Mobility-oriented Culture in an Ageing Society: Development of Scenarios for 2030

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Abstract

Regarding the conflicting demands of demographic development, mobility desires and needs as well as an increasingly complex transport and traffic environment, the MOBIL 2030 research project investigates what impacts these changes will show on the mobility culture in general and on the individual mobility behavior of the “baby boomers” (who will be aged 65 and older in 2030) in particular. Based on a model of relevant influence environments, a transdisciplinary group of experts conceptualized self-consistent scenarios for the culture of mobility in 2030 and analyzed their implications for the individual mobility behavior of (future) elderly people. Simultaneously to the scenario construction, a representative population survey of 1,000 “baby boomers” was conducted in order to determine their current mobility habits, activity preferences and lifestyle characteristics as well as their future mobility needs and requirements.

Keywords: scenarios; future elderly; baby boomers; mobility-oriented culture; transdisciplinary experts; workshops.
1. Introduction

Independent mobility is a guarantor of autonomy and a high level of satisfaction with life in old age. The resulting desire for lifelong mobility is confronted with the age associated changes and impairments which can have restrictive effects on mobility (Rudinger & Jansen, 2003). Against the backdrop of a steadily increasing proportion of elderly traffic participants (Rudinger, 2011) and an increasingly complex transport and traffic environment, the need arises for people-oriented and context-oriented measures that have a positive effect on traffic safety in general and preserve the mobility of older people in particular. (Kocherscheid & Rudinger, 2005)

1.1. Aims of the research project ”MOBIL 2030”

The conflicting demands of demographic development, mobility desires and needs, as well as an increasingly complex transport and traffic environment (Rudinger & Poppelreuter, 2010) pose the following future-related research questions:

- How will the future transport and traffic environment look in the context of all mobility behaviour?
- What effects will this transport and traffic environment have on the mobility culture in general and on the individual mobility behaviour of elderly people in particular?
- How will the elderly cope with the future demands of traffic?
- Can this age group’s growing needs to be mobile be adequately satisfied (Rudinger, 2012)?
- What influence on the culture of mobility do the elderly exert as an increasingly important sector of society?

These questions are the subject matter of the MOBIL 2030 research project funded by the Volkswagen Foundation (Rudinger et al., 2012).

The aim of the research project is to conceptualise scenarios for the culture of mobility in 2030 and to analyse their significance for the individual mobility behaviour of (future) elderly people. Therefore, in contrast to, and in addition to the existing research of mobility scenarios, the focus of this research project is on the future elderly who will be aged 65 and older in 2030.

1.2. Relevance of the project results

These future images of the transport and traffic environment with their corresponding implications for individual mobility behaviour should be supplemented and enriched by the future mobility needs and requirements, which will be determined by an empirical survey of the – in 2030 – older “baby boomer” generation. As a result, necessary and desirable changes (legislative, transport structural and infrastructural, technical, individual) (Rudinger & Kocherscheid, 2012), which optimize the fit of the anticipated transport and traffic environment with the mobility desires and needs of the future elderly, should be identified (Rudinger & Kocherscheid, 2011). Thus, the developed future images, as communication scenarios, should trigger an open discourse of the implications of demographic changes on the future culture of mobility in Germany and possible measures to maintain mobility into old age.

2. Methodology

Corresponding to the research project’s objectives, the procedure can be described in three steps (see figure 1): (1) develop scenarios of the traffic environment, (2) identify the mobility needs and requirements of (future) elderly people and (3) based on a comparison of future images and mobility requirements, deduce measures to optimize traffic safety in terms of a fit of the two facets.
2.1. Transdisciplinarity

A way to create reliable scenarios of the mobility of (future) elderly people is through the knowledge of the functions that mobility has for people of this age group (even today). A host of different factors can be credited with having a potential influence on individual mobility behaviour in general, and on the elderly specifically. In this context, the processing of the underlying questions for the MOBIL 2030 research project is carried out by a group of transdisciplinary working experts, who, under the guidance of the Center for the Cultures of Ageing (ZAK) through the use of common methods, develop an integrated overall view of the complex system of the future transport and traffic environment in 2030. The members of this group are experts in the fields of demographics, medical science, gerontology, economics, political science, psychology, sociology, media science as well as urban and transport planning.

2.2. Scenario Construction

The scenario development within the scope of the MOBIL 2030 research project is guided and coordinated by the Center for the Cultures of Ageing (ZAK) within the framework of expert workshops with participation of affected, future elderly “baby boomers”. Their basis is a model, developed in the expert group within the framework of workshops, which shows influence environments that are of relevance for the future individual mobility behaviour of elderly people (see figure 2).
Subsequently, the experts identified a total of 51 factors within these 6 influence environments which are of relevance to the individual mobility behaviour of elderly people in 2030. These factors, and their conceivable future developments by 2030, provide the basis for the calculation of self-consistent future scenarios of the transport and traffic environment in 2030. Afterwards, two scenarios of the traffic environment in 2030 were selected on a two-day expert workshop. Against the backdrop of the survey results of 1,000 “baby boomers”, a characterization of the target group in terms of their lifestyle habits was developed and implications for the future individual mobility behavior of the – by 2030 – elderly were derived.

2.3. Survey

Parallel to the described construction of future images of the transport and traffic environment within the framework of the transdisciplinary group of experts, a representative population survey of 1,000 people of the baby boomer generation, in connection with two empirical mobility surveys from the 80s and 90s, was carried out representing the beginning and end of the baby boomer phase with the collected age groups. Thus, the Center for Evaluation and Methods at the University of Bonn (ZEM) has surveyed both 500 people in the birth cohort from 1954 to 1956 and 500 people in the birth cohort from 1962 to 1964 on their current mobility habits and activities as well as future mobility requirements and needs on behalf of the Center for the Cultures of Ageing (ZAK). In addition to these future-related desires, these cohorts’ activity preferences and lifestyles, as well as other mobility-related attitudes, were noted. Therefore, the focus was shifted on both the attachment to motorised individual transportation and the attitude towards innovations in transportation technology in the coming years (see fig. 3). Together with this cohort-specific mobility data, the existence of the results from the two mobility surveys from the 80’s (Hartenstein et al., 1990) and 90’s (Jansen et al., 2001) also provided the possibility of trend analytical statements based on mobility-related basis data as well as the present spectrum of activity and mobility behaviours.

2.4. Synthesis

Following the scenario construction and interpretation as well as the empirical survey, workshops were conducted with actors in the problem area and people who will be the elderly traffic participants of 2030. Together with presenting the research results made by the Center for the Cultures of Ageing (ZAK) and the members of the expert group, the goal of these workshops was to discuss the fit between the developed images of the future and the subsequent implications for the individual mobility behaviour on the one hand, and the empirically determined mobility desires and needs of the – by 2030 – older “baby boomers” on the other hand.
In addition to this impetus for discussion, the focus of these workshops was on identifying (legislative, transport structural and infrastructural, technical, individual) measures with which the fit between the environment and the individual in the transport system can be optimised as a central feature of traffic safety. The last of these workshops for the presentation of research results and the identification of measures to improve traffic safety was carried out in cooperation with the Federal Highway Research Institute (BASt) and held at the BASt facilities in December 2011.

<table>
<thead>
<tr>
<th>Basic data</th>
<th>Mobility behaviour</th>
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<tbody>
<tr>
<td>Driving license</td>
<td>Access to / Usage of public transportation</td>
</tr>
<tr>
<td>Driving experience</td>
<td>Current driving profile</td>
</tr>
<tr>
<td>Possession / availability of means of transport</td>
<td>Driven kilometer per year</td>
</tr>
<tr>
<td>New media utilization</td>
<td>Future driving profile</td>
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</tbody>
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Figure 3: MOBIL 2030 survey topics.

3. Results

3.1. Scenarios

Scenario one was selected on the criterion of maximum consistency of the factors among themselves, while scenario two was set to have the greatest possible contrast to scenario one at a sufficiently high consistency level. After a quality inspection by national and international experts of the involved disciplines, these scenarios then served as the starting point for the derivation of the implications for individual mobility behaviour of elderly people in 2030 in the sense of policy advice recommendations.

Scenario one was labelled as “Innovative changes with younger people as active trend-setters”, while scenario two can be summarized as “Continuation of the existing situation with minor change tendencies”.

Scenario one can be characterized by the following aspects:
- Multimodal usage of means of transportation
- Preference of automobile transportation
- High dynamics and acceptance concerning innovations

The following topics stand out in scenario two:
- Lower degree of change and acceptance of innovations
- Social inequality
- Mismatch between the needs and the reality of individual mobility
3.2. Survey
The survey results show the following characterizations for the baby boomer target group:

- Heavy usage of automobiles
- Extremely high bearage of driving licenses
- Strong demand for improvements in public transport (flexibility, accessibility, connections)
- High acceptance of innovations (e.g. driving assistant systems)
- Expectancy of more frequent slow-mode mobility in the future
- No gender differences concerning education, usage of automobiles and driving licenses

3.3. Synthesis
Considering the fit between the scenario implications for the mobility of the elderly in 2030 and their desires and needs, the following ascertainties can be stated:

- There is a gap between the desire for more slow mode mobility and urban planning perspectives.
- A discrepancy between urban and rural areas concerning accessibility of transport can be identified.
- There is a mismatch between economical resources of the households and pricing perspectives of public transport.
- Despite the desire of more slow mode mobility, the dependency on automobiles remains a remarkable issue.
- With a lack of intervention, the probability of the more negative scenario two increases.

4. Conclusions
The scenarios provided a basis for rational policy decisions and therefore served the political advisory – a few of the discussed aspects shall be mentioned here.

4.1. Accessibility
Improvements of the mobility situation of elderly must focus as much on transport policy and socio-political measures as on appropriate urban development planning. It is important to create flexible, user-centred options for mobility that offer a genuine alternative to both the private automobile and traditional local public transport services, and provide innovative solutions for neighbourhoods that also respond to the needs and wishes of an ageing population. For the elderly, whose life space contracts with advancing age because of their inability to overcome environmental obstacles, it is crucial that the areas near their homes have readily accessible stores, medical and care services, appropriate public transport, and other facilities that will allow them to continue leading independent lives and being full members of society.

4.2. Targets of intervention
In the policy advisory field, three targets of intervention could be identified:

On the level of the individual traffic participant, trainings for drivers, measures to enhance considerable and resource-conserving mobility behaviour and a communication of “intermodality” as a guiding principle of traffic participation are recommended.

Concerning the technology of transport systems, the development of driving assistance systems that are suitable to older people's individual needs, an establishment of special services for the elderly to access public transport systems easier (e.g. share taxis, buses on demand) and a promotion of innovative developments in slow mode traffic (e.g. E-Bikes, Pedelecs) should be considered.

In the environmental field, it will be necessary to focus on a “good design for all”, i.e. creating an environment free from hostile properties towards any group of traffic participants, the design and planning of traffic environment more as a “space to live” for pedestrians rather than a transport track as well as the establishment of a “simple city”, i.e. a self-explanatory traffic space.
References


