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Urban multimodal travel behaviour: towards mobility without a private car

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Abstract

This paper provides empirical data gathered in the research project City2.e on the motivations and organisation of multimodal transport use of urban car owners and the possible impact of travel demand management to support a mode shift to multimodal mobility. Our results emphasise the growing dominance of multimodal mobility and the declining role of private cars in everyday mobility in dense urban areas. This shows a potential for alternative mobility solutions including car use without owning a car. To fulfil this hypothetical mode shift, it is necessary to implement targeted measures to encourage the use of alternative transport modes and to make car ownership and car use unattractive. The results show the need to re-design the installed parking management in order to support a rethinking of habitualized car use and further car abolishment. The formulated practical recommendations to design combined push and pull travel demand measures were specified according to the identified groups of car owners.

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1. Introduction

The private car is the dominating transport mode in passenger transport, fulfilling the growing needs of individuality, independence and flexibility in the fields of professional and leisure activities (MiD, 2008; Umweltbundesamt, 2012). The general meaning of the private car is still rising in Germany due to suburbanisation and thus growing interrelations within growing metropolitan regions resulting in augmenting traffic and car use (e. g. Schade and Schlag, 2007).

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As a consequence, car traffic affects the natural and social environment, displaying a risk for all road users through the risk of accidents, cutting of landscapes and causing noise emissions and air pollution, large energy consumption and hence contributes to climate change (Stern, 2007; IEA, 2009). Cities suffer severely from the effects that high car use entails as for instance air pollution, congestion and missing parking facilities. Accordingly, in cities it is tried to renegotiate public space using strategies to lower inner-city car-use and support alternative transport modes.

2. Travel demand management in the city

A growing number of cities strive to develop and implement strategies to reduce car use. Travel demand management are targeting behaviour change and can on the one hand be restricting or disabling habitual behaviour (“push-measures”) or attract a mode shift by giving incentives or information (“pull-measures”).

Following, two measures are in focus of this study. On the one hand, parking measures with raising costs for parking and limiting parking space in the inner city might push alternative transport modes. On the other hand, providing information for new services or alternative transport modes supports and stabilizes new behaviour.

3. Methodology and data: a qualitative perspective

While there are a lot of studies about the quantitative aspects of multimodal mobility, less information about the motives and dispositions underlying multimodal travel behaviour with a decreasing role of the private car was found. To overcome this lack, 60 problem-centered, semi-structured interviews were conducted between June and August 2013 in Prenzlauer Berg, a dense inner-city part of Berlin. The interviews were analysed using qualitative content analysis. The research approach analyses motives and potentials for the willingness to reduce private car-use or to abolish one’s private car within the group of car owners. Hence, two groups were interviewed, differing in car ownership, thus having 30 participants owning a car and 30 participants not owning a private car. The group of multimodal people without owning a car is analysed to identify possible differences regarding mobility behaviours of the two groups. Their current mobility behaviour provides relevant information for designing measures and developing a framework to encourage alternative choices of transport modes.

4. Everyday mobility with and without a private car

Our results show the dominance of multimodal mobility and an existing variety of transport options in our research area, Berlin Prenzlauer Berg. It thus offers a high potential for alternative mobility solutions including car use without owning a car. The study examined two groups with each 30 qualitative interviews covering the individual daily mobility patterns for each participant. The target group of car owners was found to be a very heterogeneous group in their use of transport modes as well as the contrasting group of non-car-owners. Consequently, we categorised the participants according their descriptions of everyday travel behaviour to their most frequent used transport modes. Sociodemographically, the groups of car owners and non-car owners do not differ concerning age, sex, family patterns or job status.

5. A closer look to the future: Grouping car owners

According to the relevance and actual use of the car in every-day life, we found a strong heterogeneity among the owners of a private car in our study and identified four main groups. The grouping of the car owners is based on two aspects of their mobility: (i) the current use of the private car according to alternative modes of transport (x-axis) and (ii) the readiness to reduce their car-use in favour to alternative transport modes or even to abolish the car (y-axis) (Figure 1).

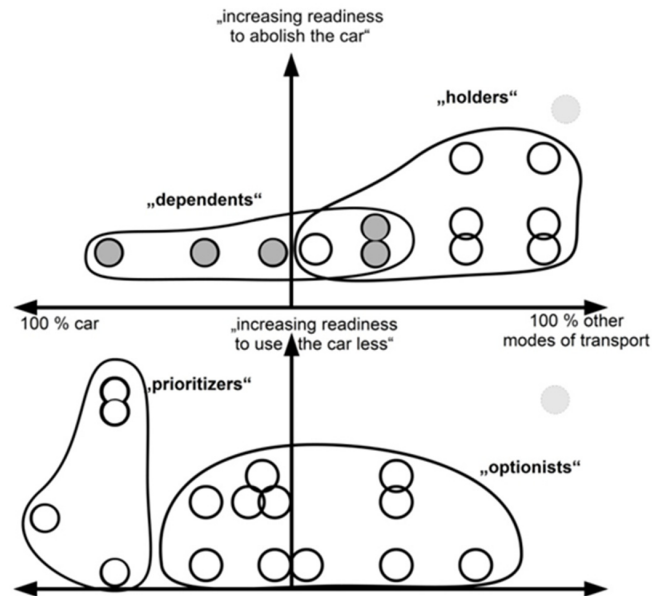


Fig. 1. The four groups of car owners classified according to their current and future mobility behaviour

This shows the relation between current travel behaviour and anticipated future behaviour based on the perceived options of alternative means of transport. Within car owners who are ready to abolish their private car in the near future, two groups could be identified: “holders” and “dependents”.

6. Requirements and Potential for combining push and pull measures

To stimulate a shift towards multimodal mobility without an own car it is most effective and publicly accepted to combine pull and push measures, to promote alternative transport modes and make car ownership less attractive for urban citizens. To strengthen the efficiency of measures, it is recommended to develop transport policies and to design transport planning measures that address target groups and respond to the specific mobility needs of car owners. In this study two areas of application were identified with high potential for regulating car traffic in urban areas: providing information on alternative modes of transport and enforcement of smart parking management as a restrictive policy for private car use.

7. Conclusions

The results of the analysis highlighted that car use is not seen as a necessity to move in cities anymore; rather it is one option among other modes of transport in the city. Many car owners use their own car for specific situations such as transport in the city and day trips or holidays outside the city. Almost all car owners are currently using bike or/and PT for daily mobility and the acceptance for using alternative modes of transport is already high. Nevertheless, current transport infrastructures and offers are perceived inappropriate or less comfortable than the private car. These negative positions regarding alternative modes of transport influence the decision of car owners to use their own car. It is therefore crucial to continuously improve infrastructures and offers to keep alternative modes of transport attractive and to respond accurately to the needs of citizens.

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