

Accessibility and usability of the public space for vulnerable road users are indicators for quality of life. Conclusions from three European projects: HOTEL, ASI, SIZE

Gudrun Haindl

FACTUM OHG
Danhausergasse 6/4
A-1040 Vienna, Austria
Tel: +43 1 5041546
Fax: +43 1 5041548
E-mail: gudrun.haindl@factum.at
www.factum.at

Abstract

The paper will give an overview on the results of three European projects with special focus on relevant results for vulnerable road users. Emphasis will be placed on traffic safety and accessibility resp. usability of public infrastructure in relation to road user behaviour (esp. in relation to the quality of life of vulnerable road users).

The concept of Quality of Life (QoL) is increasingly important in socio-economic research, but there is no clear definition. This is why the project **HOTEL (How to analyse life quality)** took its starting point in a heuristic approach that focuses on different groups of experts and their routines in connection with the assessments of QoL resulting from different mobility and transport preconditions. Workshops were the central element of the project, because they represent a heuristic approach appropriate for analysing a relatively unstructured universe of activities that are neither strictly theory-steered nor systematically knowledge- or rule-based. HOTEL was geared to improve the understanding of the assessment of citizens' QoL by politicians, other decision makers, planners, technicians and other experts.

Within the project **ASI (Assess implementation in the frame of cities of tomorrow)**, the main objective of the project was to provide knowledge about the practice of QoL assessment by different disciplines in connection with different types of public measures in the area of town planning and design, transportation and mobility. Transport and mobility play an important role in connection with the concept of QoL as they are central elements of the integration in society. Due to the strong engineering focus taken in this area so far, too little action has been taken to understand, what difficulties different groups and sub-groups of people have with transport and mobility, as the need and interests of the relevant segments of the population are not considered appropriately.

To consider the special needs of senior citizens in this respect, the project **SIZE (Life quality of senior citizens in relation to mobility conditions)** had a procedure that helps to understand existing problems of senior citizens with respect to QoL and mobility conditions. In comparison to younger people, senior citizens have to face more disadvantages in their every day life. This is partly due to the ageing process itself and partly to the physical and social structure of their environment. If preconditions affect mobility negatively, a decrease of quality is to be anticipated. The probability of a loss of autonomy, potentially followed by illness and need for help and care will increase. Not least of this reason, it should be the interest of modern welfare states to improve the mobility of senior citizens and to eliminate mobility barriers.

In the framework of HOTEL, a "toolbox" (including guidelines, QoL-related questionnaire etc.) for the assessment of QoL in connection with city planning, transport and mobility was developed and the harmonisation of data on results of QoL assessment was promoted.

In ASI it was analysed how mobility policies of five implementations in the frame of LUTR (Land Use and Transport Research Cluster) viz. of the Key Action Cities of Tomorrow (CoT) affect QoL. Evaluation was based on expert interviews. The main product of ASI consisted of an instrument for the assessment of QoL in connection with town planning, transport and mobility, taking care of both objective and subjective variables. Moreover, a databank concept, and guidelines for implementation (these developed instruments were tested in a pilot study) were elaborated.

The project SIZE used a combination of qualitative, quantitative and heuristic methods in order to explore needs of the target group "senior citizens" properly. Many needs of this group become only transparent if appropriate methods are used, as they have no strong lobby group to express their needs and interests loudly. Relevant questions were discussed and elaborated together with the target groups (target group-oriented approach).

Introduction

The paper gives an overview on the results of three European projects with special focus on vulnerable road users. Emphasis will be placed on traffic safety, accessibility resp. Usability of public infrastructure in relation to road user behaviour. Additionally, some results on the concept of quality of life and its relation to vulnerable road users and infrastructure in public space will be discussed.

Three European projects

Hotel – How to analyse life quality¹

Although the concept of Quality of Life (QoL) is increasingly important in socio-economic research, there is no clear definition: QoL is influenced by many components like culture, religion, health, residence, income, age, job satisfaction, etc. Mobility, transport and city planning, are of great importance for QoL. However, experts in this field constantly underestimate the importance to consider especially subjective aspects of QoL, and, therefore, the project HOTEL took a starting point in a heuristic approach that focuses on different groups of experts and their routines in connection with the assessments of QoL.

The following objectives were defined for the HOTEL project:

1. Improvement of the understanding of the assessment of different citizens' QoL by politicians, other decision makers, planners, technicians and other experts: Expert-centred approaches on QoL subjects often neglect the citizens' own subjective view on their QoL situation. The findings will raise awareness of the responsible experts, of the importance to consider QoL aspects appropriately. The procedure shows the significance of gender differences in connection with transport and mobility preconditions.
2. Development of a "toolbox" for the assessment of QoL in connection with city planning, transport and mobility: The "toolbox" consists of guidelines for the assessment of QoL that can be used in all European countries. These guidelines for the assessment of QoL include recommendations how to take into consideration different social, political and demographical conditions of groups or of countries by adding, leaving or modifying certain modules of the procedure.

¹ HOTEL (5 project partners) started in 2002 (until 2004) and was funded by the European Commission's 5th Framework Programme.

3. Harmonisation of data and start up of a databank where results of QoL-assessments at different occasions are stored: A specially adapted databank makes evaluation in the field of QoL much easier. By giving recommendations for a databank, accessibility to and understanding of the assessment of QoL at different occasions by different disciplines can be improved.

The following figure is quite complex (amongst others, because of the interactions between the components), however, it shows, in principle, that human/road user behaviour is not simply affected by facts, but also influenced by communication policies and the (subjective) perception of facts.

Figure 1: Relation between objective and subjective parameters, communication policy and behaviour²

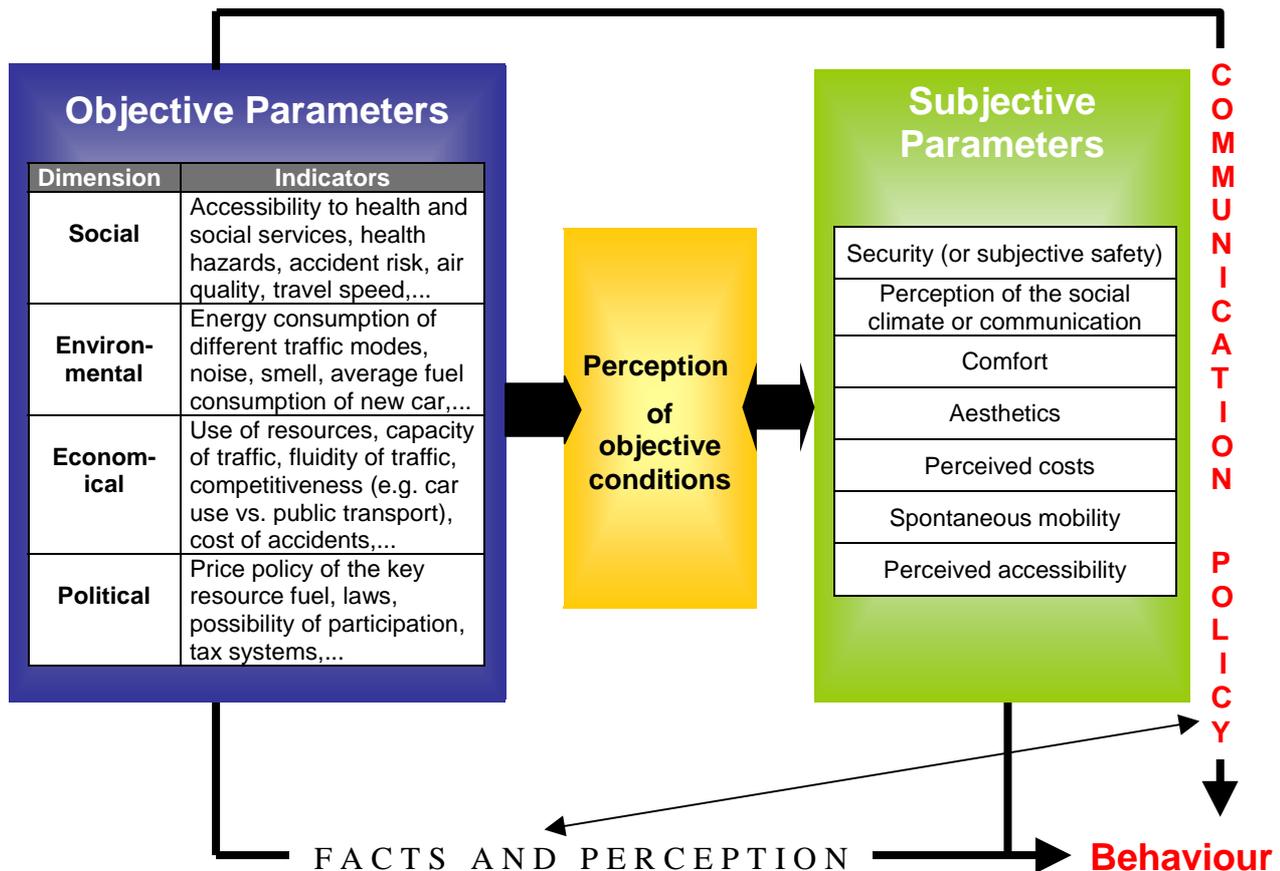


Table 1 (see next page) shows a selection of the QoL-indicators which have been collected and analysed within HOTEL. These indicators and their sub-indicators are part of the HOTEL-toolbox and can be used as a “checklist” containing indicators which are relevant for the QoL of citizens. The HOTEL-toolbox (guidelines, checklist, QoL-related questionnaire etc.) itself has been tested in a pilot study in Kristianstad, Sweden (for details see pilot study report³)

² Source (modified): Bein, N.; Risser, R.; Plichtová, J.; Sardi, G. M.; Ståhl, A. (2004): Pilot study report. Kristianstad, June – October 2004. Project report of HOTEL. Page 16. (available at: <http://www.factum.at/hotel/HPSE-2002-60057-Finalreport.pdf>)

³ Bein, N.; Risser, R.; Plichtová, J.; Sardi, G. M.; Ståhl, A. (2004): Pilot study report. Kristianstad, June – October 2004. Project report of HOTEL. (available at: <http://www.factum.at/hotel/HPSE-2002-60057-Finalreport.pdf>)

Table 1: QoL indicators and sub-indicators in connection with transport and mobility according to HOTEL findings⁴

Indicators	Sub-indicators
Accessibility	<ul style="list-style-type: none"> - Equality of access → accessibility for people with reduced mobility - Access to public transport - Access to different destinations
Comfort	<ul style="list-style-type: none"> - Absence of stress - Square meters of green areas - Square meters of living spaces - Square meters of space for pedestrians
Safety	<ul style="list-style-type: none"> - Speed limits/better control of vehicle speeds - Number of accidents, fatalities and injured person - Broad sidewalks, better walking facilities
Sustainability/ environmental impact	<ul style="list-style-type: none"> - Traffic calming areas - Decrease of car traffic → increase of cycle, public transport and pedestrian traffic → modal split - Noise and air pollution parameters - Budget for the different mobility modes - Length and size of different networks
Quality of facilities	<ul style="list-style-type: none"> - Consideration of the needs of different target groups (handicapped, elderly, children, etc.) - High satisfaction of citizens with facilities and services
Urban development	<ul style="list-style-type: none"> - Density - Distance from residence to work and of other trips

ASI – Assess implementation in the frame of cities of tomorrow⁵

The starting point of the ASI project was the assumption that implementations in public space, for which public institutions are responsible for, have the goal to improve the QoL of all citizens. However, different groups of citizens and road users may have different targets and interests. If clashes of interests result, compromises have to be found. One can distinguish three different types of interest conflicts:

- inter-group/inter-individual conflicts (e.g., car drivers vs. pedestrians)
- intra-group/intra-individual conflicts (e.g., persons or groups have contradictory interests themselves)
- conflicts between individuals/groups and the society, or societal goals

Objectives

While HOTEL was more concentrated on the theory of QoL and the assessment of it, the approach of ASI was more focussed on practice. Therefore, the objectives of the project have been defined as follows:

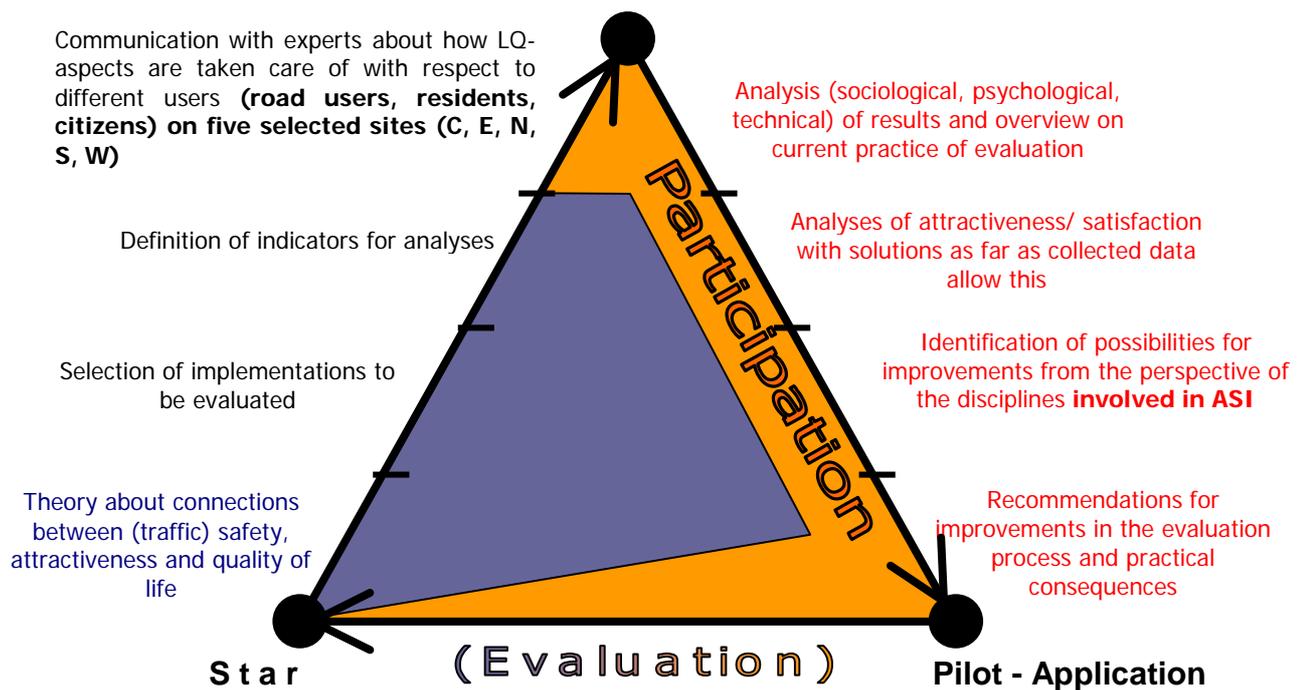
- To provide knowledge about the practice of QoL assessment by different disciplines in connection with different types of public measures (area of town planning and design, concerning issues related to transportation and mobility)
- To improve the understanding of the assessment of groups of citizens' QoL by responsible politicians and experts

⁴ Source (slightly modified): HOTEL-Consortium (2004): Final report Project report of HOTEL. Page 40-41. (available at: <http://www.factum.at/hotel/HPSE-2002-60057-Finalreport.pdf>)

⁵ ASI was funded by the European Commission's 5th Framework Programme and involved partners from five different countries in Europe (2002 – 2004).

Figure 2: Project process ASI⁶

Communication with the persons responsible for implementations



This figure shows the project process of ASI, but at the same time it can be seen as a "guide" for implementing measures in public space.

Main results

The first thing found during the project was that in the evaluated projects hardly any social scientists were included. However, social scientists have studied QoL issues for quite some time now, and could play an important role in developing relevant instruments. Most experts appeared to have a technical professional background, such as engineering and/or architecture. The under-representation of social scientists is remarkable because most projects dealt with QoL issues, which may be considered as the core business of social scientists. As sustainable development implies balancing economic, environmental and social costs and benefits, multidisciplinary teams including social scientists seem to be needed. Although there is great consensus among experts and practitioners in the fields of land use and transport about the importance of evaluating the effects of policy implementations on QoL, such issues are considered mainly at the beginning of projects, but are considered less when the projects become more concrete and detailed; according to the result of the interviews QoL issues are taken care of in one or the other way throughout the whole life time of the projects, but not systematically. It is stated that the main reason for this can be seen in the high number of definitions for QoL. Therefore, many experts and practitioners experience significant difficulties with evaluating QoL effects of policies, because no general concept or operational definition of QoL is available at the moment. A complicating matter is that experts have different disciplinary backgrounds (e.g., architecture, town planning, transportation planning, civil engineering, economy), each associated with different, and sometimes divergent, ideas on and definitions of QoL. This not only hinders communication on this issue, but also the development of suitable instruments to assess QoL. But the consequence, according to our point of view, is not that the number of disciplines should be reduced. Rather, interdisciplinary work should become more common in the area so that joint discussion and problem solving procedures improve.

⁶ Source (modified): Forward, S.; Kaufmann, C.; Risser, R. (2005): Public report on the results and products of ASI. Deliverable D13 of ASI. Public report from WP9. Page 65. (available at: http://www.factum.at/asi/download/ASI_D13.pdf)

In accordance with the state of the art about QoL, physical and psychological aspects are named by the experts as important aspects for QoL. QoL is described by the experts on the one hand as the establishing of general preconditions like a clean environment, social security, places for recreation, etc. On the other hand it reflects the satisfaction of individual needs - to have a family, a good health and, more generally (but difficult to measure), to lead a good and happy life. This is also underlined by the answers given by the experts when asked for the most and least important aspects of QoL: a clean environment on the one hand and satisfying social interaction prevail on the positive side. On the negative side luxury and money are seen as least important for achieving good QoL. In relation to traffic and especially mobility, aspects like accessibility of means, and safety are seen as most important to ensure QoL. In connection with the main contents of the projects, namely traffic, mobility and land use aspects, aspects like accessibility, good (inter)connections within and between transport modes, and comfort and smoothness of movement are given a high relevance.

The experts, who have been interviewed within ASI, say that practice mainly focuses on measuring objective conditions, reflecting expert's point of views. However, assessments of objective conditions may differ from subjective judgements, i.e., aspects that are believed to enhance QoL do not necessarily improve the citizens' perceptions of QoL. Thus, measuring objective conditions only does not provide valid information on what supports or deteriorates QoL. For this reason, it is important to also assess QoL subjectively, as this reveals to what extent people are actually satisfied with their life. Actually, the experts stated that subjective aspects of QoL have to be considered much stronger within the projects. It is possible to raise the acceptance of implementation if QoL aspects are considered adequately. Therefore, it is important that decision makers know the opinions and perceptions of users (⇒ participation).

SIZE – Life quality of senior citizens in relation to mobility conditions⁷

While HOTEL and ASI had a broader perspective, SIZE focussed on a special group of road users, namely older citizens. The central goal of EU-policies regarding older citizens is to maintain their mobility because mobility is a central element of integration into society as it is necessary to participate in any kind of outdoor social activity. To live an autonomous and independent life means being mobile without being (too much) dependent on others. Also the definition of "health" by the WHO⁸ implies the possibility of leading a self-determined life. Mobility is an important stimulus to remain active and if outdoor activities vanish, health is effected negatively still greater isolation and passivity is induced. This leads to immobility and ends up in huge costs for society. On the other hand, according to the SIZE-approach, a self determined life is connected to being mobile in an agreeable and independent way and a precondition for good quality of life.

Objectives

Objective 1: To explain and to describe the present mobility situation of senior citizens from the target group's perspective

Objective 2: To motivate action from the side of the authorities and other relevant groups in society who are, or feel, responsible in this area

Objective 3: To provide guidance for the setting up and the implementation of policies towards "keeping the senior citizens mobile"

⁷ SIZE was a research project (2003-2005) funded by the European Commission's 5th Framework Programme, involving 14 partners from eight countries.

⁸ WHO (1946): Constitution of the World Health Organization. Geneva. (available at: <http://w3.who.sea.org/aboutsearo/pdf/const.pdf>)

Accessibility and usability

Besides a lot of other result on mobility (pre)conditions and mobility problems of older people, SIZE has proposed measures on accessibility and usability of public space for the benefit of seniors. These measures are not only of benefit for older people, but for all vulnerable road users, as from the benefits of measures for senior citizens also other vulnerable road users gain advantages.

In the following five selected measures, regarding public space with special focus on vulnerable road users):

- Increase the number of seating areas/resting spaces in public places
- Improve the conditions of pavements (possible measures: differentiated paving, anti slippery surfaces, periodic control on the state of conservation, maintenance and cleaning of the sidewalks etc.)
- Measures that adapt infrastructure conditions to the exigencies of older citizens
 - Introduce greater enforcement of speed restriction to reduce pedestrian accidents (possible measures: police speed cameras, slow speed areas, narrowing of the carriageway, raised crossings, "Zone 30", residential streets etc.)
- Measures that adapt vehicles/mode conditions to the exigencies of older citizens
 - Public transport means appropriate to everybody (possible measures: special seats for elderly near the doors, location of handrails and bearings on buses etc.)
 - Introduce more low-floor vehicles
- Plan infrastructure in such a way that communication between road users is improved

Synopsis and discussion

QoL is a frequently used keyword in the area of traffic, mobility and city planning. There is no doubt that these areas have a great impact on the QoL of citizens. However, QoL is often not operationalised in these fields. Especially, literature about the assessment of QoL in practice is hard to be found. But as QoL is a multidimensional construct, it is important to combine objective and subjective perspectives. E.g., aspects of accessibility and social communication seem to play a major role here. More or less seven quality dimensions are relevant for the subjective well-being of road users and for the choice of mode: social climate/equity, objective safety, security (subjective safety), mobility, comfort, aesthetic/environmental quality, cost aspects. In short, one can say that especially aspects of accessibility and social communication seem to play a major role regarding QoL of citizens.

The public space is there for all persons; it thus, of logical reasons, has to be designed in a way that it can be used by all under agreeable conditions. Public space that can be easily used by older citizens can also be more easily used by those who are „temporarily disabled“: people with small children, with shopping bags, with suitcases, injured people, etc.

With regard to sustainable mobility it is underlined that practitioners in the traffic, mobility and city planning field have to be aware that people will only accept measures, respectively will only behave in a way to allow a sustainable development if the sustainable behaviour is linked to an increase of their own QoL. To give an example: if one wants people to use the bicycle instead of the car (more often), one has to implement measures to make cycling more attractive. But, to take people in fact to go by bike more often, people need to obtain a benefit from cycling instead of driving a car, e.g. because cycling is faster, cheaper, more comfortable etc.

The central theme of a “user-oriented approach” can be found within all three projects: If one wants to understand problems of a certain group, appropriate methods have to be used to explore the needs of this target groups properly, otherwise many needs won't become transparent. Relevant questions have to be discussed and elaborated together with the target group in order to be able to develop and implement suitable measures in public space. Finally, when implementing measures, the evaluation of these measures has to be taken into consideration, for example with the help of before-after-studies. For that reason it is of great importance for practitioners to stay in permanent contact with citizens, in order to know the preconditions for achieving the citizens' co-operation and to be able to implement good and sustainable measures.

References

- Ageing and transport (2001): OECD-report: Mobility needs and safety issues. Pdf www.oecd.org; Download 11-2004.
- Amann, A. & Reiterer, B. (2006): Final report. Public paper from Wp13, Deliverable D18 of EU-Project SIZE.
- Banister, D. (1998): Barriers to implementation of urban sustainability, *International Journal of Environment and Pollution* 10(1), pp 65-83.
- Bein, N.; Risser, R.; Plichtová, J.; Sardi, G. M.; Ståhl, A. (2004): Pilot study report. Kristianstad, June – October 2004. Project report of HOTEL. (<http://www.factum.at/hotel/HPSE-2002-60057-Finalreport.pdf>)
- Diener, E. (1995): A Value Based Index for Measuring National Quality of Life. *Social Indicators Research* 31, 103-157.
- Forward, S.; Kaufmann, C.; Risser, R. (2005): Public report on the results and products of ASI. Deliverable D13 of ASI. Public report from WP9. (http://www.factum.at/asi/download/ASI_D13.pdf)
- Hagerty et al. (2001): Quality of life indexes for national policy: A review and agenda for research. *Social Indicators Research* 55. 1-96.
- Haindl, G. & Risser, R. (2006): Guidelines for decision makers for the application of the SIZE methodology. Public paper from WP14, Deliverable D19 of EU-Project SIZE.
- HOTEL-Consortium (2004): Final report Project report of HOTEL. (<http://www.factum.at/hotel/HPSE-2002-60057-Finalreport.pdf>)
- Kaiser, H. J. & Kraus B. (2006): Results of standardised interviews with senior citizens. Internal paper from WP 8, Deliverable 12 of EU-Project SIZE.
- Martincigh, L. (2006): Guide-book of SIZE recommendations for improvements in transport and mobility that enhance life quality of senior citizens in Europe, Deliverable D17 of EU-Project SIZE.
- Steg, L., & Gifford, R. (2005). Sustainable Transport and Quality of Life. *Journal of Transport Geography* 13 (1), 59-69.
- Tacken, M.; Marcellini, F.; Mollenkopf, H. & Ruoppila, I. (Eds) (1999): Keeping the Elderly Mobile - Outdoor Mobility of the Elderly: Problems and Solutions /Euroconference in Rolduc, June 1998. Delft : The Netherlands TRAIL Research School.
- Zakowska, L. (2006): Results of standardised interviews with decision makers and experts. Internal paper from WP9. Deliverable 13 of EU-Project SIZE.
- WHO (1946): Constitution of the World Health Organization. Geneva. (<http://w3.who.org/aboutsearo/pdf/const.pdf>)