

## Travel patterns and mobility needs of senior citizens

Pro.Mode  
Berlin

Prosperity, Mobility and Demographic Change in European Cities  
27.11.2006



### Background

- ▣ **FRAME – Leisure travel of senior citizens**  
(BMBF, University of Bonn and University of Dortmund)
- ▣ **AK „Spatial impact of demographic change“**  
(Akademie für Landeskunde und Raumordnung)
- ▣ **StadtLeben – Lifestyles, urban form and mobility**  
(BMBF, RWTH Aachen, Ruhr-Uni Bochum, FU Berlin, University of Dortmund)



## Topics

- **Some relevant trends**
- **Overview on travel patterns**
- **Uneven distribution of transport among the elderly**
- **Mobility and well-being**
- **Conclusions**



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Photos (mostly) courtesy of Birgit Kasper

## What are mobility needs?

- **Daily Mobility**  
(as opposed to residential mobility and social mobility)
  - Realised behaviour
  - Availability of options / chances
  - Satisfaction with out-of-home activities
- **Needs**
  - Subjective wishes, preferences
  - Objective requirements



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## Recent (and future) frame conditions

### ➤ Ageing of the periphery

- suburban areas
- rural areas



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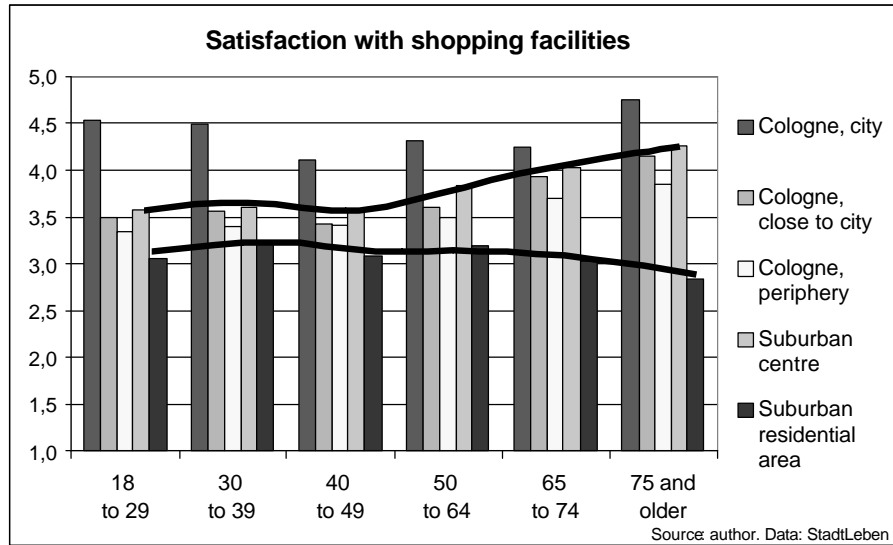
- suburban areas
- rural areas

		Population 2020 / 1999				
		0...19	20...59	60+		
West	Agglomeration	Central cities	-17%	-6%	7%	
		urban fringe, high density	-19%	-2%	<b>26%</b>	
		urban fringe, medium density	-17%	0%	<b>32%</b>	
		remote, low density	-16%	6%	<b>34%</b>	
	Urbanised	Central cities	-14%	-4%	9%	
		urban fringe, medium density	-19%	-1%	<b>28%</b>	
		remote, low density	-21%	-2%	<b>27%</b>	
	Rural		-20%	-1%	<b>26%</b>	
	Ost	Agglomeration	Central cities	-13%	-6%	25%
			urban fringe, high density	8%	23%	<b>31%</b>
			urban fringe, medium density	-9%	3%	<b>30%</b>
			remote, low density	-10%	13%	<b>65%</b>
Urbanised		Central cities	-28%	-20%	<b>27%</b>	
		urban fringe, medium density	-26%	-19%	18%	
		remote, low density	-28%	-16%	<b>30%</b>	
Rural		-31%	-20%	<b>31%</b>		
Germany (total)		-19%	-4%	<b>24%</b>		



Source: BBR (2003): Inkar Prognose 2020. Bonn

## Recent (and future) frame conditions



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## Recent (and future) frame conditions

### ➤ Ageing of the periphery

- suburban areas
- rural areas

### percent w. car in household

### ➤ Increasing motorisation among elderly

- particularly among women

age	1991 (SOEP)	2000 (FRAME)	in-crease
60 - 64	75	84	9
65 - 69	59	76	17
70 - 74	46	65	19
75 - 79	28	55	27
80 - 89	19	38	19
90+	13	17	4
All	49	66	17

Source: author. Data: SOEP + Frame



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### Recent (and future) frame conditions

➤ Ageing of the periphery

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percent w. car in household

age	with license	no license	sum
60 - 64	93	30	84
65 - 69	91	21	76
70 - 74	87	15	65
75 - 79	81	9	55
80 - 89	67	9	38
90 +	39	8	17
sum	86	15	66

➤ Increasing motorisation among elderly

- particularly among women

➤ No 'full motorisation' among future elderly

- even (some) elderly with license sell their cars
- health
- single households

Source: author. Data: SOEP 2003



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### Recent (and future) frame conditions

➤ Ageing of the periphery percent w. car in household

- suburban areas
- rural areas

men women

	one-person household	multi person household	one-person household	multi person household
18 to 29	57	90	48	85
30 to 34	95	95	72	93
35 to 39	74	94	69	94
40 to 44	69	97	71	92
45 to 49	92	92	71	91
50 to 54	53	92	58	91
55 to 59	62	90	46	87
60 to 64	64	88	41	79
65 to 69	64	84	22	76
70 to 74	35	84	7	70
75 to 79	35	84		
80 and older	38	65		

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- particularly among women

➤ No 'full motorisation' among future elderly

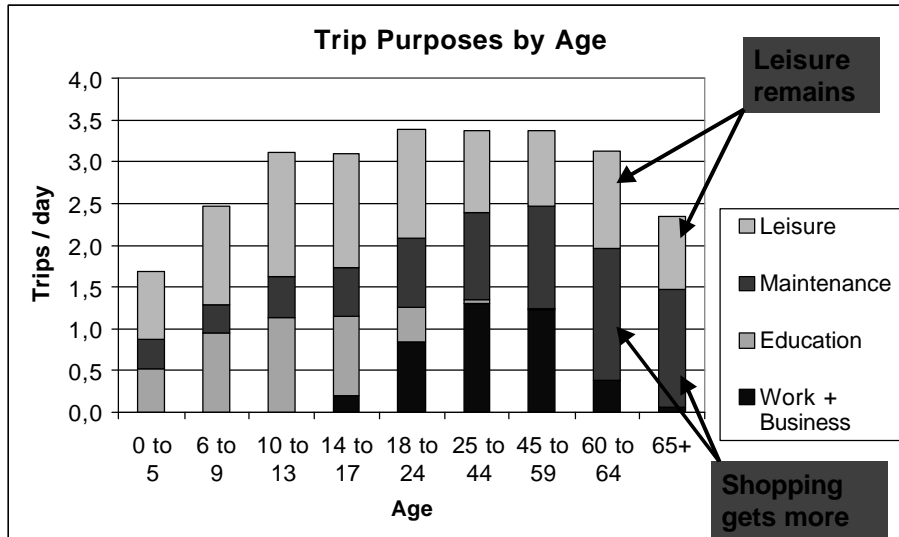
- even (some) elderly with license sell their cars
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Source: author. Data: SOEP 2003



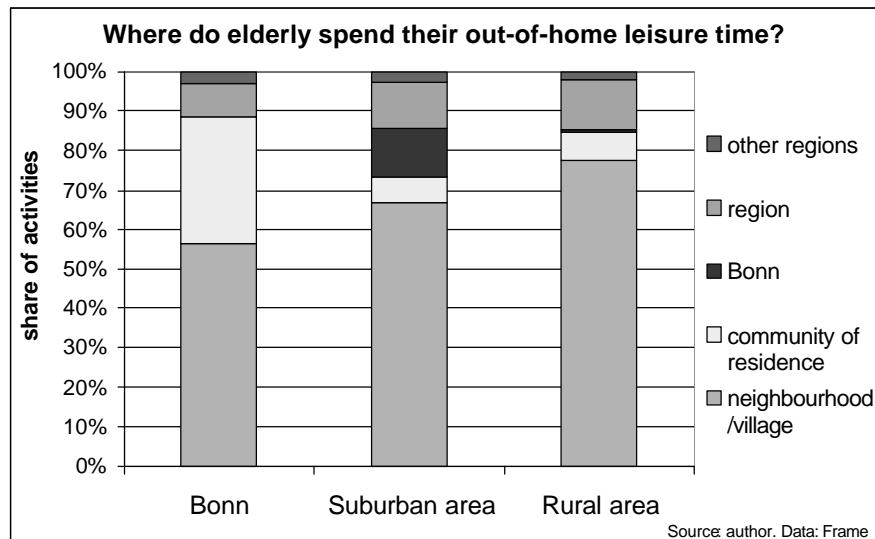
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## Overview on Travel Patterns



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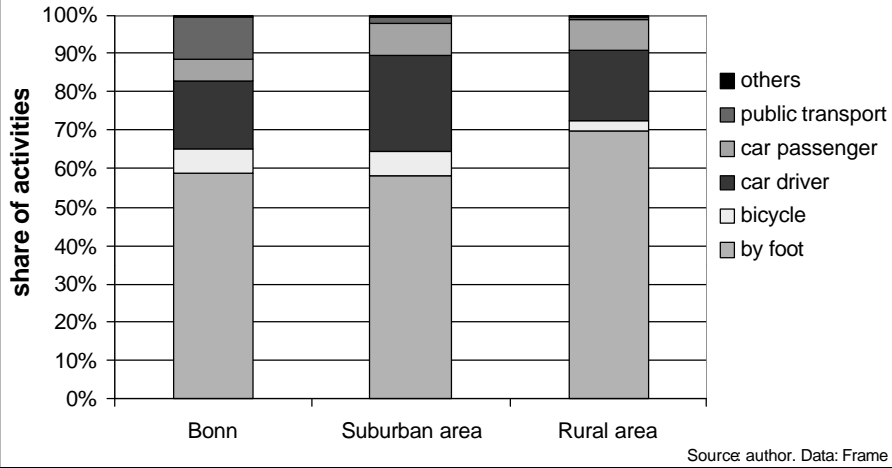
## Overview on Travel Patterns



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## Overview on Travel Patterns

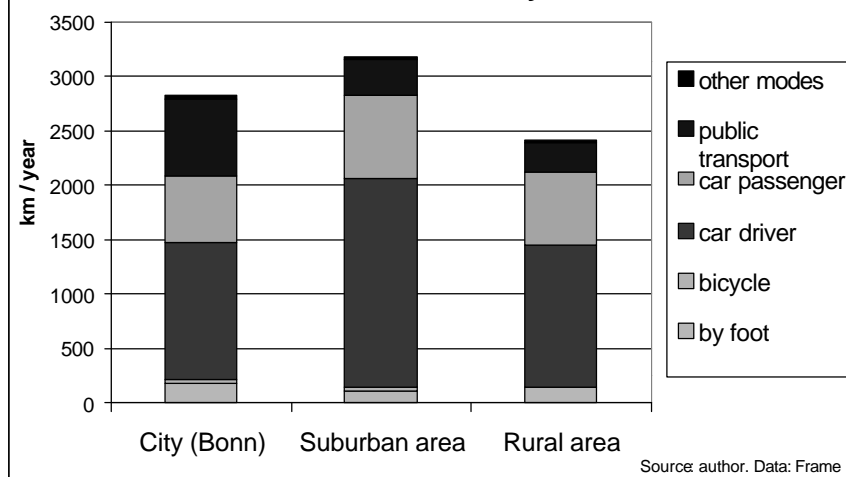
### Travel mode of senior citizens for leisure trips



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## Overview on Travel Patterns

### Annual leisure distances by travel mode



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## Overview on Travel Patterns

No leisure trip or holiday outside the region within one year before survey

Bonn	15%
suburban area	14%
<u>rural area</u>	<u>26%</u>
total	16%

Source: author. Data: Frame



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## Uneven distribution of travel

### On the one hand: Elderly...

- ...have increasingly more licenses and cars
- ...enjoy longer lasting health
- ...become more mobile („ageing“ of travel-intensive lifestyles)



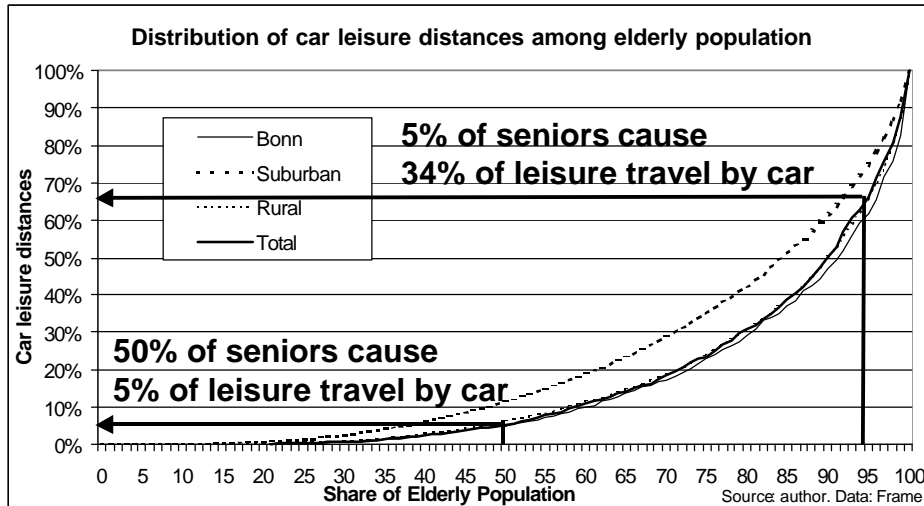
### On the other hand: Elderly...

- ...undertake mainly short (foot) trips
- ...stay in their neighbourhood
- ...don't go out much
- ...are immobile, ill, frail, lonely



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## Uneven distribution of travel



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## Uneven distribution of travel

### Characteristics of ,long distance seniors' (leisure time)

- > High education level
- > High income
- > ,Young old'
- > Good health condition
- > Male
- > Availability of car and/or season ticket (PT / Bahn)
- > Suburban residents



### Same characteristics as for large travel time budget

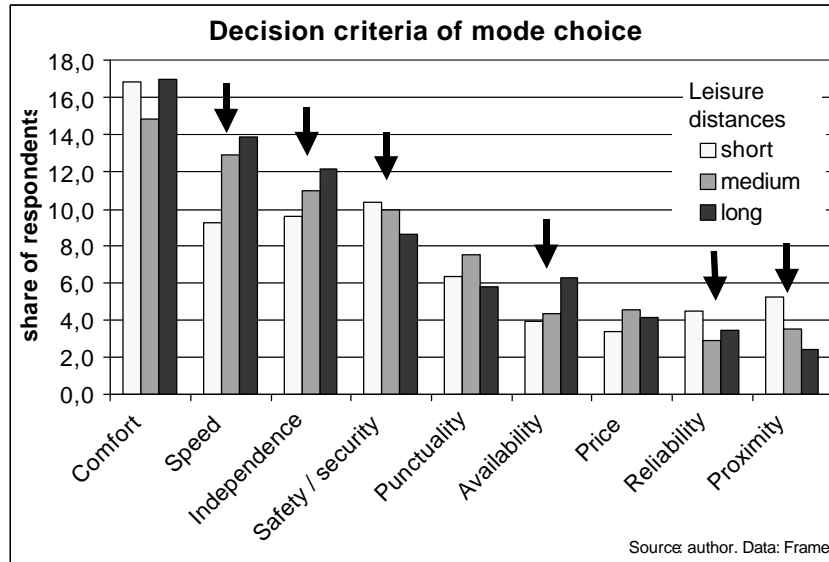
- > ,less mobile' do not suffer from heavy travel time burden
- > traffic infrastructure extension benefits ,highly mobile'
- > ,less mobile' would benefit more from more safety, small-scale accessibility, reliability

Source: author. Data: Frame



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## What is important for the elderly?



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## Does mobility affect well-being?

No unfulfilled activity wishes 48.5

Unfulfilled activity wishes 51.5

... most important of it:

Culture (theatre, concert, opera, museum, exhibitions) 12.9

Holidays 8.2

Walking, hiking, bicycle tour 7.0

Sport activities 5.8

Dancing, festivals, courses 3.3

Excursions 3.0

Source: author. Data: Frame



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## Does mobility affect well-being?

### Reasons for unfulfilled activity wishes

<b>Health</b>	<b>45.0</b>
<b>Don't want to do this alone; no fun in doing this alone</b>	<b>44.5</b>
<b>Public transport</b>	<b>42.1</b>
<b>Leisure supply</b>	<b>37.3</b>
<b>Lack of time</b>	<b>33.6</b>
<b>Don't like to go out in the dark</b>	<b>32.0</b>
<b>Weather conditions</b>	<b>31.7</b>
<b>Partner</b>	<b>31.1</b>

Source: author. Data: Frame



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## Does mobility affect well-being?

### Conditions for unfulfilled activity wishes

	Unfulfilled activity wish?	
	yes	no
<b>car availability</b>		
driving license and car in household	53.1	46.9
no driving license, but car in household	48.9	51.1
no car in household	49.1	50.9
<b>Partnership</b>		
Yes	51.7	48.3
No	49.6	50.4

Source: author. Data: Frame



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## Does mobility affect well-being?

**Existence of unfulfilled activity wishes is hardly related to external conditions or life situation**



**-> Adjustment**  
to environment  
to age-group



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## Does mobility affect well-being?

### **Observations concerning leisure and health**

- Decrease in (leisure) activity frequency only when health declines dramatically, i.e. when going out becomes virtually impossible
- First: decrease in activity variety (not frequency)

**-> Maintenance of mobility as long as possible**

### **Benefits of self-dependent mobility**

- Health
- Social networking
- Feeling self-dependent



**-> The benefits of mobility can not be substituted by delivery/supply services (,passive access')**



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## Does mobility affect well-being?

### Determinants of general satisfaction with life among elderly

	Std. B		Std. B
Age	0,130	Study area	
Gender (male)	-0,075	Leisure facilities in neighbourhood	
Income	0,135	Activity variety	0,079
Education level		Activity frequency	0,085
Health status	0,135	Leisure travel distance	
Living with partner	0,142	Leisure travel distance by car	
Car availability		Spatial distribution of activities	
Season ticket for public transport		Unfulfilled activity wish	
		Intercept (unstandardised)	1,823
		R <sup>2</sup> (explained variance)	10,1 %

Source author. Data: Frame



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## Conclusions

- Majority of elderly spend their daily outdoor life in vicinity of home
  - ...large fraction of trips by foot
  - ...large fraction of activities in the neighbourhood
  
- Few elderly have large activity spaces and travel a lot
  
- Differences correspond with life situation (health, socio-economics, demographics)



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## Conclusions

- Mobility contributes significantly to well-being and quality of life
  - ... in terms of activity frequency and activity variety
  - ... but not in terms of car availability and mode choice
  - ... and not in terms of activity radius or travel distances



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## Conclusions

- Maintenance of mobility contributes to quality of life
- Focus on self-dependent daily life
  - ... enabling small-scale access
  - ... foot trips
  - ... social networking in the neighbourhood
- Self-dependent mobility can not be substituted



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## Conclusions

- The private car will not (completely) solve future senior citizens' mobility problems
- Access is more important than speed
- Detailed planning and design schemes required
- Take other population groups into account



**Thank you!**



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