عنوان مقاله:
Different Network Performance Measures in a Multi-Objective Traffic Assignment Problem

محل انتشار:
نشریه بین المللی مهندسی حمل و نقل (سال: 1:1)

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نویسنده‌گان:
Amir Abbas Rassafi - Assistant Professor, Department of Civil Engineering, Faculty of Engineering, Imam Khomeini International University, Qazvin, Iran.
Davood Jamour - M.Sc., Department of Civil Engineering, Faculty of Engineering, Imam Khomeini International University, Qazvin, Iran
Hamid Mirzahossein - Ph.D. Candidate, Department of Transportation Engineering and Planning, School of Civil Engineering, Iran University of Science & Technology.

خلاصه مقاله:
Traffic assignment algorithms are used to determine possible use of paths between origin-destination pairs and predict traffic flow in network links. One of the main deficiencies of ordinary traffic assignment methods is that in most of them one measure (mostly travel time) is usually included in objective function, and other effective performance measures in traffic assignment are not considered. The current study is an endeavor to introduce a solution for this problem by applying a multi-objective optimization idea to traffic assignment models. To do this, a problem with three objectives including travel time, total traveled distance and the rates of cabin monoxide emissions are studied first, and then problem with two objectives combining two well-known assignment approaches i.e. user equilibrium and system optimal is introduced. Using the weighting method to solve the multi-objective problem, and comparing the results, show that the analytical relationships resulted from weighting method is applicable to different networks. Furthermore, comparison of both multi-objective and single-objective problems (travel time only) showed that the results of proposed model are more appropriate in terms of having a plenary view to this issue, and thus more useful.

کلمات کلیدی:
Multi-objective optimization, traffic assignment, Pareto optimal solution, user equilibrium, system optimization

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