

UWE Bristol

Qualitative Insights on Travel Behaviour Effects of Joining a Carshare

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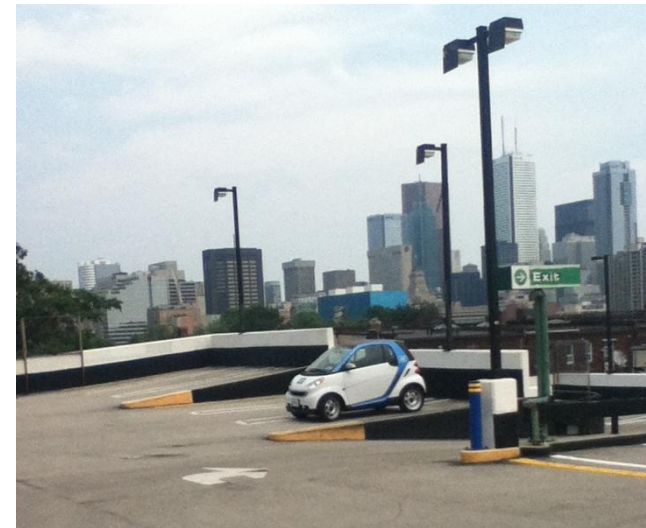


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Carsharing

- Replacement of private car ownership with short-term car hire of vehicles owned publicly or privately
- Known as **car clubs** in UK
- 162,000 car club members in UK at start of 2011 (Harmer and Cairns, 2011)
- Potential impacts
 - Freed up street-space from fewer privately owned vehicles
 - Reduced car use
 - More sustainable mobility and lifestyles
- Implications for transport analysis
 - An additional modal option



Outline

1. Existing knowledge
2. Study location
3. Methodology
4. Findings
5. Implications



Carplus Annual Survey 2010/11 UK (Harmer and Cairns, 2011) (N=8450)

- 32% of members reduced car ownership after joining
- 54% of members did not own car before joining
- 30% said they would have bought a car if they had not joined
- Over 85% of members use car club cars less than once a month
- Car club members produce a quarter of CO₂ emissions of average British driver licence holder

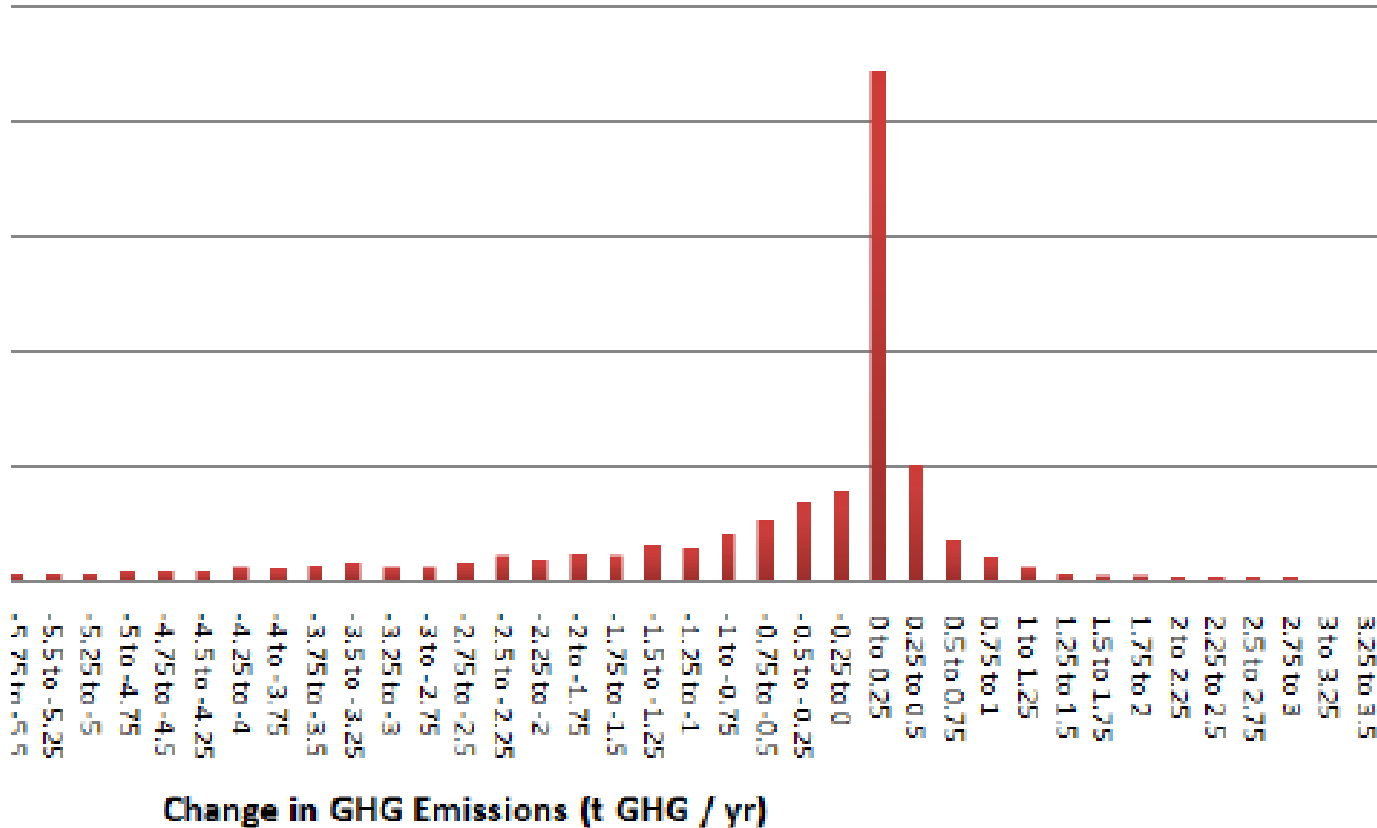
BUT...do car clubs attract people with already low car use or stimulate low car use?

Carsharing in North America (Martin and Shaheen, 2010) (N=9600)

- 25% of members reduced car ownership after joining
- 62% of members did not own car before joining
- 71% of members increased GHG emissions (based on difference between current and previous automobile mileage) but overall net reduction:
 - Average reduction of 0.54 t GHG/household/year ('observed impact')
 - Average reduction of 0.84 t GHG/household/year considering extra vehicles/miles if not joined car club ('full impact')

Carsharing in North America

(Martin and Shaheen, 2010) (N=9600)



Majority of members increase emissions by small amount (0 to 0.25 t).
Minority that reduce emissions do so by larger magnitude
→hence overall net reduction.

Carsharing in North America (Martin and Shaheen, 2010) (N=9600)

“While carsharing does facilitate lower emissions, the reduction is not generalizable across all members or even a majority of members. Rather, carsharing as a system facilitates large reductions in the annual emissions of some households, which compensate for the collective small emission increases of other households.”

Clear that those not owning car (‘accessors’) increase emissions and those relinquishing car (‘shedders’) decrease emissions. Important to know more about these two groups.

San Francisco City Carshare (SFCCS) (Cervero et al, 2006) (N=572)

- Four-year panel survey of those expressing interest in joining SFCCS, including those that became members and those that did not (non-members)
- Decrease in VMT of members and increase in VMT of non-members
- Similar percentage of members and non-members decreased car ownership (24%) but more non-members increased car ownership (33% compared to 17%)
- Decreasing car ownership more likely if public transport (PT) user, point of departure near to home and older, but less likely if have children and drive to work

Research Gaps/Questions

- What are circumstances and motivations of accessors and shedders prior to joining car club?
- How does mobility of accessors and shedders change in short and long term after joining car club?
- How might mobility of accessors and shedders have changed if they had not joined car club?

Qualitative research used to explore this

Bath City Car Club (BCCCC)

- Historic city of Bath with 85,000 residents and limited parking in centre
- Car club operated by City Car Club – largest operator in UK
- Expansion of fleet from 8 to 14 vehicles in April 2010 with 6 Toyota Prius hybrid vehicles added (funded by EU Civitas Renaissance project – see <http://www.civitas-renaissance.eu/>)
- 408 members in Bath in Sept 2011



Stage 1 of 2: Web Survey

- Survey mode consistent with how members book cars
- Conducted Sept-Oct 2011
- Data included:
 - Date joined
 - Car ownership before/after joining
 - Car club usage levels
- Usable responses from 108/408 members (26%)
- 66% male (similar distribution to BCCC membership and national survey of car club members)
- 50% aged over 45 (older respondents than BCCC membership and national survey of car club members)

Stage 2 of 2: Telephone Interview Design

- Follow up in-depth interviews with 16 BCCC members
- Conducted Dec 2011
- Topics included:
 - Motivations to join car club
 - Car ownership changes and consideration
 - Usage of different transport modes (before and after joining)

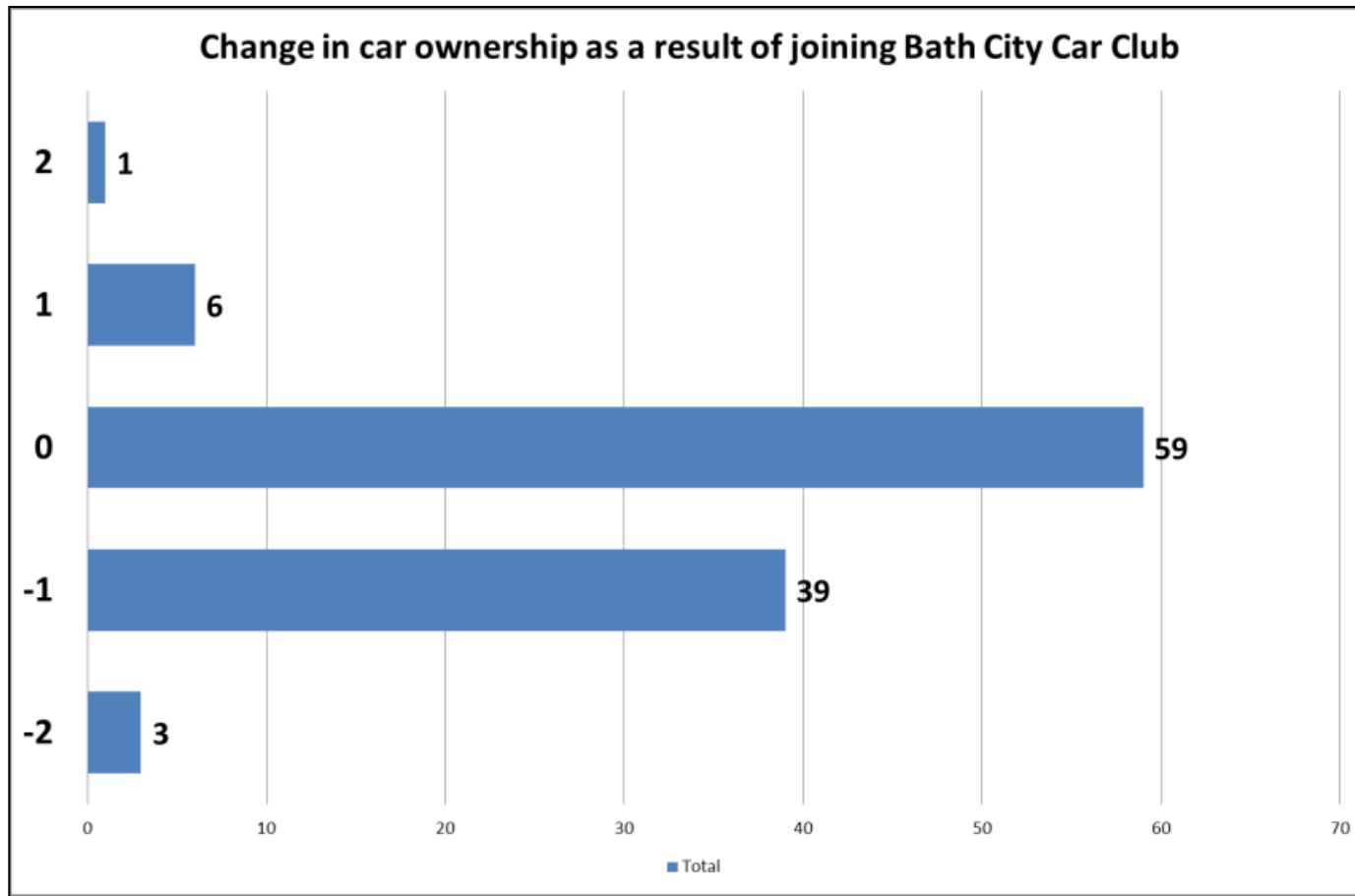
Stage 2 of 2: Telephone Interview Sampling

■ Sampling strategy

- Recruited four survey respondents in each of four groups (based on whether old/new member and accessor/shedder)
- Number of respondents available to survey in each group is shown below (N=102)

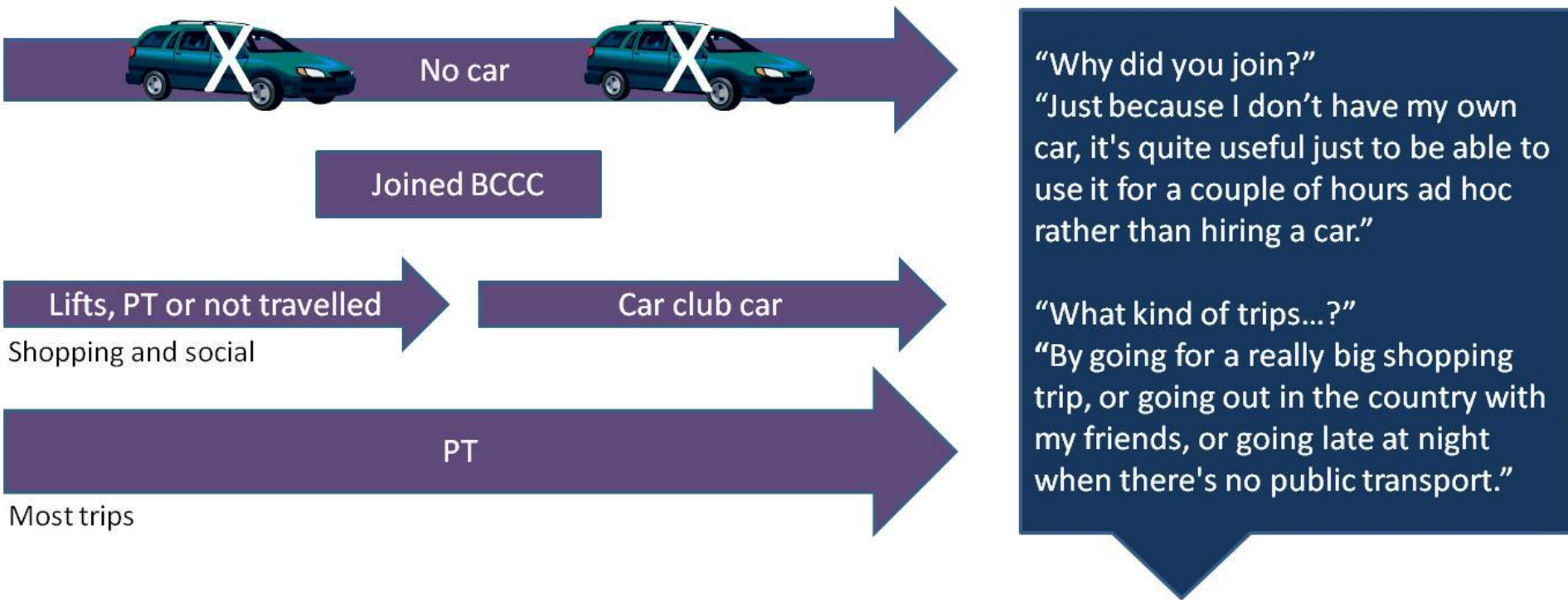
		Car ownership	
		Decreased	Same
Joined car club	Pre-Apr 10	18	27
	Post-Apr 10	20	37

Car Ownership Changes from Web Survey



42 (40%) respondents reported reducing car ownership with 31 becoming households without car and 11 becoming households with single car

Example of an accessor



Participant 5 – Male, 26-30, Student, Sharing with Other Adults

Circumstances and Motivations to Join

- Two circumstances
 - Did not have car
 - Had car but used by partner
- Motivations
 - To save money and have greater convenience than using PT/taxi/hire car for occasional journeys
 - To use for work-related travel instead of own car
 - To maintain driving skills

“But I was also, I was going to go on holiday and hire a car for a week and I thought oh god you know I was a bit nervous about getting in a car for a week, so I thought if I hired a car and used it occasionally then I would get back into the swing of things.”

(Participant 15 – Female, 46-50, Employed, Living with Child)

Travel Behaviour Changes After Joining

- Use car club instead of taxi, hire car, lifts and public transport
- Use car club for journeys not accessible without car (local but outside city) and sometimes new journeys not previously made
- Use of other travel modes largely unchanged

“Some of the journeys I wouldn’t have made at all because I just would have thought oh I can’t get there.”

(Participant 15 – Female, 46-50, Employed, Living with Child)

Car Ownership After Joining

- Some with no intention to acquire car
- Others acquired car and no longer use car club often
 - Opportunity to borrow car from family/friends
 - Regular school escort journeys necessitated car
- Use of car club for work-related travel has made one participant consider shedding car and managing with motorcycle and car club

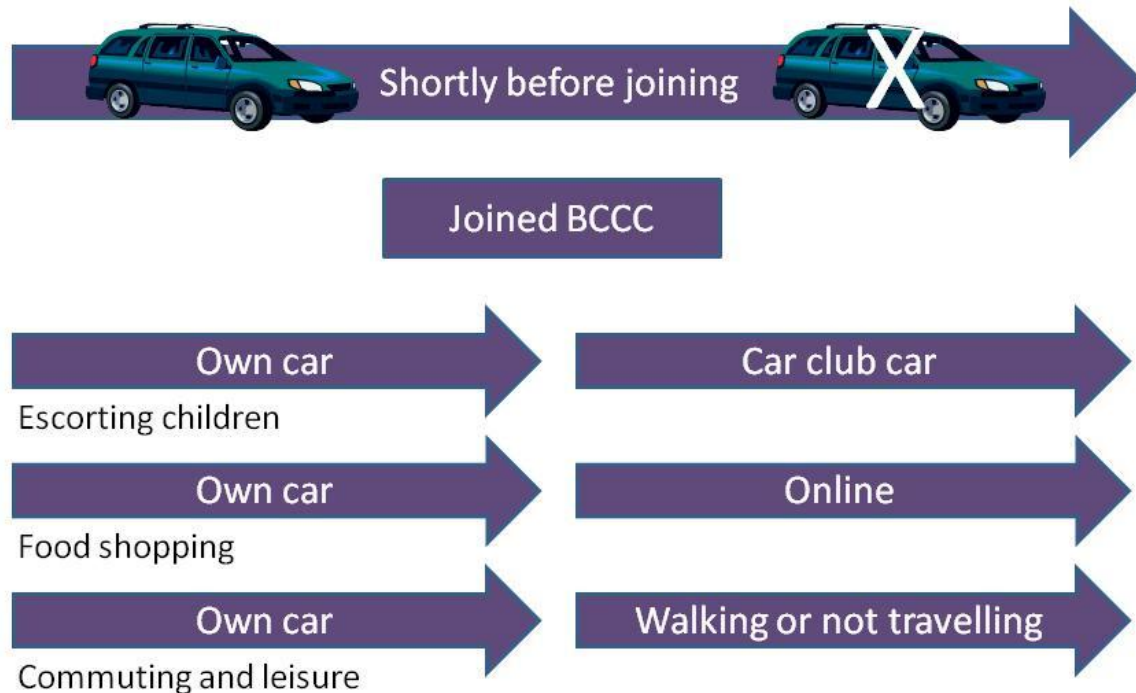
“I might have thought about it yes, yes I keep thinking about buying a car and then I realise how expensive it is and then I think again.”

(Participant 15 – Female, 46-50, Employed, Living with Child)

“Well I mean for the last four years I have had a neighbour whose car I can more or less borrow when I like so that means that I actually use the car club less than I would have.”

(Participant 3 – Male, 60+, Retired, Living with Own)

Example of a shedder



“Why did you join?”
 “Well it was all around the same time, I was thinking about getting rid of my car but was a bit reluctant because you know emergencies happen you need a car from time to time, so when I heard about City Car Club, I thought well that could be the answer .”

“What’s changed is that I do more online shopping and I don’t understand why everybody in the world doesn’t do it. And I think I’m just a little bit more organised because my walk home is something I’ve forgotten when I can pick things up...”

Participant 12 – Female, 46-50, Employed, Living with Partner and Children

Circumstances and Motivations to Join

■ Two circumstances

- Low and declining car usage but wished to have access to car and car club facilitated shedding
- Relinquished car (e.g. through redundancy) but shortly afterwards found occasional need for car and joined

■ Motivations

- To save money and hassle of owning car
- To live more environmentally friendly lifestyle
- To use for work-related travel without having to own car
- Trigger of car insurance renewal

“I didn’t tend to think about how much it was costing...but when it was time for renewal I said enough is enough. Some calculations from my son showed me how much it was - and I was shocked, the City Car Club was so much cheaper.”

(Participant 16 – Male, 60+, Employed, Living with Partner)

Travel Behaviour Changes After Joining

- Some participants were already mostly using alternatives to car
- Increased walking and public transport use for some participants
- Online shopping replaced car use
- Some journeys not made at all or made more locally

“...I mean I suppose because we haven’t got a car there are certain journeys we don’t make now, I mean for example you know if we had a car we might go out of Bath a lot more...but we don’t do now so not owning a car curtails making some of the journeys we would make.”
(Participant 6 – Male, 51-60, Homemaker, Living with Partner and Child)

Car Ownership After Joining

- Adaptation over time to not owning car (online shopping, consolidated journeys, change in destinations) with decreasing car club use over time
- No participant had intention to re-acquire own car

“No I think when I first, when I first started using the Car Club I did use the car more often than I do now, yes. I sort of then I used it occasionally and now I use it very occasionally.”

(Participant 8 – Male, 41-45, Self-employed, Living on Own)

Summary of Policy Relevant Findings

- Car clubs effective at attracting those already contemplating shedding car or triggered to consider it by life events (relevant in economic downturn)
- Car clubs prevent acquisition of cars for some members but some subsequently take opportunities to acquire cars
- Members adapt to not owning car over time and generally use car club less, suggesting need for car clubs to continually refresh membership
- Car clubs used for 'niche' journeys with members using PT and hire cars when more cost effective or convenient - car clubs are part of mobility mix and this provides potential market opportunity for collaboration between providers

Modelling Implications and Further Research

- Need to model car club membership: it can be an alternative option to car ownership with following factors influencing choice between two options:
 - Car usage level and perceived need to use car
 - Residential parking availability
 - Negative perceptions of car ownership and use (financial cost, maintenance, hassle, environmental impact)
- Need to understand travel choices of car club members: activity, destination and mode options and preferences, taking into account cost structures and quality of access
- Decision making of car club members differs from others - more advance planning and optimisation - and this needs recognising in modelling

Thank You!

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