Understanding the role of accessibility in the passengers’ choice of airports is important

Policy makers face several challenges regarding airports:
- What to do when airports reach their capacity limits
- What to do when the accessibility of airports deteriorates due to increasing road congestion
- What to do if the environmental impact of an airport becomes too high

Policy makers can respond in several ways:
- Reduce demand
- Stimulate effective use of existing capacity
- Expand capacity
- New runways/terminals
- New airport
- Stimulate use of alternative (existing) airports
- Improve accessibility of airports (both main airport and alternative airports)
- Improve current access modes
- Introduce new access modes

In order to understand the effectiveness of these policy options, it is important to understand the passengers’ choice of airports.
Contents of the paper

The paper looks at:

- **Access mode choice**
  - Case study: introduction of new rail modes
- **Airport choice**
  - Case study: introduction of ticket tax
Understanding airport choice

- Factors that play a role in airport choice
  - Availability of flights towards a certain destination
  - Availability of flights from a certain preferred airline
  - Frequency of flights
  - Travel cost
  - Travel time
  - Quality of flight
  - Facilities of the airport (check-in, shopping, customs etc.)
  - Accessibility of the airport

- Case study: impact of change in price by introducing a ticket tax
  - The Netherlands: on July 1, 2008 a ticket tax was introduced
    - € 11.25 for European destinations
    - € 45.00 for intercontinental destinations
  - Objective: raise € 350m per year
  - Before introduction, several alternative implementations were studied with the use of the AEOLUS model
Aeolus

- **Strategic, quick and pragmatic model**

- **Forecasts expected future growth of air traffic**
  - passenger numbers
  - aircraft movements
  - welfare effects of capacity limits and policy effects

- **A model to assist airport policy makers**
  - originally developed for Amsterdam Schiphol Airport
Model considers several travel alternatives

- KLM (direct)
- Iberia (direct)
- Lufthansa (via FRA)
- Transavia.com (direct)

Origin: The Hague

Destination: Spain
## Implementations under study

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<th>Departing passengers (Intercont.)</th>
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Impact on departing passengers

The Role of Accessibility in Passengers’ Choice of Airports

- No longer travelling
- Shift to land modes
- Increase at foreign airports
- Decrease at regional airports
- Decrease at AMS

Change (million/yr)
Impact on transfer passengers

The Role of Accessibility in Passengers’ Choice of Airports

![Bar chart showing impact on transfer passengers at different airports.]

- Change transfer at AMS
- Change transfer at FRA/CDG

The chart illustrates the change in transfer passengers (in millions/year) across various time periods, with a significant increase observed at 2E.
Conclusion

- The introduction of the ticket tax will result in a passenger decrease of about 8-9% at Schiphol in 2011 (compared to a situation without ticket tax)
- About 45% of these passengers will depart from a foreign airport
  Elasticity ca. -1
- About 45% of these passengers will stop travelling
  Elasticity ca. -1
- About 10% will shift to car/train

Note that these elasticities can not directly be used for other situations. The behavioural shift depends on the availability of alternatives (among others)
Be cautious when comparing these elasticities with those found in literature
Conclusion

Choice structure is illustrative only
For more information:

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Understanding access mode choice

Factors that play a role in **access mode** choice
- Availability
- Time
- Cost
- Frequency
- Comfort
- Reliability

However, the importance of each of these is strongly dependent on the local situation

Case study: the introduction of a new rail mode can be successful if ...
- Clear journey time advantage
- Direct access to city centre and to the terminal
- Catchment area is sufficiently large (especially for time-sensitive travellers)
- Product is well positioned
Traveller Choice Module: 3-level choice

Choices are determined by travel and transfer times, travel cost and service frequencies.
Logit model

The Role of Accessibility in Passengers' Choice of Airports
Impact on emissions

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Car travel time map

- 25 min
- 50 min
- 75 min
- 100 min
- 125 min
- 150 min
- 175 min
- 200 min
- 225 min
- 250 min

Schiphol Airport

Train travel time map

Schiphol Airport

The Role of Accessibility in Passengers’ Choice of Airports