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## **Sustainable development on commuting: experimental modelling to enrich official statistics**

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### **Abstract**

This paper presents new developments in statistical commuting research from the sustainable development perspective. It is targeting the challenging travel time estimation. Data integration is based on many data sources, partly big data, in order to enrich official statistics of Finland. These include public transport data from web service platforms, traffic sensor data and a road and street database by the Finnish Transport Agency.

The commuting time and distance can be calculated as a point-to-point estimate from almost every employee's home to a corresponding workplace. The new database includes the following variables: Commuting distance and time by private vehicle, Cycling distance and time, Public transport commuting distance and time (in the whole country), Helsinki Region Public Transport commuting distance and time and Corrected commuting time for trips to and from the central Helsinki area.

Results from the new database are presented in a comparative manner by taking into account a detailed Urban-rural classification by the Finnish Environment Institute. One specific application of the use of new variables is presented: an experimental model for sustainable commuting with its results.

These kinds of commuting statistics form a base for other accessibility statistics to be developed further.

**Keywords:** network analysis, accessibility, GIS, sustainable development, big data.