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## Selected Urban Mobility Issues of the Elderly: The Polish Experience

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**Abstract:**

**Purpose:** The main objective of this study is to determine the specificity and scope of urban mobility solutions for older people in Poland in the face of demographic change and population ageing and the development of the Silver Economy.

**Design/Methodology/Approach:** To achieve the main objective of the article, mainly secondary sources of information were used. Literature on population ageing and the Silver Economy as well as on transport management and urban mobility was analysed. In addition, statistical data from Eurostat, Statistics Poland and Ministry of Family and Social Policy of the Republic of Poland were used in the study. An in-depth analysis was also carried out of a number of reports from national and international institutions in the field of mobility, urban traffic studies and consultancy firms and expert opinions in the area. The author analysed national legal acts as well as documents concerning the situation of older people in Poland.

**Findings:** The results of the survey indicate that in Poland, where the proportion of older people in the country's population is over 25%, their situation is of interest to the public and other stakeholders. The country enacts legislation regulating a number of issues relevant to maintaining a good quality of life for seniors, while their situation is monitored and relevant information is provided by the government on an annual basis, including to both chambers of parliament. Poland is also developing a Silver Economy, encompassing the manufacture of a range of products and services to meet the needs of the elderly, including, among others, medical and rehabilitation products and as well as care services, recreation and transport services. There are a considerable number of initiatives in the area of transport solutions for senior citizens. The use of public transport services and the convenience of travel for the elderly are promoted through the introduction of low-floor modes of transport in many cities, the development of passenger information systems, the integration of transport modes, the modernisation of bus stop facilities or even free travel offered to senior citizens. Many local initiatives supporting the mobility of older people are also implemented within the framework of multiannual programmes, and transport services for older people are also included as a component of a package of medical or rehabilitation services for senior citizens.

**Practical Implications:** An analysis of secondary sources made it possible to identify practical implications concerning selected aspects of the mobility behaviour of older people in Poland against the background of the experience of other countries. Such an approach is important for finding solutions for the future, bearing in mind that, as time goes by, the proportion of people requiring special mobility solutions will increase.

**Originality/Value:** This article attempts to identify the determinants and specificities of

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*urban mobility of older people in Poland. Such an approach, which has the characteristics of a case study for Polish conditions, may contribute to the enrichment of the literature, in which, on Polish soil, there are too few studies on the mobility of senior citizens.*

**Keywords:** *Mobility management, elderly mobility, Silver Economy, mobility, public transport*

**JEL Classification:** *J14, J60, R00.*

**Paper type:** *Research article.*

## **1. Introduction**

The problem of an ageing population affects many parts of the world. Changes in the age structure of the society entail significant challenges, primarily of a medical nature, which affect the demand for products and services for the elderly. The evolution of the demographic structure also raises a number of economic challenges related, for example, to a country's pension system. When a population is young, several younger working people work for the benefits of one older person, and in ageing societies this relationship is distorted.

Hence, in many countries the retirement age limit is being pushed back. In other countries, however, many senior citizens remain economically active because it brings them satisfaction, ensures a decent standard of living and makes them feel needed. There are also seniors who devote themselves to developing their hobbies, helping their families, volunteering or even studying at universities of the third age.

There is no doubt that older people play an important, active role in both social and economic life. This is facilitated by increasing life expectancy and good health, which should be regarded as a great achievement of modern times and scientific progress (Burlando, Musso, and Persico, 2022).

Societies with a high proportion of older people are found in most European countries. Across the EU-27, their average share of the population in 2019 was around 20.3% (Eurostat, 2020). Depending on the age structure of their citizens, the challenges of an ageing society manifest themselves to varying degrees in different countries. Globally, their scale also depends on the level of civilisational development, the wealth of the country, its location and even its climate zone. Countries are introducing different solutions to counter the emerging problems.

In many of these cases, a range of services and solutions are provided by the public sector at central level, by municipalities or other stakeholders such as NGOs or, finally, by commercial organisations.

In countries with a high average age of the population, there is also a need for

change in many sectors. Older people require a range of special services and products, as well as adjustments, if only to existing infrastructure facilities. For older people, particular challenges also arise from their mobility, which is often limited or hindered. This creates problems in dealing with a range of everyday issues, such as shopping, visiting health care facilities or travelling to work, if the person is working. Transport issues become significantly more important here.

On the basis of the challenges discussed, the concept of the Silver Economy has emerged. Mobility issues and even logistics in the broader sense also play an important role in this concept. In Poland much attention is paid to the situation of senior citizens and their quality of life. In view of this fact, the main objective of this study is to determine the specificity and scope of urban mobility solutions for older people in Poland in the face of demographic change and population ageing and the development of the Silver Economy.

## **2. Literature Review**

### **2.1 An Ageing Society and Silver Economy**

The collective term 'elderly' in European Union conditions refers to people aged 65 and over. Their number in the EU-27 is growing significantly, from 90.5 million at the beginning of 2019 to around 129.8 million in 2050. However, certain ranges and changes in the age structure of senior citizens should also be additionally indicated. From 2019 to 2050, the population of people in the 65-74 age bracket is projected to increase by 16.6%, while those aged 75-84 will increase by 56.1% (Eurostat, 2020).

In the case of the very old (those aged 85 and over), however, the number of people is expected to double. Experts indicate that their number will increase from 12.5 million (in 2019) to 26.8 million in 2050 (Eurostat, 2020).

Seniors are a very internally diverse group of people with different health conditions, living in different types of territorial units and with various mobility options and relying to varying degrees on the help and care of relatives or living alone. Older people, despite retaining their intellectual capacity, often also have limitations in hearing, sight or mobility (Solecka, 2018; Thalassinou *et al.*, 2019).

Referring to demographic conditions outside the EU (within the G20 countries), it should be noted that the highest share of people aged 65 and over live in Japan (28% in 2018), while the share above the global average is, for example, in the USA - 16.0% (in 2018) (Eurostat, 2020).

Places with large populations of older people are often entire cities or regions. Referring to different corners of the EU, it is important to point out that here, the highest proportion of seniors (reaching a quarter of the total population in the area), live in eastern Germany (e.g., in Chemnitz 28.9%), as well as northern/western Italy

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and northwestern/central Spain and northwestern Greece (Eurostat, 2020).

In this context, however, it is important to note the additional challenges associated with where older people live - urban versus rural. In cities, there is relatively good access to a range of services and benefits. Here, however, older people are often anonymous, alone among strangers and find it difficult to live in the so-called urban jungle. In towns and cities, transport issues become an obstacle for older people, due to the often long distances between residences, medical services and other everyday matters.

In the countryside, surrounded by greenery and tranquillity, there are undoubtedly landscape-friendly living conditions for older people, but often with difficult access to a range of services, including transport services. In the absence of relatives with means of transport, there may even be a problem of social exclusion of older people, a situation where "individuals are deprived of full participation in the society (...)" (Giddens 2006 cited in Lejzerowicz, 2020).

The potential disadvantages associated with rural living for older people affect a large population of people residing in EU countries. In the EU27, in 2019, out of a total of 90.4 million older people, about 38.2% lived in urban regions, the rest outside urban regions, i.e. 39.7% lived in intermediate regions, while 22.1% lived in rural regions (Eurostat, 2020).

On the wave of the demographic changes discussed, in the face of the growing challenges they entail, the concept of a Silver Economy was born as a response and systemic approach to the problem of the advanced age of the European population.

In EU documents, for the purposes of the challenges discussed there, the Silver Economy is defined "as the sum of all economic activity that serve the needs of people aged 50 and over, including the products and services they purchase directly and the further economic activity this spending generates" (Technopolis group, Oxford Economics, European Commission, 2018). The concept is evolving and is being implemented in different countries and further stakeholders are joining the discussion. Section 3 provides an overview of its understanding in the Polish context.

The Silver Economy is evolving with the changing characteristics of the global population. Representatives of various sectors, such as producers of material goods and services, are joining in offering solutions to older people. Noticing the emerging needs of seniors, both as employees and consumers, they include them in their offerings and differentiate them from those of younger people (Dohrmann *et al.*, 2023).

In this way, there is a specialised and large market within the broader Silver Economy (Dohrmann *et al.*, 2023). Viewing older people as consumers with specific

requirements, the literature emphasises the need to ensure not only the material dimension and appropriate design of products or services, but also adequate communication with this social group. Communication, image-building in a language familiar to seniors, based on ethical practices, honesty and transparency of rules, are indicated as important (Szewczyk, 2018).

## **2.2 Mobility Issues of the Elderly**

The issue of the mobility challenges of older people in urban areas and other types of territorial units is one that is frequently addressed in the literature by authors from different countries. In the first place, it is possible to notice a fairly large group of studies discussing the experiences of those countries with a relatively numerous population of older people, mentioned in section 2.1. Hence, it is worth noting articles on Italian cities such as Genoa (Burlando, Musso, and Persico, 2022), Spanish cities (Arranz, Burguillo, and Rubio, 2022) or German ones (Giesel and Köhler, 2015).

Cities or regions with particularly large populations of older people face a number of specific problems, where there is no significant change in infrastructure facilities or public transport services, there is a considerable issue of mobility for senior citizens.

However, interesting studies also exist for non-European countries from different climate zones, with different levels of economic development or religious influences.

For example, the specifics of older people's transport and mobility behaviour are addressed for Israel, in the context of the safe use of mobility scooters by older people here on a larger scale (Gitelman *et al.*, 2016), China (Zhou, Yuan and Yang, 2020; Zang, Qiu, Xian, Zhou, Ma and Zhao, 2021) or Iran (Hatamzadeh and Hosseinzadeh, 2020).

As mentioned, the mobility problems of seniors are not only addressed for urban areas, but also for rural ones, for example for the central regions of Germany, in the context of the possibility of demand responsive transport here (Knierim and Schlüter, 2021), Tanzania, for socially excluded residents (Porter *et al.*, 2015) or Japan (Yamamoto and Zhang, 2017). In the case of rural regions of Japan, new transport challenges arise as a result of the advanced age of many residents who no longer drive cars and, at the same time, the migration of young people to cities who could help the elderly (Yamamoto and Zhang, 2017).

In the context of the challenges posed by the mobility of older people living in rural areas, it is worth mentioning that an important project - SMS Europe - Interreg Europe (2018-2023), which aims to support the development of the Silver Economy sector in rural and mountainous areas to improve the quality of life of older people, is currently being implemented in a European setting (European Union, 2021).

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Bearing in mind the aforementioned heterogeneity of a social group such as older people and the resulting differences in their mobility issues, Akhavan and Vecchio (2018) define four profiles of ageing mobilities.

Within them, they distinguish, "active individuals" (individuals who have the ability to move and, even if not without obstacles, use it independently), "assisted individuals" (individuals who move in spite of obstacles, thanks to the use of various forms of assistance - other people or devices), "non-motivated individuals" (individuals who are not mobile, in spite of the fact that there are no obstacles to it and this is due to, among other things, among other reasons) and finally 'immobile individuals' (i.e., seniors who, for various reasons, are unable to move, also due to the lack of various forms of assistance) (Akhavan and Vecchio, 2018).

Older people's opportunities also depend on where they live, hence, as a valuable complement to the four profiles of ageing mobilities mentioned earlier, consider Akhavan and Vecchio's (2018) proposed profiles of ageing neighbourhoods defined by taking into account the interplay between mobility supply and opportunities (places, activities and services) that older people want to use.

When advanced age is further accompanied by the risk of poverty, seniors' quality of life declines. In this context, the German experience is cited by Giesel and Köhler (2015), indicating, on the basis of research, that older people in very poor material circumstances have limited access to transport, are significantly less mobile and make fewer journeys.

The authors additionally note that gender is also relevant here and that it is the mobility of older women in a deprived material situation that is mainly reduced to journeys focused more on the local environment and the immediate surroundings (Giesel and Köhler, 2015).

An important aspect of older people's mobility research concerns walking. As is well known, it is nowadays a form of walking that is recognised as sustainable mobility. For older people who, for various reasons, do not participate in sport, this form of activity is essential for maintaining health. Even medical practitioners often recommend a minimum number of steps per day.

However, walking can have different objectives. In the literature, recreational and transport walking of older people is analysed in the context of mobility, among other things, also taking into account what conditions are created by different types of urban development (Zang *et al.*, 2021).

In the case of transport walking of older people in Iran, a study identified gender differences. In addition, it is highlighted that an incentive to walk can be a more attractive environment, which should be planned accordingly; all of which contributes to higher levels of health in older communities (Hatamzadeh and

Hosseinzadeh, 2020). An important area of issues addressed in the literature concerns public transport, including its accessibility for older people. The literature highlights that it is public transport that is often the only mobility option available for older people (Solecka, 2018).

Raczyńska-Buława (2017), on the basis of her research, makes valuable remarks in the context of improving the accessibility of public transport for seniors. On the one hand, she points out the need to eliminate barriers to the use of public transport and, on the other, she emphasises the relevance of introducing specific incentives to change mobility behaviour in favour of public transport (Raczyńska-Buława, 2017).

Among the barriers to be eliminated by public transport system managers, following the author, it is necessary to modernise (adapt) the rolling stock (lower grades, larger information signs, louder announcements) and the stop infrastructure for the needs of senior citizens. In addition, increasing the density of the bus stop network so that older people have closer connections to them and providing access to public transport in places intensively visited by them such as medical centres, nursing homes or cultural institutions and universities of the third age should be considered as reasonable (Raczyńska-Buława, 2017).

The incentives cited are intended, among other things, to encourage seniors to travel more often by public transport instead of a personal car. This is intended to help break down peculiar prejudices and to be an 'investment for the future' when, due to poorer health, an older person is no longer able to drive at some point in his or her life. It is emphasised that such incentives may include those of a financial nature in the form of reductions in ticket prices (Raczyńska-Buława, 2017).

Cities in many countries have introduced free public transport to meet the needs of vulnerable groups, but also, among other things, to reduce emissions or congestion. This issue has long been of interest to policy makers and many researchers. There are many examples around the world of cities that have adopted this solution for all or selected groups of passengers (Rabiega *et al.*, 2022).

These are located in different parts of the globe, in countries with different levels of GDP per capita, where the history of free public transport is longer or shorter. It is therefore difficult to find trends in this respect. Examples of such cities include: Luxembourg (since 2020), the Netherlands (since 1991), Estonia - Tallinn (since 2013), Portugal - Cascais (since 2020), Germany - Augsburg (since 2020), France - Dunkirk (since 2018), USA - Kansas City (since 2019), India - New Delhi (since 2019) and Canada - Mont Tremblant (since 2019). In the centres listed, the privilege of free transport (on all or certain modes) is enjoyed by all users or only by selected groups, including the elderly (Rabiega *et al.*, 2022).

In addition to free public transport, the literature also considers the issue of public transport price subsidies for the elderly. Based on a study conducted for Genoa, it is

indicated that such subsidies benefited the lowest-income seniors and therefore the most vulnerable members of older society (Arranz, Burguillo, and Rubio, 2022).

A review of the literature reveals the multifaceted nature of the problem of older people's mobility. Its specificity, as mentioned, depends on many of the factors cited, such as geographical conditions, place of residence, accessibility of public transport or its price. Hence, Fatima *et al.* (2020) point out that most studies on the mobility of older people are case studies. The following section discusses the determinants of mobility development among older people in Poland.

### **3. The Silver Economy in Poland with Particular Emphasis on Transport Issues**

#### **3.1 Population Ageing and the Silver Economy in Poland**

In Poland, with a population of about 37.8 million people in 2022, about 9.8 million were senior citizens, i.e., people aged 60 and over. As in the conditions of most EU countries, a steady increase in their share of the country's population is observed here. In 2005, it was 17.2%, while in 2022 it had already reached 25.9%. In that year, the increase in the number of elderly people was lower than in previous years, due to oversized deaths caused by the COVID pandemic (MRiPS, 2023a; GUS, 2022).

The elderly in Poland are dominated by those aged 65-69, with 25.7% of the total elderly population. The least numerous group are those aged 75-79 - 12.1% share in the elderly population (MRiPS, 2023a). It should be noted that younger seniors are usually still in good physical condition and in relatively good health. Since, of all senior citizens, it is their share in Polish society that is currently significant, it will be necessary to address the growing number of problems faced by people of more advanced age, including those of mobility nature, over time.

The basic legal act addressing the issue of seniors in Poland is the Act of 11 September 2015 on older persons. Here, as mentioned, 'persons who have reached the age of 60' (Act, 2015) are recognised as seniors, regardless of whether they remain economically active or not (GUS, 2018).

In view of the ageing population, large-scale activities to improve the quality of life of seniors, on the Polish ground, are reflected in the implemented senior citizen policy, which is also discussed in the literature (Klimczuk, 2018).

According to the legislation (Act, 2015), it is understood as "a set of activities of public administration bodies and other organisations and institutions that carry out tasks and initiatives shaping the conditions for dignified and healthy ageing" (Act, 2015).



With a view to the senior citizen policy implemented in the country, it is important to identify the needs of older people. According to Statistics Poland, they have been defined as those "which are revealed or make a significant change as a result of the biological process of ageing, a change in the personal situation or professional activity of the senior citizen" (GUS, 2018).

In the face of such an understanding of these challenges, statistical studies that address aspects of the life of the elderly population in Poland also define the concept of the Silver Economy, understood as: "the totality of phenomena occurring in the market related to the process of adapting all production and service activities to the ageing of the population" (GUS, 2018) or "a part of the market of products and services produced and provided to meet the needs of senior citizens" (GUS, 2018).

In Poland, several segments of the previously defined senior economy can be distinguished, these include *inter alia*: life-enhancing products, medical and rehabilitation products, new technologies, construction, financial and insurance services, health services, care services, sport and recreation, education and culture, activities of other non-commercial entities and transport services (GUS, 2018).

At the central level in Poland, numerous multiannual programmes concerning older people have also been developed, including: Long-Term Senior Policy in Poland for years 2014-2020, the Aktywni+ programme, The ASOS programme, the Senior+ programme, the Social Policy towards Older People 2030 and the Safe and Active Senior campaign (MRiPS, 2023b). There are a number of local initiatives, many of which concern various transport improvements for senior citizens.

Considering the relevance of the problems of the ageing population and the need to address them if necessary, in accordance with the legal provisions, the Government presents information on the situation of older people to both chambers of Parliament every year by 31 October, in particular on the basis of monitoring, which covers a number of designated aspects, among others, the income situation, living conditions, including housing, labour force participation, family situation, health-related quality of life and the availability and level of social services, etc., (Act, 2015).

Transport and mobility issues also arise within the monitored areas. Hence, for the purposes of this study, an analysis of this government document (MRiPS, 2023a) was carried out in addition to a number of other secondary sources. Given the aforementioned fact that mobility conditions differ significantly in rural and urban areas and given the limited volume of the article, the following section discusses aspects of urban mobility of seniors in Poland.

### **3.2 Urban Mobility of the Elderly in Poland - Discussion**

Based on an analysis of the literature and other secondary sources, a number of areas discussed in the context of older people's mobility were identified. The following

discussion addresses these by highlighting a selection of experiences with the mobility of older people in Poland. When discussing the mobility of older people in Polish cities, attention must first be paid to the public transport situation. Older people, due to their health situation and not infrequent limitations in their ability to drive their cars, are often forced to use precisely collective public transport (Solecka, 2018).

In Poland, the issues of operation and directions of its development are regulated by the Act on public collective transport (Act, 2010). It indicates, among other things, the principles for the preparation of sustainable development plans for public collective transport, known as transport plans. These documents define, in particular, the transport network on which public transport is planned, forecasts of transport needs, principles of organisation and financing of transport, as well as the desired standard of services (Act, 2010).

The Act additionally indicates that transport plans should take into account the needs for sustainable development of public transport, especially for people with disabilities and those with reduced mobility (Act, 2010). Thus, as can be seen in the legislation, the needs of vulnerable groups and therefore older people are noted in the context of public transport planning in Poland.

These plans are compulsory for cities with more than 50,000 inhabitants. Hence, Gadziński *et al.* (2019), on the basis of an analysis for 86 Polish cities, formulated a report that allows to gain knowledge about, directions of transport policy in particular locations, also taking into account the needs and conditions of various social groups here. The analysis of this document also makes it possible to indicate how issues of the needs of older people are addressed in the transport plans of cities in Poland.

In this context, it should be noted that the problem of access to public transport for people with disabilities, the elderly and children, *inter alia* in the form of equipping urban transport systems with low-floor buses, can be found in plans for 32 urban centres (Gadziński *et al.*, 2019). At the same time, it should be mentioned that in numerous cities in Poland such means of transport have already been in operation for a long time.

In a larger number of cases, as plans for 53 cities provide for the integration of different modes of transport, which significantly facilitates multimodal urban travel for the elderly through the possibility of conveniently changing modes of transport. Another issue of upgrading infrastructure supporting public transport in the form of shelters and bus stops is planned in 19 cities (Gadzinski *et al.*, 2019).

Here, too, it should be noted that in many Polish cities the bus stop infrastructure is already of no concern. It is also interesting to note that two of them - Krakow and Warsaw - have opted for public-private partnerships in order to modernise and

maintain these important elements of urban infrastructure and have successfully implemented the project (PPP Platform, 2023).

Many of the planning assumptions discussed above are successfully implemented. However, experts point out that despite the existing transport plans in Polish cities and the promotion of sustainable mobility in them, actual investment decisions do not always lead to their actual implementation (Gadziński *et al.*, 2019).

Referring to data on the state of development of urban public transport in Poland, it should be pointed out that the total length of public surface transport lines is currently 58,094 km, including 55,459 km of bus lines, 2,090 km of tram lines, 545 km of trolleybus lines and 42 km of metro lines (GUS, 2023).

Comparing these figures to the situation that existed in 2015, it should be noted that these lines have increased slightly (with some changes in the period 2019-2020) and there are now approximately 1,330 km more (GUS, 2023). The following slight development in the length of transport lines is due, among other things, to the enlargement of many territorial units. However, in order to illustrate the actual situation with regard to the development of public transport, data on the number of people transported by it over the years are representative.

In this context, it should be noted that in 2015, the number of people transported by urban public transport was 3,843.4 million, while in 2022 it will be only 3,224.8 million (GUS, 2023). For the sake of comparison, it is worth noting that more than 30 years ago, in the times of a centrally controlled economy, when few Poles (compared to the inhabitants of democratic Western European countries) owned cars - in 1986, the number of public transport passengers, according to the Chamber of Commerce of Urban Transport, was around 9,000 million people (GUS as cited in IGKM, 2023). Faced with a lack of alternatives, many people then travelled by public transport.

Referring to the issue of this article, the transport behaviour of older people using urban public transport should be considered. For this purpose, the results of research carried out by entities responsible for public transport for selected Polish cities were analysed. As an example, data for the city of Gdansk, with a population of 486,345 and a proportion of older people of 26.1 % (Official portal of the city of Gdansk, 2023), and thus a result close to the national average, can be cited.

Considering the motivations (purposes) of older people travelling by public transport, it was indicated that only 3.9% of journeys are to or from work; 8% are leisure trips, while as many as 80.1% of journeys are related to official matters, trips to shopping centres and shops, medical appointments or other visits. It should additionally be noted that 7.9% of movements are non-home-related (Kostelecka *et al.*, 2022).

The authors of the report additionally emphasise that as the age of passengers increases, a higher proportion of non-obligatory journeys can be observed than obligatory ones, at a younger age related to going to work or school (Kostelecka *et al.*, 2022), which undoubtedly seems to be a universal pattern for different urban centres.

Research into the transport behaviour of city dwellers also provides an additional insight into the modes of transport and mobility chosen by pensioners. In Gdansk, this social group travels 43.5% on foot, 28.1% by car and 25% by public transport. Senior citizens, especially those in the group of pensioners, usually travel outside of peak hours (Kostelecka *et al.*, 2022).

The culmination of journeys by pensioners occurs between 10 am and 1 pm. It should also be noted that 3.4 % of journeys by pensioners are made by bicycle or scooter (Kostelecka *et al.*, 2022). As indicated earlier, walking is also important because of its health-promoting character, as is cycling and mobility by scooter, and it is clear that city dwellers are making use of this option.

In the example given, similar percentages of travel by public transport and by car can be observed. It should be emphasised that Polish pensioners are people whose youth fell on times when the motorisation rate in the country was very low and, as indicated earlier, many Poles at that time travelled by public transport.

They are therefore now people who have a fairly rich experience of travelling by public transport and are quite keen to return to it. It is noted in the literature that in many European countries there is a peculiar challenge related to the implementation of public transport travel for those older people who previously based their mobility on travelling by car (Raczyńska-Buława, 2017).

As indicated in section 2.2, a solution for improving accessibility to public transport for older people is the existence of free public transport in cities. In Poland, free public transport covering all users or selected groups of residents, including older people, is already offered by more than 50 small and medium-sized cities (Rabiega *et al.*, 2022).

With free public transport for all users in mind, it is important to note that it is the managers of small urban centres who are more likely to opt for this solution due to a lower proportion of fare revenue than in large cities. In addition, the costs associated with maintaining public transport in larger cities are much higher, due to the number of lines operated, different modes of transport (Rabiega *et al.*, 2022).

In large cities, it is usually older people and students who can use public transport free of charge, while the age limit for this entitlement is, in most cases, 70 years e.g., in Łódź (Borowska-Stefańska, Wiśniewski and Kowalski, 2020) or the aforementioned Gdańsk. Younger pensioners use tickets at a 50% discount.

In line with information published by the Chamber of Commerce of Urban Transport, it should also be noted that in many urban centres, an increase in passenger satisfaction has been observed, which is due, among other things, to the increasingly modern rolling stock, equipped with air conditioning, Internet access and video surveillance, which is important from the point of view of passenger safety (IGKM, 2023), especially for older passengers.

Senior citizens feel safer and more confident using public transport services when they have access to passenger information systems. These systems are in place in many Polish cities, along with Intelligent Transport Systems being developed here.

It is also important to note the changes in the fleet of rolling stock and the fact that 67% of vehicles are equipped with Euro 5 and Euro 6 engines, which contributes to improving urban air quality (IGKM, 2023). A modernisation of the bus fleet in cities is already underway and will include an increase in the number of electric and hydrogen buses (Rabiega *et al.*, 2022), in connection with the obligations imposed by the Electromobility Act (Act, 2018). This will undoubtedly improve the urban air quality so important for older people.

With regard to the issue of travelling by car, the share of which is still significant among pensioners, it should be noted that Poland is a country with one of the highest ratios of vehicles per 1000 inhabitants, reaching (in 2021) nearly 700 cars (Eurostat, 2023). In this context, it should be emphasised, following experts, that in Poland owning things on one's own (including a car), especially by the older generation, is a specific manifestation of resourcefulness in life, having social and economic sources (Młynarski, 2022). As mentioned, a car is a good that current seniors found difficult to obtain in their youth.

Another important aspect to consider is the use of car sharing by senior citizens. In this context, it should be pointed out that among the predominant urban mobility styles (determined by the longest travel time per week in a given vehicle), its share is 17% (Młynarski, 2022).

However, this is the result for all age groups. Two models are identified in the research: "car sharing users" - (usually men aged around 31-50 and more often not owning their own car despite higher monthly salaries) and "non-users", which in Polish conditions are people over 51 years of age, more often owning their own personal car than users (Młynarski, 2022), among other aspects mentioned in the previous paragraph.

In addition, a number of multiannual programmes addressed to seniors, announced at the central level, under which initiatives are implemented at various levels of local government, contribute to improving the mobility of older people in the country. These are reported annually in the aforementioned document prepared at government level - Information on the situation of older people in Poland.

The 2022 document identifies various senior transport services (including those financed with EU funds) that were implemented as component of a bundle of services or separate services. For example, there was a bundle of services consisting of, for example, rehabilitation classes, health-promoting education, rental of rehabilitation equipment and a transport service to the classes, or, in another case, transport is part of a service combined with art or nature activities for seniors (e.g., in Bory Tucholskie) (MRiPS, 2023a).

There are also transport-only services - for example, for the benefit of seniors in the city of Kielce, the 'Taxi for Seniors' programme was carried out in 2022, under which older people could use free transport on request once a month (a total of six times a year) (MRiPS, 2023a).

#### **4. Conclusions**

In the area of transport solutions aimed at the elderly, numerous initiatives are being implemented in Poland to encourage the use of public transport services and contribute to the convenience of travel for senior citizens. These include the introduction of low-floor means of transport in many cities, the development of passenger information systems, integration of means of transport, modernisation of bus stop infrastructure or even free travel offered to senior citizens.

There are also many local initiatives to support the mobility of older people, and transport services are being incorporated as part of medical or rehabilitation services for older people with reduced mobility, for example.

In Poland, the elderly population is dominated by seniors under 70 years of age, i.e., people who are currently usually in fairly good physical condition. In view of the developing Silver Economy in Poland, it is important to draw attention to the need for further development of transport solutions dedicated to this social group. As time goes by, the proportion of older people in the population will increase, thus, unfortunately, the proportion of the elderly who are becoming sicker and more restricted in their mobility.

There will undoubtedly be a growing role for transport services as part of other services for senior citizens or dedicated transport on demand for this group. It is important to involve different stakeholder groups in these initiatives. It is also crucial to address these issues in the research community and to enrich the literature on the subject, thereby raising public awareness.

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