

## DOCTORAL THESIS

### Inter-generational changes in activity-travel behavior and auto-mobility in the chinese context

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# ABSTRACT

Observations in a number of developed countries have shown a stagnating or declining trend in the level of car use and sparked a heated debate on whether such trend would persist into the future. While arguments over the potential causes of this trend remain largely unsettled, the crucial implications of the long-term trends on the strategic development of transport infrastructure as well as the long-term planning schemes in the transportation sector are generally agreed upon. This study aims at providing evidence of the changing trends in an under-researched area with historically limited car dependence and distinct cultural and social characteristics through disaggregate analysis on several large-scale datasets. Three separate case studies were carried out to identify the changes in car ownership, activity-travel behavior, car use, and personal attitudes towards cars in different Chinese cities, namely Hong Kong, Shenzhen, and Beijing. Statistical modeling approaches were applied for the disaggregate analysis at the household and individual levels. Findings in the case study of Hong Kong suggest that the level of car ownership and car use has shown indications of levelling-off and even a certain degree of decrease in the past decade, despite the low level of car dependence for the entirety of the city's history. Results in the case of Shenzhen, on the other hand, indicate a surging car ownership rate in recent years, which is in contrast with the situation in its neighboring city of Hong Kong. The interactions between built environment and travel behavior have also changed significantly in Shenzhen, a city undergoing rapid expansion. The third case study reports that the level of auto-mobility has increased significantly during the past decade in Shenzhen and all age groups and cohorts experienced similar uptrends in car ownership and car use. In addition, analysis on the dataset from Beijing suggests that young adults do not evaluate private cars and their functions as favorably as the middle-age adults. Findings in this study contribute to the existing literature by providing empirical evidence on the recent changes in car ownership, activity-travel behavior, and attitudes towards private cars in the Chinese context. This study also highlights the importance to expand the range of research

attention out of the developed and motorized countries in order to gain a more comprehensive understanding of the dynamics in travel behavior and auto-mobility around the world. Findings also have important policy implications in curbing auto-dependence in daily travel and planning and managing future transportation.

**Keywords:** Inter-generational changes, activity-travel behavior, peak car, built environment, travel attitudes, auto-mobility

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