Mobility information services and its consequences for travel behaviour considering different user types
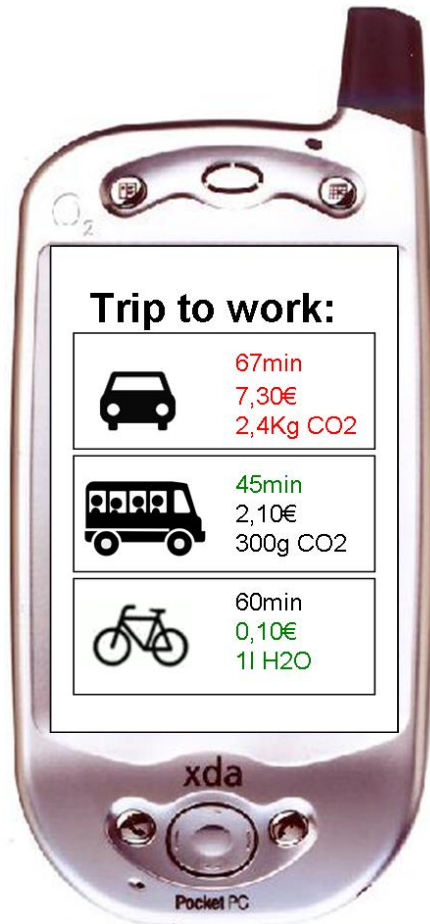
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Expectations on Mobility Information Services (MIS)

Trip to work:

🚗	67min 7,30€ 2,4Kg CO2
🚌	45min 2,10€ 300g CO2
🚲	60min 0,10€ 1l H2O

From a transport professional's perspective:

↗ To inform about different modes of transport – encourage multimodality

↗ To lower barriers of public transport usage

↗ To help form an integrated transport system – allowing intermodal trips

From a transport system user's perspective:

↗ Supporting decision making behavior

↗ Enhancing comfort

↗ Giving personalized recommendations according to my needs

Research Question

Do Mobility Information Services (MIS) influence travel behavior?

- ⇗ What are the benefits of MIS?
- ⇗ Who are the users of MIS?
- ⇗ Do MIS encourage the use of alternative modes of transport and support multimodality?

http://www.connect.de/themen_spezial/25622120_0808cca5b7.jpg

Data analysis

➤ <u>Analyzing the question: Do MIS influence travel behavior?</u>

   ➤ Cluster analysis to show different groups of behavior

   ➤ Showing the potential impact

➤ Data basis: "Information and Communication Panel" (ICT Panel 2007)

   ▪ Sample size: 3.500 persons

   ▪ Contents: User needs and attitudes of ICT usage

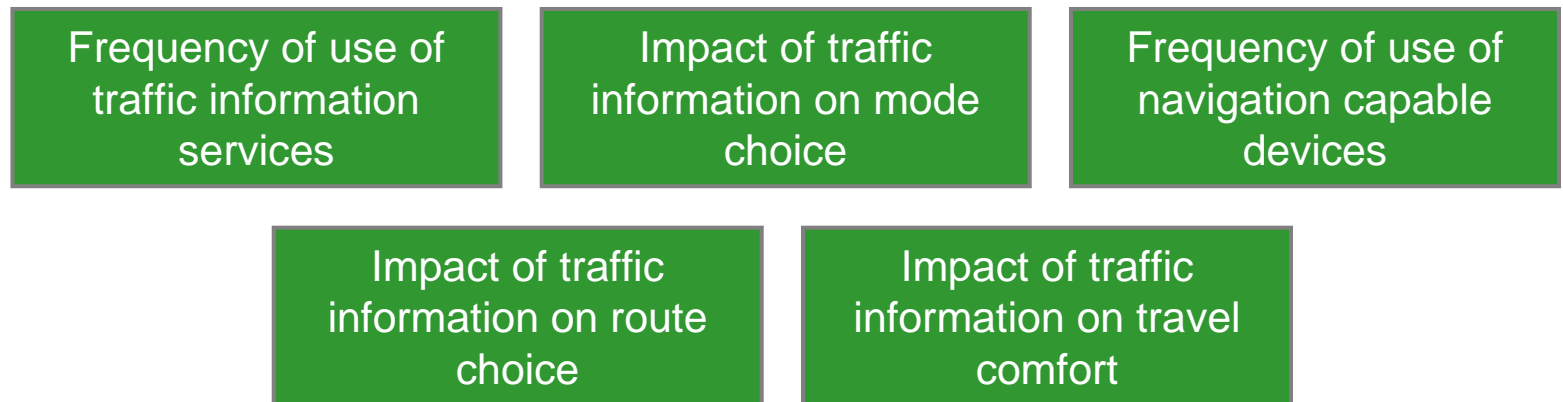   ▪ Representing German speaking population age 14+

Methodology

➤ Hierarchical Cluster Analysis:

- WARD Algorithm – minimizes heterogeneity within the cluster and maximizes the distance between clusters

- Cluster separated by:

    1. Objective measurable items of MIS usage
    2. Attitude items towards MIS usage

Item categories:

Frequency of use of traffic information services	Impact of traffic information on mode choice	Frequency of use of navigation capable devices

Impact of traffic information on route choice	Impact of traffic information on travel comfort

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29 April, 2010

Cluster characteristics

Cluster 1:   age 50, high education, medium income, high car usage, high walking and PT affinity but only occasional user (n=577)

open minded

Cluster 2:   age 46, good education, medium income, very high car usage, doesn't like walking or PT (n=1039)

Cluster 3:   age 46, medium education, high income, very high car usage, doesn't like walking or PT and never uses it (n=1612)

conservative

Cluster 4 & 5:   age 56, low income, low education, low car availability, forced to use PT (n=113 + 159)

Hypothesis: According to the high PT affinity, cluster 1 is more open to adjust their mode choice towards PT due to better MIS than cluster 3.

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MIS effects on <u>travel time</u> and <u>comfort</u>

Chart — vertical axis labeled "as %" from 0 to 100

Categories (x-axis):
- help saving time
- make trips more comfortable
- help calming down in traffic jam

Legend: ■ open minded ■ conservative

Approximate values:
- help saving time: open minded ≈ 89, conservative ≈ 54
- make trips more comfortable: open minded ≈ 66, conservative ≈ 35
- help calming down in traffic jam: open minded ≈ 57, conservative ≈ 36

Text box:
- ➤ Overall "open minded" value traffic information significantly higher than "conservative"
- ➤ Greatest benefits in saving time
- ➤ "open minded" stronger belief in accuracy and benefit of traffic information

n=2189

Mode choice behaviour and <u>multimodal potential</u>

➤ Basically sample self-confident about the right mode choice – "open minded" even higher

➤ Both cluster originally show low multimodal attitude

➤ Impact of MIS to mode change generally low BUT significantly higher for cluster "open minded"

as %

100
90
80
70
60
50
40
30
20
10
0

choosing the most appropriate mode · think about mode choice · modal shift due to information

■ open minded □ conservative

n=2189

First conclusions

↗ Hypothesis: According to the high PT affinity, cluster 1 is more open to adjust their mode choice towards PT due to better MIS than cluster 3.

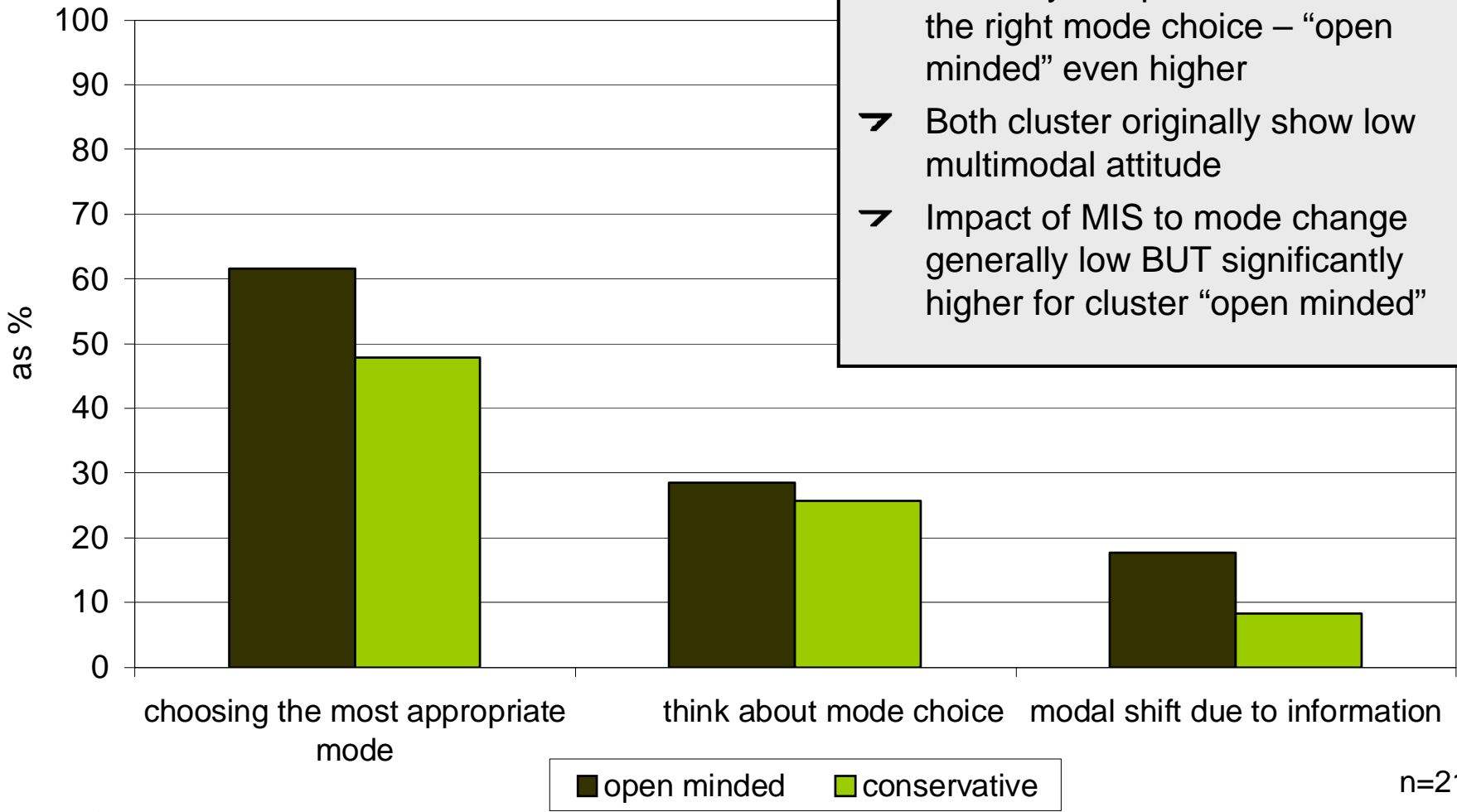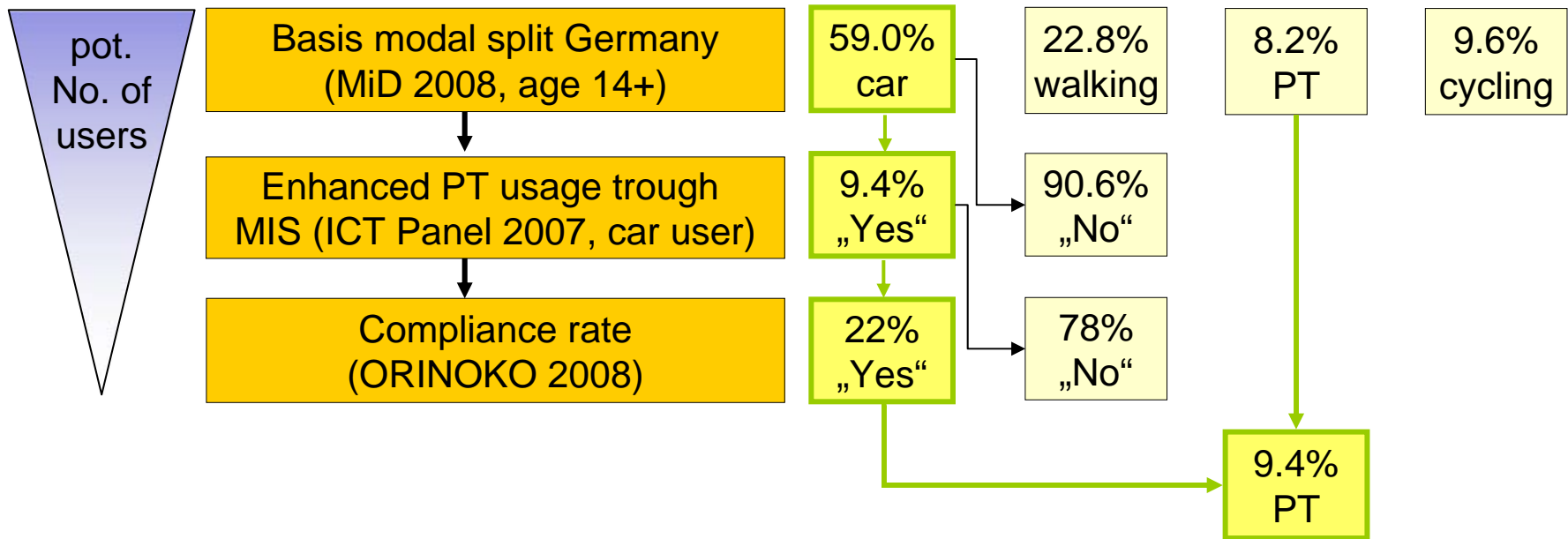Yes, the cluster "open minded" is:

- more open to use MIS

- is optimistic about benefits in their usage

- is more likely to adapt their mode choice but only to a small extent

Lets talk numbers! What is the real potential?

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Potential of increased public transport (PT) use

Potential in numbers for Germany

pot. No. of users				
Basis modal split Germany (MiD 2008, age 14+)	59.0% car	22.8% walking	8.2% PT	9.6% cycling
Enhanced PT usage trough MIS (ICT Panel 2007, car user)	9.4% „Yes"	90.6% „No"		
Compliance rate (ORINOKO 2008)	22% „Yes"	78% „No"		
			9.4% PT	

Modal split rises from 8.2 % to 9.4% for PT (relative +15%!)
Increase of 3.0 Mio. PT trips/d

Overall conclusions and further research

- ↗ Considerable potential of users for advanced MIS
- ↗ Big field tests are needed to prove the potential

➤ Information is the missing link between different modes of transport encouraging intermodal trips

Thank you for your attention!

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