Perceived safety and mobility behaviour of elderly road users in rural areas: Results from four recent surveys

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Abstract

Four recent (three Austrian and the European SARTRE4) surveys that deal with attitudes towards road safety and mobility were reviewed from the viewpoint of the age group 65+. Special emphasis was put on the safety assessment of various modes of transport (i.e. walking, public transport, cycling, driving). Topographic conditions were taken into account with a focus on rural areas with poor public transport. Results showed that people in the age group 65+ consider the car as a relatively safe means of transport. However, for the health conscious part of the elderly population walking and cycling are an important factor for their quality of life. Nevertheless, urban sprawl in rural regions and the lack of senior-friendly sidewalk infrastructure make it difficult for many elderly persons to run their errands on foot. Another barrier to walking is the perceived danger of motorised traffic for pedestrians. Recommendations with a focus on the needs of elderly people were derived based on the findings.

Keywords: road safety; safety attitudes; mobility behaviour; elderly road users; rural areas; choice of transport modes

Mots-clés: sécurité routière; attitudes de sécurité; comportement de mobilité; usagers de la route âgés; zones rurales; choix des modes de transport

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1. Introduction

The demographic development in Western industrialised countries is characterised by an ageing population, which is a challenge for planning future mobility. Elderly people will play a more important role as road users and their mobility patterns will change significantly.

Mainly two types of means of transport will be affected: On the one hand will we see an increase of motorised individuals among the elderly (BMVIT, 2013). An increased number of driver’s license holders and higher car availability will provide freedom of choice for seniors and this freedom will very often lead to using the car as means of transport – especially in rural areas with poor public transport availability. Nevertheless, there will still be a fair share of elderly people who won’t be able to use cars for transport because of economic reasons or because of impairments.

On the other hand, public transportation will see a change of its main users: There will be less students and more elderly people - but these won’t be "captive riders" anymore. Thus, offering attractive services for this growing group and at the same time facing cost pressure and problems with public sector financing are two of the many challenges that will have to be mastered by societies with a sustainable public transportation system.

In the following chapters, some results from three Austrian (KFV 2013; Aigner-Breuss et al., 2011; Furian, 2014) and the European SARTRE4 (Cestac & Delhomme, 2012) surveys that deal with the issue of mobility of the elderly are presented and discussed. These surveys were analyzed from the viewpoint of the age group 65+. Special emphasis was put on the safety assessment of various modes of transportation, the modal shift towards non-motorized means of transport as well as barriers to walking and using public means of transport in the age group of 65+. As topographical conditions play an important role when it comes to choosing traffic modes this aspect was also taken into account.

2. Traffic mode choice in rural and urban areas

Findings of two studies were analysed concerning traffic mode choice. One study deals with people aged 65+, living in Viennese suburban areas (KFV, 2013). These areas are located within the city limits but are not linked directly to public transportation and quick city transport connections. The second study is comprised of rural areas outside of Vienna (Aigner-Breuss et al., 2011).

For the purpose of these studies, telephone surveys and in-depth interviews were conducted in selected communities within the respective age groups, as well as a survey of the existing infrastructure and public transport services.

The main traffic mode used by elderly people in these two environments was the car, either as a driver or a passenger (named as main transport mode by 68% of the respondents). However, car usage was decreasing with increasing age: usage of public transportation and walking showed an opposite trend (age group 65-74: 20%, age group 75+: 35%).

It has to be considered that walking can mean “to go for a walk” or “walking to the next shop”. By half of the respondents walking was seen predominantly as a leisure activity (a promenade). 41% stated that they are walking as leisure activity as well as using it as means of transport. The main motives for walking and cycling as leisure activities were “to stay fit and healthy.”

Topographical conditions also played a role in choices of traffic mode. A comparison of elderly people 65+ living in flat and hilly areas showed that non-motorised modes decreased in the latter (see figure 1).

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1 Persons who do not have immediate access to private transportation or who otherwise must use public transportation in order to travel. Also, persons limited by circumstance to use one mode of transportation. Or, having to rely on public transportation to meet one's travel needs (Source: American Association of State Highway and Transportation Officials Glossary)
Fig. 1. Traffic mode choice: flat versus hilly living area, n=200 respondents 65+, in %

Source: Aigner-Breuss et al. (2011); KFV (2013)

Considering that the car is the most dominant mode of traffic, what are the potential reasons to give up driving at an old age? More than half of the 65+ respondents (54%) stated that they would quit driving because of health reasons and 38% for feeling unsafe while driving. Advice from others such as relatives or the doctor seem to affect this decision only for a minority (9%). Although health reasons seemed to be relevant for quitting driving, results showed that if respondents had walking impairments they would rather keep on driving. The car gives them the opportunity to “stay independent” while using public transportation, walking and cycling were experienced as more arduous than driving.

3. Motivations for being a non-motorised traffic participant

To know and to understand the motivations for the use of specific modes of transport of elderly people is crucial for policy makers if they are to draft effective traffic policies that encourage a shift from car use to greater use of other means of transportation in this growing age segment.

In this regard the recent SARTRE 4 study (Cestac & Delhomme, 2012) showed that health and fitness were key motivators, especially among elderly non-motorized road users.

SARTRE (Social Attitudes to Road Traffic Risk in Europe) is a regular Europe-wide survey, started in 1991, that collects information on mobility, risk perceptions, attitudes, behaviours and experiences on the roads. Previously focused on car drivers, this latest survey, SARTRE 4 (carried out 2010/2011), was expanded to include car drivers, powered two-wheelers and non-motorised traffic participants such as pedestrians, cyclists and users of public transport. 21,280 people were surveyed across 19 countries through face-to-face interviews.

Analyses of motivations and travelling styles of people who mainly used means of transport other than cars or motorcycles, showed that “health” and “physical exercise” ranked highest as motivators for non-motorised traffic participation in the age group 65+ (see figure 2). In the younger age groups (<65), financial reasons played a significantly more important role.

“Health” as motivator for non-motorised traffic participation was named by older respondents significantly more often than in the younger age groups: In the oldest age category (65+), 64% of the respondents agreed that health reasons were a motivation for not using motorised vehicles; in the age group <65 only 48% did so.
4. Perceived safety of elderly traffic participants in rural areas

“Experiences of not feeling safe” in a particular mode of traffic is an important barrier for not choosing this mode. Respondents of both studies (KFV, 2013; Aigner-Breuss et al., 2011) were asked for a safety assessment of various modes of transport (i.e. walking, public transport, cycling and car). Thus, the car and public transport were considered as the safest modes of transport in both studies. Riding a bicycle caused the strongest feelings of lack of safety. A comparison of rural and suburban regions showed that non-motorised means of transport (i.e. walking, cycling) featured higher rates of feeling unsafe in rural areas (see figure 3).

Among people in the age group 75+, the sense of lack of safety increased for walking whereas for the other modes of transport it remained on the same level as in the age group 65-74.
The subjective assessment differs from the actual accident risk: The car was considered as a relatively safe mode of transport by the age group 65+, although the majority of the injured elderly people are car drivers or passengers (see figure 3).

The results of another recent survey among Austrian traffic participants (Furian, 2014) were in a similar vein. 2,700 Austrian traffic participants, including 900 pedestrians, were asked about their views on traffic conflict situations, causes of conflicts, and shortcomings in pedestrian infrastructure.

When asked about their perception of danger regarding five prompted modes of transport, bicycling was considered most dangerous by all traffic participants. Walking was considered as (very) dangerous by 23% of traffic participants aged 65+; in rural areas it was about one third of the respondents in this age group (33%) compared to 24% in urban areas.

It is apparent, that traffic modes were considered as more dangerous (percentages are all above 20% except for public transport mode – see figure 4) than they are experienced personally as unsafe (percentages for perceived unsafety are all below 20% except for bicycle - see figure 3).

Public transport was considered as the least dangerous means of transport by all road users; the car was considered as less dangerous by people 65+ than by the younger age groups (see figure 4).

![Fig. 4. Perception of danger of various transport modes: "(very) dangerous", in %; n=2,700 Austrian road users aged 65+](source: Furian (2014))

### 5. Barriers to walking and using public means of transport

The latter study also included a specific section on pedestrians and their perception of walking infrastructure. Austrian pedestrians 65+ were satisfied mostly with the number and availability of footpaths (51% very satisfied), followed by width, quality and lighting on footpaths and sidewalks (more than 40% each). They were less satisfied with the speed of motorised road users (11%) and the missing separation of pedestrians from cyclists (7%) (see figure 5).
6. Recommendations

Findings of the reviewed studies show that the car is considered as a relatively safe mode of transport and will remain the most important mode of transport for the elderly, especially in rural areas.

Analyses of motivations, barriers and safety assessments for walking and public transport led to a set of recommendations for maintaining the mobility of elderly traffic participants:

- Fitness and health are important issues for the elderly and for society in general. Fitness and health are key motivators for non-motorised traffic participants. These motives also play a major role for leisure activities like hiking and biking. Thus, linking health issues and fitness with mobility topics can also be utilised for the promotion of non-motorised mobility of elderly people in everyday life.

- Through a modal shift from passenger cars to public means of transport, positive effects on road safety can be expected, provided the infrastructure fulfils the safety needs of elderly pedestrians and users of public transport.

- Pedestrian infrastructure within towns should be improved – away from exclusive car-friendliness – by curbing speeds and providing roads that serve the needs of all road users – including vulnerable. This could go hand in hand with the reviving of old town centres and establishing innovative solutions for pedestrians.

- As topographical conditions and the quality of infrastructure play an important role in choice of traffic mode, planning measures for infrastructure have to be adapted to the specific settings. Although there are many recommendations for a senior-friendly infrastructure already available (e.g. improvement of footpaths and sidewalks, avoiding conflicts with other road users, facilitating crossings) it is also essential to strengthen the participation of elderly people in the regional planning of infrastructural measures (e.g. checks of pedestrian infrastructure in co-operation with local senior citizens). The approach of participation of citizens in traffic planning is also an integrative part of the European Commission’s policy on sustainable mobility (Sustainable Urban Mobility Plans – SUMP).

It will be a sign of quality of life in the future, when people can fulfil their daily needs without causing much motorised traffic. Thus, walking will be part of the life quality of the population that will reflect more on health issues in the context of everyday mobility.
References


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