

Estimation of a mode choice model for long distance travel in the Portuguese National Transport Model

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The Portuguese National Transport Model (PoNTraM) developed in 2006 represents the supply and demand of medium and long distance travel within the country. The scope of PoNTraM is to evaluate transport measures that have a regional or national impact, such as the construction of a new national airport or a high speed rail link. It considers five modes of transport relevant to long distance travel: car, bus, rail, taxi and high speed rail.

The demand forecast is a crucial element in evaluating impacts. In addition, the model quality for the evaluation of transport measures is directly related to the empirical validity of the parameters in mode choice models. Improving the calibration process, the results are easily validated and thus, the model becomes a more reliable and valuable tool to support decision making. The demand model is calibrated based on Large-scale household long distance travel Survey (IMMLD).

In 2009, updates were introduced in the old model at a structural (networks and services) and behavioral level (calibration parameters). The second update was performed based on the current model responses to the successive changes by comparing the PoNTraM implicit and cross elasticities to the literature elasticities.

The comparison shows that the implicit and cross elasticities for the conventional modes of transport (car, bus and rail) are comparable to the elasticities found in international scientific literature, confirming the reliability of the PoNTraM results.

Keywords: Transport, Mode Choice, Elasticities