

Forecasting Future Demand for Energy Efficient Vehicles: A Review of Methodological Approaches

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Abstract : Considerable literature has been focused over the last few decades on forecasting the consumer demand of Energy Efficient Vehicles (EEVs). These methodological issues range from how to capture recent purchase decisions in revealed choice studies and how to set up experiments in stated preference (SP) studies, and choice of analysis method for analyzing such data. This paper reviews the plethora of published studies on the field of forecasting demand of EEVs since 1980, and provides a review and annotated bibliography of that literature as it pertains to this particular demand forecasting problem. This detailed review addresses the literature not only to Transportation studies, but specifically to the problem and methodologies around forecasting to the time horizons of planning studies which may represent 10 to 20 year forecasts. The objectives of the paper are to identify where existing gaps in literature exist and to articulate where promising methodologies might guide longer term forecasting. One of the key findings of this review is that there are many common techniques used both in the field of new product demand forecasting and the field of predicting future demand for EEV. Apart from SP and RP methods, some of these new techniques that have emerged in the literature in the last few decades are survey related approaches, product diffusion models, time-series modelling, computational intelligence models and other holistic approaches.

Keywords : demand forecasting, Energy Efficient Vehicles (EEVs), forecasting methodologies review, methodological approaches

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