

Car club member analysis: exploring differences in motivations, preferences and mobility patterns amongst new members

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Background

Increasing the use of car clubs is an opportunity to reduce carbon emissions from transport in Scotland. This research analysed survey data to better understand members' motivations for joining car clubs. The findings may be useful in encouraging car club membership and in understanding the impact of car clubs on the transport system.

Key Findings

- New members of car clubs can be separated according to those who previously owned a car (47.7%) and those who did not previously own a car (52.3%).
- These two categories of new members differ significantly in some of their characteristics:
 1. **Members who *had* prior car ownership** are more likely to be motivated to join a car club to:
 - spend less on transport; and
 - reduce their level of car use.

However, these members have a tendency to increase the number of trips they make by car whilst decreasing their use of light-rail transit and walking trips after joining.

2. **Members who *did not* have prior car ownership** are more likely to be motivated to join a car club to:
 - access cars on a short-term basis; and
 - make trips which cannot be done using alternative modes.

These members have a greater preference to make use of Plug-in Hybrid Electric Vehicles and Hybrid Electric Vehicles. They also have a tendency to increase the number of trips they make by car whilst decreasing the number of trips they make by foot after joining.

Executive Summary

New members of car clubs can be categorised based on whether or not the new member owned a car prior to joining. These two groups are roughly the same size. This finding suggests that new members of car clubs in the UK are comprised of individuals who are deciding to access a car and those who are making the decision to alter the way in which they access cars.

These two categories of new members seem to differ from each other on a number of their expressed characteristics:

1. New members who had prior car ownership appear to have a relatively high desire to *reduce their use of cars and the amount of money they spend on transport*. This is potentially motivated by this category of new members having a higher likelihood of reporting a recent change in financial circumstances before joining. However, new members who had prior car ownership tend to perceive that their car use as both a driver and passenger actually increases post-joining, whilst the number of trips conducted using light-rail transit and foot has a propensity to decrease.
2. New members who did not have prior car ownership seem to be relatively more attracted by *the ability to hire cars on a short-term basis, and to make trips which cannot be serviced by other transport modes*. New members in this category also appear to be more interested in driving low emission cars, with relatively high stated preferences for Plug-in Hybrid Electric Vehicles and Hybrid Electric Vehicles. The analysis indicates that this category of new members tend to increase the number of trips they make by car whilst decreasing their trips by foot after joining a car club.

The research presented in this document could be useful for the promotion of car club mobility in a number of ways. Firstly, knowing how motivations for joining car clubs differ between groups of new members allows for marketing information to be tailored more closely to the specific preferences of the groups. For example, advertising car clubs in car-based media would likely prove more effective in encouraging membership if the advertisement concentrated on how car clubs release their members from the burden of car ownership. Advertisements on public transport may prove more effective if they focus on the flexible access to cars that car clubs provide.

Secondly, understanding how car clubs are influencing the perceived mobility patterns of members allows research to begin to consider how car clubs might be altering the wider transport system. For example, determining how the use of car clubs is replacing other modes of transport can help to assess whether car clubs are reducing private car use.

Introduction

According to the Developing Car Clubs in Scotland program (Car Plus, 2016¹), the potential benefits car clubs include:

- reducing the emissions of global and local pollutants by acting as a lead market for the diffusion of low emission vehicles;
- reducing the cost of accessing a car;
- acting as a part of a multi-modal integrated transport systems, and
- reducing transport poverty in rural communities by providing flexible access to cars.

An expansion of car club operations within Scotland is partially contingent on the emergence of increasing levels of demand for this mobility service amongst citizens. This research summary provides new insights into the motivations of different groups of new car club members, which can be useful when considering the development of targeted advertisements and policies that respond to the unique features and preferences of different member groups.

New members joining car clubs in the UK appear to be quite evenly split between those who did (47.7%) and those who did not (52.3%) own a car prior to joining. Those new members who did not have prior ownership of a car can be thought of as individuals who are up-scaling to car-based mobility, whilst those who did have prior car ownership can be described as individuals who are changing the manner in which they are accessing car-based mobility. The purpose of this report is to investigate the differences which are apparent between these two categories of new members. Data necessary to conduct the analysis is sourced from the Annual Car Club Members Survey 2015 conducted by Steer Davies Gleave on behalf of Car Plus. Differences are considered in terms of:

¹ An overview of this policy is available at: <http://www.carplus.org.uk/projects/car-clubs-in-scotland/>

- reasons for joining;
- experience of life events prior to joining;
- expressed preferences for different vehicle propulsion systems (e.g. Electric Vehicles); and
- perceptions of new members concerning alterations to their mobility patterns after joining.

The two categories of new members appear to be equally spread across the UK regions (Figure 1). This indicates that new members in Scotland are following similar prior car ownership patterns to those observed in the rest of the UK.

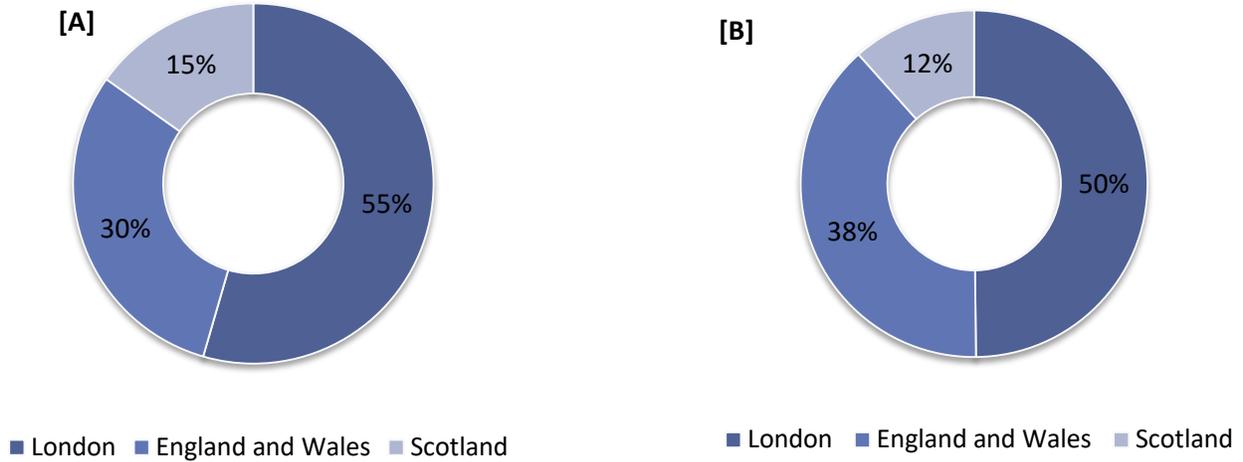
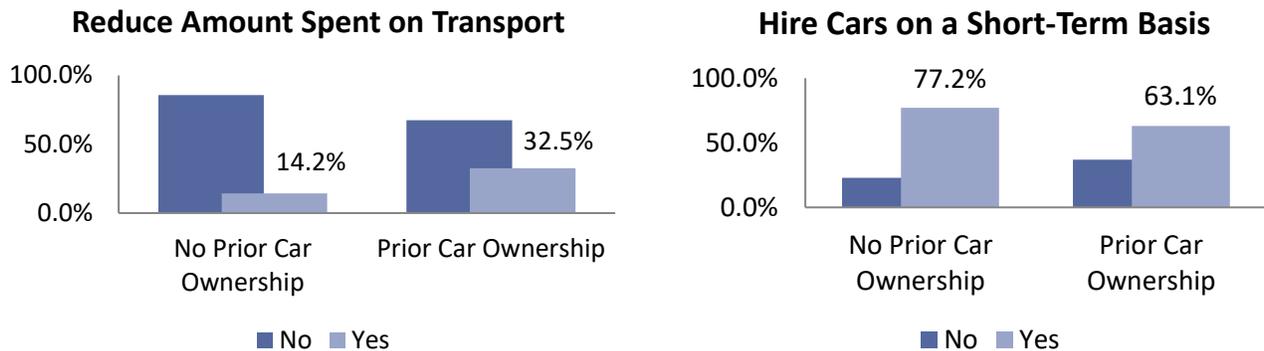


Figure 1: Regional splits between new members who [A] did not have prior car ownership and [B] did have prior car ownership (n = 613)

Motivation for Joining

The Annual Car Club Members Survey asks new members why they decided to join the car club with ten different response options being available to select. Figure 2 illustrates the significant differences in motivations between new members who did and did not have prior car ownership. Chi-square (X^2) tests of difference are utilised to identify where these two categories of new members significantly differ in their motivations for joining.



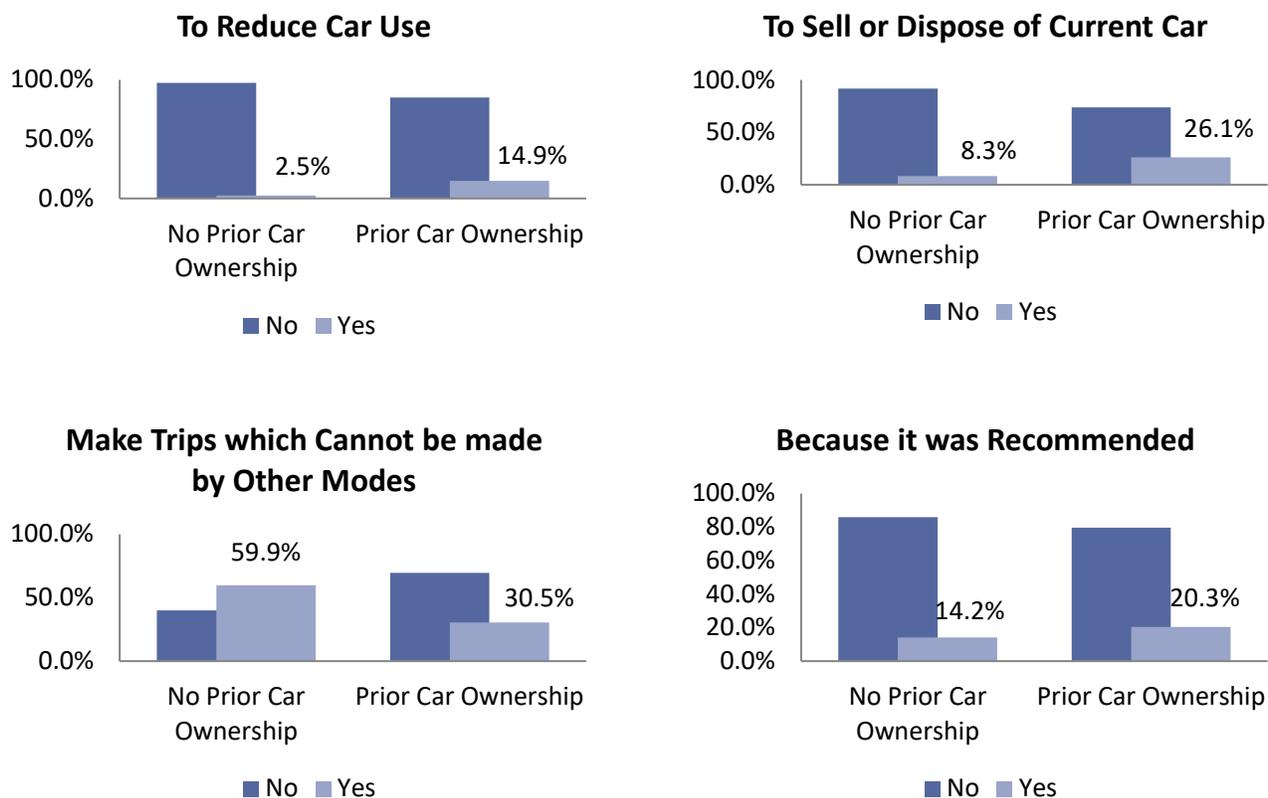


Figure 2: Identified differences in motivations for joining a car club for new members who did and did not have prior car ownership (n = 613)

The results of the chi-square analysis suggest a number of significant differences in motivation are present. New members who had prior car ownership are more likely to be motivated to join a car club in order to reduce the amount of money they spend on transport, to reduce their level of car use, to dispose of an existing car that they own and because membership was recommended to them. New members who did not have prior car ownership are more likely to be motivated by a desire to hire cars on a short-term basis and to make trips which could not be done by other modes. Interpreting these different motivations across the two categories of new members, it seems as if new members who had prior car ownership are interested in the ability of car clubs to release them from the burden of car ownership. New members who did not have prior car ownership appear to be motivated more by a desire to utilise the mobility service that cars provide.

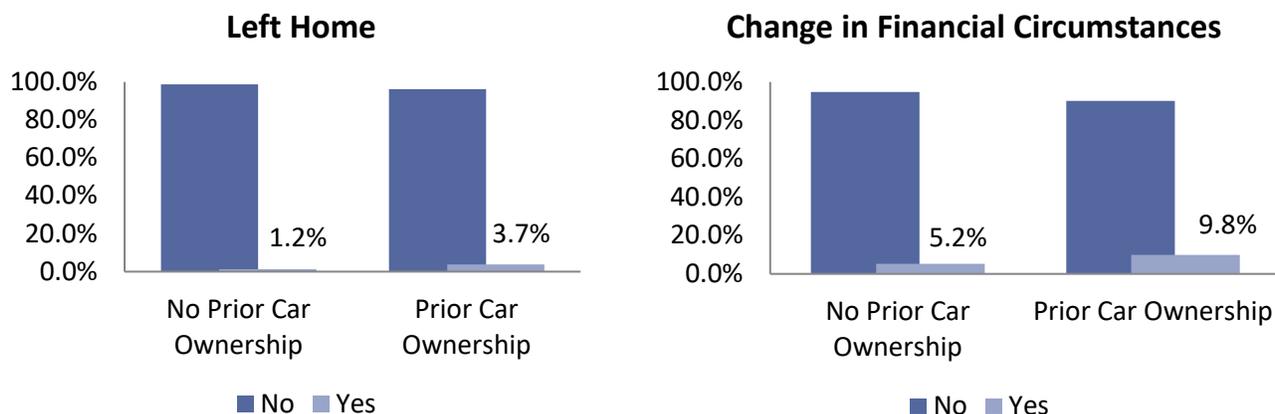


Figure 3: Identified differences in life events experienced around time of joining car club (n = 613)

In addition to the stated reason for joining a car club, the Annual Car Club Members Survey asks new members if they have experienced a life event around the time of joining. Figure 3 summarises the significant differences in life events experienced across new members who did and did not have prior car ownership. The comparison between these two categories of new members indicates that new members who did have prior car ownership have a higher likelihood to have recently left home and to have experienced changes in their financial circumstances. Interesting, a number of other life events such as moving to a new area, changing jobs or entering retirement did not differ significantly between the two categories of new members.

Propulsion System Preferences

Car Clubs often allow their members access to vehicles which utilise different fuels and propulsion systems (e.g. Electric Vehicles). The opportunity to drive a car which utilises an alternative propulsion system can represent an attribute which attracts new members to join. Figure 4 provides an overview of the stated preferences new members have towards using vehicles with different propulsion systems based on whether the new member did or did not have prior car ownership. Chi-square tests of difference are applied in an effort to identify where these two categories of new members significantly differ in their propulsion system preferences.

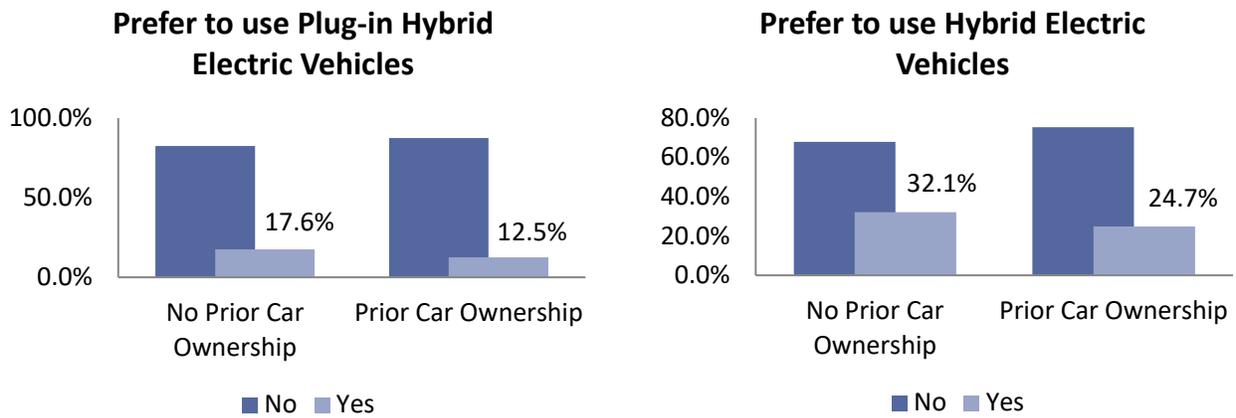


Figure 4: Identified differences in expressed preferences to use Car Club vehicles with different propulsion systems (n = 613)

The analysis highlights that new members who did not have prior car ownership appear to have a higher likelihood of desiring access to vehicles which make use of low emission propulsion systems. Specifically, new members with no prior car ownership tend to express greater preferences to drive Plug-in Hybrid Electric Vehicles and Hybrid Electric Vehicles as compared to the preferences of new members who did have prior car ownership.

Use of Transport Modes before Joining

The Annual Car Club Members Survey measures the mobility patterns of new members before they joined the Car Club by asking new members to state their previous use levels of different transport modes. These previous mobility patterns are summarised in Table 1 with chi-square tests of difference utilised to identify where new members who did and did not have prior car ownership are unique in their pre-joining mode use.

The comparison between the two categories of new members indicates that substantial differences are apparent concerning previous mode use. Perhaps unsurprisingly, new members who had prior car ownership have a stated higher level of car use as both drivers and passengers preceding joining. For new members who did not have prior car ownership, a greater level of public transport use is observed with relatively high trip frequencies by bus, coach and train. Additionally, new members with no prior car ownership have a greater propensity to make use of taxis and to make trips by foot preceding joining.

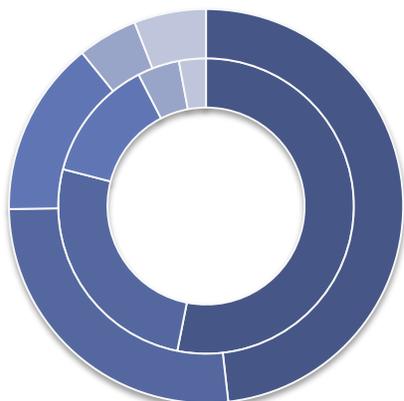
Table 1: Stated frequency of trips made by transport modes before joining the Car Club for members who did and did not have prior car ownership (n = 613)

	Transport Modes								
	Bus	Coach	Train	Light-Rail	Car Driver	Car Passenger	Taxi	Bicycle	Walk
<i>No Prior Car Ownership: Before</i>									
No Trips	2.3%	56.0%	1.6%	11.9%	53.1%	16.1%	11.4%	45.1%	.6%
Once a Year	8.1%	34.3%	19.5%	16.2%	25.9%	26.5%	29.4%	9.5%	.3%
Once a Month	23.9%	8.3%	45.6%	20.5%	13.4%	38.3%	42.5%	10.9%	8.1%
2 to 3 Times a Week	21.7%	.3%	13.0%	13.5%	4.6%	15.4%	12.7%	7.6%	25.6%
3 or More Times a Week	44.0%	1.0%	20.2%	38.0%	3.0%	3.7%	3.9%	27.0%	65.4%
<i>Prior Car Ownership: Before</i>									
No Trips	12.1%	66.7%	10.9%	16.4%	27.1%	18.5%	23.7%	50.7%	4.6%
Once a Year	14.2%	27.8%	25.7%	20.0%	8.9%	14.4%	22.3%	10.4%	1.8%
Once a Month	21.3%	3.0%	30.3%	19.3%	20.8%	32.5%	35.3%	14.2%	10.7%
2 to 3 Times a Week	17.7%	1.5%	12.0%	12.7%	15.6%	21.4%	15.1%	6.0%	27.5%
3 or More Times a Week	34.8%	1.1%	21.1%	31.6%	27.5%	13.3%	3.6%	18.7%	55.4%
χ^2	30.175	13.835	32.625	5.061	128.546	30.416	18.156	7.150	16.012
P-value	.000	.008	.000	.281	.000	.000	.001	.128	.003

Use of Transport Modes after Joining

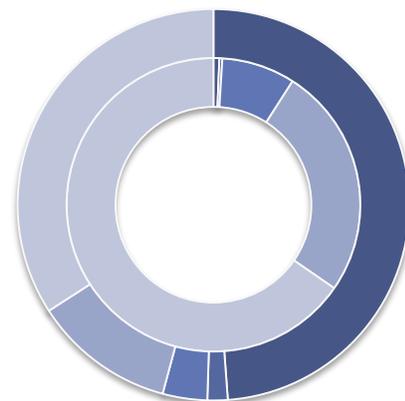
In addition to measuring new members transport mode use before joining the car club, the Annual Car Club Members Survey asks new members to state their mode use after joining. Having data on both stated before and after mode use allows a comparison between how new members perceive their use of transport modes has changed since joining the car club. The stated mode use after joining the car club for new members who did and did not have prior car ownership is detailed in Figures 5 and 6. Wilcoxon-signed-rank tests (Z) are utilised in order to identify significant changes in mode use for these two categories of new members since joining.

No Prior Car Ownership - Car Driver



- No Trips
- Once a Year
- Once a Month
- 2 to 3 Times a Week
- 3 or More Times a Week

No Prior Car Ownership - Walk

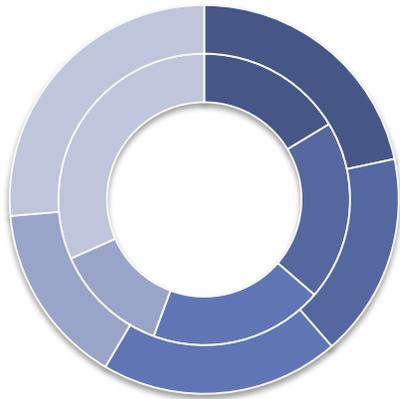


- No Trips
- Once a Year
- Once a Month
- 2 to 3 Times a Week
- 3 or More Times a Week

Figure 5: Identified differences in stated frequency of trips made by respondents with no prior car ownership before joining the car club (inner circle) compared to after joining the car club (outer circle) (n = 613)

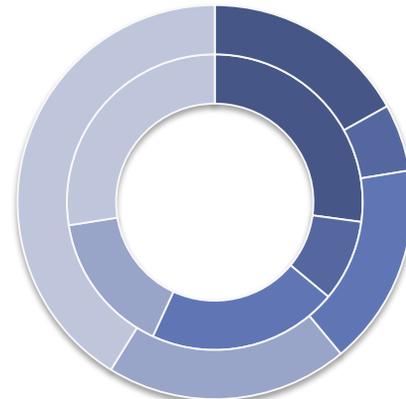
The results of the Wilcoxon-signed-rank test suggest that new members perceive that a number of significant alternations have occurred in their mode use since joining. These perceived changes are somewhat different between new members who did and did not have prior car ownership. For new members who did not have prior car ownership (Figure 5), trip frequencies as a car driver tend to increase after joining whilst trips conducted on foot tend to decrease. The frequency of trips taken as both drivers and passengers tends to increase after joining for members who had prior car ownership (Figure 6). Additionally, these new members tend to make less use of light-rail transit systems and have a decreased propensity to make trips by foot after joining. Of particular interest here is the magnitude of the reduction in walking trips stated by new members, with the proportion of new members stating that they make no walking trips increasing from 4.6% to 50.9% post joining for new members who had prior car ownership and from 0.6% to 48.8% for new members who did not have prior car ownership. These changes seem quite dramatic, though they are stated changes based on the new member's perceptions and thus the magnitude would likely prove smaller if an objective measurement was utilised.

Prior Car Ownership - Light-Rail



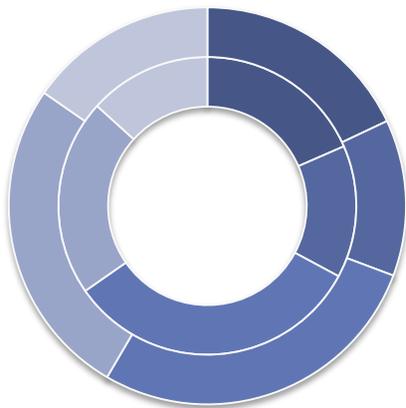
- No Trips
- Once a Year
- Once a Month
- 2 to 3 Times a Week
- 3 or More Times a Week

Prior Car Ownership - Car Driver



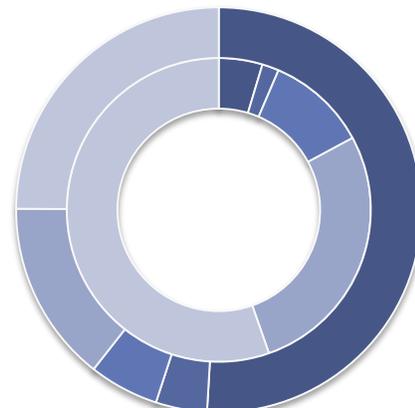
- No Trips
- Once a Year
- Once a Month
- 2 to 3 Times a Week
- 3 or More Times a Week

Prior Car Ownership - Car Passenger



- No Trips
- Once a Year
- Once a Month
- 2 to 3 Times a Week
- 3 or More Times a Week

Prior Car Ownership - Walk



- No Trips
- Once a Year
- Once a Month
- 2 to 3 Times a Week
- 3 or More Times a Week

Figure 6: Identified differences in stated frequency of trips made by respondents with prior car ownership before joining the car club (inner circle) compared to after joining the car club (outer circle) (n = 613)