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# LOGISTICS IN THE LIGHT OF THE AGEING POPULATION\*

**Summary:** The aim of this article is to highlight the problem of the ageing society that will be faced by the broadly defined logistics discipline. A systematic growth in the percentage of the elderly in the total population has been observed for many years. Numerous publications on population forecasts provide evidence for the shaping of the new demographic order on a global scale. This problem has been more and more frequently perceived not only as an economic and social threat but also as a development opportunity for those companies that will offer innovative solutions adjusted to the needs of the elderly. The ageing society also becomes a potential that should be noticed by enterprises providing logistics services as well. The article includes the literature studies in the areas of demography and grey power logistics. It presents the results of demographic forecasts. The article describes opportunities and threats associated with the trend of the ageing population. It also shows a senior-oriented policy in the EU and Poland. The paper introduces the issue of the grey power logistics as a megatrend in logistics and discusses logistics challenges in the light of the ageing society.

**Keywords:** ageing population, grey power logistics, logistics services.

**JEL Classification:** L840, J110.

## Introduction

The issue of the ageing society has become the subject of many discussions among politicians, demographers, sociologists, and economists. The changes of the global demographic structure are associated with numerous socio-economic consequences, in particular for the public finance sector, labour market, health

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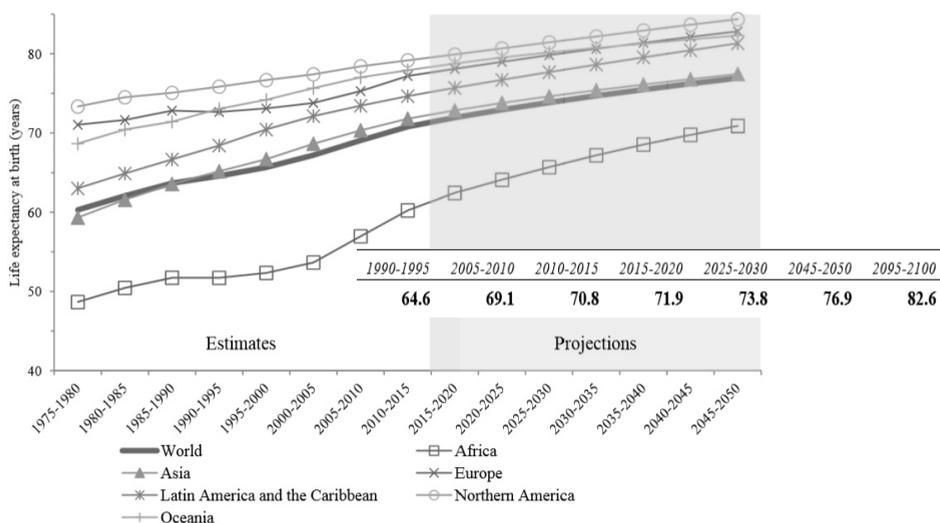
\* The research have been carried out the framework of work S/WZ/1/2014.

care, and educational system [Richert-Kaźmierska, Grzesiak, 2014, p. 5]. This trend has also been observed by the widely understood business sector, which begins to recognise a new group of customers – seniors – in the ageing population. Their dynamic growth results in the emergence of a new group of consumers with specific needs that generates demand for new goods and services. The ageing society also constitutes a great challenge to the social as well as the business logistics. This article deliberates on such problem areas as, e.g.: identifying problems, needs and values of the elderly in terms of the development of elderly-oriented logistics services, designing new logistics products and services adjusted to the needs of seniors as well as developing new business models, logistics management strategies and logistics services addressed at the elderly.

## 1. Demographic situation in Poland and in the world

At the turn of the 19th and 20th centuries the average life expectancy barely exceeded 40 years. The percentage of the elderly in the total population was minor and equalled 4-6% of people over 60 years of age [Antoszkiewicz, 2014, p. 10]. This situation has changed very rapidly. At present, as the United Nations estimates, the average life expectancy across the world is approx. 72 years. It is forecasted that until the end of the 21st century people will on average live 10 years longer (Figure 1).

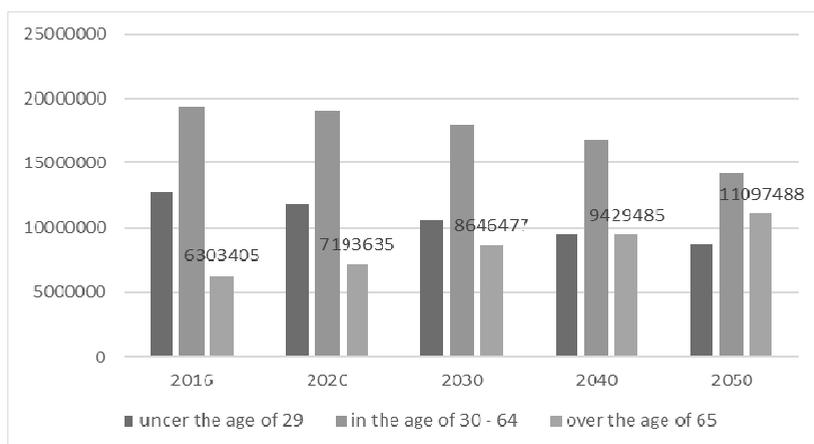
**Figure 1.** The average life expectancy in the world



Source: United Nations [2017].

The number of people in Poland is dropping and the percentage of the elderly is growing. According to the Central Statistical Office of Poland (GUS), in 2016 there were 6.303.405 people over 65 years of age in Poland. It is forecasted that in 2050 this number will almost double and reach 11.097.488 (Figure 2).

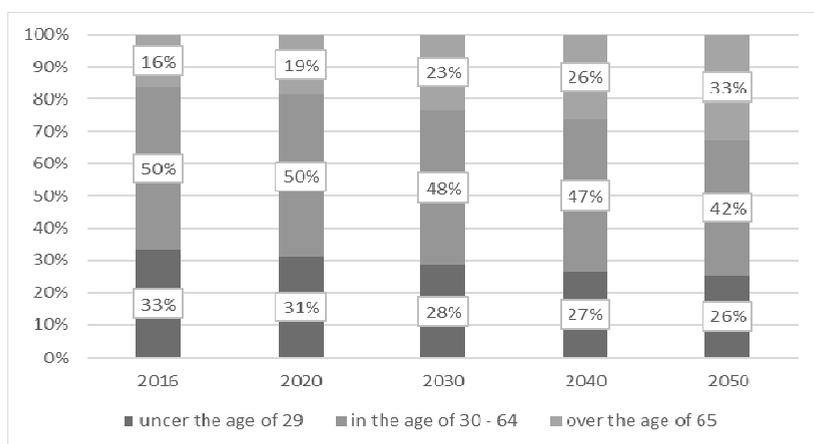
**Figure 2.** Population forecast in Poland



Source: Based on the data from [www 1].

While analysing the demographic structure in Poland in terms of age, it can be observed that in 2016 seniors constituted 16% of the entire population, and in 2050 – as the Central Statistical Office of Poland reports [www 1] – this percentage will be 33% (Figure 3). This means that one in three Poles will reach the retirement age.

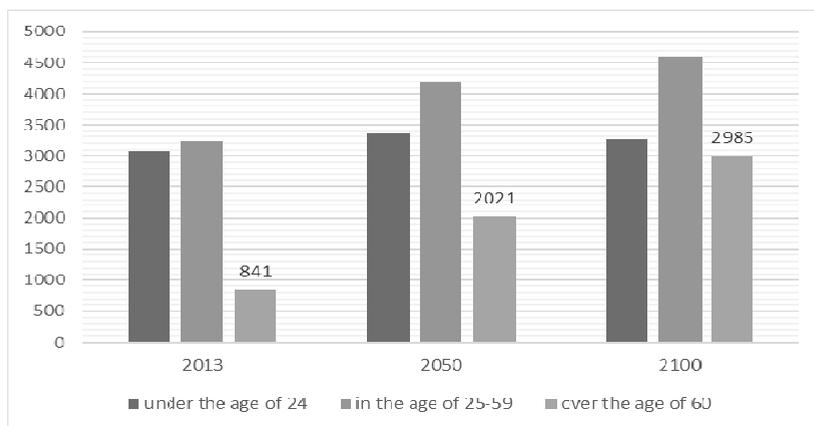
**Figure 3.** Population structure by age in Poland



Source: Based on the data from [www 1].

The research conducted by the Department of Economic and Social Affairs at the United Nations points to the fact that the ageing process of societies is also noticeable on the global scale. It is forecasted that the global number of people over 60 years of age will grow from 841 million in 2013 up to 2.021 million in 2050 and 2.985 million in 2100 (Figure 4). Hence, in 2100 this group will constitute 355% of seniors living in 2013 [United Nations, 2013].

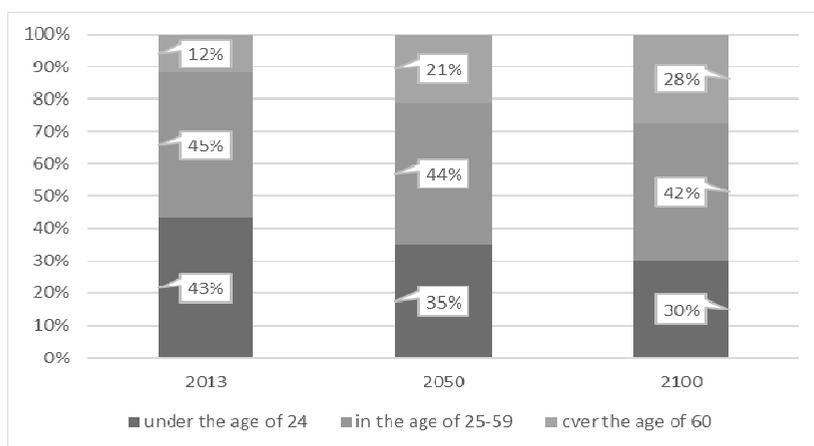
**Figure 4.** Population forecast in the world (in million)



Source: Based on: United Nations [2013].

As the breakdown of the demographic structure illustrated in Figure 5 suggests, the percentage of seniors in the population will grow from 12% in 2013 up to 21% in 2050 and 28% in 2100.

**Figure 5.** Population structure by age in the world



Source: Based on: United Nations [2013].

The rapid growth in the percentage of the elderly is primarily caused by the lengthened average life expectancy as well as decrease in the number of births. This process leads to the ageing of labour resources and the growth in the participation of professionally passive persons.

## **2. The ageing society**

### **2.1. Opportunity or threat**

The ageing society constitutes a challenge faced by the countries across the entire world. This problem is associated with both economic and socio-political consequences. On the one hand, the process of the greying society is perceived as a negative phenomenon that determines many threats. The growth of the elderly population is associated with growing budget expenses towards retirement and disability allowances as well as growing expenditures on medical care and senior care services. The observed tendencies are also connected with the ageing of labour resources and decreasing employee productivity. All these aspects contribute to the limiting economic growth and breed problems with maintaining international competitiveness [Szukalski, 2012].

However, in recent years many have begun to perceive the issue of the ageing population as an enormous opportunity for development and economic growth [Golinowska, 2011; *New Waves of Growth...*, 2011; Szukalski, 2012]. There is a potential in the growth of the senior society which should be handled in the market and social aspects [Niewiadomska, Sobolewska-Poniedziałek, 2015]. Many countries can already boast of good practices regarding solutions to the ageing population. For example, Japanese companies have quickly noticed an opportunity for their development in an ageing society and have effectively faced this problem inter alia by developing new, innovative technologies to enhance quality of senior's life [Obia, Ishmatovab, Iwasakic, 2013]. Many countries have begun to acknowledge this potential and introduced, e.g., an intense senior-oriented policy.

### **2.2. Senior-oriented policy in the EU and Poland**

The problem of the ageing society has been observed by the Commission and the Council of the European Union. These organs started a debate and a number of initiatives aimed at drawing attention to the current trends associa-

ted with demographic changes. In 2001 the participants at the meeting of the European Council in Stockholm already highlighted that demographic transformations constitute one of the paramount challenges to the future development of the continent [Mering, 2012, p. 42]. Four years later, the Green Paper “Confronting Demographic Change: A New Solidarity Between the Generations” pointed to the new image of a senior who is in a growingly better health condition, has savings and therefore wishes to be professionally and socially active for a longer time [European Commission, 2005]. In its subsequent messages, the European Commission pinpoints that the phenomenon of the ageing Europe may constitute an opportunity to increase the competitiveness of the European economy by means of, e.g., creating new markets of goods and services adjusted to the needs of the elderly customers [Communication from the European Commission, 2006]. The ageing populations bring new development possibilities for innovative companies through the demand for new goods or services or adjusting goods and services to the needs of the elderly [Communication from the Commission to the European Parliament, 2009]. In response to the new demographic profile of Europe, the European Commission summons the member states to create innovative solutions in the field of information and communication technologies, transport, energy and tourist infrastructure as well as novel social services, in particular with regard to long-term care.

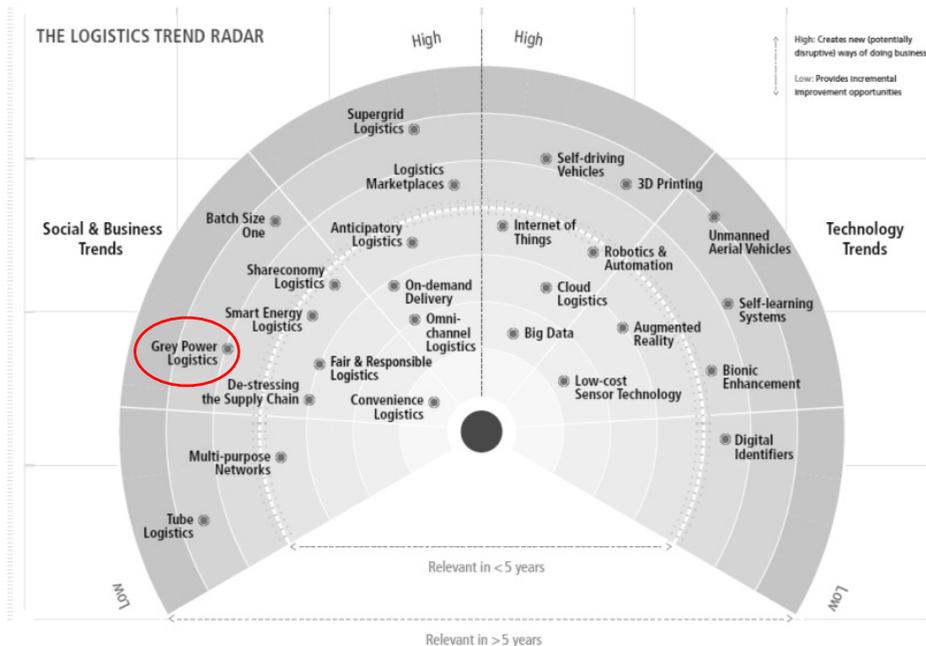
Also Poland has observed the problem of the ageing society. The current senior policy constitutes a serious priority of the Polish government that takes many initiatives addressed at supporting the elderly. One of them was establishing the Department of Senior Policy at the Ministry of Labour and Social Policy in 2012. It deals with, e.g.: creating and developing guidelines addressed at seniors, conditions for improving the system of supporting seniors, executing tasks in the area of active ageing and other forms of cooperation with the participation of the elderly and monitoring the implemented solutions [www 2]. Moreover, in 2014 the government published the document entitled Long-term Senior Policy in Poland for the years 2014-2020, which includes a number of measures in the area of senior policy aimed at improving the situation of the elderly towards dignified ageing in good health [Uchwała Nr 238 Rady Ministrów, 2013]. While recognising the issue of the ageing society, the government also published The Government Programme for Social Participation of Senior Citizens for 2014-2020. The document accounts for support areas and directions that foster the achievement of the major objective that is improving the quality and level of live of the elderly in terms of dignified ageing by means of social activity [Uchwała Nr 237 Rady Ministrów, 2013].

### 3. Logistics and the ageing society

#### 3.1. Grey power logistics as a megatrend in logistics

The ageing population is perceived by many researchers as a megatrend in logistics [Tinnilä, 2012; Brdulak, 2014]. A. Bujak [2016] names the power that fundamentally changes the manner of functioning of logistics economic entities, their mode of operation, competition, a significant direction, tendency or power that emerges globally or locally and is capable of operation in the future and that exerts a significant impact on almost each aspect of the functioning of societies and logistics itself. In its report Logistics Trend Radar DHL, the DHL as well perceived the problem of the ageing generation as a development opportunity for logistics companies. It focuses on 26 trends that in the nearest future will significantly affect the functioning of the logistics sector [www 3].

**Figure 6.** Logistics trend radar DHL



Source: [www 3].

The authors of the report emphasise that in five or more years the first wave of the digital society will enter the elderly segment. Therefore, grey power logistics, namely logistics addressed at the elderly, will play an important role since the development of the percentage of the elderly will correspond with the growth in the demand for new logistics services, e.g. delivering medicines to houses [www 4, p. 16].

### 3.2. Image of a senior – new recipient of logistics services

Nowadays, a new image of a senior as a consumer is being shaped. Seniors are no longer perceived as stereotyped, lonely people that are clumsy, poor, and ill. Today's generation of the elderly is interested in active lifestyle, functions in a multi-channel environment and is open towards innovative solutions. As T. Zalega [2017] claims, seniors more frequently subdue to new (alternative) consumer trends, such as: cocooning, conscious consumption, smart shopping, collaborative consumption and consumer ethnocentrism. Literature devotes much attention to the description of the image of today's senior [Meiners, Seeberger, 2010; Brandys, 2015; Lipowski, Angowski, 2017], who:

- lives longer than 20 years ago;
- has regular income, reaches the income that is on average twice as small as the income of a working person, but in comparison to income per family member – the senior has a larger amount per person;
- owns life savings, own apartment;
- has a lot of free time;
- is active and curious about the world;
- is interested in various products;
- has a rational and conscious approach towards shopping;
- is all the more inclined to search for products of higher quality;
- more and more frequently uses the Internet, has access to information;
- participates in cultural events;
- eagerly travels;
- is better educated;
- has various needs, opportunities, aspirations, likings as well as psychophysical and economic condition.

Today's seniors also have various needs that frequently result from their possibilities, interests, likings, and aspirations. The providers of logistics services dedicated to the elderly should therefore take into consideration seniors' needs, apart from those basic ones that are required for everyday life. These are: the need for development, cognitive, social needs [Reber, 2000], material, safety, and emotional needs [Trafiałek, 2003, pp. 106-109].

### **3.3. Challenges to logistics in the era of the ageing population**

In the era of ageing societies it can be expected that many economy sectors will develop. F. Bran, M. Popescu, and L. Stanciu [2016, p. 132] identified the main beneficiaries of the current demographic situation, including: health sector, construction of smart homes which support independent living, personal and autonomous transport, personal banking and e-banking services, tourism sector.

All these economic and social activities will require widely understood logistics support. Logistics service providers will offer various modes of delivering medicines and food to a senior's home. Such solutions as meals-on-wheels will also become popular. Moreover, the need for carriage services will grow since year over year a growing percentage of people will need to reach a medical care facility or a cultural centre.

The ageing society also becomes a drive for the development of such concepts as: aging-friendly cities, aging-in-place and smart house [Stefanov, Bien, Bang, 2004; Scharlach, 2012; Klimczuk, Tomczyk, 2016]. Their common goal is to improve the quality of life and the level of safety for elderlies by means of applying new information and communication technologies or other innovative solutions in the space arrangement where they live and function on a daily basis.

The growing market of silver customers will bring the development of logistics support strategies dedicated to entities that provide services to seniors, such as: hospitals, social care facilities, blood donation centres, and pharmacies. They will mainly involve planning and organising goods distribution as well as transporting elderly persons. Furthermore, these institutions more and more often start to apply tools and management concepts known in business logistics. For instance, hospitals implement logistics solutions that facilitate patient service, supervision of the hospitalisation process and the flow of medications, medical agents, and information [Twaróg, 2014].

The shaping of a new demographic global profile also constitutes a challenge for packaging manufacturers. The packages of products dedicated to seniors should be easy to use and the placed information should be readable and understandable.

It should also be highlighted that together with this new demographic trend the situation on the labour market will change too – the period of professional activity will lengthen. The problem of the ageing labour resources will also concern logistics industry. Therefore, producers of innovative technologies now offer new solutions which are supposed to facilitate work in, for instance, a warehouse. These are, e.g.: exoskeletons that foster lifting heavy objects and protect against injuries.

The enterprises face a number of challenges, due to the growing percentage of the elderly. It is highly likely that this trend shall give rise to new business models, strategies for logistics management and logistics services addressed at the needs of the ageing group of customers. Commercial entities should in the first place become aware that the ageing society creates new growth opportunities and, at the same time, constitutes a chance for improving their competitiveness. Their activity should be based on counteracting ageism and perceiving the elderly customer as a person who is frequently active, open to innovation and familiarised with the Internet. Before a company takes new strategic decisions it should identify problems and needs as well as real assets of the elderly. The knowledge of their expectations, habits, interests, and needs together with the recognition of differences in the age or material status will allow for segmenting this group of customers. This segmentation will further result in adjusting the offer to the needs or developing a new strategy of logistics services towards seniors. It is also vital to develop ways to reach the elderly with such new services, extend the access to innovative solutions and motivate seniors to use them.

## Conclusions

An aging society is a natural and inevitable process which must be faced by various areas of life. According to the author of the article, in this sphere, the grey power logistics will face also many challenges. These are, e.g., identifying problems, needs, and values of the elderly in terms of the development of elderly-oriented logistics services, designing new logistics products and services adjusted to the needs of seniors as well as developing new business models, logistics management strategies and logistics services oriented at the elderly people.

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**LOGISTYKA W OBLCZU STARZEJĄCEGO SIĘ SPOŁECZEŃSTWA**

**Streszczenie:** Celem artykułu jest zaakcentowanie problemu starzejącego się społeczeństwa, z którym będzie musiała się zmierzyć szeroko rozumiana logistyka. Od wielu lat mówi się o systematycznym wzroście odsetka ludzi starszych w populacji. Publikowane liczne prognozy ludności świadczą bowiem o kształtowaniu się nowego porządku demograficznego świata. Coraz częściej problem ten postrzega się nie tylko jako zagrożenie ekonomiczne i społeczne, ale również jako szansę na rozwój firm, które zaproponują innowacyjne rozwiązania dostosowane do potrzeb ludzi starszych. Starzejące się społeczeństwo jest także potencjałem, który powinien zostać zauważony przez przedsiębiorstwa świadczące usługi logistyczne. W artykule zaprezentowano wyniki prognoz demograficznych. Omówiono szanse i zagrożenia związane z trendem starzejącego się społeczeństwa oraz zwrócono uwagę na postawę Unii Europejskiej i polskiego rządu wobec analizowanego problemu. W opracowaniu przedstawiono również zagadnienie *grey power logistics* jako megatrendu w logistyce oraz zidentyfikowano wyzwania, jakie stoją przed logistyką wobec starzejącego się społeczeństwa.

**Słowa kluczowe:** starzejące się społeczeństwo, logistyka ukierunkowana na ludzi starszych, usługi logistyczne.