

보행편의지수 개발 및 활용 방안 연구

Development of a Pedestrian Convenience Index for Local Governments

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SUMMARY

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As part of enhancing the effectiveness of the walking policies, evaluation tools have been recently developed to assess the local government projects in terms of walking safety, but there remains a lack of effort in measuring the extent of walking convenience. Thus, the purpose of this study was to develop an index that can objectively and efficiently measure the municipal pedestrian convenience level and to explore its potential as an effective government monitoring tool in improving the pedestrian environment and in consulting the direction of the walking policies.

In this study, the pedestrian convenience index is defined as an index for quantitatively evaluating the local physical walking environment that pedestrians can access safely and conveniently from the origin to the destination. To this end, four indicators – rate of pedestrian-only road, pedestrian path efficiency, public transportation accessibility, and park accessibility – comprising the index were determined and tested based on the three municipalities – Jung-gu and Gangnam-gu of Seoul and Chuncheon-si. The test analysis results showed that independence, complementation, and internal consistency of the indicators were secured. Thus, it is feasible to calculate the pedestrian convenience index through the arithmetic mean of these four indicators. The pedestrian convenience index and the individual indicators are calculated as a building-level score 0–100 and based on this, it is feasible to count the scores as an administrative dong-level or a city-level.

The pedestrian convenience index is the third index to evaluate the outcome of each local government's walking policy following the pedestrian safety index and the pedestrian policy index developed in the preceding study, Oh & Han (2018). It is meaningful that this study presents a practical methodology for achieving an effective, comprehensive evaluation system of the pedestrian environment that precisely measures safety and convenience in a balanced manner.

Meanwhile, this study has limitations as follow. It is somewhat insufficient in verifying the appropriateness of the index because the test analysis was conducted pursuant to only three local governments. Although the pedestrian convenience index is highly useful by utilizing the GIS data, its connection with the people's perception of the walking convenience has not been examined. Thus, in the future, it is necessary to calculate and verify the pedestrian convenience index based on all local governments nationwide and to improve the indicators by reflecting the actual pedestrian behavior and perception.

Keywords :

Pedestrian Convenience Index, Pedestrian Network, Rate of Pedestrian-only Road, Pedestrian Path Efficiency, Public Transportation Accessibility, Park Accessibility