The use of electric vehicles: A case study on adding an electric car to a household - DTU Orbit (16/08/2019)

The use of electric vehicles: A case study on adding an electric car to a household

The market share of battery electric vehicles (EVs) is expected to increase in the near future, but so far little is known about the actual usage of this emergent technology. Consumer preference studies have indicated that the current limitation on driving distance is important. At the same time studies on the actual use of household vehicles indicate modest requirements for daily travel. An unresolved issue is to what extent these range limitations affect daily travel in EVs. In this study, we use real electric vehicle trip data to study the distribution of daily use and types of home-based journeys where a household decides to use an electric vehicle instead of their conventional vehicle. The results show how several factors related to distance and number of necessary charging events have plausible effects on electric vehicle travel behaviour. Further, the modelling indicates that the EV alternative is mostly used for well-planned transport and that EV use will not be the same as use of the conventional vehicle in two-vehicle households.

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