



## A parking management scheme for private car parks – a promising approach to mitigate congestion on urban roads?

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# The Problem

- Parking management and paid parking zones in public space → very efficient TDM-measure
- Problem: increasing number of private parking slots → commuter car parks, car parks of shopping centres etc.
- Two options of solution



congestion pricing

parking management for private car parks

# Options of parking management measures for private car parks

1	Obligatory limitation of the maximum number of private parking slots for customers and commuters
2	Parking space levy for operators of large private car parks 20 to 60 €/month, parking slot
3	Obligatory parking fees for customers (0,80 to 1,80 €/h) and commuters (20 to 60 €/month, parking slot)
4	Maximum trip quotas in combination with mobility management for customers 20 to 200 car trips/day, 1000 m <sup>2</sup> gross floor area, penalty

# Methodological considerations

## Goal of study

- Effect of traffic demand
- Investigation of possible but not negligible side effects

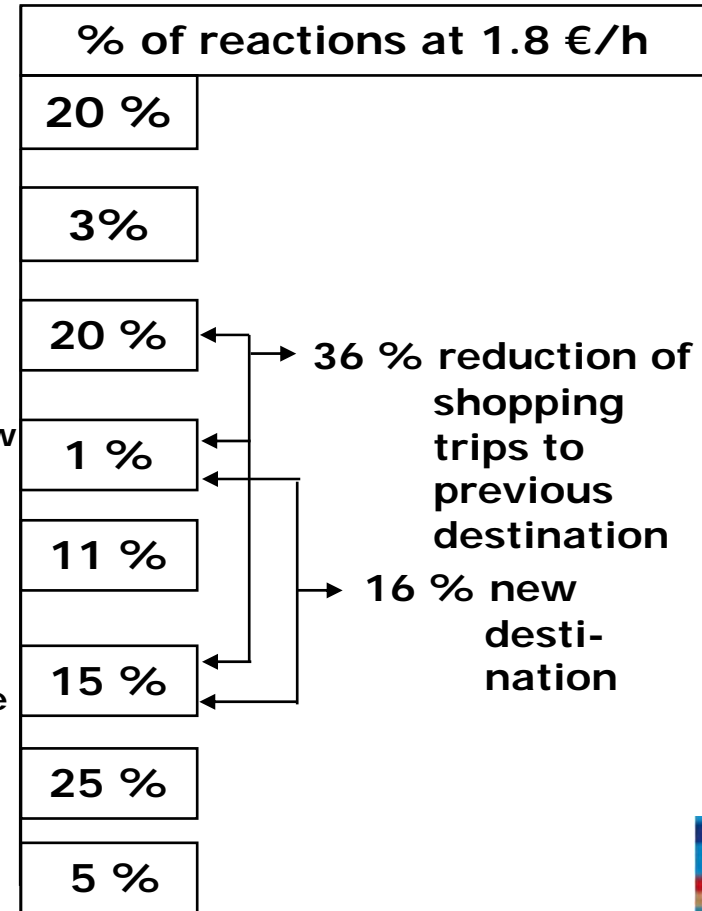
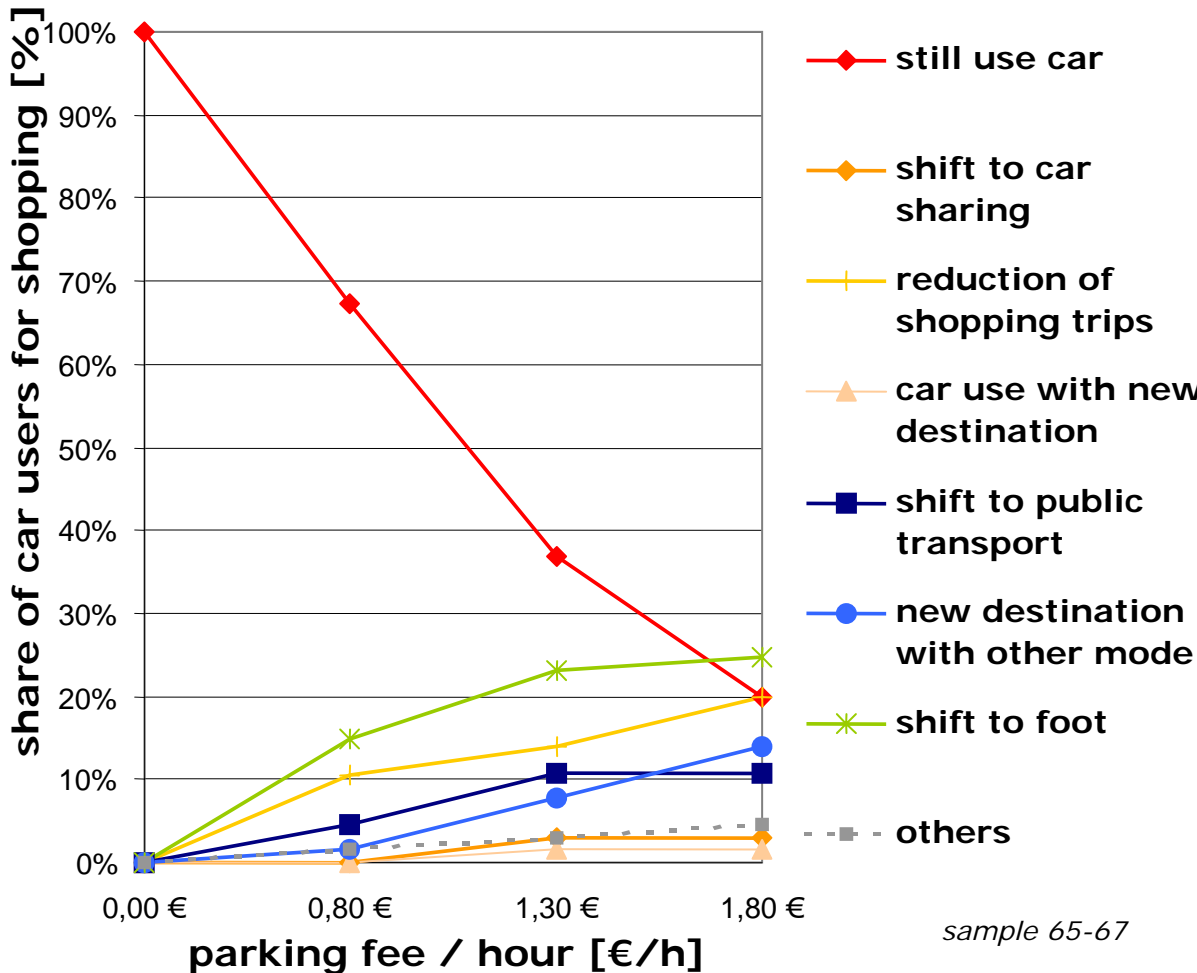
## Survey of car users (stated preference)

gross sample	709 respondents
net sample	144 respondents
	229 trips

## Survey of operators of enterprises (structured interactive interviews)

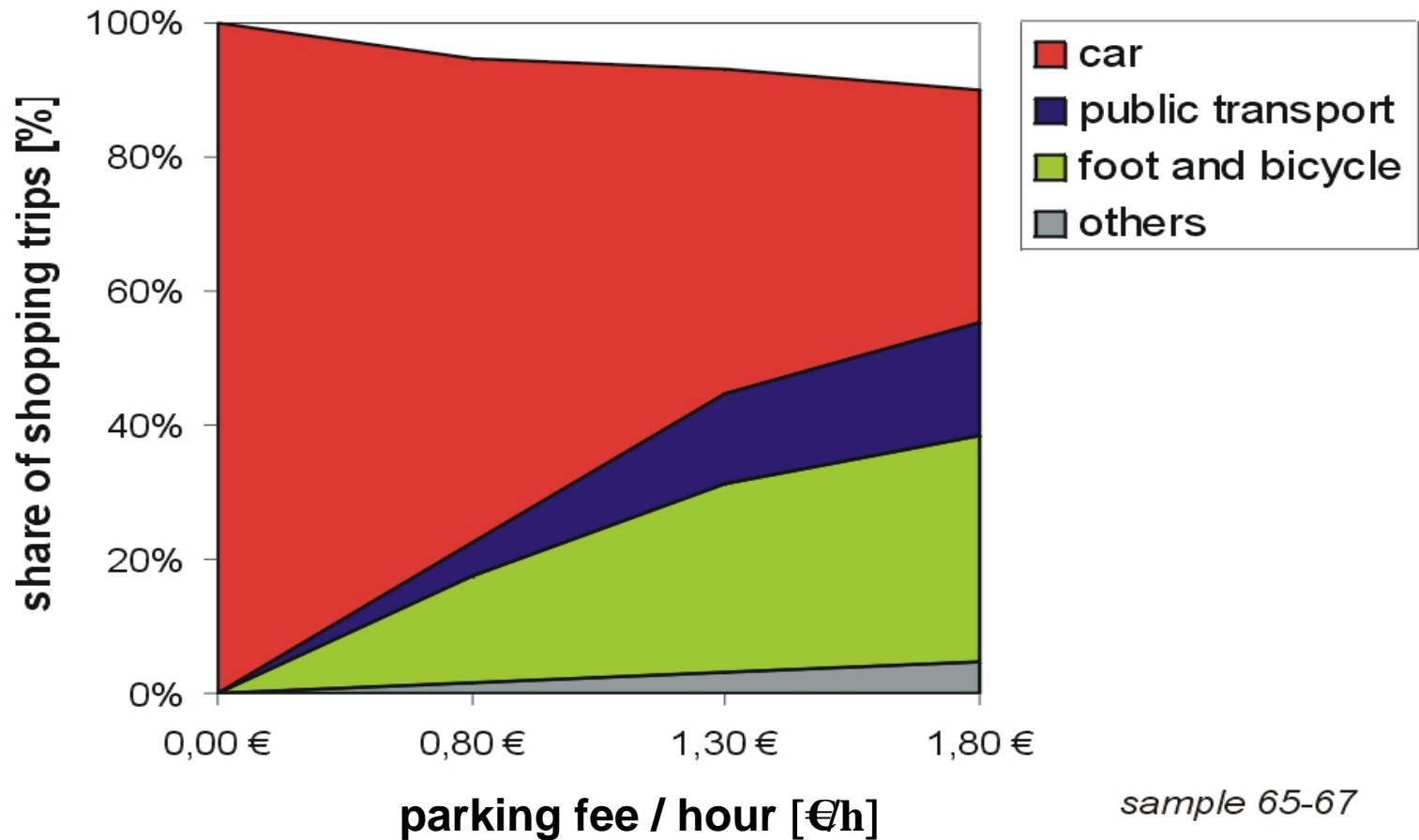
type of enterprise	net sample
Shopping centres	11 respondents
Leisure facilities	6 respondents
Business enterprises	4 respondents
Office buildings	4 respondents
Total	25 respondents

# Behavioural reaction of users of cars for shopping purposes to obligatory pay parking schemes for shopping centres in Vienna



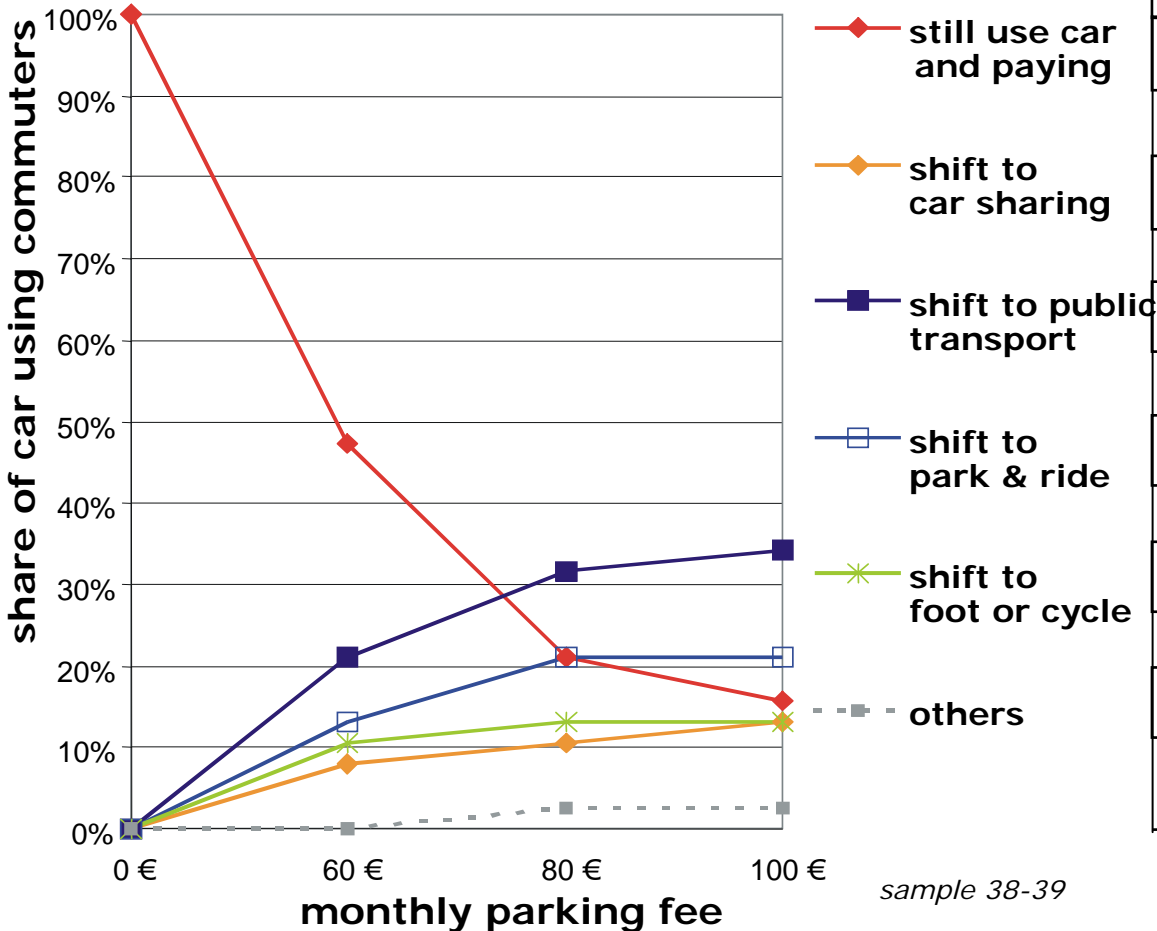
sample 65-67

# Change of modal split for shopping purpose as a result of obligatory pay parking schemes for shopping centres in Vienna

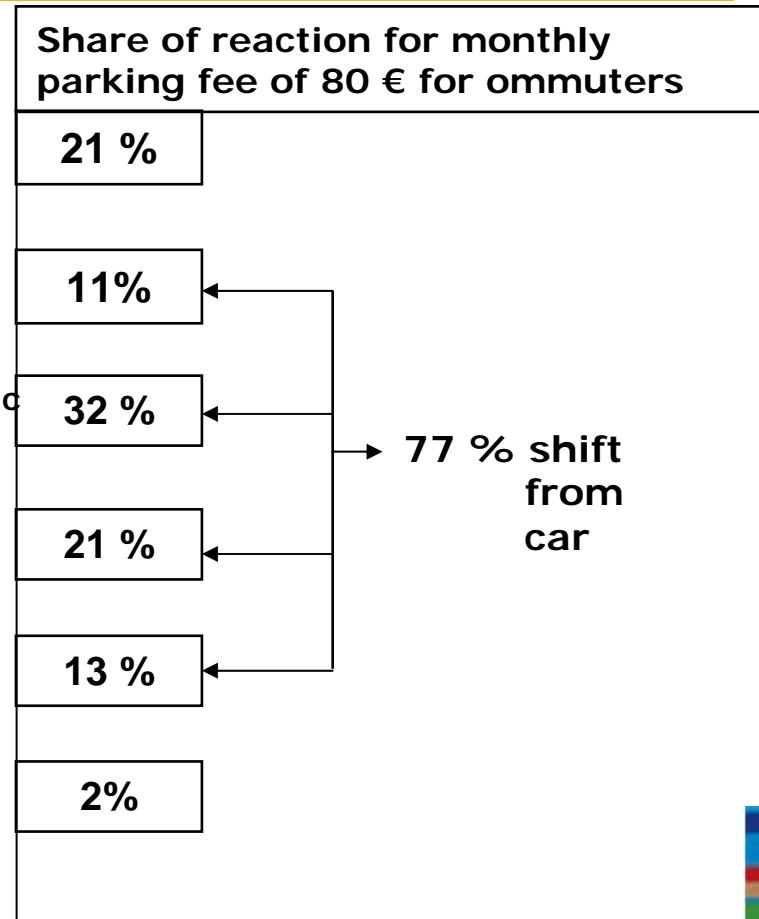


sample 65-67

# Behavioural reaction of commuters with car to obligatory pay parking schemes in the Vienna Region

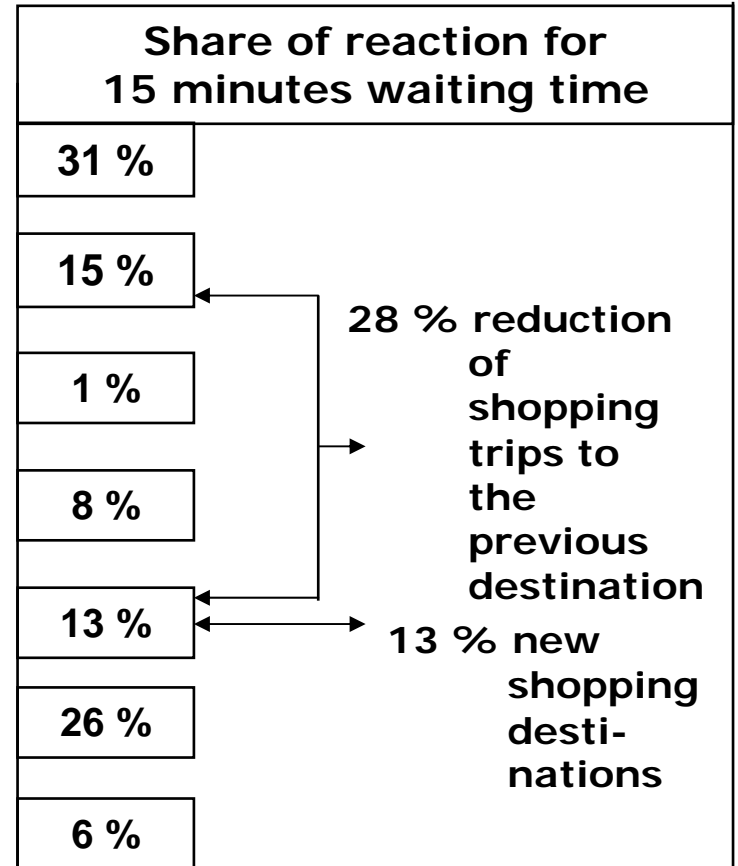
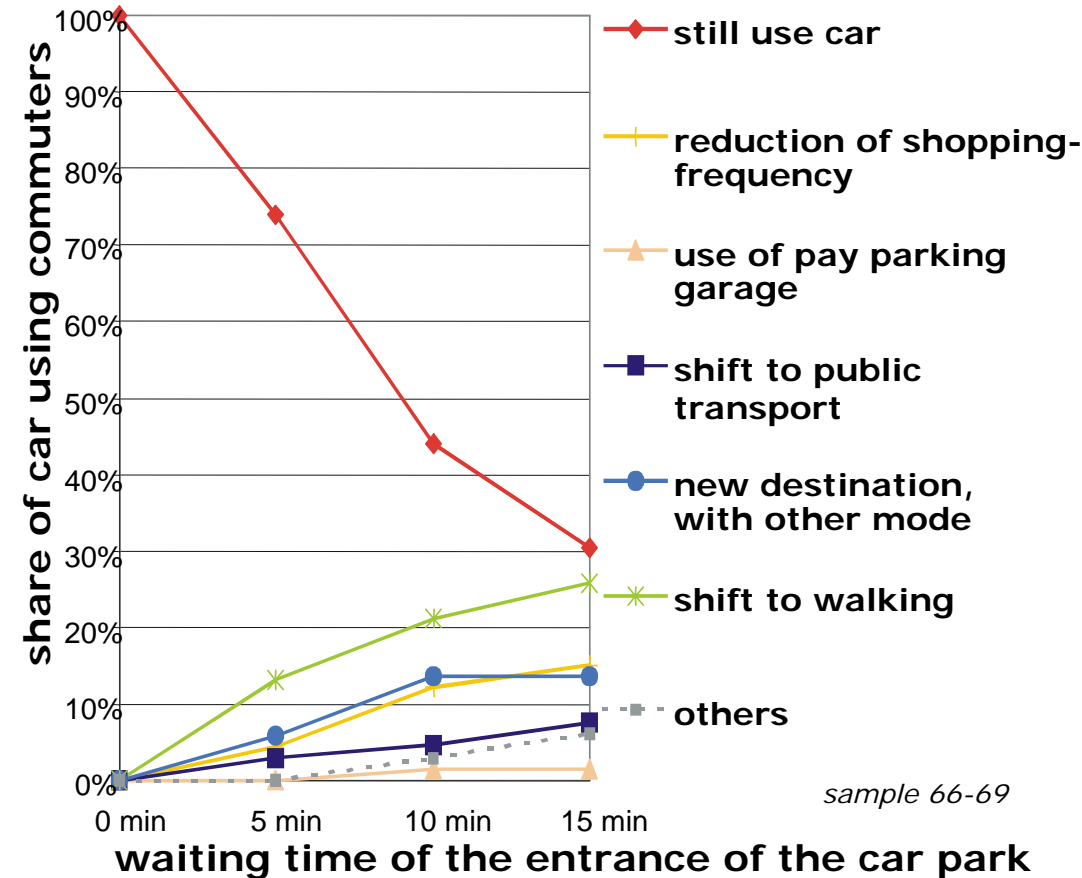


sample 38-39

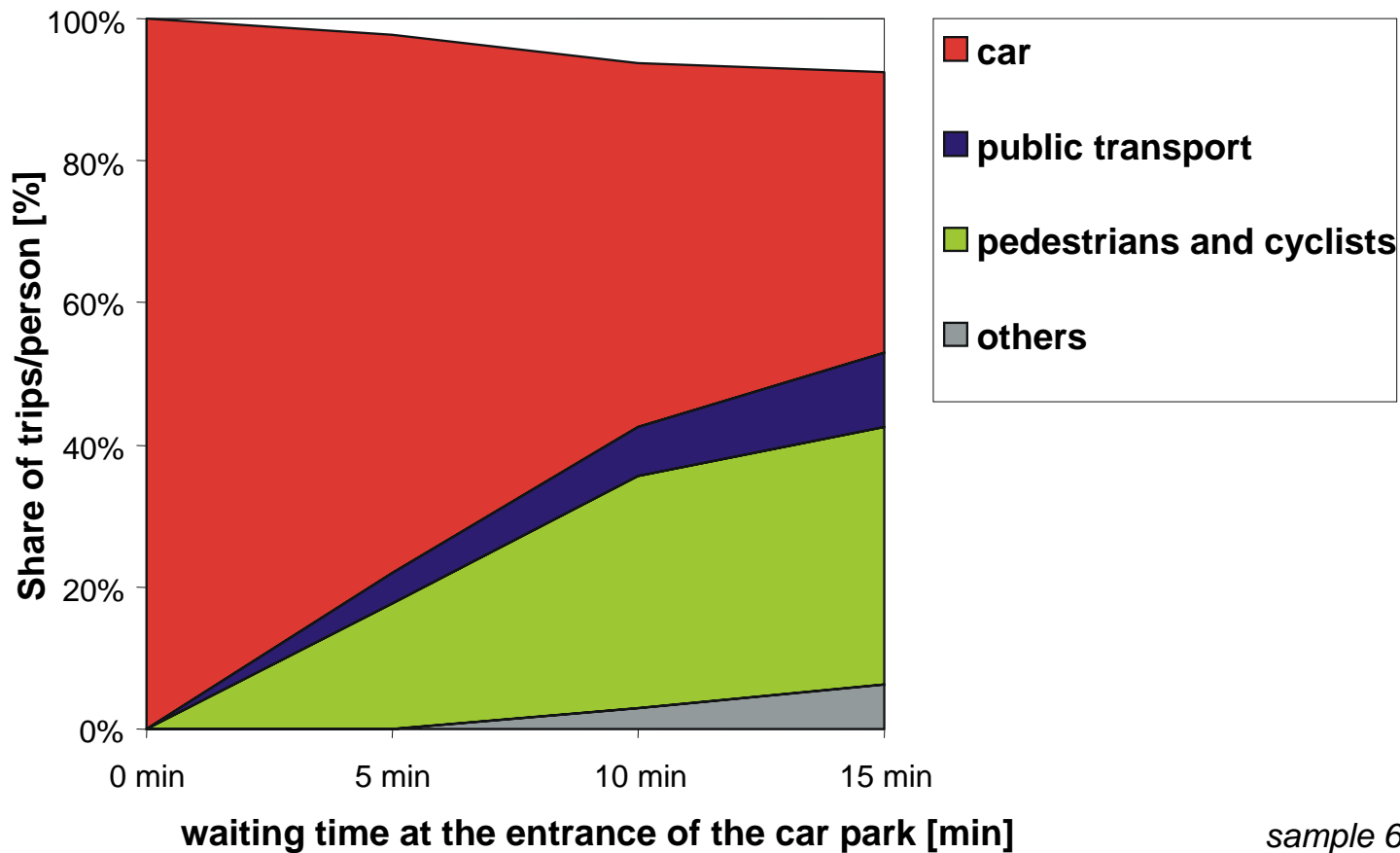




# Behavioural reaction of car users for shopping purpose to waiting times at the entrance of car parks of shopping centres in Vienna



# Change of the modal split for shopping purpose as a result of the waiting time at the entrance of car parks of shopping centres in Vienna



sample 66-69

# Opinion of operators and developers about obligatory pay parking scheme (OPPS) for shopping centres

50 %	loss of image difficult argumentation to customers
100 %	refund of parking fee → loss of control effect for traffic demand → combination of OPPS with parking space levy
90 %	influence on decisions of location → problem at boundary of zones with different fee level → equal treatment of all locations is important

# Opinion of operators and developers about parking space levy for shopping centres

73 %	influence on the decision of location → problem at boundary of zones with different tax level → equal treatment of all location is important
100 %	passing the cost to customers
27 %	jeopardizing of existing location of shopping centres
64 %	reductions of number of parking slots

# Opinion of operators and developers about limitation of car trips for shopping centres by quota

- 100%
- no understanding for this measure
  - not practicable
  - fine for exceeding the limit = tax
  - passing the costs to customers
  - disadvantage of locations if not covering all regions
  - influence over the decision on location
  - problem of misuse by strange customers

# Conclusion of investigated parking management measures for private car parks

- Strong demand effects, mitigation of congestion
- Recommendation for combined measures  
OPPS + parking space levy
- Recommendation for application
  - in low density areas outside cities
  - increased graduation of levy dependent on increasing car-orientation
- Limitation of car trips for shopping centres
  - possible application in air quality redevelopment areas
  - further research needed

# Attention of not negligible side effects of parking management measures for private car parks

- Short term effects for shopping trips
  - Omitted trips (deduced traffic) up to one quarter
    - consumer loss
  - Change of destination for shopping trips up to one quarter
    - weakening of shopping locations
    - appropriate zones for shopping centres with obligatory parking management measures?
    - problem of fair competition for obligatory zones with differentiated level of quota
- Long term effects
  - Strong effect on location choice for shopping centres
    - appropriate locations for obligatory TDM zones
    - boundary problem?
- Further research recommended



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