

Substitution Path Between Air and Rail in Europe: a Measure of Demand Drivers

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1.3.4.5.7 ENAC, 2.University of Manchester, 6. Bauhaus Lufthart

Objective

identifying the determinants of passengers' choice of transportation

➤ *assessing the substitution paths between air and rail for French city-pairs*

Methods

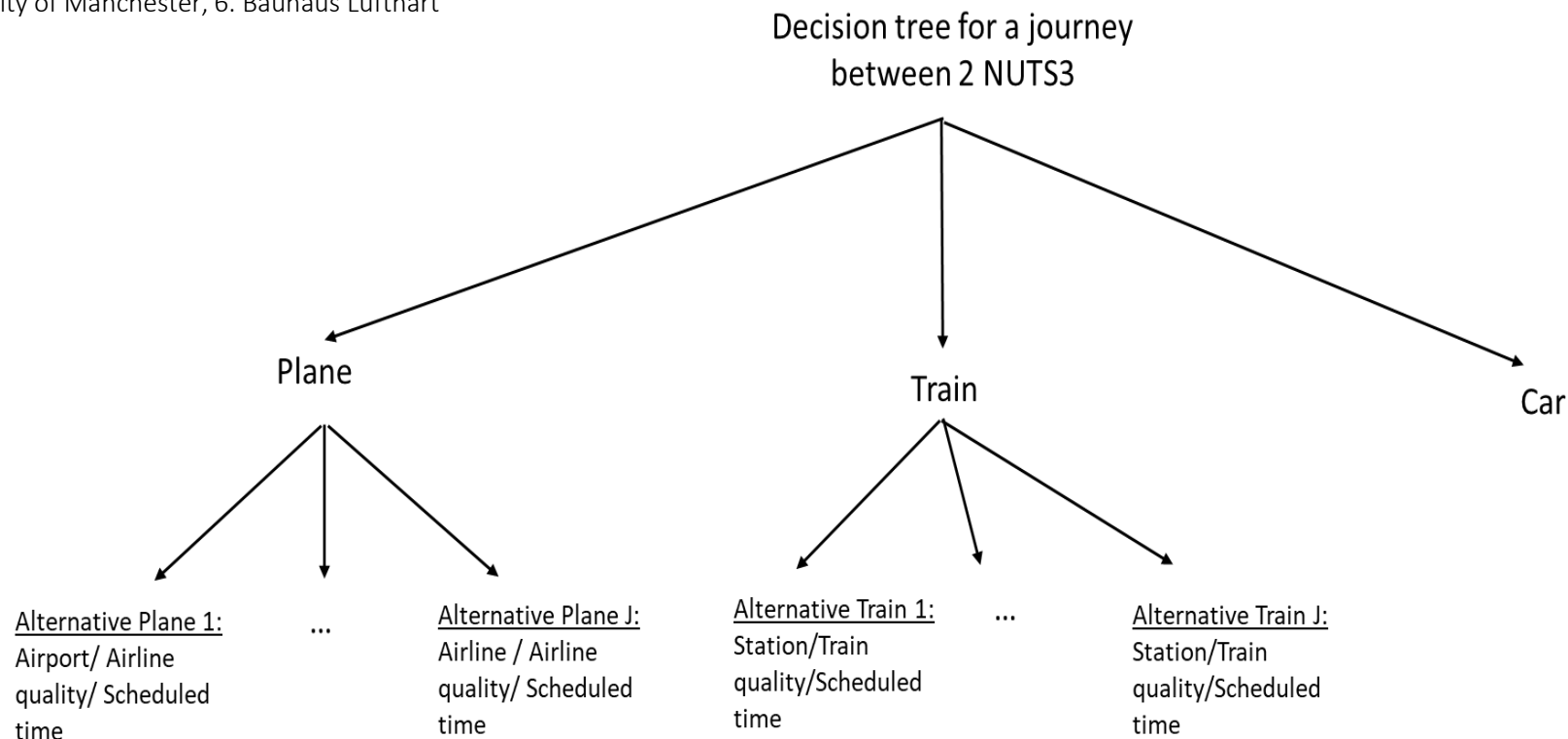
Analyzing 47 Origin-Destination direct lines where train and rail are in competition

➤ *Econometrics modelling of passenger choices : estimating market shares of modes*

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Alternative: combinaison of a mode, service provider (airline/airport or rail station), quality AND corresponding price

- Demand for each alternative correspond to the probability to choose the alternative
- Demand expressed in terms of market share

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Two different models depending on the proxy for the size of the market

Statistical significance of the estimated parameters

Price: correct negative sign

Quality: positively impact the market share

High level of **intra-mode correlation**

Use of **instrumental variable** method to control for endogeneity between price and market-share

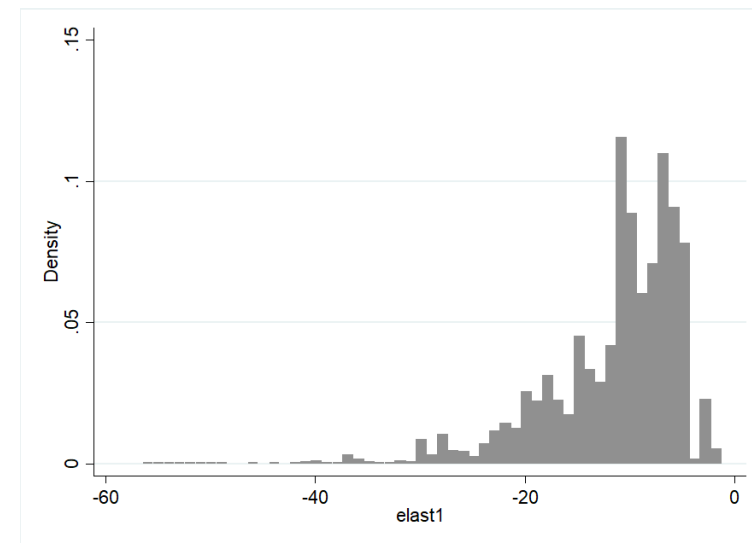
Instrumental variables:

Price of energy

Number of employees per service provider

- **Price elasticity of demand**

➤ -11.3% on average



- **Sensitivity to quality**

➤ move from low to high quality implies a percentage change in market share of 2.27% on average

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- Main results
 - Strong sensitivity of modal market shares to changes in the level of fares
 - Evidence of sensitivity to the quality of service
- Very preliminary results
- Next steps: introduction of additional determinants of choice
 - Percentage of frequency during weekends, holydays
 - More characteristics of service providers, airports, rail stations