

Task 7.7: Airport-Related Trips

Background

The household survey data will in principle include the airport access trips of resident air passengers and the commutes of airport employees but, in practice, it would not be surprising if we had under-sampled residents' air passenger access trips. The data will not include the airport access trips of visitors.

There seems no reason to distinguish the commuting trips to the airport from any other HBW journeys although, in the HBW models, we could allocate the airport separate coefficients if this seemed justified.

We would expect resident air passenger access trips in the household survey to have been allocated to EB or HBO purposes. We should be able to make a rough guess as to their volume and check this against the household survey to determine whether we should rely on it. If the data seem heavily under-sampled, we might replace it with a synthetic approach to air passenger trips as we will do for visitors. I assume in the following that this would be the most sensible approach.

Model

The concept is to develop a separate base trip matrix of air passenger vehicle trips, forecast this using growth factors and apply time period factors before adding to the other vehicle trip matrices.

Trip Attractions

In the synthetic approach, knowing or guessing the number of visiting air passengers and their choice of access mode, we can estimate car/taxi trip rates. I am not sure whether there is any point in representing public transport access trips because they are mainly on dedicated bus services, which may not be in our network.

Appendix A illustrates a model of air passenger and commuter trip rates. Many of the model parameters are unavailable, and are therefore judgements based on reasonable expectation, on, for example, the proportions of air passengers by domestic/international, business/leisure, group size and the surface access mode shares for each sub-category.

The model is shown to validate reasonably against independent data on:

- number of cars parked,
- taxi flows
- car traffic flows,
- peak traffic flows.

Thus we can estimate air passenger trip generation rates for the airport as:

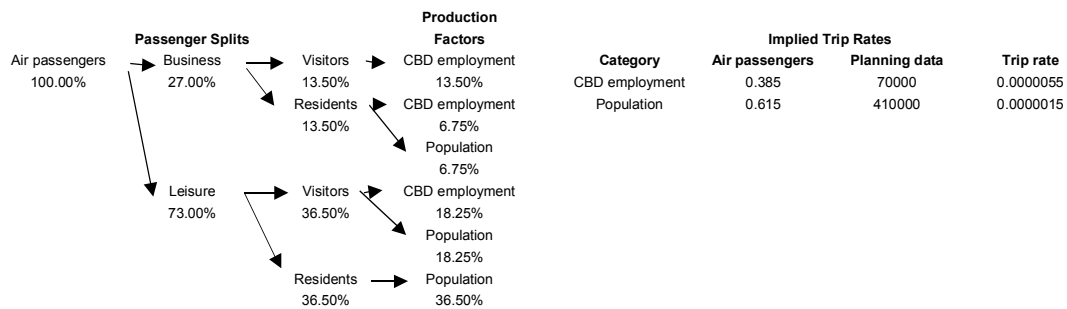
- 1.01 daily car and taxi trips per passenger,
- of which 73% are leisure and 27% business.

Trip Matrix

These trip attractions will be distributed across origin zones in some necessarily arbitrary approach. Factors to consider are:

- ❑ many visitor trips will start at hotels, primarily in the CBD;
- ❑ many business trips will start in the CBD, related to service employment and the nature of CBD businesses;
- ❑ wealthier households are more likely to generate air travel.

Once we have the base year planning data, the following approach will be implemented as illustrated below, where we have allocated generation factors to each element of the air passenger market.



Forecasting

Using forecasts of air passenger growth we can project the matrix into the future.

Time period factors

Analysis of the data suggests that there is no directionality in the peak periods (that is there are as many vehicles arriving as departing). As a result the air passenger OD matrix can be allocated to the time periods as follows:

- ❑ am peak: 13%
- ❑ interpeak: 45%
- ❑ pm peak: 15%

