

## **Carshare as a Lever for Travel Behaviour Change**

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**785 Words**

**Background:** Proliferating carsharing services need policy support, supporting infrastructure and kerbside space to thrive. There is no Australian evidence if carsharing is complementary to or conflicting with current transport objectives. Even internationally, most studies concentrate on ‘what’ is the impact of shared modes. They survey individuals about the ‘net’ difference in travel behaviour (mostly car ownership and car use) ‘before’ and ‘after’ or sharer vs non-sharer. While these comparisons are useful ‘performance’ measures, there are several gaps in these impact assessments:

- Travel behaviour change is a complex process where carshare is just one of the many agents. Hence, there is a need to better understand ‘role’ of carshare in the process of travel behaviour change.
- Psychological constructs influence the adoption of new technology and associated behaviour change. The same are not understood about carshare.
- Most impact assessments do not account for attitudinal self-selection (1).

**Aims and Objectives:** This PhD research uses a mobility biographies perspective to understand ‘how’ carshare acts as a lever in travel behaviour change. The objectives of the project are to:

- Explore the process of travel behaviour change in response to carshare.
- Investigate the impacts of carsharing on travel behaviour.
- Examine the role of attitudes in influencing the decision to use of carshare and subsequent changes in travel behaviour.

**Theoretical Framework:** The proposed theoretical framework has been adapted from travel behaviour models by Ben-Akiva et al. (2) and Muggenberg et al. (3). We hypothesise that changing lifestyle needs (e.g. birth of a child) initiate a reconsideration of the lifestyle, mobility and travel choice equilibrium. Car share acts as an enabler of change. However, its adoption and effectiveness in changing travel behaviour are dependent on psychological constructs which have been explored using the Theory of Planned Behaviour(4).

**Methods:** A mixed methods approach has been used for this study based in Melbourne. Qualitative surveys four focus groups and 18 semi-structured interviews. An online questionnaire survey of carshare users (n=610) and non-users (n=405) was also conducted.

**Progress:** So far, the qualitative data has been analysed and findings have been reported in a paper which has been submitted to the 98<sup>th</sup> TRB Annual Meeting (result awaited). The quantitative data is currently being analysed. The PhD research is in advanced stages and the pre-submission seminar is due in April 2019.

**Findings so far:** Qualitative study highlighted that changes in travel behaviour are a product of lifestyle events, lived experiences, personal attitudes and geographic context. Availability of carshare is a mobility option which enables changes in travel behaviour rather than causing it, in most cases. Depending on changes in travel behaviour post joining carshare, carsharers were classified into five user segments. While some saw no change in car dependency, some increased it while others reduced the same. Major changes in car dependency usually coincided with major life events. Respondents insisted that carshare was not the cause for their travel behaviour change but acted as an enabler.

Low adoption rates of carshare and ‘no change’ in travel behaviour of adopters are key concerns in Melbourne. Our research highlighted that psychological constructs play an important role in adoption of carshare and

subsequent changes in travel behaviour. In addition to health, environment and cost considerations, acceptability of carshare is also dependent on normative constructs around car ownership, the cultural association of car ownership with life events (such as childbirth), the emotional comfort of car ownership, dissatisfaction with public transport and high perceived mobility needs. Perceived barriers, such as the 'fear of scarcity', complex booking and renting mechanisms, need for pre-planning, travelling with kids, pets and disabilities etc., also limit carshare adoption and continued use. These constructs also act as a catalyst or retardant in travel behaviour changes post carshare adoption.

In essence, encouraging carshare use is ill-served by a blanket policy approach. It is essential to understand specific barriers faced by user segments to tailor policies to encourage the carshare adoption and improve its effectiveness in inducing sustainable travel behaviour. Knowing life events which coincide with carshare adoption is also useful in making informed interventions through behaviour change programs.

Analysis of quantitative data is currently underway and aims to quantify the size of the user segments and test psychological determinants of carshare use using the Theory of Planned Behaviour. We will also create an attitudinal market segmentation of all respondents and compare travel behaviour between carshare users and non-users (To remove the impact of attitudinal self-selection from impacts).

Working solo on PhD research is a steep learning curve and I wish to learn from the experience of fellow researchers and experts. I also hope to contribute to discussions, drawing from my experience in urban planning, transport planning and travel psychology. Participation in this workshop will be a great opportunity for me.

1. Mishra, G.S., et al., *The effect of carsharing on vehicle holdings and travel behavior: A propensity score and causal mediation analysis of the San Francisco Bay Area*. Research in Transportation Economics, 2015. **52**: p. 46-55.
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