

Development Department Research Programme

Scottish Household Survey Analytical Topic Report: Mode Choice

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This topic report uses SHS data to summarise the key statistics on current mode choice and perceptions of alternative modes, identifying factors which affect behaviour of travellers in making a mode choice.

Main findings

- n The research states that approximately one in five (**21%**) trips made by adults from non car owning households in Scotland are made by car (predominantly as car passengers).
- n This rises to over three quarters (**77%**) of trips from households with one car available for personal use and rises again to over **87%** of trips by adults from households with two or more cars available.
- n The research states that there is a strong relationship between the relative cost of the car and public transport use and that there is potential to boost the use of public transport by making it less costly.
- n The research states that for both short and long distances, there was a strong link between the car ownership level of the child's household and the likelihood of them either walking or cycling. The greater the number of cars available, the less likely it was that the child would walk or cycle.

Summary of Car Ownership Analysis

The SHS data suggests that approximately one in five (**21%**) trips made by adults from non car owning households in Scotland are made by car (predominantly as car passengers). This rises to over three quarters (**77%**) of trips from households with one car available for personal use and rises again to over **87%** of trips by adults from households with two or more cars available.

The factors which influence car ownership will therefore automatically tend to influence mode choice.

All of the variables suggested by the current UK National Car Ownership model and which are available in the SHS data were found to be significant in identifying differences in household car ownership. These factors include household income, household structure, the number of employed adults, the availability of a company car and a number of other factors, including the standard six-way rural/remoteness index.

In addition, the frequency of the nearest bus service and the Scottish Index of Multiple Deprivation were shown to influence certain household car ownership proportions.

Public Transport versus Car Trip Analysis

Our analysis of the car versus public transport mode choice has focussed on the set of journeys in the SHS data where a realistic mode choice was available.

The analysis suggested that, not surprisingly, mode choice behaviour differs strongly between different categories of the traveller's driver's licence status, with full licence holders choosing cars much more frequently than non drivers.

For those in possession of a **full driving licence** in a household with car(s) available, the following conclusions are supported by our analysis:

- n There is a significant correlation between mode choice and the relative attractiveness of the car and public transport alternatives;
- n For journeys where the generalised cost ratio for car versus public transport is lowest (ie public transport was at its most competitive) the standard six way Scottish

rural/remoteness index is strongly linked to the difference between car and public transport use, with car use highest in rural areas and small towns;

- n For intermediate generalised cost ratio journeys, the proportion choosing public transport is strongly related to the length of the trip, with public transport use lowest for longer trips;
- n Where the generalised cost ratio was highest (i.e. the public transport alternative is approaching the limits of what we have considered to be 'realistic'), the proportion using public transport is strongly related to whether or not the home is located near a frequent bus service, being higher where services are more frequent;
- n 78% of 'Car Choosers' drove their cars on a daily basis compared with 39% of the 'Public Transport Choosers';
- n 'Public Transport Choosers' are significantly more likely to view public transport as convenient than 'Car Choosers';
- n 'Public Transport Choosers' are generally slightly more appreciative of public transport provisions than 'Car Choosers'.

Our analysis of the mode choice behaviour of those in **possession of a provisional licence** or those who had **never held a drivers licence**, in a household with car(s) available suggests the following conclusions:

- n There is again a significant correlation between mode choice and the relative attractiveness of the car and public transport alternatives;
- n Where the generalised cost ratio was lowest (public transport was at its most competitive) the journey purpose was strongly linked to the difference between car and public transport use with the proportion travelling by public transport is greater for those escorting to shops/home/education, travel to education and travel to work;
- n For intermediate generalised cost ratio journeys, the proportion choosing public transport is strongly related to length of the of the trip with public transport being lower for longer trips;
- n Where the generalised cost ratio was highest, the proportion choosing public transport is strongly related to age, with car use highest for the oldest and youngest age groups.

Summary of Motorised (e.g. car, bus) Versus Non-Motorised (walking, cycling) Trip Analysis

For trips less than 5km, the greatest difference between the proportions using motorised and non motorised modes was the length of the trip, with the percentage walking or cycling being higher for shorter trips.

For distances less than 3km there is a strong relationship between levels of car ownership and proportions of non-motorised journey stages, with the latter falling as the number of cars available to the household rose.

For trips between 3km and 5km, the percentage of non motorised trips is strongly affected by journey purpose. There is a higher proportion of non-motorised travel for 'day trips', 'shopping' and trips to an educational establishment or sport. There is a lower proportion choosing non motorised travel for escort trips (personal/work/shopping) and employers business than for other journey purposes.

Summary of School Travel Analysis

Not surprisingly, the distance between home and school yielded the greatest variation in the proportion of children walking or cycling to school: the greater the distance, the less likely the children were to walk or cycle.

For trips between 0.3km and 0.5km, there was a link the proportions walking/cycling or being driven to school and household car ownership. The greater the number of cars available, the less likely it was that the child would walk or cycle.

For trips between 0.5km and 2km, there was a strong link between the age of the child and the proportions walking/cycling or being driven to school and age, with older children more likely to walk/cycle than younger ones.

For distances greater than 2km, there was a strong (and not surprising) link between the car ownership level of the child's household and the likelihood of them either walking or cycling. The greater the number of cars available, the less likely it was that the child would walk or cycle.

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