The model can be used to evaluate pedestrian facilities in road links to compare different road links or to identify deficiencies in a given road.

At present walkability is evaluated using qualitative measures that are very subjective. Existing methods of evaluating walkability was carefully studied and the limitations and weaknesses were identified. Methods to evaluate as many features were proposed and validated. Among these factors, several features of sidewalks such as width, elevation difference, paving type and continuity are assessed. Modal conflict, the conflict between pedestrians and bicycles/motorized vehicles is measured using passing and meeting number of events. Availability of crosswalks and delay at un-signalized and signalized crosswalks are some of the parameters used to evaluate crossing facility. A good mix of land use where the number of destinations (Groceries, restaurants, schools, health facilities, Cinemas, etc.) is higher is considered to be a good walkable neighborhood. Availability of pedestrian facilities including, benches, shades, bus halts with seats, pedestrian information boards, proper street lighting add scores to a road link. Addressing differently able people; the blind, the disabled, push carts, children is also taken in to consideration while universal accessibility is believed to be at vital importance. Apart from the above quantitative measures, parameters such as, aesthetics is also assessed qualitatively. A score as a percentage is finally obtained from the evaluation where 100% means a perfect road to walk and 0% means a disaster for walking.

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