

Abstract Title: *Meteorological variation in travel behaviour*

Author(s):

Lieve Creemers* - Hasselt University - Transportation Research Institute (IMOB)

Geert Wets - Hasselt University - Transportation Research Institute (IMOB)

Mario Cools - LEMA - University of Liège

Abstract:

Weather causes a variety of impacts on the transportation system. This paper contributes to the weather-related transport literature by investigating the meteorological variation in revealed preference travel data. The main objective of this paper is to investigate the impact of weather conditions on revealed activity participation (trip motives) and revealed modal choices in the Netherlands. To this end, data from the Dutch national travel household survey 2008 was matched to hourly weather data provided by the Royal Dutch Meteorological Institute. Two GEE-MNL models are constructed, namely one for modelling the impact of weather conditions on trip motive and one to assess the effect on modal choice. The parameter estimates of the weather variables indicate that, depending on which travel attribute one focuses, other factors might play a role. Nonetheless, fog, sunshine duration and temperature have a significant impact in both models. Unexpected is the fact that snow and ice cover do not play a role at all. Nonetheless, this finding can be accounted for by the relative low occurrence of these weather types in the study area. It is important to integrate these identified impacts of weather in travel demand modelling frameworks, since this will help to achieve a higher accuracy and more realistic traffic forecasts. This allows policy makers to make better long-term and short-term decisions to achieve various political goals, such as the development towards a sustainable transportation system. Further research in this regard, should emphasize on the role of weather conditions and activity-scheduling attributes.

Keywords:

travel behaviour, meteorological variation, weather