Abstract

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Using GIS for Measuring Transit Stop Accessibility Considering Actual Pedestrian Road Network.

Bus stops attain their importance to the transit service from being the main points of contact between the passenger and the bus. Considering spatial attributes, both the location and the spacing of bus stops significantly affect transit service performance and passenger satisfaction, as they influence travel time in addition to their role in ensuring reasonable accessibility. Knowing that every transit trip begins and ends with pedestrian travel, access to a bus stop is considered a critical factor for assessing the accessibility of the stop location. In this research, transit stop access coverage is estimated based on the actual pedestrian road network surrounding the stop. Accordingly, new indices are developed to assess a bus stop location on a more spatial basis. These indices measure the accessibility of a bus stop through the surrounding road network in addition to the ratio of actual access coverage to the ideal access coverage of a stop.