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Demographic composition and projections of car use in Austria

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Abstract

Understanding the factors driving demand for transportation in industrialized countries is important in addressing a range of environmental issues. Previous work has identified demographic factors as important influences on demand, in addition to economic factors. While some studies applied a detailed demographic composition to analyse past developments of transportation demand, or estimated parameters based on models that include demographic variables, projections for the future have never accounted for future compositional changes in the population. In this paper,we combine cross-sectional analysis of car use in Austria with detailed household projections to explore the sensitivity of projections of car use to the specific type of demographic disaggregation employed. We find that particular demographic characteristics of households can have important effects on aggregate demand through the combined effect of differences in demand across different types of households, and changes in the future composition of the population by household type. For example, the highest projected car use—an increase of about 20 per cent between 1996 and 2046—is obtained if we apply the value of car use per household to the projected numbers of households. However, if we apply a composition that differentiates households by size, age and sex of the household head, car use is projected to increase by less than 3 per cent during the same time period. These findings suggest that the inclusion of demographic factors in transportation demand modelling should extend beyond their use in historical decompositions and as controls in model parameter estimation to explicit consideration of future demographic changes.

Full article