Tight Budgets or Environmental Awareness? The Changing Travel Behavior of Young Germans

Tobias Kuhnimhof
Institute for Transport Studies, University of Karlsruhe
Kaiserstr. 12
76131 Karlsruhe, Germany
Tel: +49 721 608 4119
Email: Kuhnimhof@ifv.uni-karlsruhe.de

Ralph Buehler
Urban Affairs and Planning, Virginia Tech
School of Public and International Affairs
1021 Prince Street Suite 200
Alexandria, VA, 22301, USA
Tel: 001 703 706 8104
Email: ralphbu@vt.edu

Dominika Kalinowska, DIW
Department of Energy, Transportation, Environment
German Institute for Economic Research (DIW Berlin)
Mohrenstr. 58, 10117 Berlin
Tel: +49 30 89789 687
Email: dkalinowska@diw.de

ABSTRACT

For years, researchers, planners, and policy makers have been going to great lengths looking for possibilities to change travel behavior towards more sustainability. Nevertheless, the triumphant success of the automobile that conquered more and more domains of life appeared to be inexorable. This applied to Germany as to most other countries. However, more and more data suggest that this era might be coming to an end. Results from different NTS surveys as well as vehicle registration statistics imply that young Germans today are less auto-oriented than their parents used to be in their young years. The paper sheds light on this largely unforeseen and little investigated development that occurs among the young population in a modern and economically well off country. First, we investigate observed travel behavioral changes of the young population in Germany. Two developments are under focus in this discussion: the diminishing differences between men and women and the rise of multimodal behavior. Second, the paper looks at likely causes for this trend change in young peoples' travel demand. Among possible causes are shrinking mobility budgets because of a changing economic situation of young travelers. Other possible explanations for shrinking auto-mobility by the young are their educational, professional and residential choices and associated mobility needs. These choices of the young may also express a change of mind in that they indicate an increasing environmental awareness.

INTRODUCTION

Like other industrialized societies Germany has experienced increasing automobile ownership and use over the last decades. From 1970 to 2005 the number cars per 1,000 persons almost tripled in Germany from 200 to 560 [Buehler 2009]. For decades, many young Germans have dreamed of getting a driver's license and owning their first car as soon as they turn 18—driving age in Germany. Over the course of a lifetime, car use increased rapidly once an individual turned 18 and driving hit its peak around the age of 30 [Buehler, Kunert 2010]. Daily levels of car travel declined with increasing age once individuals reached their mid 30s. Over the last 40 years, the age group between 18 and 30 has been one of the most car oriented groups in German society and has increased its level of car use considerably—serving as a bellwether for more car-oriented life-styles of all groups of society [DIW 1993].

Against this background, it appeared inexorable that every new generation would be more motorized and car oriented than the preceding generations. One rational for this expectation was that more and more youth did not experience much other travel than with the automobile. Because of being chauffeured around more than any other generation before, the generation which grew up in the 70s and 80s was even named "Generation Golf".

However, after decades of uninhibited growth of travel demand and automobile orientation German travel demand researchers were in for an unexpected development: First, per capita growth of mobility did not continue as expected and largely stagnated from the mid 1990s onward [Zumkeller et al. 2004]. Now it becomes clearer that this overall stagnation is composed of heterogeneous developments, specifically for different age groups. Per capita travel demand - specifically automobile travel - of elderly travelers is still on the rise. This largely conforms to expectation as the last representatives of generations who had lived a life without car are being replaced by more auto-oriented generations.

On the contrary, the development of travel demand for young travelers shows a different picture. Various sources indicate that the automobile orientation of young travelers is not as pronounced anymore as it used to be in the past. In this paper we will present different figures which illustrate this development. Two developments are specifically interesting and helpful in understanding this change in trend: First, the fact that men are giving up their traditional advantage over women with respect to automobile travel. Second, the increasing spread of multimodal travel behavior. After presenting these developments, we will discuss possible reasons for the observed trend changes.

DATA SOURCES

The main data sources for the analysis of travel trends in this paper are two German household travel diary surveys (NTS), the Kontiv 1976 and the German Mobility Panel MOP 1995 through 2008. Both are briefly presented in the following.

Kontinuierliche Verkehrserhebung (Kontiv) 1976

The first national travel survey in West Germany—the so-called Kontiv-Survey—was conducted in 1976. Participants in this survey were asked to report their travel activities during an assigned 24 hour period. The 1976 sample included 27,695 households, with 41,297 individuals reporting on 113,240 trips made throughout the year [DIW 1993]. The survey is representative for the entire country and for all seasons of the year. NTS surveys with a comparable format were conducted in 1982 (Kontiv 82), 1989 (Kontiv 89), 2002 (MiD 2002), and 2008 (MiD 2008) [BMVBS 2010]. Unfortunately, changes in survey design between the surveys before and after 2000 (Kontiv vs. MiD) make the comparability of long term trends questionable at best [Holz-Rau, Scheiner 2006]. The 2002 and 2008 MiD survey are comparable, however, the 2008 micro data had not yet been publicly released for analysis at the time of writing of this paper.

The German Mobility Panel MOP

The German Mobility Panel (MOP) is a multi-day and multi-period travel survey that has been conducted annually in fall since 1994. It comprises a 7-day trip diary and repeated participation of the same respondents in three consecutive years. The annual sample size of the MOP is about 750 households or 1,800 individuals. Participants report their trips for an entire week. As a consequence the annual data base contains about 45,000 [MOP 2010].

In contrast to Kontiv/MiD, which only collects data about one travel day, we can use the MOP travel data to investigate variance in travel behavior throughout the week. For example, we can identify travelers who use multiple modes of transport during the week and others who rely on one mode of transport for most of their weekly trips [Kuhnimhof et al. 2006]. Travel information about a representative week allows for important insights into individual mode choice preferences and habits that go beyond the typical one day trip diary. Moreover, in contrast to methodological changes in the Kontiv and MiD survey series, the MOP has been conducted without methodological changes since 1994. Hence, the MOP data can be used to generate comparable time series since the mid 1990s [MOP 2010].

Data Use in this Paper

This paper relies on data from the 1976 Kontiv survey and the MOP between 1995 and 2008. Kontiv 1976 and MOP might not be entirely comparable. However, changes in travel

behavior over 20 years were so pronounced that they outweigh any methodological issues. Kontiv 1976 is the only reliable national travel survey for Germany before the 1980s and serves to establish a baseline of travel demand in Germany. Hence, the conclusions drawn in this paper on the basis of observed trends in the last 30 years serve as indicators for long term changes in travel and should be valid proxies for changes in travel irrespective of potential data comparability issues. Most of our analysis will focus on travel trends during the last 15 years and hence rely on the comparable annual MOP data.

One disadvantage of the MOP data is the relatively small annual sample size (only about 1,800 individuals per year). The small sample size suffices to make estimates about travel at the national level, but it hinders meaningful disaggregate analysis of subgroups of the population. In order to partially overcome this shortcoming for some of the presented analyses we pooled the MOP data of five consecutive years to divide the 15 year period into three pooled samples of approximately equal size: Data from 1995 through 1999 were pooled to generate results labeled 1997; likewise we created two other pooled samples for our comparison over time: 2000 to 2004 (labeled 2002) and 2005 to 2008 (labeled 2007).

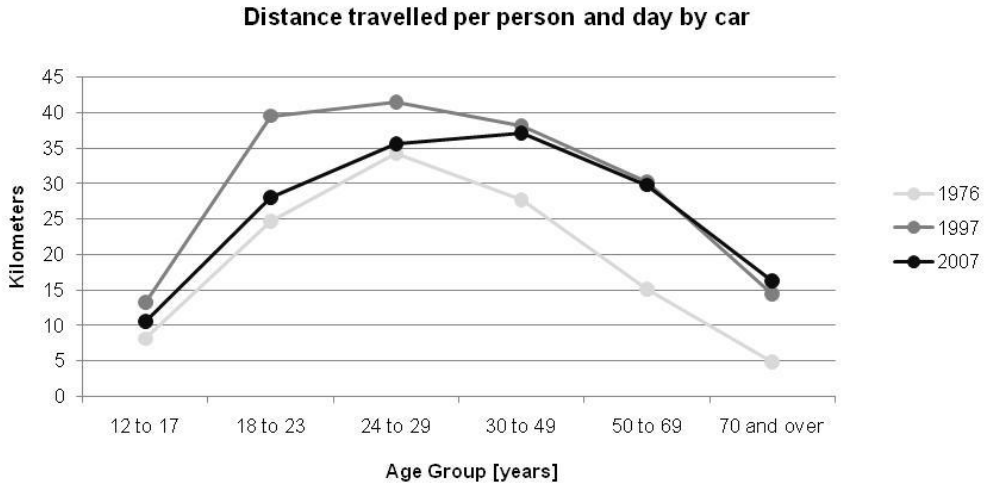
TREND CHANGES IN TRAVEL DEMAND BY MODE

From 1976 to 1997, the average distance traveled per person per day in Germany rose by over 50% from 26 km to 40 km — mainly related to an increase in the number of trips by car and distance traveled by automobile. During this time the share of all trips by car increased from 45 percent to 60 percent. Demographic shifts help explain this overall trend: during this time period the German baby boom generation reached driving age, started their professional careers, had increasing incomes, and lead increasingly active lifestyles—thus contributing to an increase in overall travel demand, but particularly by automobile [FGSV 2006].

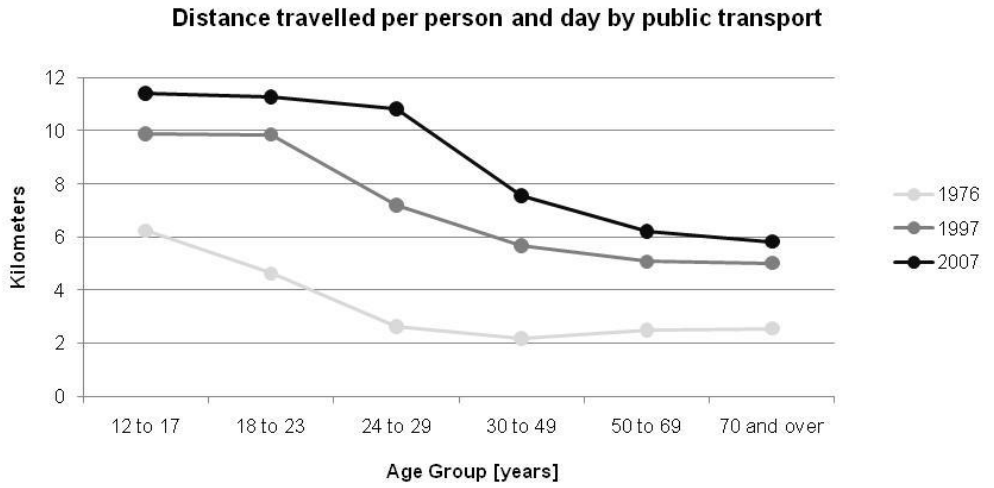
However, increasing automobile travel was not only limited to the baby boomers. Per capita travel demand and motorization for all age groups increased significantly during this time period. This is illustrated in FIGURE 1 which measures travel demand as total distance traveled per person per day by mode for different age groups. The figure focuses on the young age groups but also shows older age groups as a point of reference, albeit at a lower age resolution.

FIGURE 1 shows that demand for other modes than the automobile also increased. Daily distance traveled on public transport rose for all age groups—while the share of trips by public transport declined slightly from 11 to 8 percent—indicating slightly fewer but longer public transport trips per person. Moreover, average walking and cycling distances have also increased for all age groups—with the exception of teenagers. Changes in non-motorized travel are small and should be interpreted carefully in light of survey comparability.

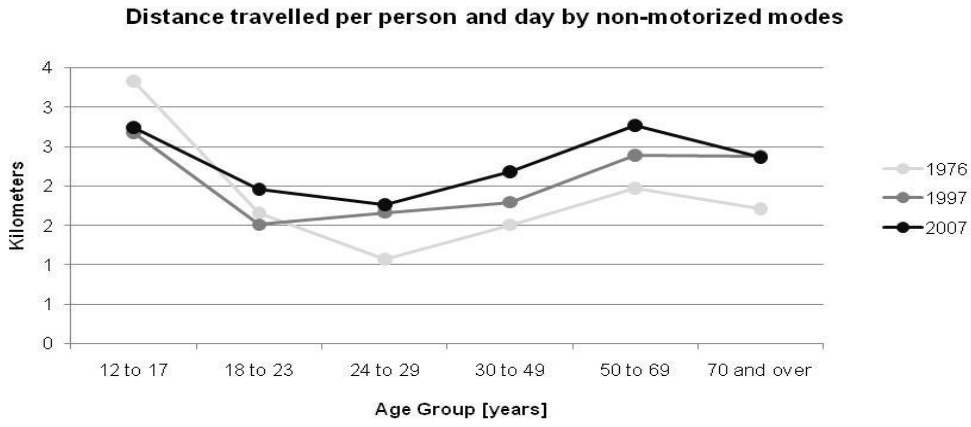
.



1



2



3 **FIGURE 1: Per capita mileages by mode and age class**

4

6

In summary, between 1976 and 1997 Germany witnessed a strong increase in travel distance and automobile use which was specifically pronounced among young adults. Since 1997, however, there has been little change in travel behavior at the aggregate level in Germany: average distances traveled per capita hovered around 40 km per day—suggesting either stagnation or saturation of travel demand [Zumkeller et al. 2004].

However, aggregate data hide heterogeneous trends for different age groups. Automobile travel stagnated for the population between 30 and 70 and increased slightly for individuals older than 70. This suggests that today's elderly maintain their more auto oriented mobility patterns into old age and lead more active lifestyles than prior elderly generations.

In contrast automobile travel demand for travelers 30 years and younger has declined since the mid 1990s. In fact levels of car travel of the young people in 2007 were more similar to 1976 than to 1997. Public transport distance rose for this age group since the mid 1990s. Daily distance walked and cycled has increased for all groups between 1997 and 2007.

The results suggest that a comparatively more car oriented young generation of the 1990s has been replaced by a young generation with less automobile travel demand. Especially, public transport seems to benefit from this trend. Between the 1976 and 1997, the years after reaching driving age saw a significant drop in individual public transport ridership, walking, and cycling. While in 2007 young adults still increase their driving, reduce walking, cycling, and public transport use once they reach 18—this does not seem to be as pronounced anymore. For example, while in the early 1990s public transport mileage dropped off sharply once individuals reached their early 20s, in 2007 travelers seem to keep their teenage level of public transport into their late 20s.

MEN ARE LOSING THEIR ADVANTAGE OVER WOMEN

One important storyline in the context of this trend change is the different development of travel demand by men and women. Over the last 40 years, western societies have seen a decline in differences in travel behavior of men and women. This is mostly interpreted as a process of the women catching up with men as the lifestyles of the genders are becoming more similar: Since 1980, the share of women 15 years and older who work has increased in Germany from 40 to 51 percent today [World Bank 2010]. During the same time the average age of the mother when having the first baby rose from 25 to 30 [Destatis 2010a]. Regarding young travelers, this indicates that there is a longer period during which gender differences are not very pronounced.

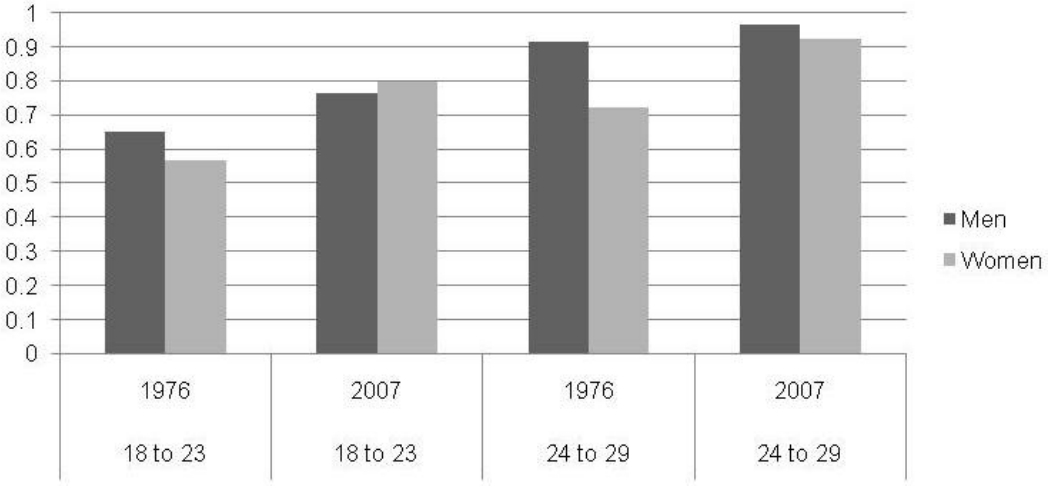


FIGURE 2 Share of licensed drivers among young men and women 1976 and 2007

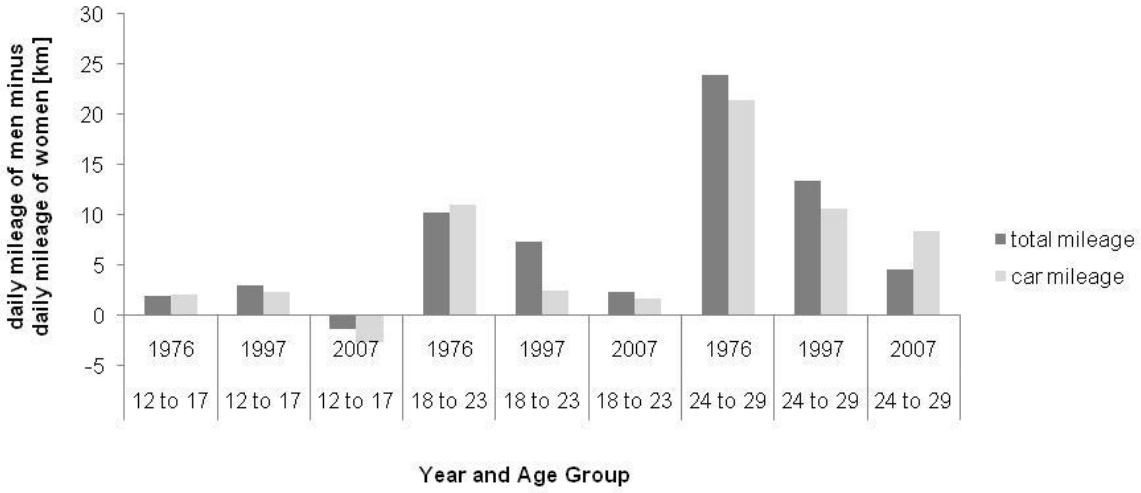


FIGURE 3 Trend of gender differences in per capita mileage since 1976

As a consequence, gender differences with respect to travel behavior strongly decreased for young travelers within the last decades. On the one hand, differences with respect to license holding have largely disappeared (FIGURE 2). On the other hand, this assimilation of the genders is also reflected in diminishing differences in daily miles traveled (FIGURE 3): In 2007, teenage girls even traveled more kilometers per day than teenage boys. In other age groups between 18 and 30 traditional gender differences still prevail. Nevertheless, they are now much less pronounced than they used to be in the past.

However, since a couple of years a new facet of this development is becoming more apparent: Men – who have traditionally been more auto oriented with higher levels of motorization and larger auto distances travelled – seem to give up this advantage and develop a mobility style which is more similar to that of women with a lower level of automobile orientation. There are three important indications for this development:

First, according to the official vehicle registration statistics, motorization levels show declining motorization for young men since the early 1990s [KBA 2010a]. Young women have joined this trend around the year 2000. After 2000, motorization for both genders decreased, more strongly, however, for men. Nevertheless, these vehicle registration statistics only allow for limited insight into the car availability of young adults since automobiles are often registered in the parent's name to avoid high insurance rates.

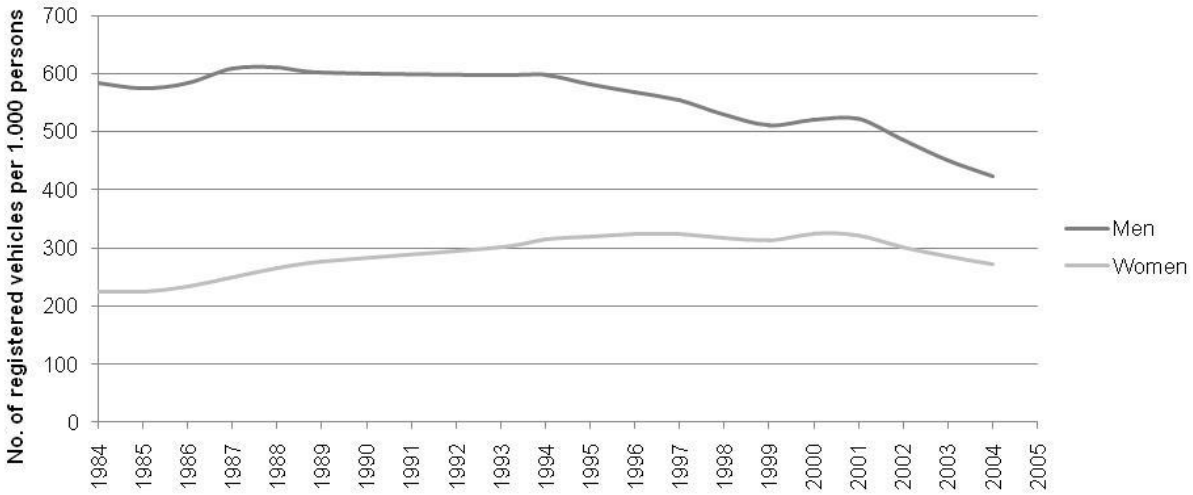


FIGURE 4 Vehicle registrations by men and women under 30 1984 to 2004

Second, the MOP data indicates a slightly higher share of licensed drivers among women between 18 and 23 compared to men (Figure 4). This finding is in line with the federal official statistics on license holding, which indicates that since 2006 the driver's license rate among young men under 25 is lower than that of women [KBA 2010b]. (Unfortunately, this government data source only covers licenses obtained since 1999. It can hence not be used to establish long term trends or statistics for other age groups).

Third, a decomposition of the new travel trends since 1997 - which have been presented above at the aggregate level - by gender reveals that the trend of decreasing automobile travel is significantly more pronounced for men than for women. TABLE 1 shows the results of linear regressions in which the travelled mileage by mode is the dependent variable and the year passed since 1995 and gender are explanatory variables. Conforming to expectation the explanatory power of the models is very little. Nevertheless, they indicate that the behavioral changes described above are significant and more distinct for men: Regarding the model "Car", the intercept describes the average weekly automobile mileage of women in the initial year (1995). "Male" quantifies the advantage that man had at that time. "Year" shows the effect which each additional year that passed since 1995 had on the mileage of both, men and women. "Male*Year" shows the combined effect of the variables "Male" and "Year", i.e. is shows the mileage reduction which men experienced in addition to the mileage reduction of both genders. TABLE 1 also indicates that gender differences with respect to the use of other modes are not significant.

		Weekly Distance Traveled [Km]			
		Car	Public Transport	Non-Motorized	Total
Intercept	Estimate	255.7	34.5	11.1	307.2
	P > |t|	*<.0001*	*0.0002*	*<.0001*	*<.0001*
Male	Estimate	82.8	13.2	-2.0	104.1
	P > |t|	*<.0001*	*0.3038*	*0.1763*	*<.0001*
Year (passed since 1995)	Estimate	-4.1	5.7	0.1	1.5
	P > |t|	*0.0193*	*<.0001*	*0.3695*	*0.4491*
Male*Year	Estimate	-5.7	-1.9	0.4	-7.9
	P > |t|	*0.0196*	*0.2048*	*0.0401*	*0.0036*
	R-square	*0.021*	*0.015*	*0.006*	*0.011*

TABLE 1: Weekly distance traveled by mode (Linear regressions based on MOP data)

Overall, these figures indicate that men are losing their traditional advantage over women with respect to automobile usage. This is not only because women are catching up but also because men are reducing their car usage more strongly than women. This has important implications as to how this trend has to be interpreted: The car as a status symbol is often said to be more relevant to men as to women. If men are reducing their driving this may indicate that there are adapting a more rational relationship to the automobile. Conforming to other sources, this may be just another indicator for the decreasing relevance of the car as a status symbol overall [Rees 2010; FHDW 2010].

THE RISE OF MULTIMODAL BEHAVIOR

To further investigate changes in automobile use of the young, we divided NTS survey respondents into sub-categories—differentiating by driver's license status, car availability, and intensity of car use:

The first group consists of licensed drivers—highlighting a group of young adults that could potentially drive, since a driver's license is a precondition to driving. The second group consists of young adults with driver's license and car access in their household--indicating a group that has the same legal right to drive as group one and also has easy access to a car to realize their driving demand. These first two groups encompass potential automobile users. We further differentiate two more groups by car use intensity: The third group consists of young individuals with driver's license, car access, and who made at least one car trip as driver per week. The fourth group consists of "mono-modal drivers". Mono-modal drivers relied on the car for most trips during the survey week and did not ride public transport or the bicycle.

FIGURE 5 depicts how the shares of 18-23 and 24-29 year olds in these four groups have developed since the 1970s. The share of young adults with driver's license increased significantly since 1976 for both age groups. However, driver's license rates have started to drop for adults in their early 20s, while driver's license rates are still high for individuals in their late 20s. Based on these results it is possible that young adults today may postpone obtaining a license until they reach the late 20s. However, this is a new trend and it is equally possible, that in the future the young age group may decide not to obtain a driver's license at all even at higher ages.

Car access has increased between the 1970s and the 1990s—especially for individuals in their early 20s. Part of this growth might be explained by an increasing share of young adults still living with their parents and having access to their parents' car. Until the mid 1990s, the share of young adults with driver's license and car access had increased hand in hand. However, since a couple of years this trend seems to have been decoupled and car availability for young individuals is now decreasing. For 24-29 year olds having a driver's license and having access to a car seem to have been more closely related in the 1970s than they are today. Today more than 20% of the licensed drivers in the 24-29 year old age group don't have access to a car.

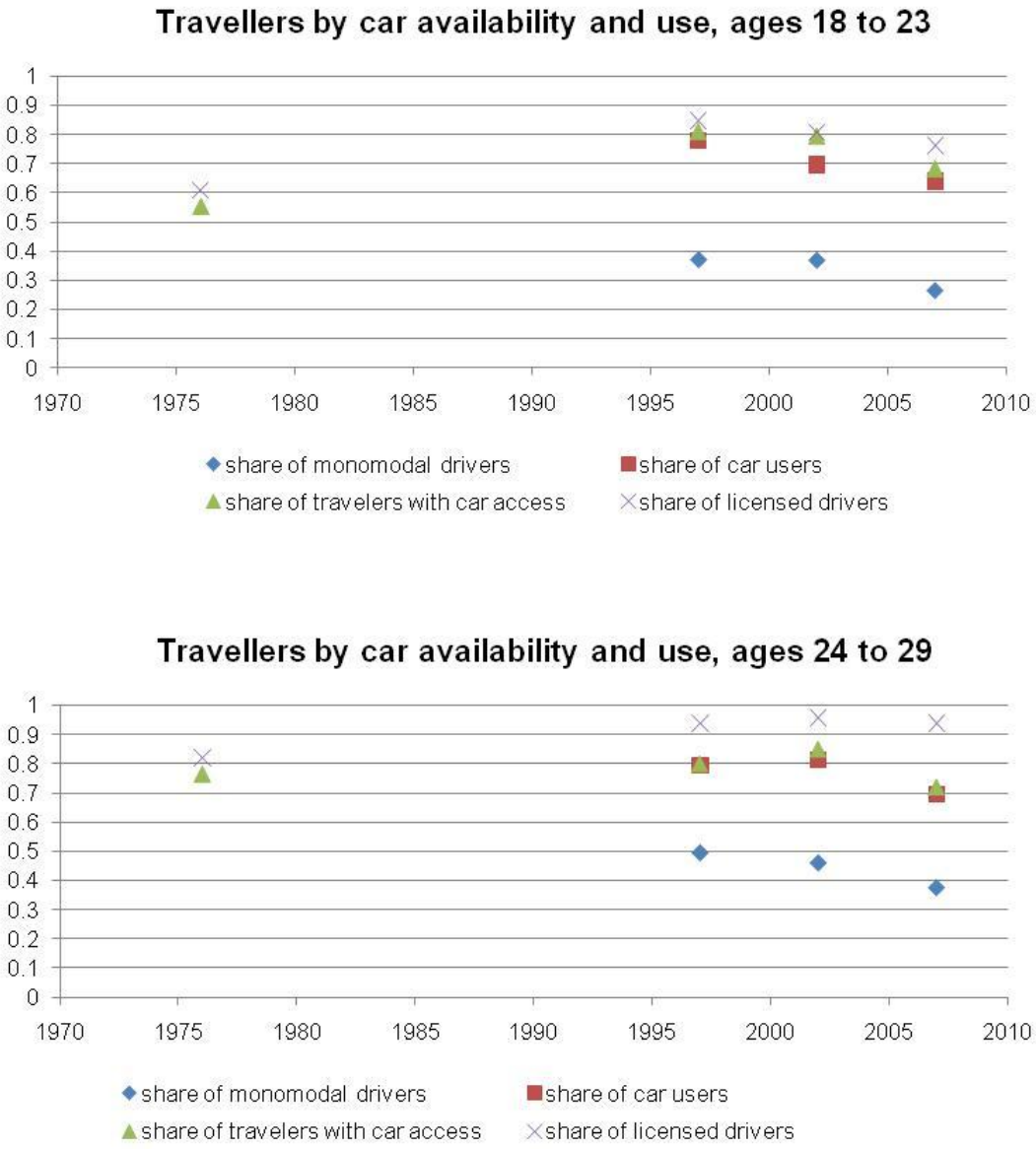


FIGURE 5: Young adults by car availability and car use since 1976

FIGURE 5 also shows that nearly everybody who has access to a car makes a trip by automobile during the one week survey period. However, the share of those who solely relied on the car to get around during the survey week has decreased significantly over the last ten years. Since trip rates have not declined, this trend suggests that multimodal behavior has increased—meaning that individuals use their cars for some trips, but also ride public transport, bicycle, and walk. The 1976 survey only traced travel behavior on one travel day and not for a week, thus it is not possible to extend this specific trend in weekly car use all the way back to 1976.

FIGURE 6 shows the trend of automobile mode shares for teenagers and young adults by car availability since the 1970s. Young adults without car access use automobiles less and ride public transportation more today compared to the mid 1970s. Moreover, confirming the trends above, young adults with car access use the car less than in the past—and walk, bike, and ride public transport more. This long term data may indicate that the trend towards multimodal behavior among car users is not as recent as suggested above, but may have been going on for decades.

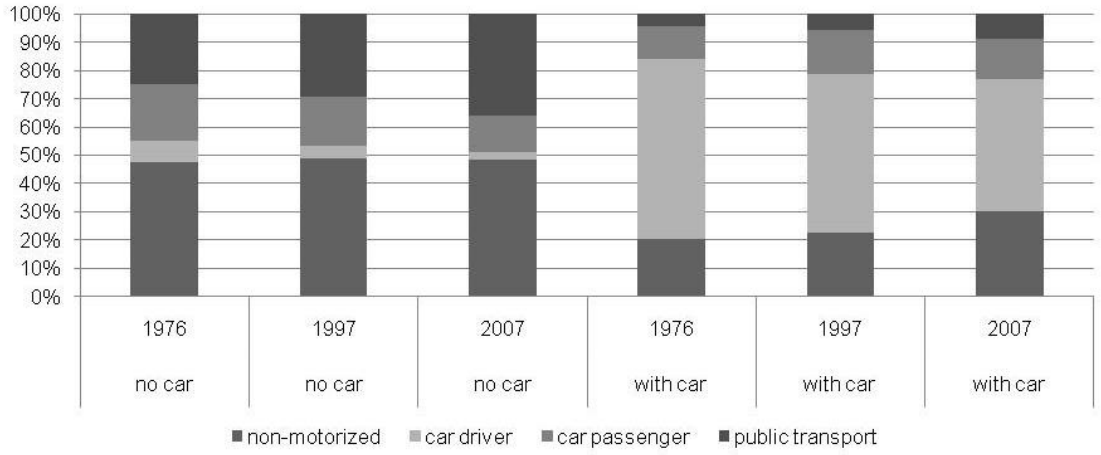


FIGURE 6: Trend of mode shares by young adults by car availability since 1976

A factor that might have contributed to increasing multimodalism is a change in the self-perception of drivers: Societal borders between drivers and non-drivers were much more distinct in the 1970s compared to today. Somebody who had the wealth to acquire a car in the 1970s would tend to avoid public transport, which was considered an inferior mode [Holz-Rau et al. 2010]. This attitude has changed and combining modes has become almost chic in some parts of the society.

However, when explaining the recent trend in decreasing car ownership by young adults another long term development that has contributed to more multimodalism has to be considered: For decades cars became more affordable to larger parts of the society due to the decreasing costs of car ownership relative to income since the 1970s [Buehler, Kunert 2010]. As a result, the private car has become more of a normal mobility tool for those who only drive occasionally. For these groups using other modes besides the car is a normal component of their travel habits. Thus multimodal behavior among car users has increased, simply because multimodal pedestrians, cyclists, and public transport riders have joined the circle of car owners—and only drive occasionally.

POSSIBLE EXPLANATIONS FOR TREND CHANGES

The trends presented above suggest that young Germans in 2007 are not as car oriented as previous generations of young adults. In the following we discuss possible reasons for this trend. Thereby it appears fundamental to disentangle economic reasons from other explanations for trend changes: If the observed trend changes were predominantly caused by a dire economic situation of young travelers this would suggest that historic trends return once their economic situation brightens up. Other explanations, however, might indicate a structural change of behavior which is likely to be more sustainable.

Economic situation of young households

We first discuss the income situation of young travelers, mostly based on data by the German statistical office DESTATIS which builds on an income and expenditure survey. According to this source the income situation of young households with a household head up to 35 years old has not changed significantly over the last decade, even after accounting for price deflation [Destatis 2010b]. However, if we disaggregate the incomes of young households by different income sources an assessment of the economic situation of young households appears to be very difficult: DESTATIS data indicates that around one fifth of the financial incomes of household under 25 (age of head of household) are composed of non-public transfers, mostly support by other households. The support by parents probably plays the dominant role here. Even households between 25 and 35 receive almost one tenth of their financial incomes from such sources.

Furthermore, information on young households' income derived from data from income and expenditure surveys cover only a limited spectrum of the potential income sources of this age category. The German survey queries information on non-public and inter-household transfers. But it is self-evident that it does not capture all of such informal income allocations that may be a significant financial resource in the case of young households. As soon as income transfers have an erratic character and vary in their amount respondents tend to forget about them or do net even bother to report them in the first place assuming they are not significant to the survey.

An additional aspect is the financial support received by those households in non-monetary terms [Leopold, Schneider 2009] e.g. housing rents covered by parents. This also applies to the provision of vehicles, when parents or grandparents purchase the vehicle for the young household or even cover the incurred costs of vehicle insurance or annual tax, just to mention a few examples.

This brief discussion shows that income and expenditure survey data may not tell the full story about changes in the economic situation of young people. It seems necessary to take into account additional economic indicators in order to understand the economic context of the development of mobility behavior. FIGURE 7 shows the development of the German GDP and youth unemployment since 1991 (after the German unification). It illustrates that Germany

overall experienced two decades of relative economic well-being, while nevertheless youth unemployment increased significantly. On the other hand, employment rates for the 25 to 29 and 30 to 34 year olds increased slightly between 1998 and 2008 [Nicoletti et al. 2009].

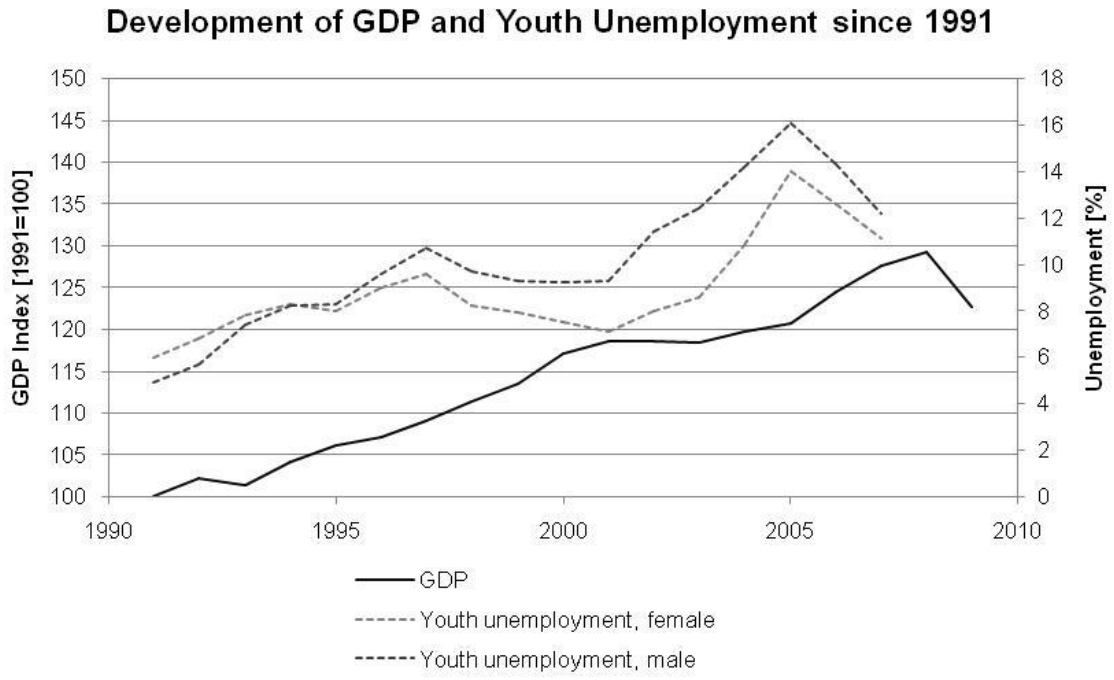


FIGURE 7: Development of GDP and youth unemployment in Germany since 1991 (own representation based on data by Destatis [Destatis 2010b] and World Bank [World Bank 2010])

Such aggregate figures hide the issue of inequality: Studies based on data from the German Socio-Economic Panel Study (SOEP) on the polarization of wealth and wellbeing, distributional conflicts and the public perception of inequality for Germany, covering the last decade show that the degree of inequality and polarization with respect to the living conditions has in fact increased. The importance of the income categories in-between the poor and the wealthy, the so called “middle class”, has declined [Faik, Becker 2009]. Today, single-parent households as well as households under 25 years of age bear an over proportional risk in Germany to slip under the line of poverty. In 2008 almost 25 % of young adults at the age between 19 and 25 lived in households with a disposable income beneath the poverty line according to the Laekan-Indicator adapted by the European Union to measure poverty [Frick, Grabka 2010]. A multitude of factors endorse this rather recent development. One of them is a growing enrolment of young adults in universities and the accompanying trend to leave the parental household establishing an independent household-collective.

At the end of this overview the picture on the economic and employment situation of young adults remains somewhat murky. On the one hand, there is indication that economic

factors - specifically associated with increasing inequality – might have contributed to the observed changes in mobility behavior. On the other, the overall development does not reveal any significant disruptions that can be directly related to findings on mobility trend changes.

Mobility costs and expenditures

FIGURE 8 shows the development of selected price indices in Germany since the mid 1990s [Destatis 2010c]. It reveals that price increases for transportation have been stronger than for other consumption. This particularly applies to the specifically noticeable out-off pocket costs of driving. Crude-oil prices as well as German taxation policies have contributed to this.

Again, we used income and expenditure survey data to analyze the development of the income share which young households allocate to mobility. According to this data the household expenditure shares for overall transportation, gasoline as well as public transport services have not changed significantly over the last decade [Destatis 2010d]. This analysis does not show any dramatic shifts between the different consumption goods categories for young households. The development of different expenditure shares of young households in the age category 25-35 displays only moderate variation over the last decade, a consistent trend cannot be identified. However, also with respect to expenditures, similar methodological questions exist as discussed above regarding incomes. Hence, this analysis indicates that there have not been significant changes but that there is a potential for slight budget reallocations by young households.

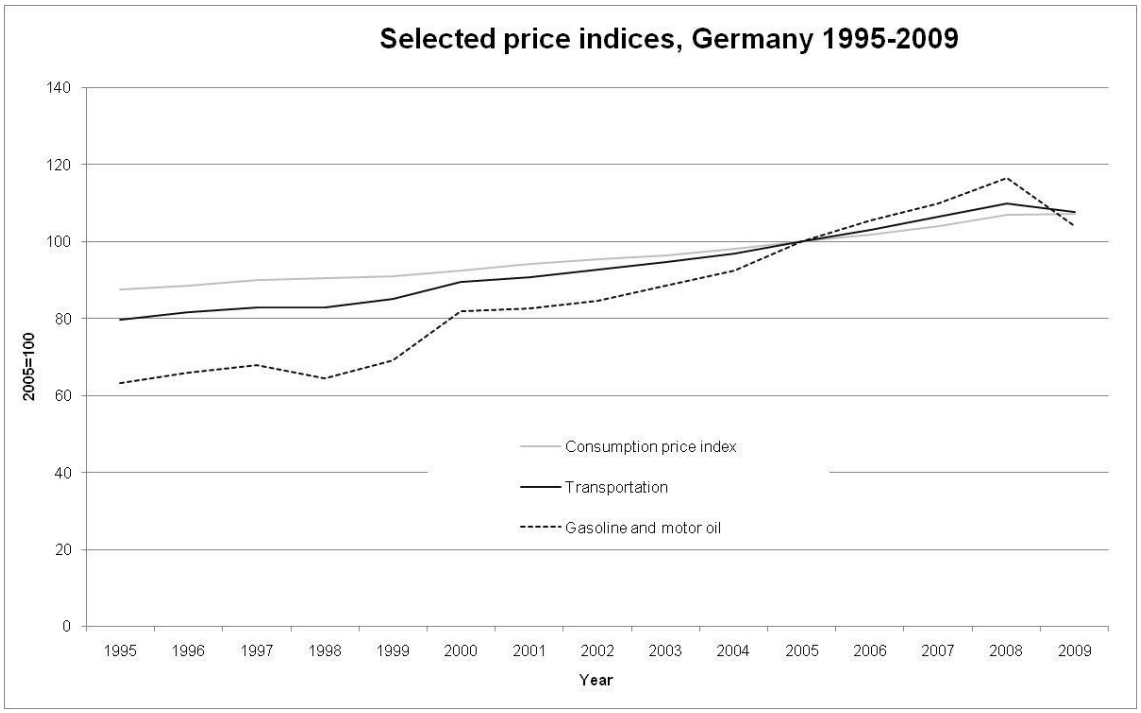


FIGURE 8: Development of selected price indices in Germany since 1995 [Destatis 2010c]

Additional explanations

It appears likely, that there is not one simple explanation for the decrease in automobile use among young adults. Instead, probably a mix of different causes has lead to the decreasing automobile orientation of young travelers. In the following we present different developments which we believe play an important role in understanding the observed behavioral changes:

Increasing importance of urban lifestyles: Car orientation is traditionally less pronounced in urban environments. Over the last decade, an increasing share of young Germans has moved to urban or more densely populated areas. FIGURE 7 shows that young Germans of all age groups have moved to cities or denser urban regions between 1998 and 2008 [Destatis 2010e]. This move to the city and dense areas may be partly driven by increasing enrollment in colleges and universities [Destatis 2010f; BA 2010]. This change in the spatial distribution of the young population is likely to contribute to decreasing car use. In additional, urban lifestyles increasingly represent a role model for young people.

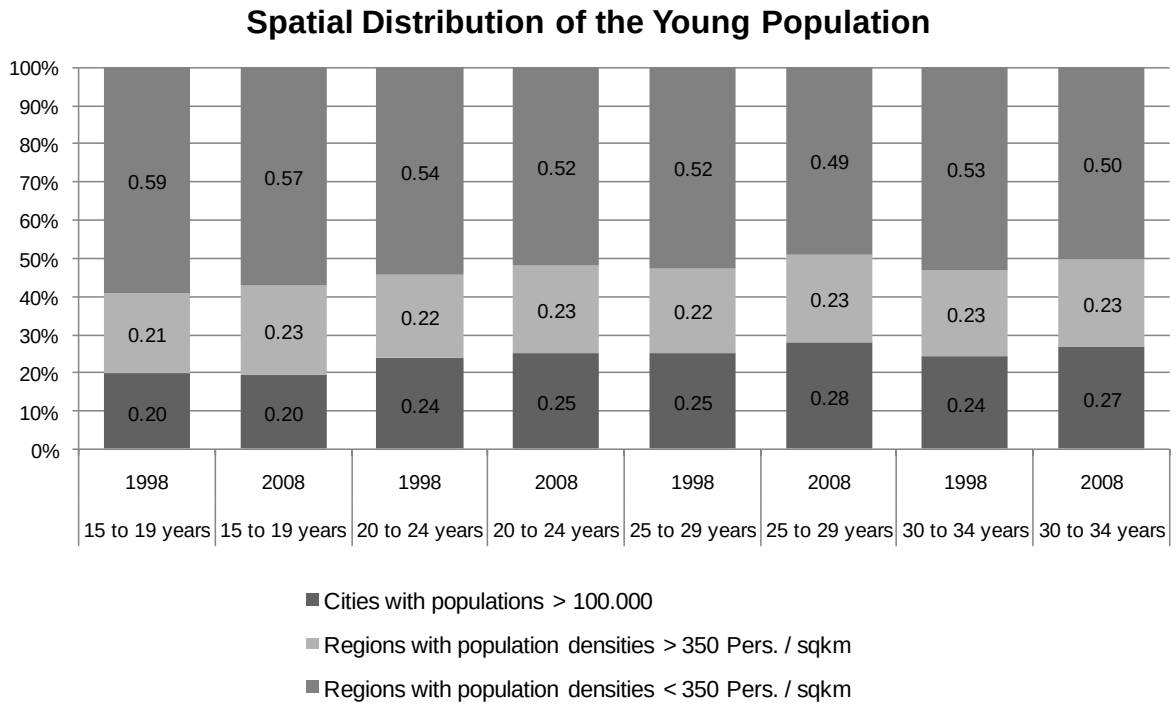


FIGURE 9: Share of Young Germans living in cities and suburban regions, 1998-2008 (own representation based on data by Destatis [Destatis 2010d])

Increasing mode alternatives: In urban areas the conditions of mode use have changed in several respects. The alternatives to the private car have developed significantly. Public transport has improved its service in many urban areas—e.g. through the introduction of integrated ticketing and monthly and annual tickets. These tickets reduce cost for public transport well

below automobile ownership and operating costs [Buehler, Pucher 2010; Buehler 2009]. Most systems offer even steeper discounts for students. Additionally, car sharing schemes have developed dynamically with doubling membership rates since 2004, representing a real alternative to the private car in many urban areas [BCS 2009]. Moreover, many German municipalities have implemented policies and measures which aim at fostering the use of walking and cycling such as bike lanes and bike parking facilities. At the same time, driving is discouraged by parking policies, traffic calming, pedestrianized downtowns and clean air zones with restricted vehicle access.

Changing mode preferences on long distance travel: In the past, the car has played an important role as mode of transport for long distance travel for holiday journeys to other EU countries or within Germany. With the emergence of low cost airlines a large part of former long-distance car travel has shifted to air travel. Moreover, high speed rail has taken over a significant share of long distance car travel. When the car is not being used anymore for long distance journeys an important reason for keeping a car has disappeared for many travelers. This might have contributed to the decreasing appeal of owning a car for many—who can reach local destinations by foot, bike, or public transport and fly or use high speed rail for intercity travel.

Increasing relevance of ICT: Information and communication technology (ICT) may influence travel behavior of the young more than any other age group. Recent travel surveys show that the number of trips by young travelers has decreased in the last years—thus indicating overall decreasing levels of mobility. Replacing physical travel with virtual internet travel might be one reason for decreasing trips rates. However, ICT might also withdraw budgets, specifically time budget, and attention from physical travel. Fancy ICT gadgets, such as i-phones or i-pads, appear to play an increasing role as status symbol for the young population.

CONCLUSIONS

The paper at hand presented travel trends among young Germans. It illustrated that there is increasing indication that a historic trend with increasing motorization and automobile usage has come to an end for this group. According to data from the German Mobility Panel MOP Germans have decreased their automobile travel within the last decade. These findings go hand in hand with vehicle registration statistics and are also reflected in the share of licensed drivers in this age group.

There are two important storylines within this development: First, men are losing their advantage over women with respect to automobile usage. This is not only because women are catching up but also because young men are reducing their driving more significantly than women. This can indicate a change of the role of the automobile in the eye of young people - less of a status symbol and more of a mobility tool. Second, multimodal behavior is becoming more and more common, i.e. travelers more frequently switch between the modes they have at their disposal. This also applies to car owners for whom using other modes used to be unusual decades ago and is normal today.

The discussion of possible reasons revealed that it is very difficult to disentangle the role of economic factors and other factors to explain the observed trend changes. Among the other factors are the spatial distribution of the young population, the increasing appeal of alternatives to the automobile in urban environments and for long distance travel, and the increasing importance of ICT for young people's lives. A combination of these factors has probably contributed to the observed changes in travel behavior presented in this paper. Most likely, no single factor would have led to the identified trends. However, the interaction of these trends enables the young generation to develop a different mobility style compared to previous generations.

ACKNOWLEDGEMENTS

This paper presents excerpts of work by an international consortium on "Changes in young people's mobility patterns". This work is sponsored by the Institute for Mobility Research (ifmo), Munich.

REFERENCES

BCS (Bundesverband Car Sharing) (2010). 15-prozentiger Kundenzuwachs im deutschen CarSharing in 2009. Pressemitteilung vom 18.2.2010. 2010, Hannover, Germany: Bundesverband Carsharing.

BMVBS (2010). Mobilitaet in Deutschland 2008/2009. 2010, German Federal Ministry of Transportation: Bonn/Berlin.

Buehler, R. (2009), Promoting Public Transportation: A Comparison of Passengers and Policies in Germany and the U.S. Transportation Research Record: Journal of the Transportation Research Board of the National Academies of Science, 2009. 2110: p. 60-68.

Buehler, R. and J. Pucher (2010), Sustainable Transport in Freiburg: Lessons from Germany's Environmental Capital. International Journal of Stustainable Transport, 2010. in press.

Buehler, R. and U. Kunert (2010). Determinanten und Perspektiven des Verkehrsverhaltens in den USA und in Deutschland. Internationales Verkehrswesen 2010.

BA Bundesagentur fuer Arbeit (2010), Entwicklung der sozialversicherungspflichtig Beschaeftigten. Zeitreihen ab 1999. 2010, Nuernberg, Germany: Bundesagentur fuer Arbeit.

FSGV (2006). Hinweise zu verkehrlichen Konsequenzen des demographischen Wandels. Cologne, Germany: Forschungsgesellschaft für das Straßen und Verkehrswesen. Arbeitsgruppe Verkehrsplanung, FGSV-Verlag.

Destatis (2010a). Statistik zum Durchschnittlichen Alter der Mütter bei der Geburt ihrer ehelich lebendgeborenen Kinder. Statistisches Bundesamt, Wiesbaden.

Destatis (2010b). Sustainable Development in Germany. Data on the Indicator Report 2008. Statistisches Bundesamt, Wiesbaden.

Destatis (2010c). Preise. Harmonisierte Verbraucherpreisindizes, Deutschland. März 2010. Statistisches Bundesamt, Wiesbaden.

Destatis (2010d). Laufende Wirtschaftsrechnungen (LWR) 2002-2007. Statistisches Bundesamt, Wiesbaden.

Destatis (2010e). Regionaldatenbank. Statistisches Bundesamt, Wiesbaden.

Destatis (2010f). Studierendenstatistik. Statistisches Bundesamt, Wiesbaden.

DIW (1993). Vergleichende Auswertungen von Haushaltsbefragungen zum Personennahverkehr, KONTIV 1976, 1982 und 1989. 1993, DIW. German Institute for Economic Research. Berlin.

FHDW (2010). Jugend und Automobil 2010. Eine empirische Studie zu Einstellungen und Verhaltensmustern von 18 bis 25-Jährigen in Deutschland. Bergisch Gladbach.

Frick, J. R. and M. Grabka, (2010). Weiterhin hohes Armutsrisiko in Deutschland: Kinder und junge Erwachsene sind besonders betroffen. In: Wochenbericht des DIW Berlin Nr. 7/2010.

Holz-Rau, C. and J. Scheiner (2006). Die KONTIVs im Zeitvergleich: Möglichkeiten und Schwierigkeiten beim Vergleich der Erhebungswellen. Internationales Verkehrswesen, (11) 2006.

Holz-Rau, C., J. Scheiner, A. Weber, V. Kloepper (2010). Entwicklung des Verkehrshandelns seit 1930. Internationales Verkehrswesen, (4) 2010.

KBA (2010a). Fahrzeugstatistik. Bestand am 1.Januar 2010 nach Haltern. Kraftfahrbundesamt, Flensburg.

KBA (2010b). Kraftfahrerstatistik. Fahrerlaubnisbestand am 1. Januar 2010. Kraftfahrbundesamt, Flensburg.

Kuhnimhof, T., B. Chlond, and S. von der Ruhren (2006). Users of Transport Modes and Multimodal Travel Behavior: Steps Toward Understanding Travelers' Options and Choices Transportation Research Record 1985, Journal of the Transportation Research Board, Washington 2006, pp. 40-48

Leopold, T. and Schneider, T. (2009). Schenkungen und Erbschaften im Lebenslauf Vergleichende Längsschnittanalysen zu intergenerationalen Transfers. SOEP papers on Multidisciplinary Panel Data Research 234. German Institute for Economic Research (DIW Berlin).

MOP (2010). Website of the German Mobility Panel. www.mobilitaetspanel.de. Accessed 2010.04.26.

Nicoletti, Ch., F. Peracch, and F.Foliano (2009). Estimating Income Poverty in the Presence of Missing Data and Measurement Error. SOEP papers on Multidisciplinary Panel Data Research 252. German Institute for Economic Research (DIW Berlin).

Rees, J. 2010. Auto? Nein Danke. Wirtschaftswoche 9.2010.

World Bank (2010). World Development Indicators. http://databank.worldbank.org. Accessed 2010.04.15.

Zumkeller, D., B. Chlond, and W. Manz (2004). Infrastructure Development in Germany under Stagnating Demand Conditions: A New paradigm? Transportation Research Record: Journal of the Transportation Research Board, No. 1864, TRB, National Research Council, Washington D.C., 2004, pp. 121-128.

Zumkeller, D., B. Chlond, P. Ottmann, M. Kagerbauer, and T. Kuhnimhof (2008). Panelauswertung 2007. Wissenschaftliche Begleitung und erste Auswertungen der Erhebungswellen zur Alltagsmobilität (Herbst 2007) sowie zu Fahrleistungen und Treibstoffverbräuchen (Frühjahr 2008). Zwischenbericht. Institut für Verkehrswesen, Karlsruhe.