Safe and Secure Cities for Pedestrians and Senior Citizens

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Abstract. The aim of our project TL02000559, sponsored by Technological Agency of the Czech Republic, Prague, is to develop a new attitude to the mobility of our senior citizens in urban settings, more age sensitive and based on possibilities they have in relation to the urban green mobility. The source of the knowledge is the public participation in the form of questioning the elderly citizens to understand the real problems they face. The procedure is based on a redefinition of urban space and following revitalisation and remodelation of public spaces like streets, squares, parks and embankments. This includes reduction of unnecessary car traffic and environmental pollution and traffic accidents, where the elderly are the most endangered group. Nevertheless, it does not mean any reduction in the mobility of the elderly. Mobility of the elderly is a necessity for their quality of life and should be supported by the improvement of transport systems. This enables their inclusion in society. Green transport like walking, cycling, and public modes of transport like busses and tramways should be modernised and developed.

1. Introduction
Demographic trends in the last decades indicate a marked rise in the number of elderly people in the population and there is a high correlation between age, mobility and disability. The share of elderly people in the total population is expected to rise from 21% in 2000 to around 31% by the year 2020 and to around 34% by the year 2050. Disabled people represent around 13% of the nation. Various national, European and world initiatives recognise the needs of elderly people. With changing attitudes and conditions, the desire to travel for social life, business and leisure represents a potentially major new source of ideas for travel providers, urban planners, car, IVIS and ADAS designers and producers.

Due to demographic changes, older and disabled people represent a significant and permanent growing part of the Czech population. We lack a progressive increase over the past decade in the social awareness of the requirements for older and disabled people throughout the Czech Republic and other parts of Europe. This progression should move from making provision for older and disabled people on a welfare-oriented basis, towards increasingly more understanding of elderly needs, equal access to all facilities as a matter of human rights. Improving access to any form of travel will provide additional social, as well as economic benefits at personal, governmental and commercial levels. [1]

We should use a procedure to recommend that helps to understand existing problems. Many needs become only transparent if appropriate methods are used. In the case of our project, a combination of...
qualitative, quantitative and heuristic methods was chosen. Relevant questions were discussed and elaborated together with the target groups. The results of the project work should be critically reviewed by scientists, representatives of senior citizens’ organisations, as well as by stakeholders, decision makers and practitioners of various disciplines at workshops, conferences and mobility planning in the Czech Republic and other European countries. [2]

2. Cross-disciplinary research on ageism related to urban planning and mobility

In line with the European Strategy beyond 2020, with its reference to the increasingly ageing populations placing strains on European welfare systems, and its objective to guarantee that “people experiencing poverty, limitations and social exclusion are enabled to live in dignity and take an active part in society”, there is a strong need for creating a “society for all”, where everyone can realize his or her full potential and pursue a fulfilling life, regardless of age and based on freely chosen interdependence or autonomy. This means that policies need to be devised for combating social exclusion in later life, embracing older people’s diversity, responding to their varying needs and avoiding older adults being pushed to the margins of our society. [3]

Undoubtedly, equitable access to quality of transport services plays an integral part in any endeavour for social inclusion. Based on a human-based and holistic approach, ageing should be mainstreamed in all areas of services provided by society. In this regard, all existing services should be adapted, and new services developed, in order to guarantee the inclusion of older populations. Special attention should be given to: a) older people with specific or high needs, such as those individuals requiring protection against violence; b) older people in need of support in decision making; c) older persons with beginning needs or in early phases of old age; d) older people at risk of isolation; and e) older people in marginal locations and rural areas, f) those at risk of financial exclusion due to low income/bad debts.

This paper offers an overview of our research, and policy challenges and considerations related to exclusion in old age, accessibility, spatial mobility and transport technologies and services to address inclusion amongst diverse older populations. This paper plaid, in addition to specific measures, for an ‘elderly impact assessment’, an assessment that should become mainstream when developing transport services likely to be used also by older persons. In this paper, exclusion from transport services is understood as arising from inequities in relation to the access, usage or appropriateness of transport service infrastructure for older people, and/or the exclusion of older people from decision making in relation to the design and implementation of transport services related to their needs and preferences.

3. Demographic changes

Due to demographic changes, older and disabled people represent a significant and permanently growing part of the Czech population. In addition, disabled people represent around 13% of the nation. Various initiatives recognise the needs of elderly and handicapped people. The older generation as a target group is evolving; its size, as well as the structure, is changing during the time. The population of advanced European countries is getting older; pessimistic forecasts expect that within twenty years the number of post-productive citizens will catch up with and even exceed the numbers of other age categories. As to the structure, the number of women in this group prevails, and this is becoming even more distinct with the growing age. From the economic point of view, this group, on the whole, comes under poorer groups, which particularly applies to elderly people living alone (just one person without a partner or a wider family). The higher-age groups also include working citizens (in the group men prevail); senior citizens are often active members of various associations, clubs and other interest groups. Technical facilities of their households and availability of basic living needs enable them to live relatively independent lives in their permanent domiciles or even in their summerhouses. [4]
Even though essential features are common, this group is very heterogeneous as to the physical and mental health and overall physical and mental condition. The standing and needs of healthy seniors are significantly different from those of more or less ill individuals, not to mention the disabled.

There would be no point to lengthening human life if this meant merely lengthening suffering for individuals and increasing problems for society as a whole. The aim both for ageing individuals themselves and for society is to delay ageing and, in close connection with the biological and social sciences, to seek ways of maintaining man’s mental clarity and physical condition for as long as possible. The aim is also to find ways of compensating for the inevitable losses which come with increasing age, ways of increasing man’s ability to adapt to the changes occurring both in his own organism and in the surrounding world, and ways of extending the period of time for which man is self-sufficient, useful to his surroundings and able to get something out of life for himself, without proving a burden to himself or his surroundings.

There is still a great scope for society to improve the conditions necessary to a satisfying old age. Even in retirement, it is possible to give people the chance of undertaking activities useful to society, to prevent the existential uncertainty of old age and the loss of social prestige, social contacts leading to complete isolation, etc.

The course of human ageing and the subjective experience of the quality of life in this period depends to a considerable degree on the individual’s expectations of old age, on how he reacts to the changes which have occurred, and how he manages to come to terms with them. One’s attitude towards one’s own age depends, primarily, on the way in which ageing takes place on the biological, psychological and social level. Man’s initial experiences of his own ageing generally induce unwelcome feelings. The changes noticed take the form of a progressive loss, decline and diminution, i.e. altogether a minus.

4. Old-Age Social Exclusion
In focusing on exclusion from services in later life, it is important to consider how older people in cities are prevented from using the services they need to address their needs and promote their well-being. In other words, there has to be a focus on un-met need where there is a gap between the need for services and the level of services provided or accessible.

Un-met needs can significant negative consequences for older people, such as poorer health, lower levels of health-related quality of life or even an inability to live independently and in dignity. When people’s health and care concerns are not addressed early on, their needs may escalate in complexity and prevalence requiring more intensive care packages, which are costly for themselves, for service providers and for society, particularly where care is state funded or subsidized. Furthermore, delays or failing to address people’s needs prevents people from contributing fully to society, for example, providing childcare, doing voluntary work, or continuing in employment. Reliance on alternative care provision through informal carers may also have negative consequences for the carer, including economic and health consequences, perpetuating the cycle of social exclusion.

The impact of un-met need for services may differ for different groups. Health status, socio-economic situation, sexual preference, religion or culture, living in rural or urban living, and family circumstances may create differences in how people experience becoming older and how they can respond to un-met needs. Poorer older people may be unable to buy services on the private market or on the grey market. People in rural or marginal and distant areas may face difficulties in accessing services because of lack of care services in rural areas, given large distances between service providers and service users and poor transport infrastructure. People with limited education opportunities may have trouble accessing the information on service availability and entitlement, reducing their level of
service utilization. People who are lonely or who live in more socially isolated circumstances may receive less information about formal service provision and have fewer opportunities to avail of informal supports.

Old-age exclusion in the field of area-based services is an issue, perhaps more due to area-based issues than old-age. Generally, access to services should be equal regardless of where in the country a person lives. But due to a country size, due to dispersed habitation patterns, and due to the fact that older people more often compared to the younger generations continue to live in rural areas, there is a de facto situation where people in more remote areas are (somewhat) excluded from using some services especially in case they cannot use a private car or in case they cannot rely on family/significant others who can help with transportation.

Area based service exclusion impacts different groups in a different manner. Despite the fact that the former ‘younger-old’ old age difference became lost importance, gender is still important: older women tend to be more affected than older men, as older women more seldom do drive their own car. At this moment, policy-oriented research focusing on implementing means to counter old age /area-based exclusion (for the Czech context) is lacking. Especially in developing community based means and partnerships between private and public stakeholders.

As documented in the sociological and planning literature, there is evidence of large differences and significant cross-European country variation in care service provision: e.g. what kind of services does a specific type of welfare state, provide by specific market mechanisms, by private non-profit sector and by family and cultural traditions? We also need to consider important differences between rural and urban areas across the Czech Republic, and the impact of rural/urban contexts on services access.

Currently, there are critical knowledge gaps reflecting how macro constellations formal and informal provision influence micro level differences in the experiences of older people’s care service use. Many European welfare systems now operate based upon a mixed economy of care characterised by an application of market principles and using both profit and not for profit providers to deliver state contracted care services. Shortages of paid care labour, increasing female labour market participation and a widespread contemporary perception that social care is ‘in crisis’ point to the need for large scale comparative research studies investigating factors that promote sustainable care systems that can meet the needs of a diverse older population and the diverse group of carers across Europe.

5. Old-Age Exclusion from Transportation Services
Old-age exclusion in the field of transportation services can be either related to transport accessibility (e.g. an inability to access the transport services due to high costs, physical barriers or lack of actual service provision in some cities) or exclusion from society due to the lack of transport (e.g. an inability to reach services or outlets for social participation due to the lack of transport). [5]

Exclusion from society has negative consequences both for older adults themselves and for society. Senior citizens are an important part of the society; their absence influences many assets of social life like children care, education, culture life and many others. Transport is an important factor facilitating inclusion and should be considered as a part of social structures that facilitate good ageing and quality of life not only of the elderly themselves, but also of their families and friends. [6] At a more fundamental level, accessibility issues are important because they are the first step to consider in securing entry to transport services. As with other services, addressing transport issues through a ‘one-size-fits-all’ approach should be avoided, with different groups encountering different sets of challenges. These challenges can vary by urban-rural location, but also in accordance with individual resources and characteristics (e.g. age, income, physical ability, social network, family status). Local
and national policies, such as policies on driver licensing in old age, are also influential with differential impacts evident across jurisdictions.

A great deal of research exists on transport planning and design for older adults. We know a lot about accessibility and decreased physical functioning, and the different needs of different user groups. However, much less is known about how policies influence transport-related exclusion. There is also a lack of critical analysis of age-related implications of different policies regulating transport and mobility.

6. Transport and mobility in later life
Senior citizens are endangered by exclusion and loneliness. That is why our vision regarding the elderly aims at maintaining their active life and mobility. This is a central element of their integration in society. Senior citizens want to enjoy a good life with travel, tourism and mobility and want to stay autonomous and independent as far as possible. Without the possibility to maintain mobility, senior citizens cannot lead an independent life, with many other problems, such as personal isolation and health problems as a consequence.

The general objectives of our research were:
To explain and describe the present mobility in an urban context and transport situation, the problems, needs and wishes of different groups of senior citizens from their own perspective compared with experts’ points of view (“experts” being sociologists, psychologists, traffic experts, experts on gerontology, architects and urban designers, urban planners, politicians, policy makers, experts of other related EU projects, etc.);
To motivate action by the authorities and other relevant groups in society who are, or feel, responsible in this area, among others by making discrepancies in problem identification transparent;
To identify relevant solutions for existing problems and to provide guidance for setting up and implementing policies aimed at “keeping the elderly mobile and healthy”.

The results of our sample differ from the results of other larger cities mainly in questions of rating public transport and attitudes of the public towards senior citizens.

7. Mobility of the elderly in an urban context
We have been working with two cities that represent the Czech mid-size cities with a secondary background. Concerning the dimension of cares and fears, our mid-size cities seniors – more than seniors in other cities – express fear, especially fear of contact with people. They are afraid of menace from car drivers and passers-by, they are afraid of victimization – assault, dispossess.

Quality of life was measured in the frame of the project. In most sub dimensions (e.g. transport conditions, quality of public spaces and infrastructure), our senior citizens expressed more contentment than seniors from other cities. Surprising exception appeared the dimension of public transport. Here, seniors more than others complained of insufficient equipment with special vehicles (low-floor, kneeling vehicles), and insufficient respect and support from public transport drivers. Public transport is the most frequently used mean of transport for seniors; that is why they have considerable demands in this area. Compared to the era before 1989, the situation in public transport is perceived as worse (restriction of public transport).

8. Ageism – the sort of social exclusion in transport
Concerning the dimension of mobility barriers, seniors perceived more sensitively than the rest of the sample all asked items. However, as the most important barrier, the negative attitudes of the public towards senior citizens were indicated. Thus, subjective ageism or age discrimination was indicated.
It is possible to identify and to interpret those spots in the traffic system, in which the social ageism is encoded. Some places are taboos for older people. Some places are constructed without regard to older people. Negative attitudes toward older drivers were mentioned many times. Generally said, an old person is not a welcome road user and passenger in traffic. Road traffic is an area that is not arranged for older people with their limited mobility. In this space, speed, aggression and ferocity dominate, and these attributes are not ascribed to old age. Here, senior citizens rightly feel humiliated and discriminated.

Indifference towards older people in public transport is expressed, for example, by lack of barrierlessness. The relationship between seniors and places where they live reveals deeply rooted attitudes and values. Considerable unsuitability of the public transport system for people with reduced mobility, i.e. also for older persons, is in this country usually solved by establishing barrier less lines. From a certain point of view, this can be perceived as an act of stigmatisation that causes exclusion of older people, or people with reduced mobility, from the system of public transport, and contributes to age disintegration and segregation of society. Of course, it is possible to argue that there is not enough money to renovate vehicle fleet etc., but we can see, for example in Brno, that only small part of public transport vehicles has an accessible arrangement. Non-accessibility strengthens tendency towards the social exclusion of older citizens.

The most demonstrative display of ageism in public transport appears in relations between drivers, passengers and older fellow travellers. Seniors are confronted not only with the heavily accessible physical environment; driver and other passengers – as seniors, according to results, feel themselves – let them know that they do not belong here, being too slow, having too many demands, claiming attention (asking priority seats, safe seats etc.).

9. Summary of the most important results of the quantitative survey
Mobility is not only related to the personal ability of the elderly but above all to the distances, the configuration of roads, of the urban spaces, technical solutions and in particular, to the barriers, it presents for the most vulnerable road users. A relevant issue to be faced by the regional authorities and local municipalities is how to ensure for the elderly citizens the possibility to carry out their everyday-life activities, in particular when they walk. This is not an easy task since urban spaces located in the newer parts of the cities that constitute the largest portions of the residential areas have been designed mainly to meet car mobility requirements. Pedestrians’ mobility is often compelled to use the “leftover” spaces. What comes out may turn out to be unsuitable for the requirements of many a sub-group, especially for the elderly, and above all for fostering social relationships.

Such a "car culture" is so deeply rooted in the transport planning culture, that also when pedestrian urban spaces are planned anew, they are designed in a way that does not succeed in inducing users to start an identification process. As they are often not conceived from the pedestrians’ point of view, they are often not popular, therefore not used or also misused, and quite frequently in the end, they assume such a state of neglect that they reach exactly the opposite goal of what they have been created for. Generally, it is necessary to find and specify the barriers for walking. These barriers are manifold, and they are different for different people. From a point of view of the effectiveness of the renewal and remodelation, it is necessary, first of all, to eliminate the highest number of small barriers for the highest number of people.

10. Results and discussions
Policy challenges and stakeholders considerations should be alternated. A major policy challenge is to really understand the needs of older adults and to avoid assuming what those needs, or older people’s preferences, might be. The transport needs of older adults today are heterogeneous and determined by topographical, urban, social and demographic factors. Consequently, it is difficult to cater to those
needs through policies and planning. Often there is no attempt to understand the needs but rather to
guess what needs of older people are (or which needs are desired or appropriate).

Another important policy challenge is to deal with conflicting goals. For example, supporting older
persons’ mobility may conflict with goals for greener transport or goals for traffic safety. There is
research evidence about the importance of mobility for older persons’ well-being, as there is research
demonstrating the heterogeneity the transport needs. Several studies have investigated the needs more
closely and given input to policymaking. However, policies are always “political” and these goals for
a good transport system need to compete with other, sometimes-conflicting goals. Priorities should be
set and political choices should be made. One of the most problematic policies regulating older
persons’ mobility and ability to use transport systems are the age-related restrictions on driver
licenses. These policies are demonstrably harmful to the older people and have not been found to
produce any positive effects in terms of safety. The insurance is costly for people older than 75 years
or in case someone of 75 or older wants to rent a car. Driver licensing should be based on capability
and not chronological age: The access to services at all ages is not a European directive.

11. Conclusions

There is a need to move away from silo-based thinking and consider how regulating/policing older
people’s transport and mobility has an impact not only on transport and closely related areas but also
on the lives of older people and on the society as a whole. Alternative transport assessments and
impact frameworks should be developed. There has been a progressive increase over the past decade
in the social awareness of the requirements for older and disabled people throughout Europe. This
progression has moved from making provision for older and disabled people on a welfare-oriented
basis, towards increasingly equal access to all facilities as a matter of human rights. Improving access
to any form of travel will provide additional social, as well as economic, benefits at personal,
governmental and commercial levels. Implementation of inclusive design and co-production transport
development strategies should be secured. Support of green urban transport especially walking, is
substantial, which is the most healthy and suitable mode of transport for the elderly. It is the
appropriate physical activity that is beneficial for the mind and physical bodies. In the frame of the
city renewal, the creation of conditions for walking and cycling should get the absolute priority.

On the other side, car equipment alternation should be investigated. In Europe owning and utilizing
of a car is one of the best remedies against a diminishing of cruising radius in old age and
a comfortable mean to sustain autonomy and independence of living as well as social relations.
Physical handicaps and limits of the elderly could be compensated today by technically sophisticated
and permanently cheaper technical solutions. Promotion of smart cities and smart transport,
specialised driver-assistance systems in the cars and advancement of the demand for the age relevant
cars with high-tech-optimisation should be the remedy; It is expected that these technical means will
be used to a far greater degree in the future for the purposes of preventing road accidents (active safety
- self explaining roads) and to reduce the impact of the road accidents that do occur (passive safety –
forgiving roads) to senior citizens. The use of telematics should help in preventing accidents. Technical development increasing the safety of vehicles for older passengers does not need to be the
privilege of a few. It will be necessary to co-operate with manufacturers to ensure that technical
innovations are available to all and attainable as soon as possible for a wide range of new vehicles.
The possibilities for equipping older vehicles already on the roads with new technical means of
prevention should also be investigated. With changing attitudes and conditions, the desire to travel for
services, business and leisure represents a potentially major new source of ideas for IVIS (In Vehicle
Information Systems) and ADAS (Advanced Driver’s Assistance Systems) designers and producers.
Senior drivers represent a potentially major new source of ideas for IVIS and ADAS designers and
producers. The telematics development including IVIS and ADAS designed to reduce traffic accidents
and to support elderly drivers in a suitable and user-oriented way may be an appropriate solution.
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