

Task 6.5 Sample Enumeration

Inputs

2001 Census car ownership for each zone (p_0, p_1, p_{2+})

Household travel survey.

Processing

Divide the household survey sample into the 5 household types. We assume that these samples are representative of the households in all zones.

For each household type, set up a spreadsheet to produce car ownership estimates (p_{1+} and $p_{2+/1+}$) for each household in the sample, and the overall values for the sample. Incorporate in the spreadsheet a parameter λ to which values can be ascribed.

Using the census car ownership data, for each household type and for each model separately, identify the two zones with highest and lowest car ownership levels. Manually re-run the model on the household sample with different values of λ until the model reproduces these two car ownership levels: we now have maximum and minimum values of λ , say λ^{\max} & λ^{\min} . Using these values we can reproduce on the household survey sample the overall car ownership of the two zones with the lowest and highest car ownership levels (for a particular household type and model).

As all other zones have car ownership levels between these two, the values of λ_z for all other zones z must lie between these two values λ^{\max} & λ^{\min} . Divide this range into 50 increments, and run the model to produce car ownership estimates for each incremental value of λ . Number the increments (or classes) 1-50. Now allocate each zone to one of these classes (that which best matches the census car ownership of the zone).

In forecasting with this model, we uniformly growth up the incomes of our household samples, and re-run the car ownership model for the new incomes and for each value of λ . Each zone is allocated the car ownership of the class to which it has been allocated.

Outputs

A sample enumeration process

Note