Motoring and Vehicle Ownership Trends in the UK

http://www.abdn.ac.uk/ctr/research/currentbr-research-projects/mot
Project partners

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• Professor Eddie Wilson, University of Bristol
• Dr Tim Chatterton, Geography and Environmental Management, University of the West of England
MOT: Motoring and vehicle Ownership Trends

• 3 year project (from 1/10/12) with:
  – 4 academic partners (Aberdeen Uni, Southampton Uni, TRL Ltd. and Uni West of England)
  – DfT + DECC are official project partners

• Follows a 3 month scoping study in 2011

• Radical new look at emissions and energy demand from private transport

• Uses new data sources to find new patterns in road transport emission sources
Core dataset

• In 2005 the UK Vehicle and Operator Services Agency (VOSA) introduced computerised system for recording annual ‘MOT’ roadworthiness tests
• 35 million vehicle tests each year
• Published by DfT in November 2010
• Contains:
  – the vehicle odometer (mileage) reading
  – the vehicle manufacturer, type and engine capacity
  – the vehicle's year of first use
  – the top-level postal area (letters only from the postcode) of the Vehicle Testing Station
  – We are applying to VOSA for data on the registered keeper
MOT: Objectives

1. **Combine new sources of data** to give a spatially and temporally disaggregated understanding of car ownership and use, and associated energy demand and emissions

2. **Develop new methodologies**, datasets and research capability to understand the relationships between energy demand and emissions from car use, and a wide range of structural and social factors

3. **Describe and explain the linkages** between different fuel uses, energy end uses and energy service demands at the domestic level

4. **Develop a baseline** of spatially disaggregated energy demand from car use from which future **scenarios** can be developed and modelled

5. **Assessment of social and environmental justice issues** in relation to income, fuel use and price, emissions of pollutants and exposure to impacts.

6. **Track changes over time and space** in order to evaluate the scale and distribution of the impacts of local transport policy interventions
Data interface development
On the Estimation of Temporal Mileage Rates


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Abstract

Mathematical and computational techniques are developed for the analysis of annual MOT (minimum technical) test data from the UK Department for Transport and for the public domain. This paper focuses on the development of a new theory which has the potential to estimate large-scale temporal variations (e.g., monthly) in vehicle mileage at a population level, that we call the "spot rate" — derived from source-scale (e.g., annual mileage data at an individual vehicle level). As the estimate of daily, the model is self-contained, but the theory has applications to any data set (intermittently), where a median value of individual vehicles is measured on an occasional basis. Numerical time-stopping schemes are derived from the theory and are used on synthetic data to permit comparisons with a known ground-truth mileage rate. It is found that for practical applicability, the methods need to pre-process data.
Intended Outcomes

• New, spatially, temporally and socially disaggregated understanding of car ownership, and associated emissions and energy demand.

• Links with other direct energy demand to develop more holistic carbon and energy footprints.

• Development of future scenarios for electricity demand from EVs.

• Assessment of social and environmental justice issues in relation to income, fuel use and price, emissions of pollutants and exposure to impacts.

• Ability to track changes over time and space in order to evaluate the scale and distribution of the impacts of local transport policy interventions.

• Design of a tool to aid monitoring of local transport policies.
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