



Peak Car in Switzerland? Understanding car-less households, their motives and structural preconditions

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Tobias Arnold, MA, University of Bern / Interface Politikstudien Forschung Beratung,
Luzern

Prof. Dr. Ueli Haefeli, University of Bern / Interface Politikstudien Forschung Beratung,
Luzern

PD Dr. Katharina Manderscheid, University of Lucerne

1. Peak Car ?: Understanding car-less households
2. Socio-spatial embedding of carless-ness. Findings from the Swiss Household Panel, the British Household Panel and the German Socio-Economic Panel
3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility
4. An agenda for further research

1. Introduction: Peak Car ?: Understanding car-less households

- Up until recently: continuous increase of motorization and car-use, correlated to incomes of private households as an “universal law” in transportation research
- Car-lessness in modern Western societies used to be seen as an indicator of economic deprivation and social exclusion
- But: Recent research findings from different Western countries postulates a new phenomenon (labelled as “Peak Car”)
 - Travel by private car seems to have reached a plateau,
 - Stagnation or decline in car ownership and use – particularly among young, urban and well-educated social groups use
- However, it is not clear yet how to explain these findings and in the literature, there are several lines of explanation

2. Socio-spatial embedding of carless-ness. International comparisons

Manderscheid, K., 2016: Mobile Ungleichheiten. Eine sozial- und infrastrukturelle Differenzierung des Mobilitätstheorems. *Österreichische Zeitschrift für Soziologie* 41: 71–96.

Manderscheid, K., 2014: Criticising the Solitary Mobile Subject: Researching Relational Mobilities and Reflecting on Mobile Methods. *Mobilities* 9: 188–219.

Research goal:

- Exploring and assessing the impact of social and spatial structures on mobility practices

Data:

- Switzerland: Swiss Household Panel (SHP) 2012
- England: British Household Panel Survey (BHPS) 2009
- Germany: Socio-Economic Panel (SOEP) 2012

Methods:

- International comparison
- Bivariate descriptives
- Multiple Correspondence Analysis
 - Using **couples** as unit of analysis
 - **Active variables**: length of commutes, duration of residence and interregional moves

2. Socio-spatial embedding of carless-ness. International comparisons

Carless-ness by type of household: Percent (absolute)

	couple with children	couple without children	single household	single parent	Sum
no car	4.1 (139)	10.1 (307)	41 (484)	17 (71)	12.9 (1078)
car available	95.9 (3253)	89.9 (2719)	59 (697)	83 (370)	87.1 (7278)
	100 (3392)	100 (3026)	100 (1181)	100 (446)	

Switzerland 2012; Data: SHP; Cramer's V=0.373

	couple with children	couple without children	single household	single parent	Sum
no car	4.7 (120)	9.1 (195)	47.8 (433)	32.7 (166)	15.2 (965)
car available	95.3 (2436)	90.9 (1942)	52.2 (473)	67.3 (341)	84.8 (5393)
	100 (2556)	100 (2137)	100 (906)	100 (507)	

England 2009, Data: BHPS; Cramer's V=0.436

	couple with children	couple without children	single household	single parent	Sum
no car	4.4 (302)	8.7 (714)	42.2 (1560)	27.2 (306)	14.5 (2943)
car available	95.6 (6554)	91.3 (7511)	57.8 (2137)	72.8 (817)	85.5 (17354)
Sum	100 (6856)	100 (8225)	100 (3697)	100 (1123)	

Germany 2012; Data: SOEP; Cramer's V=0.403

2. Socio-spatial embedding of carless-ness. International comparisons

Carless-ness by household income: Percent (absolute)

	less than 35000 sfr/a	35001 to 70000 sfr/a	70001 to 100500 sfr/a	more than 100501 sfr/a	Sum
no car	20.2 (373)	12.9 (481)	21.7 (158)	7.6 (66)	12.9 (1078)
car available	79.8 (1463)	87.1 (3259)	78.3 (1751)	92.4 (799)	87.1 (7278)
Sum	1842	3740	1909	865	

Switzerland 2012; Data: SHP; Cramer's V=0.132

	less than 15000 GBP/a	15001-28000 GBP/a	28001-44000 GBP/a	more than 44000 GBP/a	Sum
no car	34.9 (656)	15.6 (317)	4.6 (95)	2.1 (43)	13.8 (1111)
car available	65.1 (1224)	84.4 (1714)	95.4 (1987)	97.9 (2016)	86.2 (6941)
Sum	100 (1880)	100 (2031)	100 (2082)	100 (2059)	

England 2009, Data: BHPS; Cramer's V=0.369

	less than 2200 €/m	2200 to 3100 €/m	3101 to 4200 €/m	more than 4200 €/m	Sum
no car	28.3 (2491)	6 (297)	2.9 (98)	1.7 (57)	14.5 (2943)
car available	71.7 (6301)	94 (4617)	97.1 (3227)	98.3 (3209)	85.5 (17354)
Sum	100 (8792)	100 (4914)	100 (3325)	100 (3266)	

Germany 2012; Data: SOEP; Cramer's V=0.346

2. Socio-spatial embedding of carless-ness. International comparisons

Carless-ness by settlement type: Percent (Absolute)

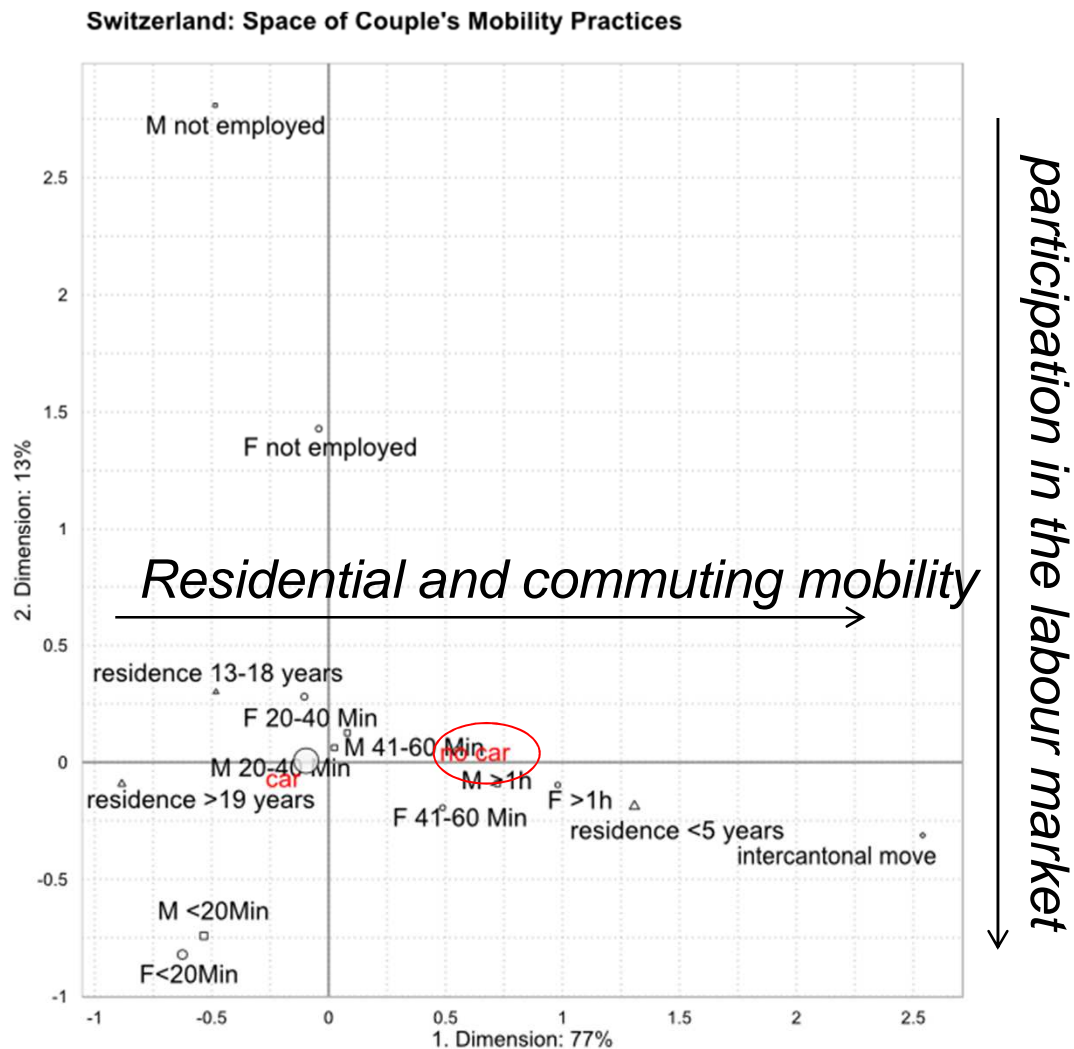
	urban	suburban	rural	Sum
no car	26.3 (590)	11.5 (287)	5.5 (201)	12.9 (1078)
car available	73.7 (1653)	88.5 (2200)	94.5 (3425)	87.1 (7278)
Sum	100 (2243)	100 (2487)	100 (3626)	

Switzerland 2012; Data: SHP; Cramer's $V=0.254$

	urban	suburban	rural	Sum
no car	16.3 (1435)	13.2 (817)	13.1 (691)	14.5 (2943)
car available	83.7 (7387)	86.8 (5386)	86.9 (4581)	85.5 (17354)
Sum	100 (8822)	100 (6203)	100 (5272)	

Germany 2012; Data: SOEP; Cramer's $V=0.044$

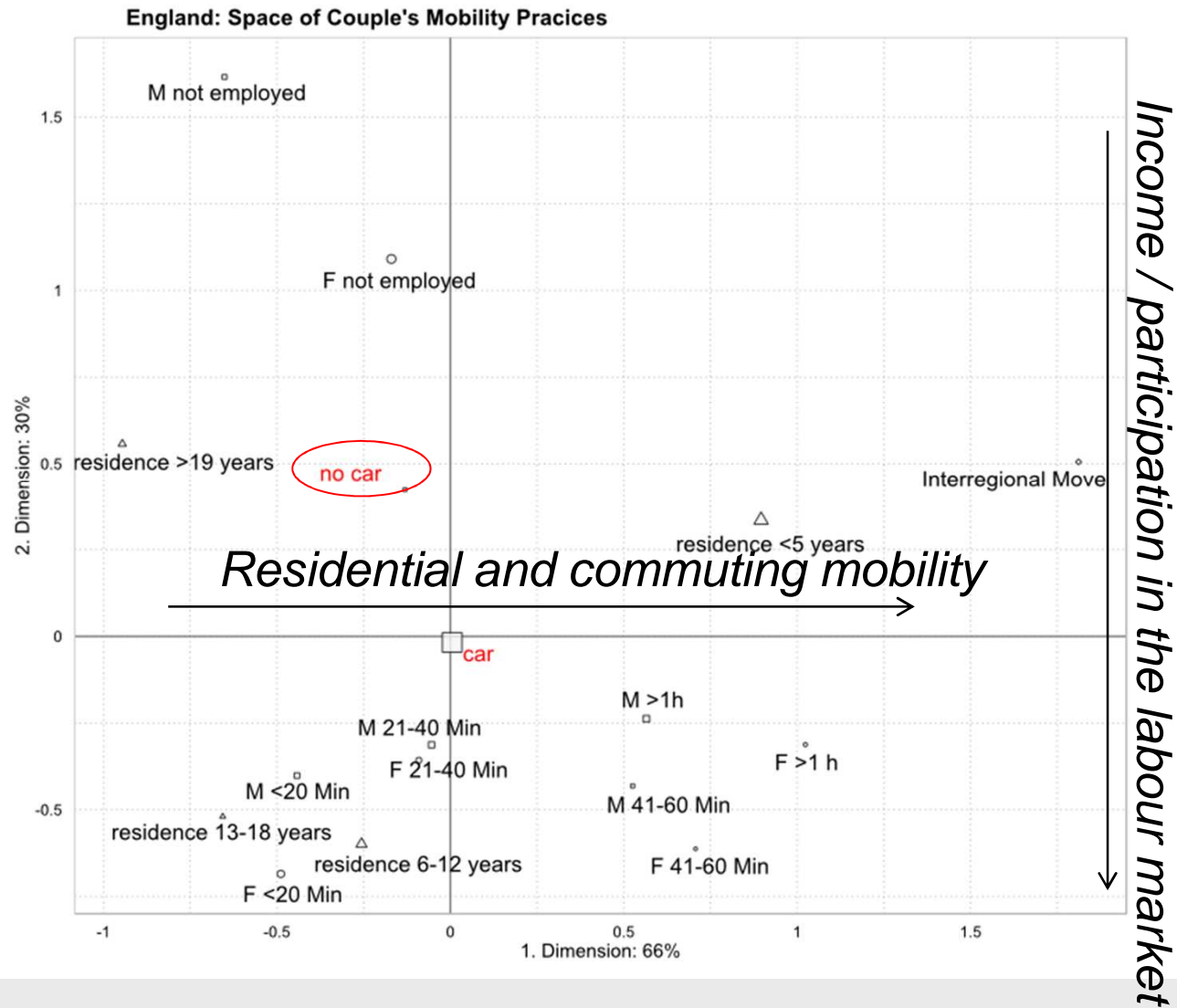
2. Socio-spatial embedding of carless-ness. International comparisons



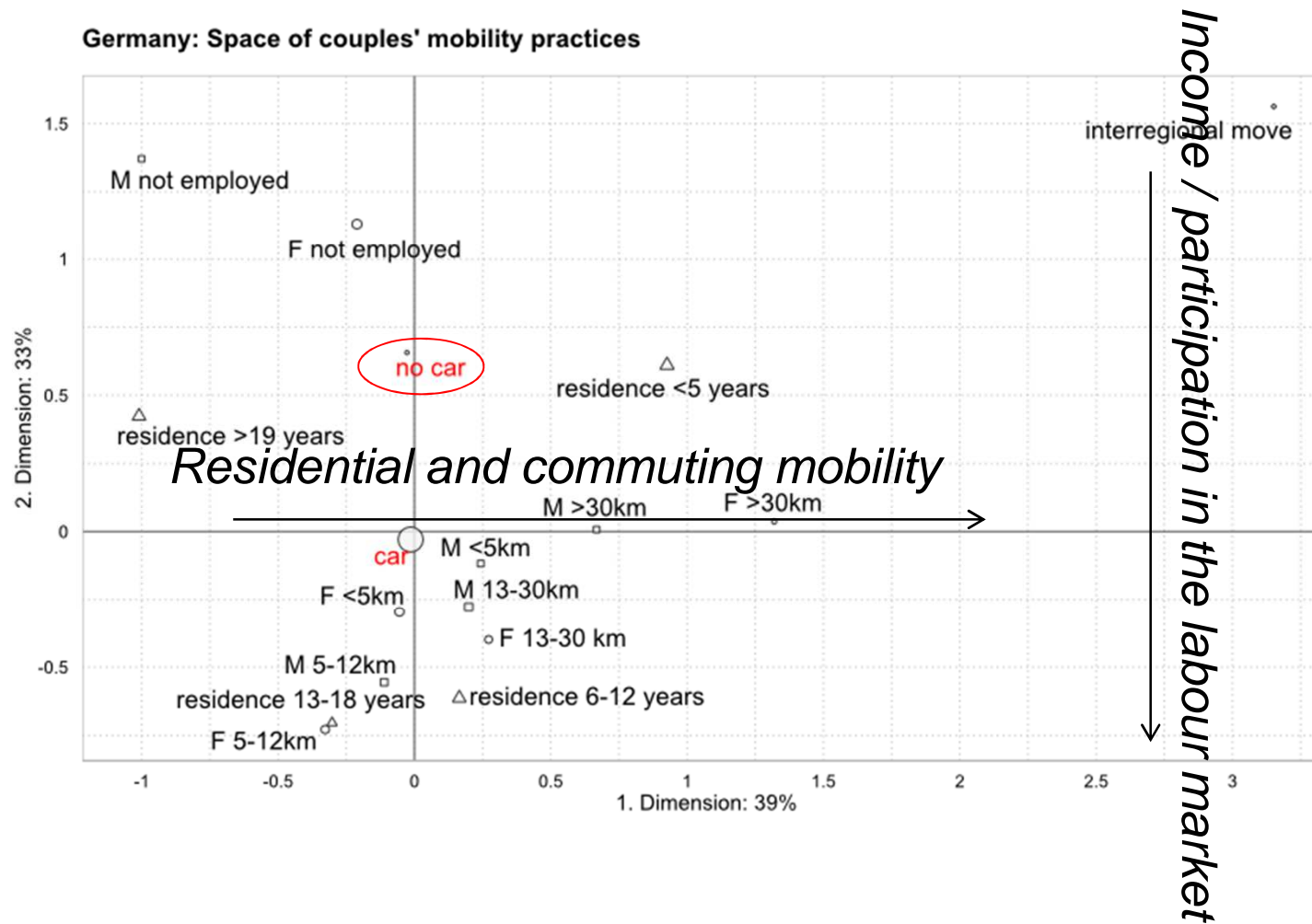
Multiple
Correspondence
Analysis:

Data: SHP 2012

2. Socio-spatial embedding of carless-ness. International comparisons



2. Socio-spatial embedding of carless-ness. International comparisons



Multiple Correspondence Analysis:

Data: SOEP 2012

3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

Haefeli, Ueli; Arnold, Tobias (2015): Autofreie Lebensstile – Spezialauswertungen der Mikrozensusen Verkehr 1994, 2000, 2005 und 2010 sowie der Haushaltsbudgeterhebung (HABE) 2009–2011, Bericht zuhanden des Bundesamts für Energie (BFE), Interface Politikstudien Forschung Beratung, Luzern.

Research questions:

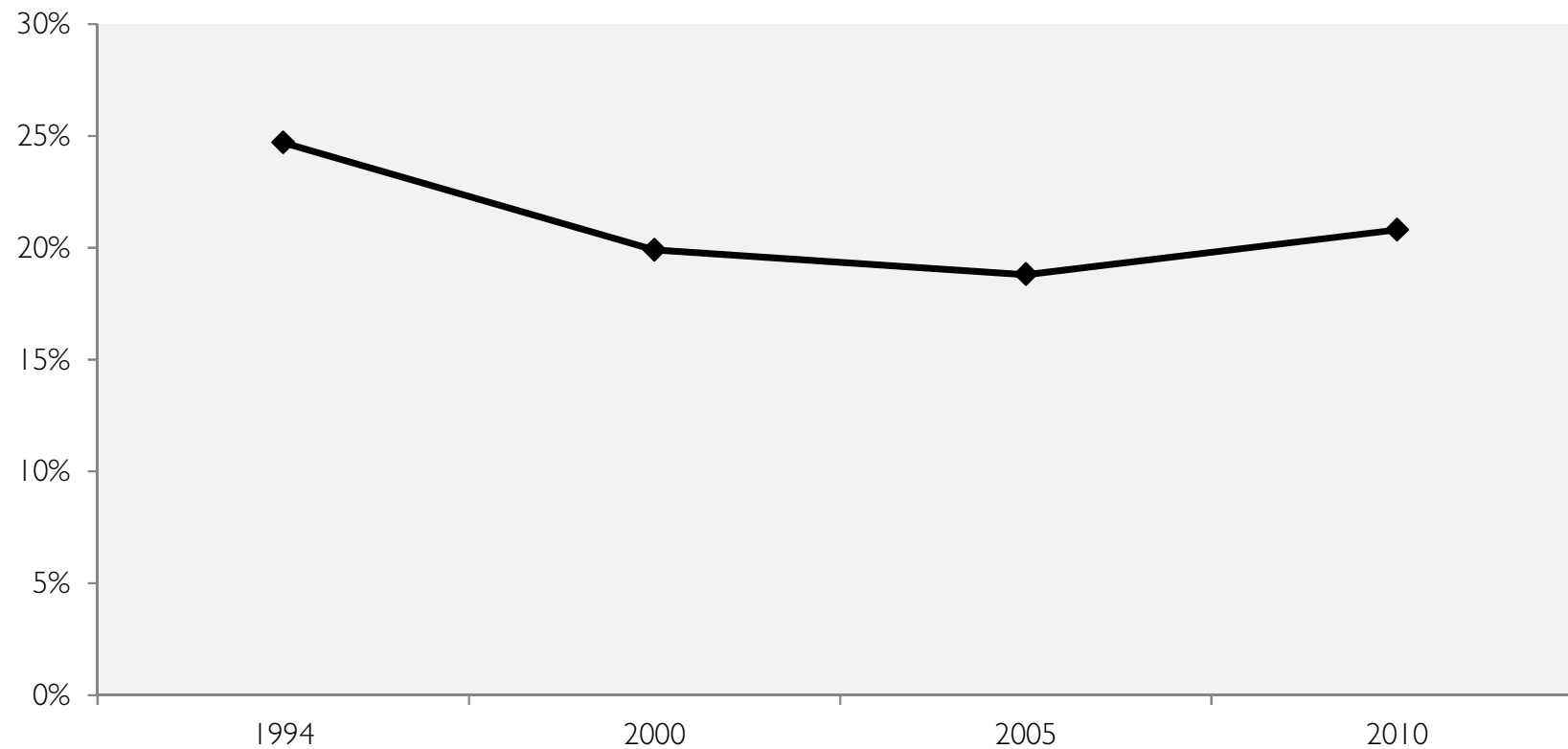
- How can we describe the car-less households in terms of their mobility behaviour and their socio-economic characteristics?
- How can we divide the carless-less households into different clusters?
- Which development do we observe in the time course form 1994 to 2010

Data: Swiss micro census traffic and mobility 1994, 2000, 2005, 2010

- BFS / ARE
- Survey on mobility behaviour in Swiss households
- Sample size: 16'500 (1994) to 60'000 (2010) households

3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

Total share of car-less households in Switzerland



3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

Car-less households are most present ...

... in urban areas

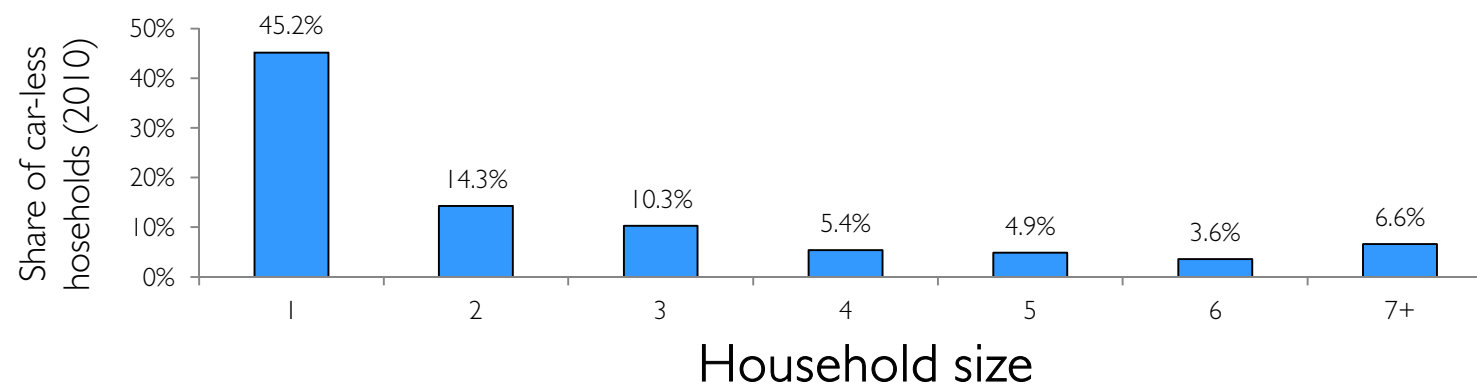
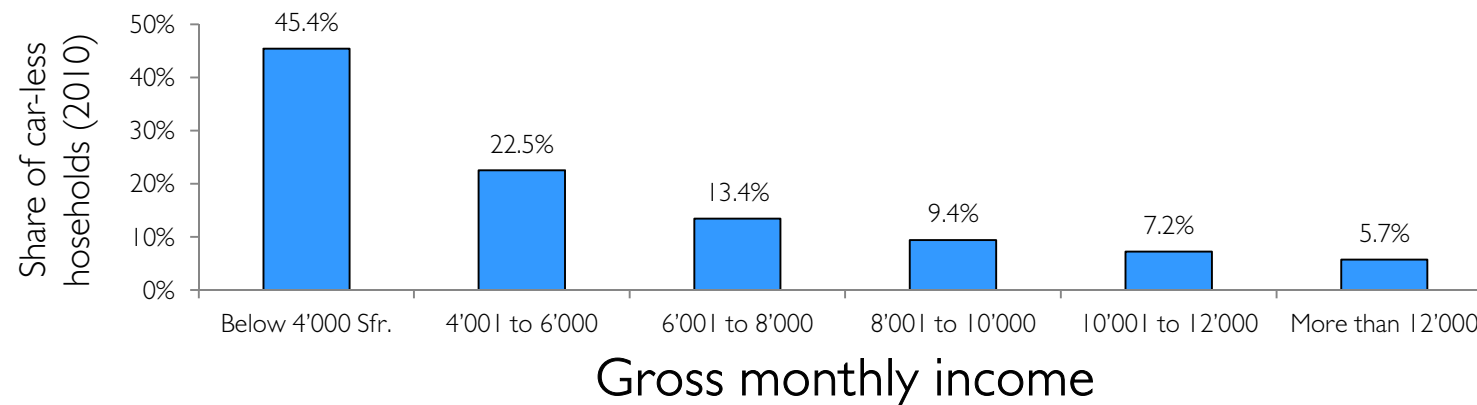
Households without car	1994	2000	2005	2010
Urban area	27.6%	22.8%	21.4%	24%
<i>5 biggest cities</i>	43.2%	39.7%	43.1%	48.4%
Rural area	17%	13%	10.7%	10.8%

... in the german speaking part

Households without car	1994	2000	2005	2010
German and Rhaeto-Romanic speaking part	26.5%	21%	19.7%	21.8%
French speaking part	20.5%	17.8%	16.9%	18.8%
Italian speaking part	17.3%	14.9%	14%	15.9%

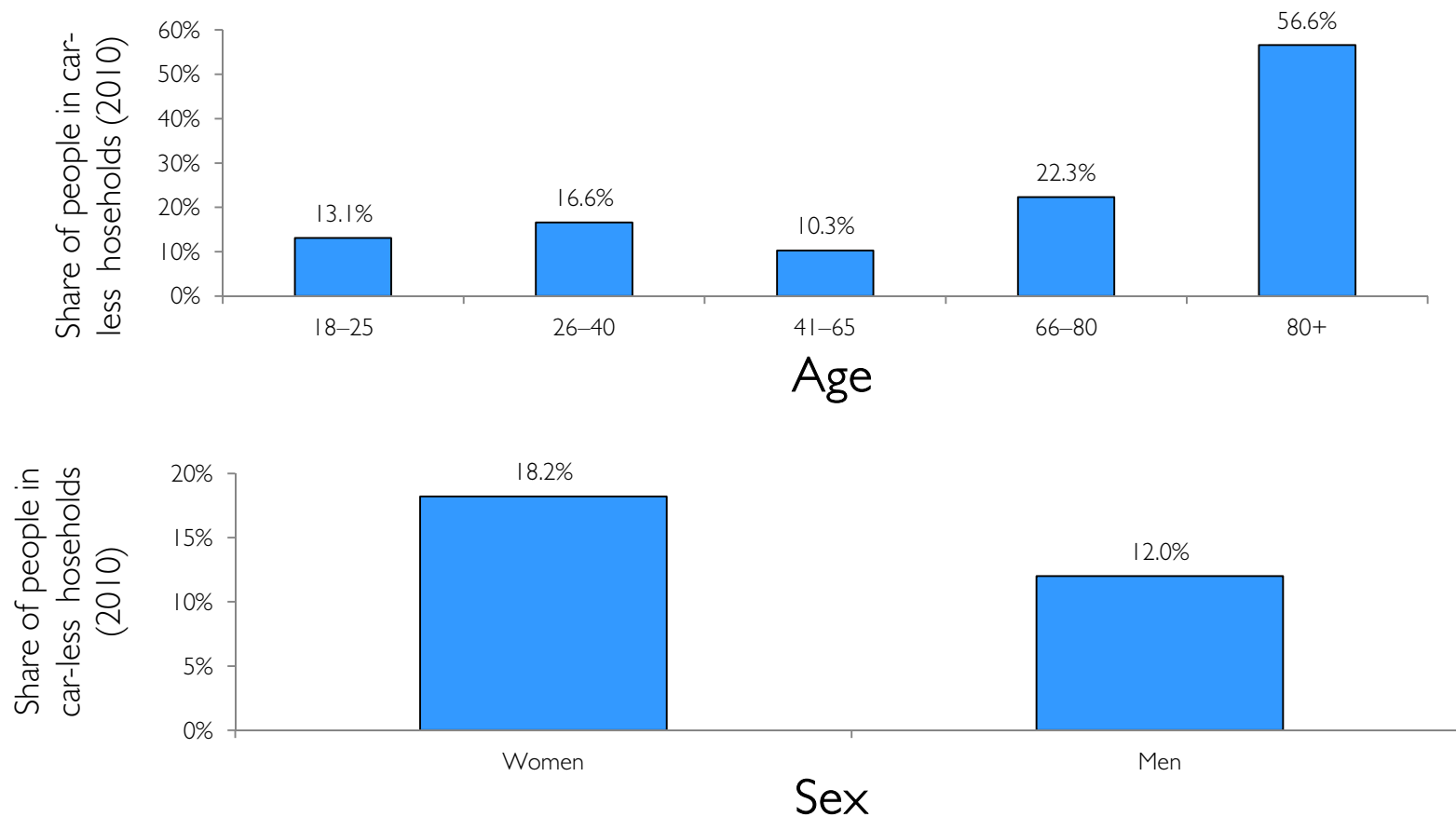
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Socio-demographics of people in car-less households (I)



3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

Socio-demographics of people in car-less households (II)



3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

Mobility behaviour of people in car-less households (I)

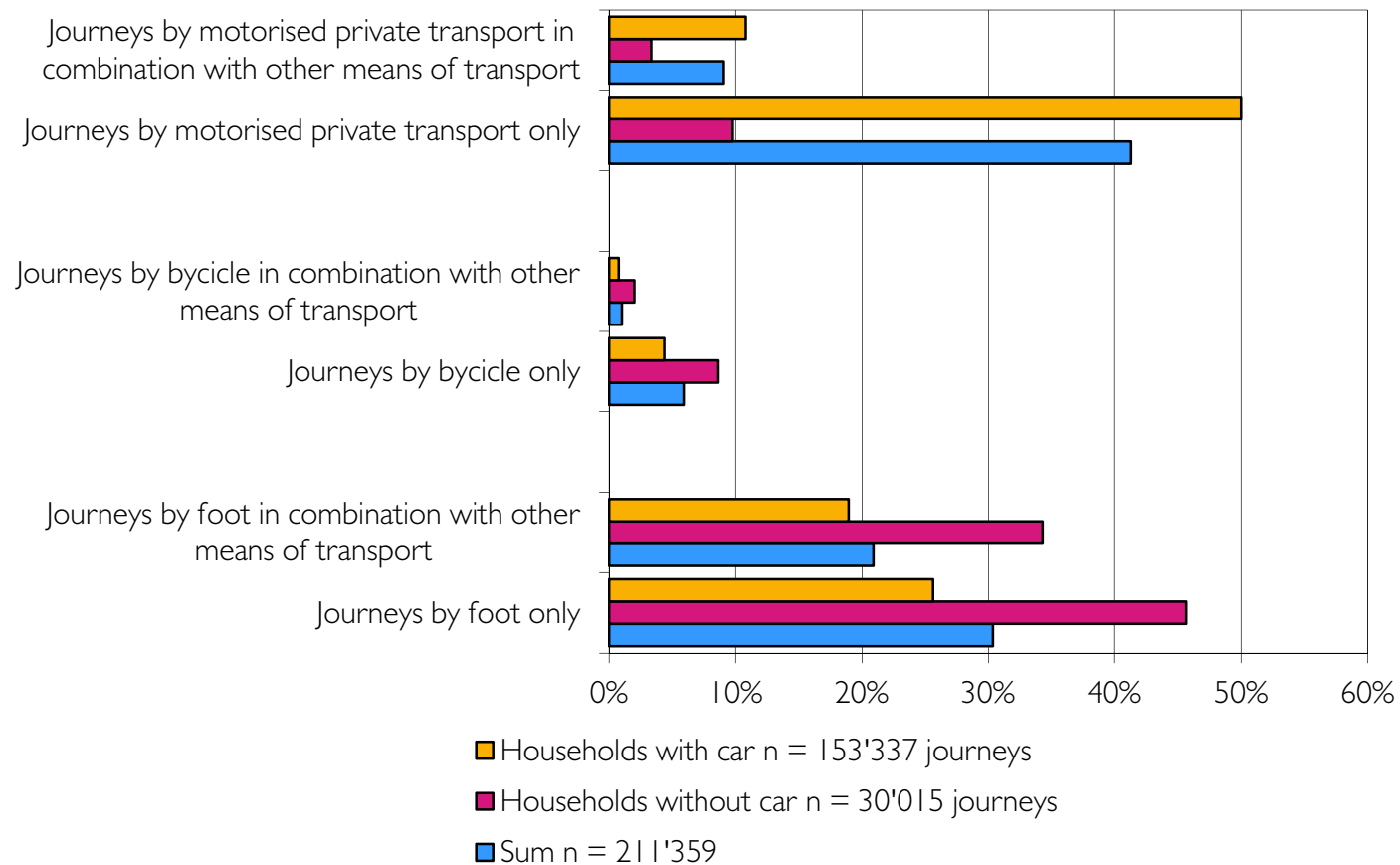
- 78% dispose of a subscription for public transport
(people in households with car: 52%)

- 19% use Car-Sharing
(people in households with car: 1.8%)

- People in car-less households compared to households with car ...
 - ... have smaller daily distances (-35%)
 - ... complete longer distances with public transport (+ 118%)
 - ... complete smaller distances with cars (-82%)

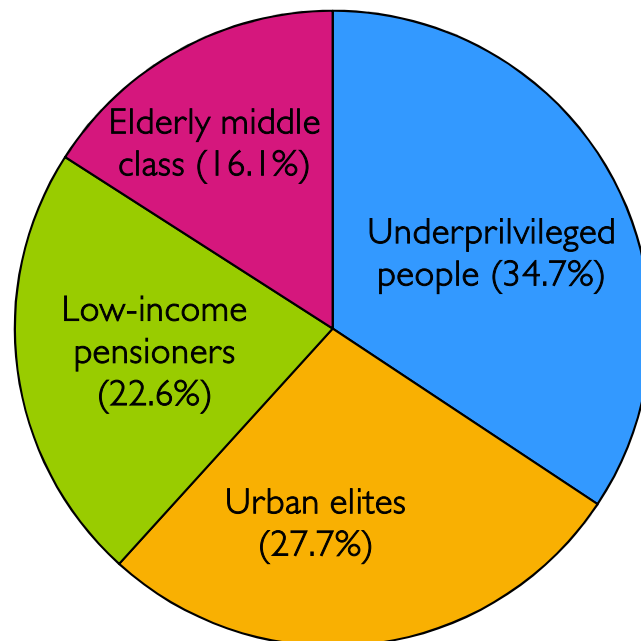
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Mobility behaviour of people in car-less households (II)



3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

From a descriptive to a multivariate approach: Cluster of car-less households (I)



Research question:

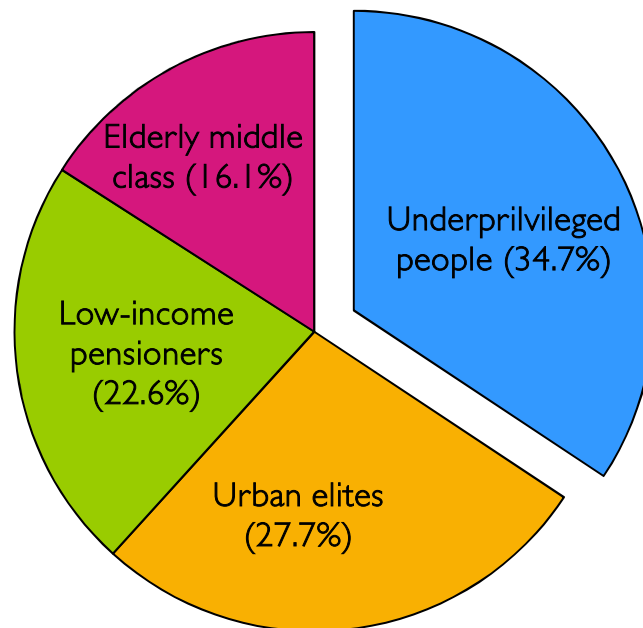
How can we divide the carless-less households into different clusters?

Method:

Latent class analysis

3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

From a descriptive to a multivariate approach: Cluster of car-less households (II)

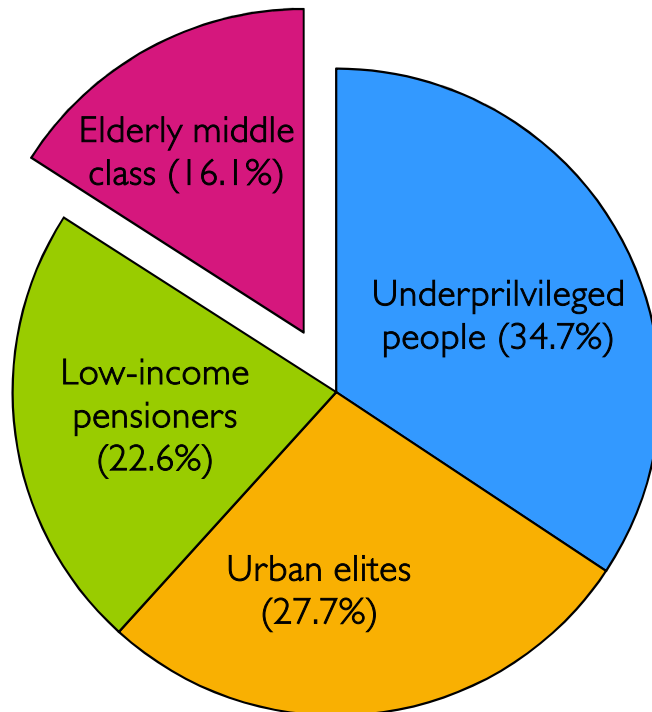


Underprivileged people:

- Low income and low level of education
- Single person households and households with children
- Younger and middle-aged people (almost no pensioners)
- Majority has no driving license

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From a descriptive to a multivariate approach: Cluster of car-less households (III)

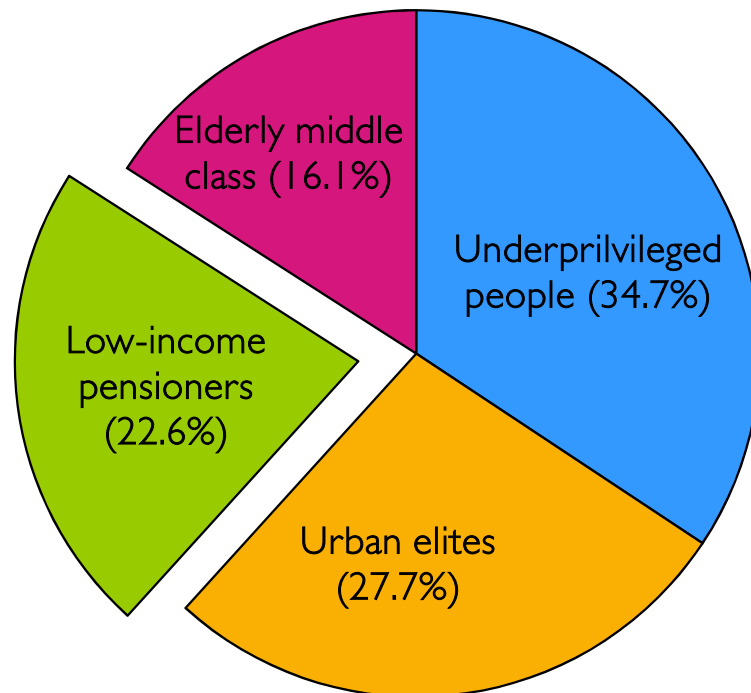


Elderly middle class:

- Low income and low level of education
- Single person households and households without children
- Elderly people (60+)
- 3 of 4 have no driving license
- Low mobility consumption

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From a descriptive to a multivariate approach: Cluster of car-less households (IV)

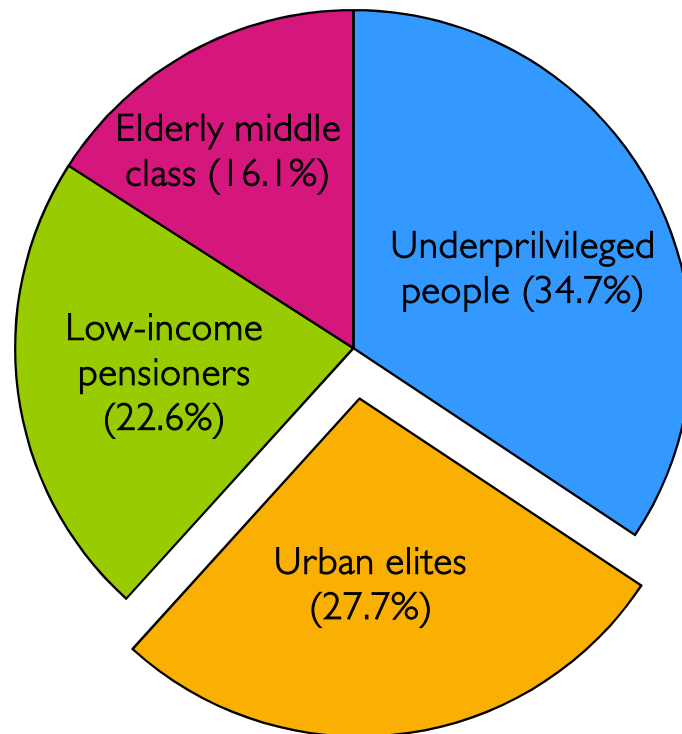


Low income pensioners:

- Low income and low level of education
- Predominantly female pensioners in single person households without driving license
- Very low mobility consumption

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From a descriptive to a multivariate approach: Cluster of car-less households (V)

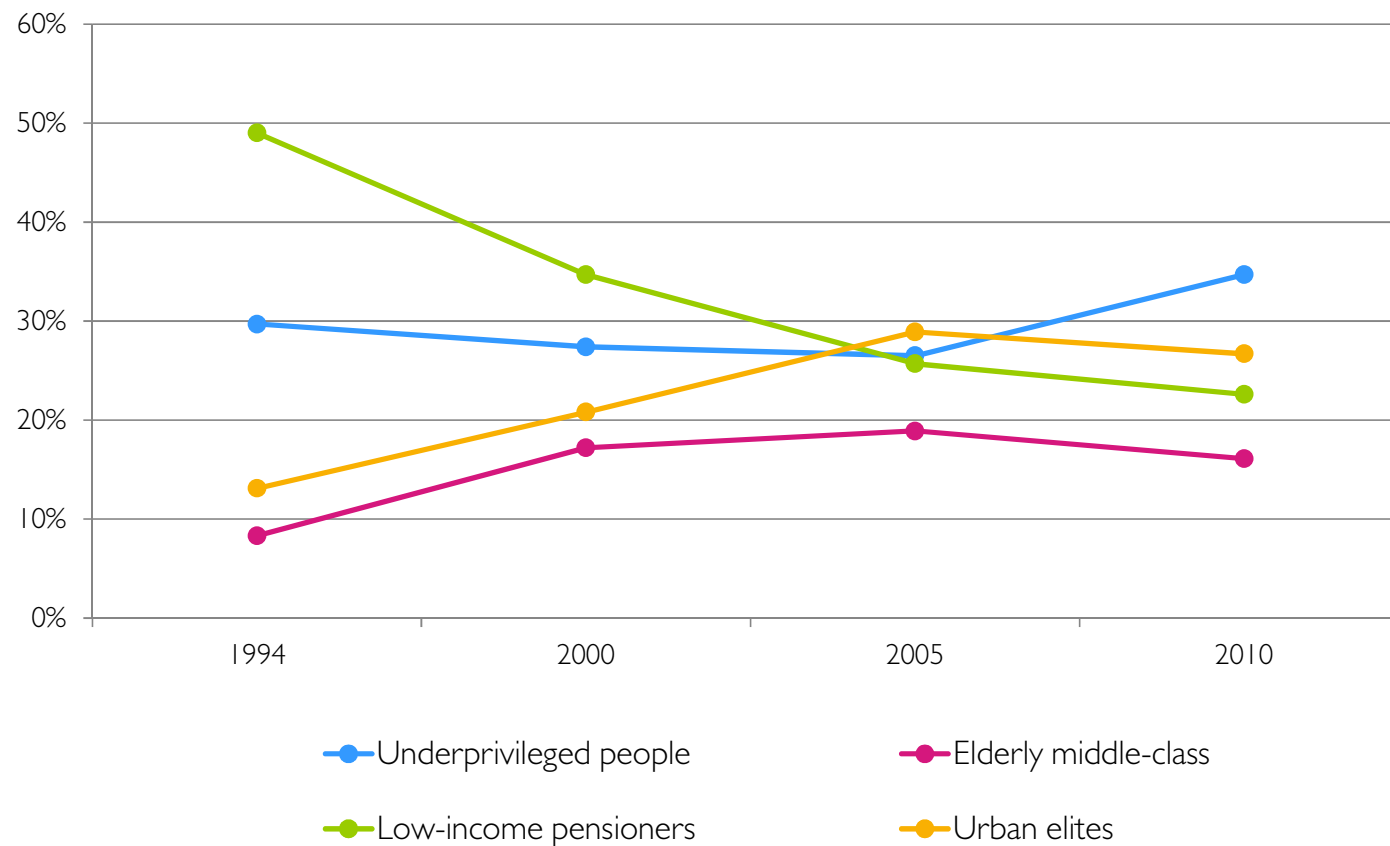


Urban elites:

- High income and high level of education
- People at working age
- 8 of 10 with driving license
- Living in urban centres
- High level of mobility consumption

3. Urban elites as a promising target group : results from the analysis of the Swiss microcensus traffic and mobility

From a descriptive to a multivariate approach: Cluster of car-less households (VI)



4. An agenda for further research

Four questions for further research:

1. What are the determinants for voluntary non-car ownership in Switzerland?
2. How big is the potential of voluntary carlessness in Switzerland?
How does the decision-making process for or against owning a car proceeds?
3. What sustainability balance can be drawn from voluntary carlessness in Switzerland?
4. How can the group of carless households be expanded in future?



Thank you for your attention!