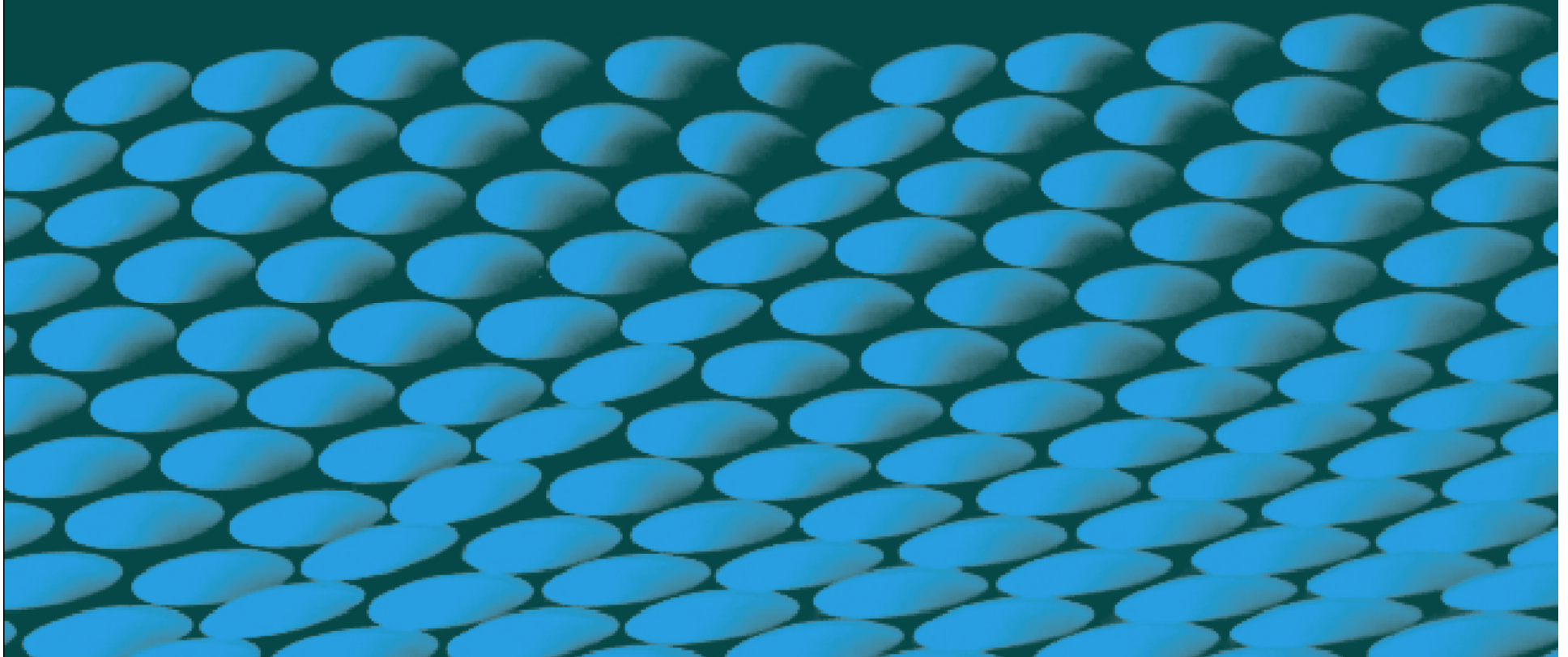


significance

quantitative research



The Role of Accessibility in Passengers' Choice of Airports

2 October 2008

Marco Kouwenhoven

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

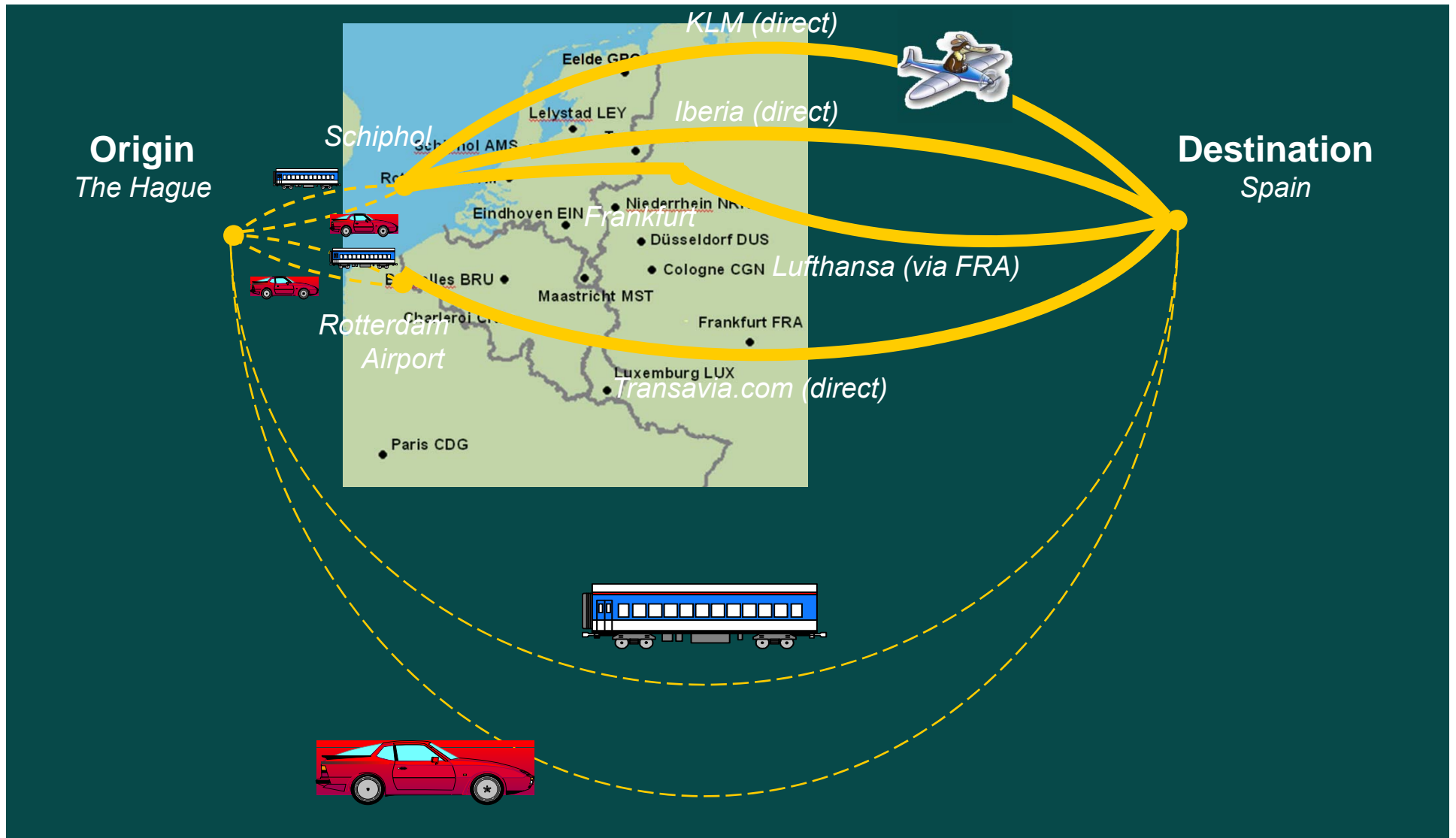
- *Case study*: impact of change in price by introducing a ticket tax
 - The Netherlands: on July 1, 2008 a ticket tax was introduced
 - € 11,25 for European destinations
 - € 45,00 for intercontinental destinations
 - Objective: raise € 350m per year
 - Before introduction, several alternative implementations 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



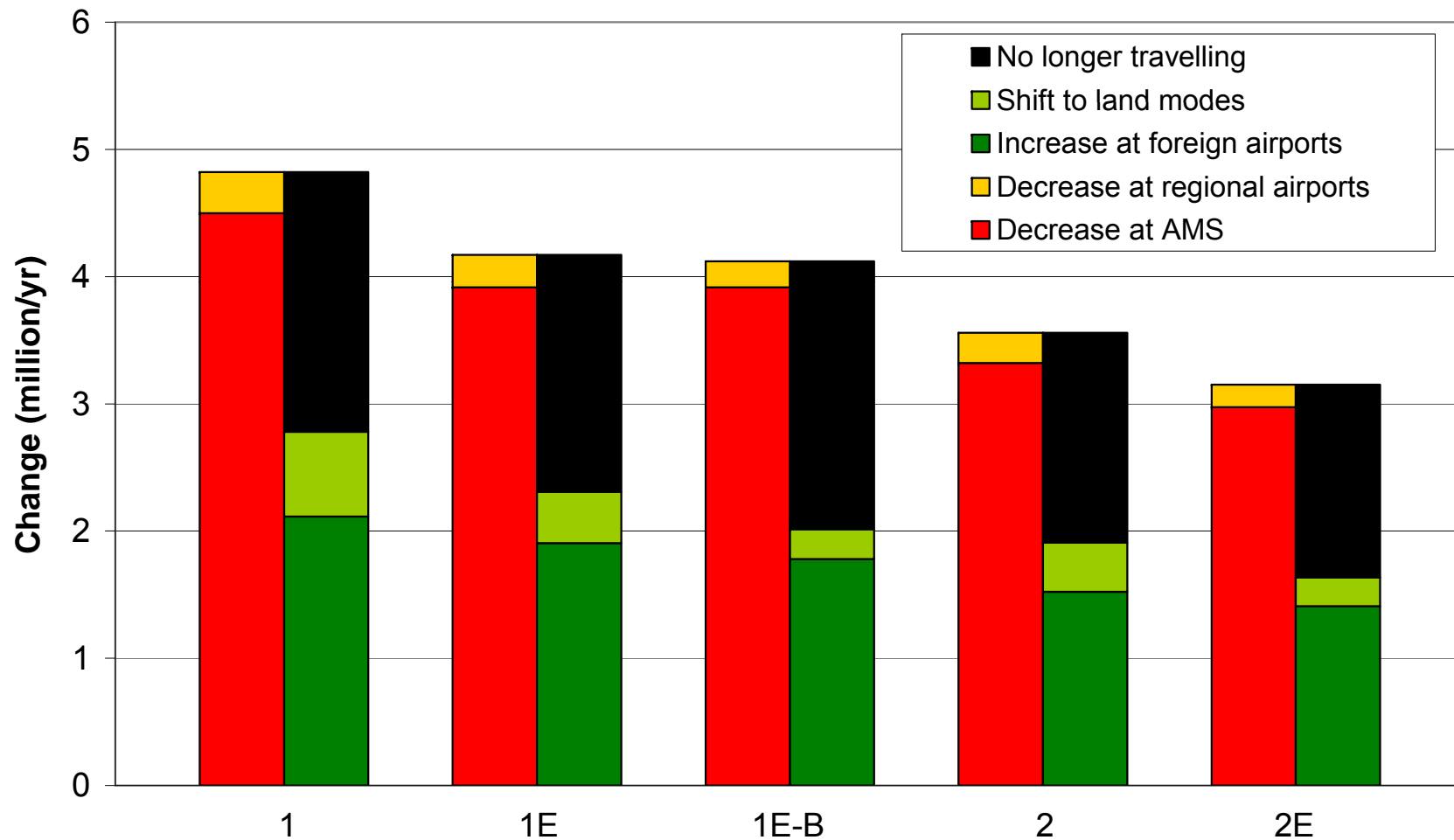
Model considers several travel alternatives



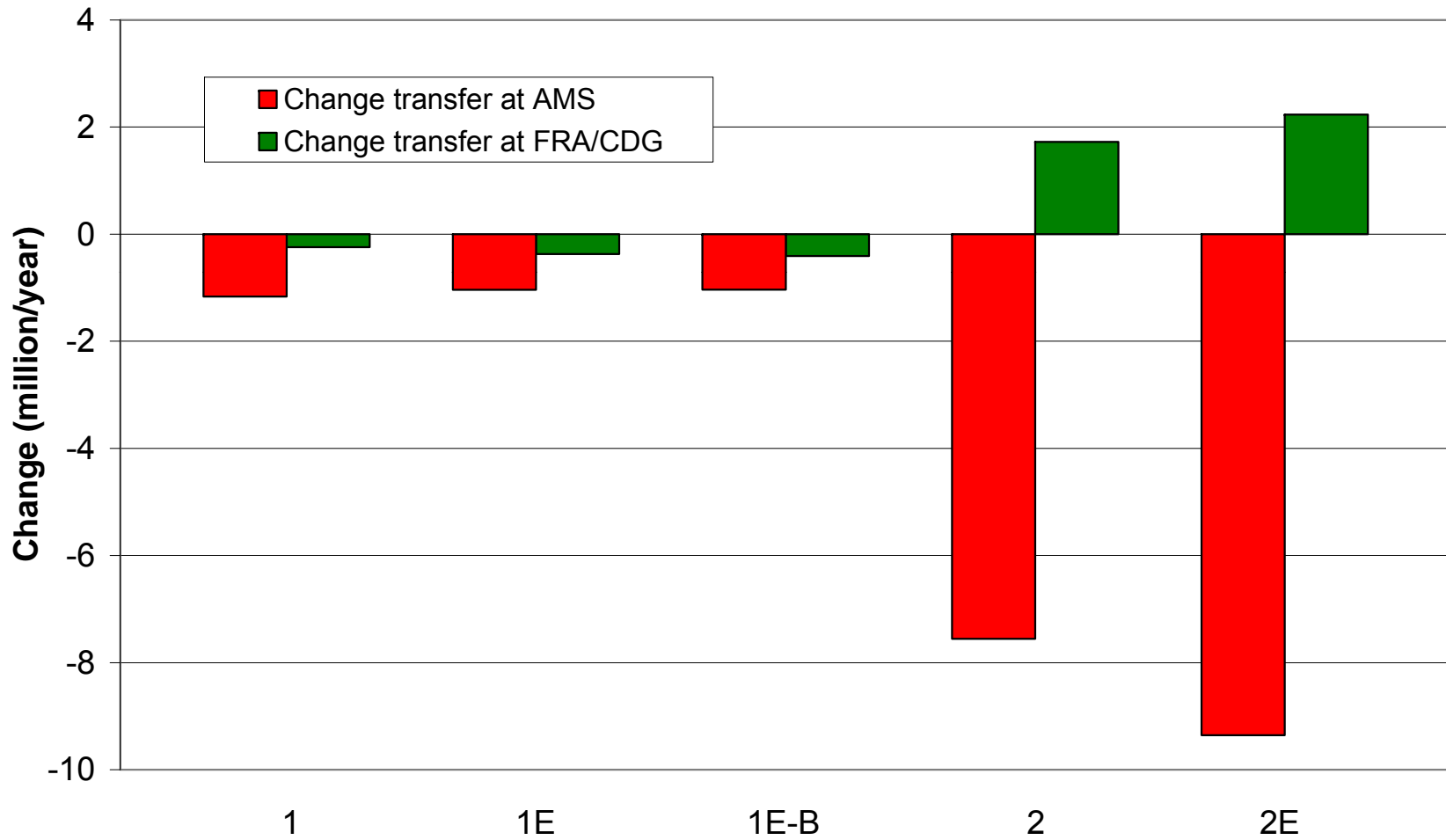
Implementations under study

	Departing passengers (Europe)		Departing passengers (Intercont.)	Transfer passengers
Variant 1	€ 23			
Variant 1-E	€16.67	€37.50		
Variant 1-EB	€12.50	€47.50		
Variant 2	€13.75			€13.75
Variant 2B	€9.50	€21.38		€15.44

Impact on departing passengers



Impact on transfer passengers



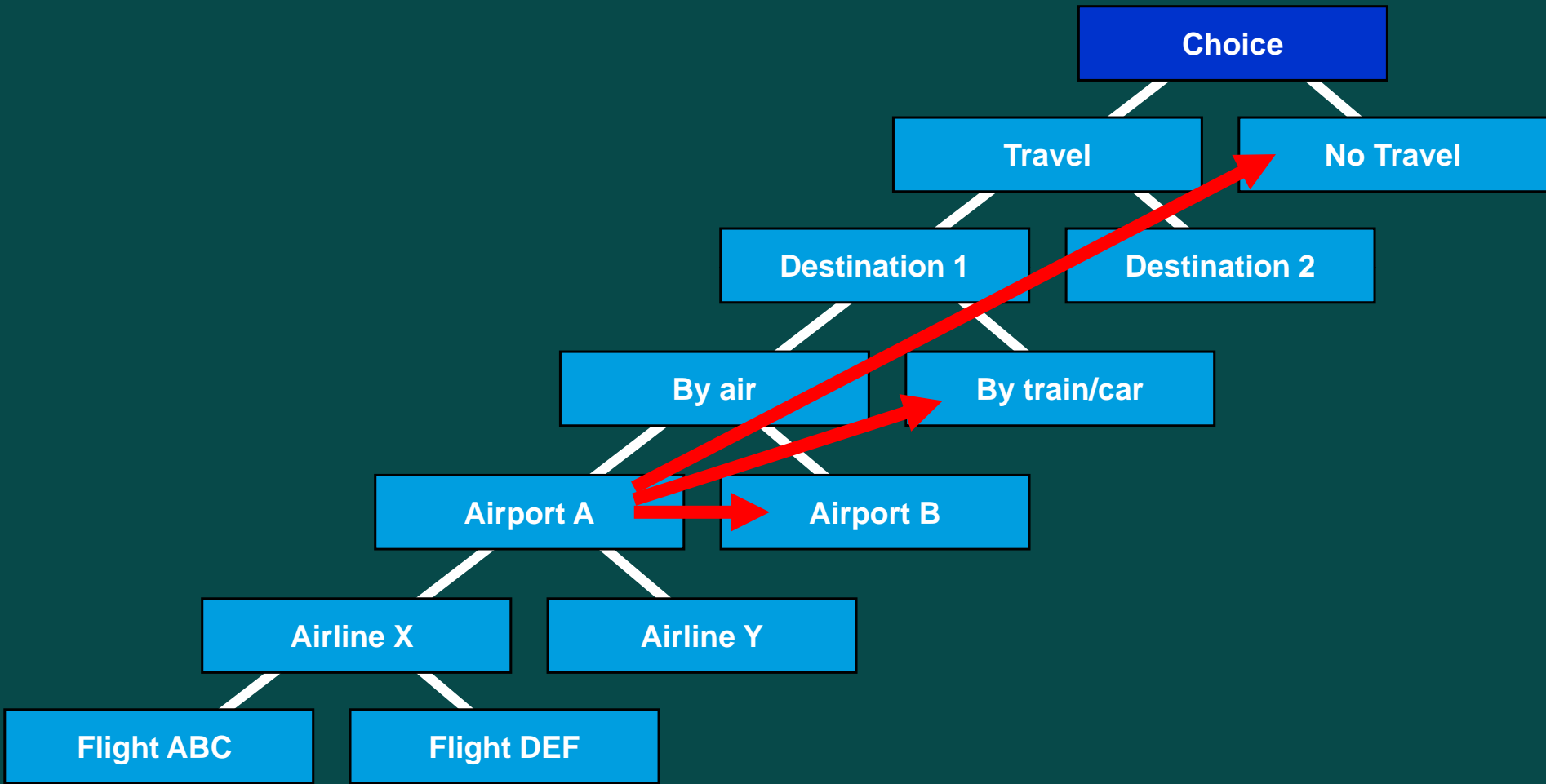
Conclusion

- 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:

Marco Kouwenhoven

kouwenhoven@significance.nl

BACK-UP



Understanding access mode choice

■ Factors that play a role in **access mode** choice

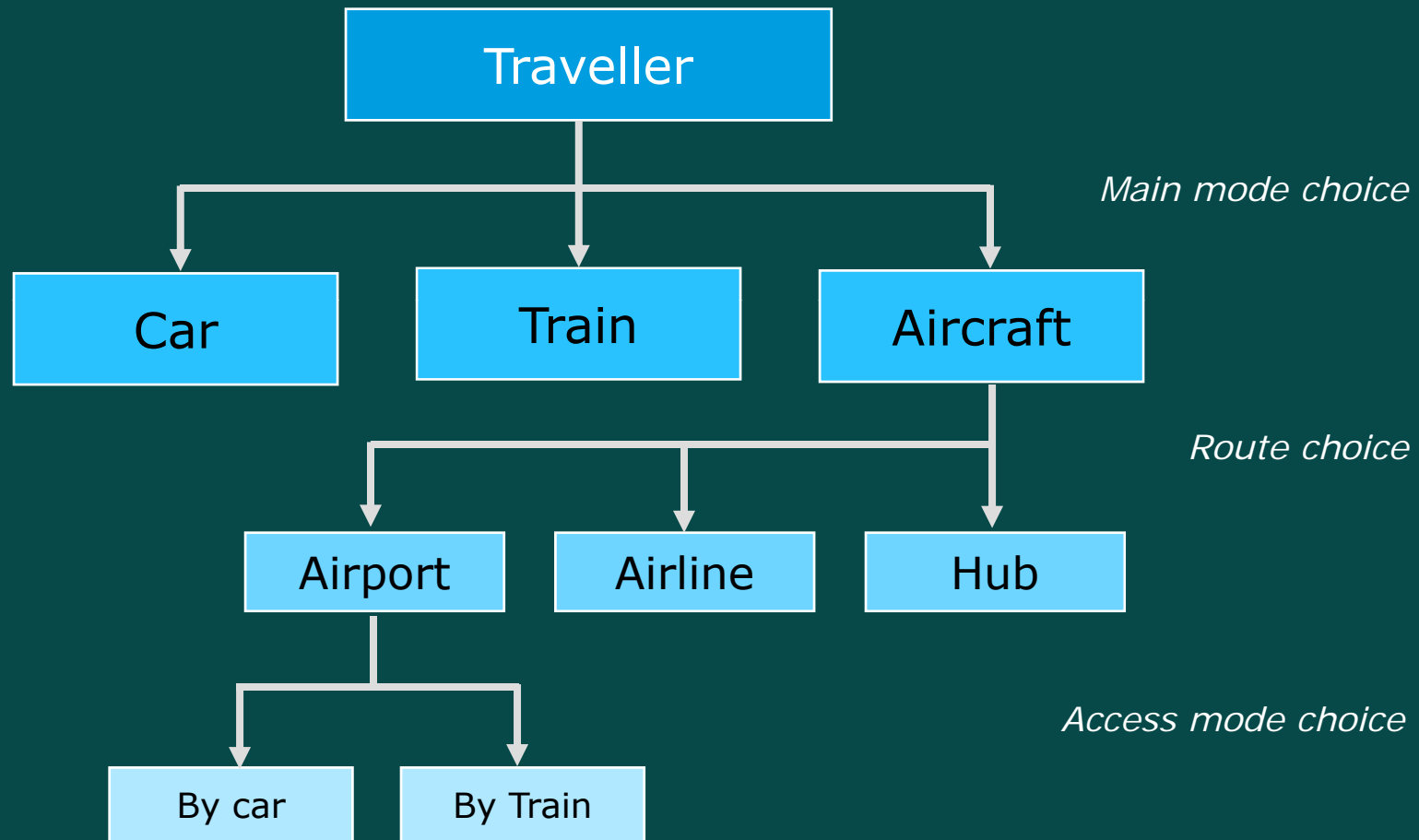
- Availability
- Time
- Cost
- Frequency
- Comfort
- Reliability

■ 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

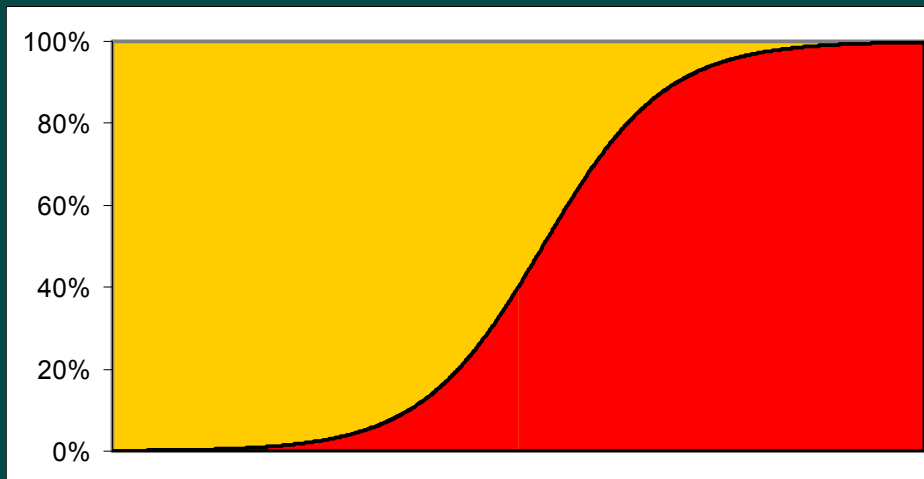
Logit model



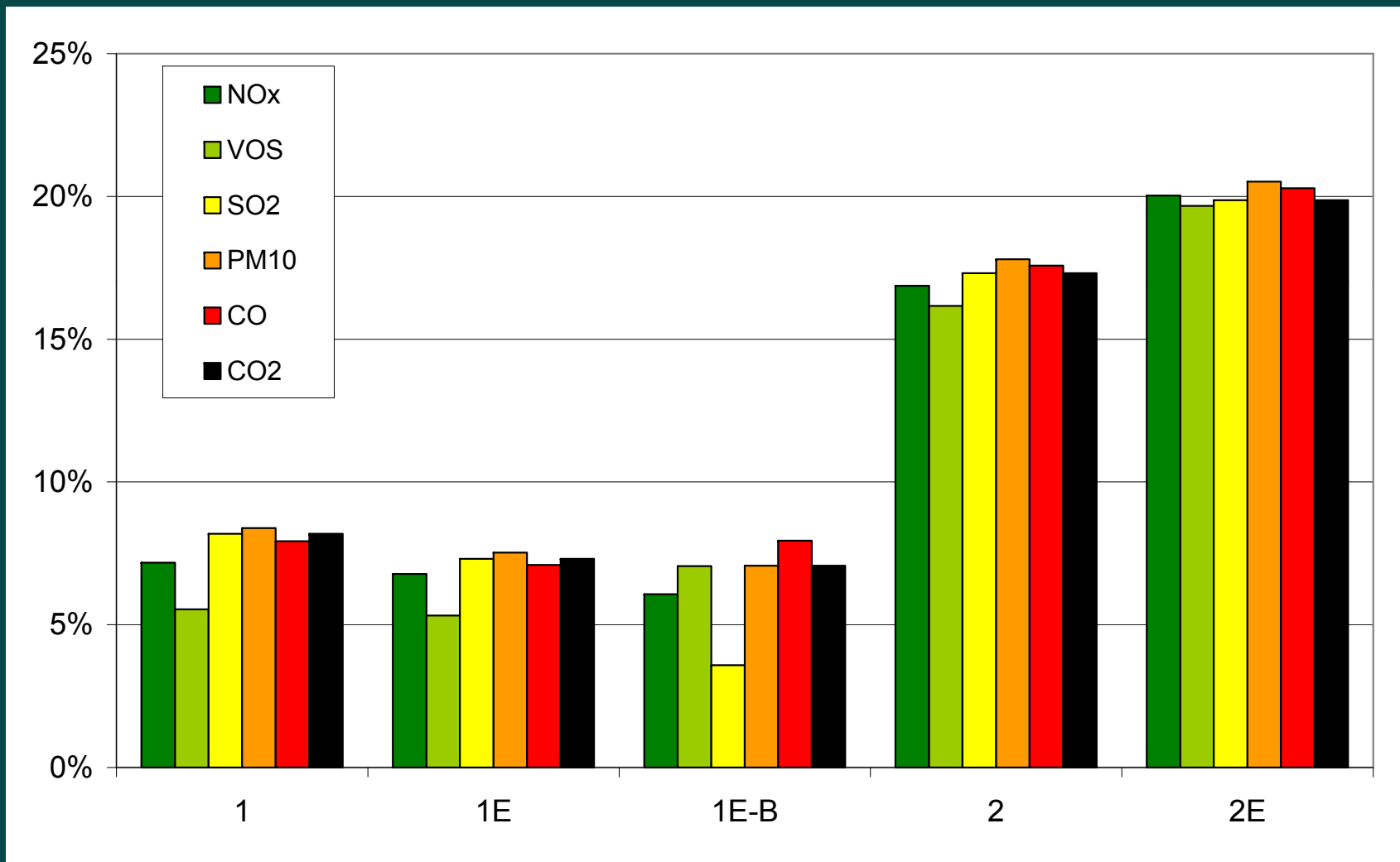
Attractivity (Schiphol)



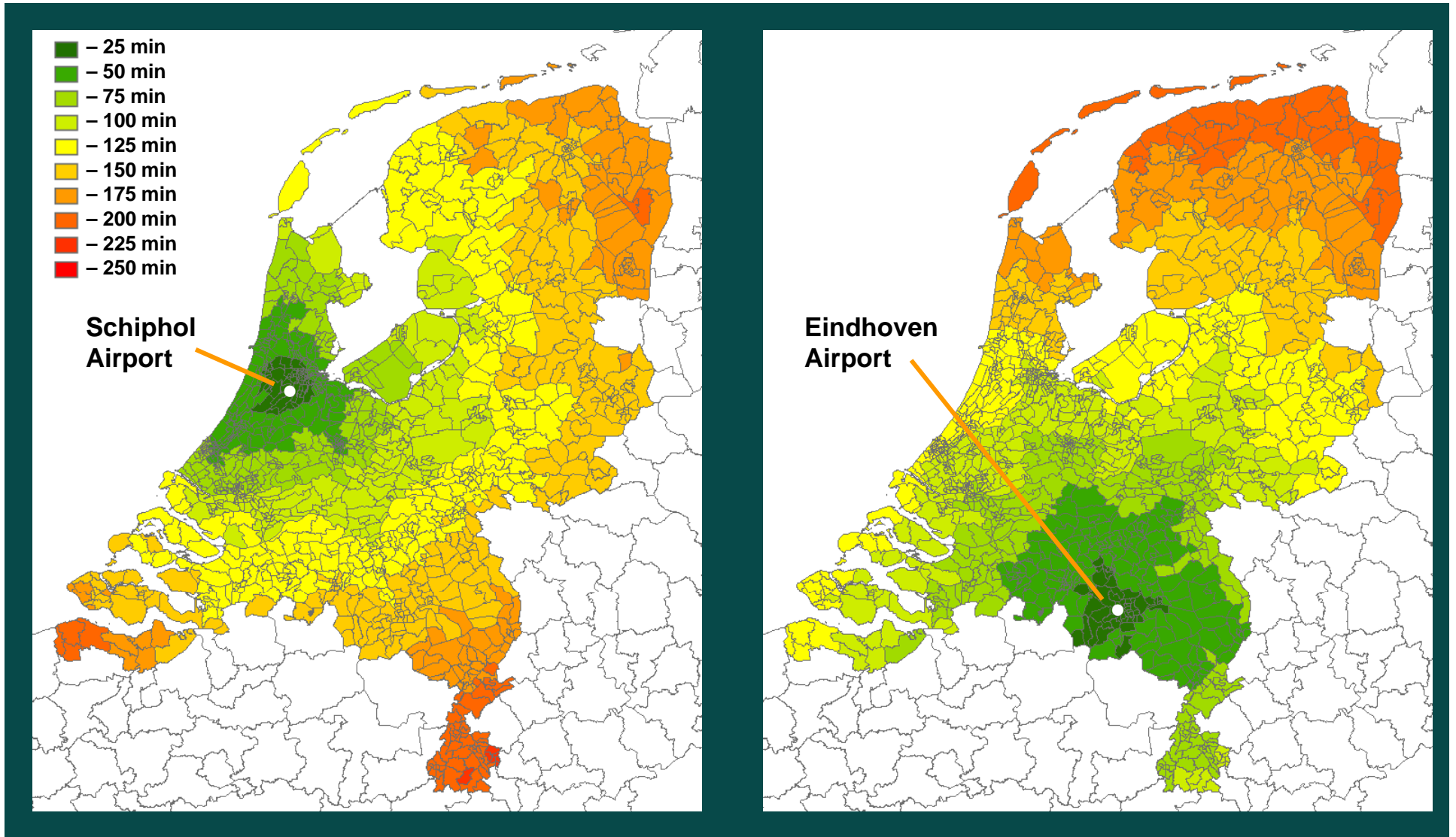
Attractivity (Rotterdam)



Impact on emissions



Car travel time map



Car travel time map

Train travel time map

