

## **EMPLOYMENT POTENTIAL INDEX OF OLDER PEOPLE IN THE EUROPEAN UNION**

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**Abstract:** The aging of the population in Europe brings an increase in the group of people 65+, which is important to reflect on not only from the perspective of state governance in developing strategies and finding solutions to aging-related phenomena such as the growing economic dependence of older people, but it is also necessary to pay attention to this in terms of the theory and practice of human resources and age management within using the employment potential of older people in the labor market. The article focuses on the employment potential index of older people (EPIOP) and on the characterization of the factors which were used to create EPIOP and subsequently to monitor its development in the European Union (EU 28) during the years 2008-2018. The data were obtained from Eurostat and UNECE databases. The findings indicate that the indices of the individual countries had a predominantly increasing trend and converged with the EU 28 average, and none of the countries monitored in the index fell below the base year 2008 throughout the period under review. Latvia (23%), Bulgaria (23%) and Cyprus (19%) had significantly higher growth rates compared to the base year. The lowest EPIOP grew in Germany, the Netherlands, France, Denmark, Slovenia and the Czech Republic. The EU 28 average had a maximum growth rate of 9%.

**Keywords:** ageing, employment potential, labor market, older people

**JEL classification:** E24, I00, J11, J14, J20

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## Introduction

As the share of older people has been increasing in the population for several decades, from the point of view of human resources management and age management, it is important to monitor the factors that relate to the use of the employment potential of older people in the labor market. Monitoring the development of such factors is important not only from the perspective of state management, the creation of strategies and searching for solutions to the phenomena associated with the aging population and thus the growth in the numbers of older people but is also important from the point of view of human resources management at the company level, with an emphasis on planning and recruitment or the implementation of a policy to prolong the working life of older people. Last but not least, knowledge of the values of the factors of using the employment potential of older people is not negligible, even for individuals who have become part of the cohort of 65+ as they are not only passive anonymous members of this group, but active participants in processes like raising the retirement age, improving health care, active ageing, well-being and quality of life, opportunities for deepening qualifications, education and development.

The article is focused on the growth of the employment potential index of older people (EPIOP) and the factors of employment, health, well-being and education of older people, which were used to compose EPIOP. The index monitors the period 2008-2018 in the countries of the European Union. The data were obtained from the Eurostat and UNECE databases. The article continues with a literature review, research methodology, results and conclusion.

## Literature Review

Using the employment potential of older people in the labor market (Shatalova, 1999; Gregar & Pejřová, 2013; Gregar & Pejřová, 2014; Gregar et al., 2015) affects various areas of society, scientific research, professional practice and everyday life.

Supporting the growth of the employment of older people is a preferred trend in countries where the use of employment potential of older people in the labor market is closely linked to the demographic phenomenon of population aging (Jeníček & Foltýn, 2003; Dudel & Myrskylä, 2017; Ćwirlej-Sozańska et al., 2018; Neary et al., 2019; Horváthová & Éhn, 2020; Vaňo, 2020), the problem of the growing economic dependence of older people (Hu & Yang, 2012; Fiala & Langhamrova, 2017; Abeyasinghe, 2019; Hyndman et al., 2021) and unemployment among older people (Axelrad et al., 2017; Amber & Domingo, 2017; Axelrad et al., 2018; Zelezna & Kreidl, 2016), especially those just before retirement age (Gomezbellenge & Belgrave, 1984; Wuebbecke, 2011; Murray et al., 2015; Hetschko et al., 2019; Ponomarenko et al., 2019).

The sociological concept of active aging (Bútorová et al., 2013; Rodriguez-Rodriguez et al., 2017; Hatar, 2019; Ortega, 2021) is closely linked to the use of the employment potential of older people in the labor market by its focus on the employment of older people (UNECE, 2020), in which ageism still plays a negative role (Harris et al., 2018; Mirza et al., 2021; Kim et al., 2021) and age discrimination

against older people (Gomezbellenge & Belgrave, 1984; Leitner, 2001; Oskova, 2010; Pawera & Jančíková, 2017; Meliou et al., 2019; Busygina & Shtrikova, 2019). The classic theme of life cycles is being revised due to changes in the social roles of older people as a consequence of their later retirement, and thus a redefinition of life stages according to the individual's working life (Komp-Leukkunen, 2019; Langot, 2019).

In the field of health in relation to the use employment potential, the health status as well as physical and mental health of working older people are examined (Whitley & Popham, 2017; Ćwirlej-Sozańska et al., 2018; Neary et al., 2019; Schelleman-Offermans & Massar, 2020; Borchart et al., 2021) and the extent of their health exhaustion associated with an increase in workload, discomfort and distress considering the working conditions (Wahrendorf et al., 2016; Fournier et al., 2018; Eisenberg-Guyot et al., 2020; Wolfe & Patel, 2021). As the aim of our research on using the employment potential of older people, we also include the indicator of life expectancy growth (Ediev et al., 2019; van der Mark-Reeuwijk et al., 2019; Eurostat, 2020; Bartek, 2020) as it is one of the prerequisites for prolonging working life.

The well-being factor of older people is considered to be a motivating factor (Lakomy, 2019; Axelrad et al., 2020) of using the employment potential of older people. What most often threatens the level of well-being is the financial income of older people (Fonseca et al., 2014; Pienkowska-Kamieniecka, 2018; Swain et al., 2020; Hoeyberghs et al., 2020; Lu et al., 2021; Wolfe & Patel, 2021), housing financing (Costa-Font, 2013; Riedy et al., 2019; Alidoust & Khalaj, 2021), financial exclusion (Potyrańska & Hajduk-Stelmachowicz, 2019) or the availability of quality food (Radermacher et al., 2010; Knight et al., 2020; Gajda & Jezewska-Zychowicz, 2021).

Education and development are frequent subjects of human resources research and in focusing on using the employment potential of older people, it is a key factor that increases competitiveness (Balanovska et al., 2019) and labor market participation (Hallsten, 2012; Midtsundstad & Nielsen, 2019; Groot & Van den Brink, 2000).

## Research methodology

The following methods were utilized to monitor the use of the employment potential of older people in the labor market: literature analysis, comparison, induction, deduction and the employment potential index of older people. The index is compiled according to four factors, based on an analysis of the literature on older people and the labor market: employment, health, well-being, and education. The individual factors are assigned indicators that we consider to be key. The data were obtained from the Eurostat (2021a, 2021b, 2022a) and UNECE (2020) databases for the period 2008-2018 in EU 28 countries.

The employment potential index of older people is compiled from the following indicators (cf. Table 1):

1. Employment of older people 65 years or over. According to Eurostat (2021c)<sup>2</sup>:
2. *“Employment (persons in employment): Employed persons comprise persons aged 15 years and more who were in one of the following categories: (a) persons who during the reference week worked for at least one hour for pay or profit or family gain; (b) persons who were not at work during the reference week but had a job or business from which they were temporarily absent”*.
3. Healthy life years at age 65. According to Eurostat (2022b)<sup>3</sup>:  
*“The indicator of healthy life years measures the number of remaining years that a person of a specific age is expected to live without any severe or moderate health problems”*.
4. Life expectancy at age 65. According to Eurostat (2022c):  
*“Life expectancy at certain ages represents the mean number of years still to be lived by a person who has reached a certain exact age, if subjected throughout the rest of his or her life to the current mortality conditions (age-specific probabilities of dying)”*.
5. Well-being 65+, which includes the relative median income, no poverty risk and no severe material deprivation. Definitions of the three indicators according to UNECE (2019a):  
Relative median income ratio *“is defined as the ratio of the median equivalised disposable income of people aged 65 and over to the median equivalised disposable income of those aged below 65”*.  
No poverty risk means *“the percentage of people aged 65 and over who are not at risk of poverty (people at risk of poverty are defined as those with an equivalised disposable income after social transfers below the at-risk-of-poverty threshold, which is set at 50% of the national median equivalised disposable income after social transfers)”*.  
No severe material deprivation is *“the percentage of people aged 65 and over who are not severely materially deprived. Severe material deprivation refers to a state of economic and durable strain, defined as the enforced inability (rather than the choice not to do so) to afford at least four out of the following nine items: to pay their rent, mortgage or utility bills; to keep their home adequately warm; to face unexpected expenses; to eat meat or proteins regularly; to go on holiday; a television set; a washing machine; a car; a telephone”*.
6. Educational attainment 55-74. According to UNECE (2019b) it is *“the percentage of older persons aged 55-74 with upper secondary or tertiary educational attainment”*.
7. Lifelong learning 55-74. According to UNECE (2019a)<sup>4</sup> it is *“the percentage of people aged 55 to 74 who stated that they received education or training in the four weeks preceding the survey”*.

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<sup>2</sup> Data not available for 2008 for Luxembourg and Malta, 2016 and 2018 Luxembourg.

<sup>3</sup> Data not available for 2008 for Croatia, for 2010 for Italy, 2012 Sweden.

<sup>4</sup> Data not available for Bulgaria for the entire reporting period 2008-2018.

The age range in Educational attainment and Lifelong learning was chosen due to the unavailability of data for the 65+ cohort, but we decided to include it because it came closest to the characteristics of the required age group 65+ indicator.

**Table 1. Composition of employment potential index of older people**

Factor	Indicator	Data source
Employment	Employment of older people 65+	Eurostat (2022a)
Health	Healthy life years at age 65	Eurostat (2021a)
	Life expectancy at age 65	Eurostat (2021b)
Well-being	Relative median income 65+	UNECE (2020)
	No poverty risk 65+	UNECE (2020)
	No severe material deprivation 65+	UNECE (2020)
Education	Educational attainment 55-74	UNECE (2020)
	Lifelong learning 55-74	UNECE (2020)

Source: Author's own compilation based on research

The employment potential index of older people (EPIOP) is formulated according to Eurostat (2019):

$$EPIOP_n = \frac{a_n + b_n + c_n + d_n + e_n + f_n + g_n + h_n}{q} * 1 \quad (1)$$

Where:

EPIOP = employment potential index of older people, a = employment, b = healthy life years, c = life expectancy, d = relative median income, e = no poverty risk, f = no severe material deprivation, g = educational attainment, h = lifelong learning, q = value for the base year 2008, n = year.

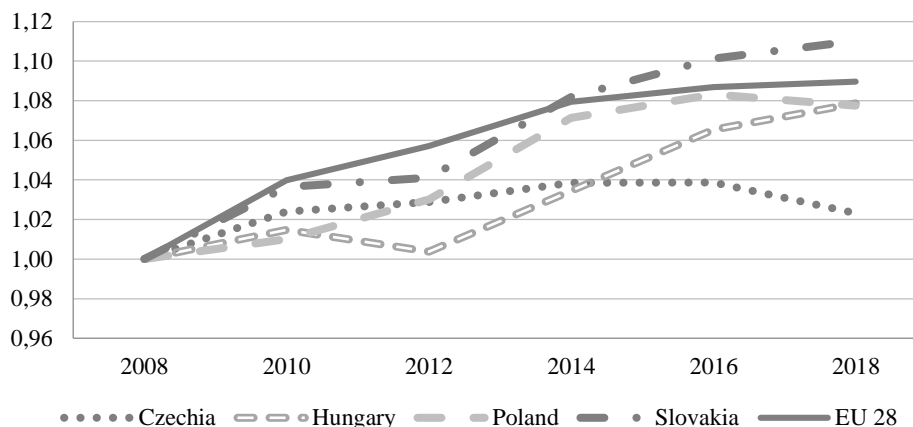
## Results

The results are divided and presented in six graphs for comparison by region and for a clearer view of the development of the employment potential index of older people (EPIOP). Countries are grouped in the graphs according to the geographical characteristics (territorial proximity, region) and historical specifics (political and economic developments in the past). The development of the EPIOP index is monitored in relation to the base year 2008 for the years 2010, 2012, 2014, 2016 and 2018. Data were not available for selected indicators in some countries (see the Research methodology section). Although the observed indicators are not complete in this case, we nevertheless included them in the description because the results show at least a partial development of the index.

Figure 1 presents the development of the EPIOP indices in the period under review in the Visegrad Group countries (V4), that is in the Czech Republic, Hungary,

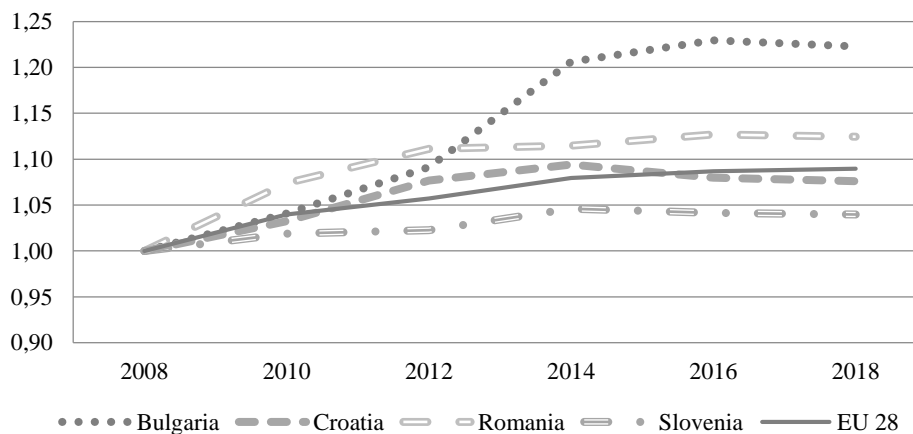
Poland, Slovakia and for comparison EU 28. The lowest growth of the index was recorded in the Czech Republic, the highest value in 2014 and 2016 – 1.04 points. The highest increase in the index was achieved in Slovakia in 2018 – 1.11 points. At the same time, as the only V4 group, it grew to the EU 28 average, the value of which was the second highest, although in 2012 it was above the level of Slovakia. Hungary and Poland mostly had a growing index trend and converged in 2018

at 1.08 points. Positive findings with regard to using the labor potential of older people in the labor market is that the indices of individual countries mostly had a growing trend.



**Figure 1. EPIOP in Czechia, Hungary, Poland, Slovakia, EU 28**

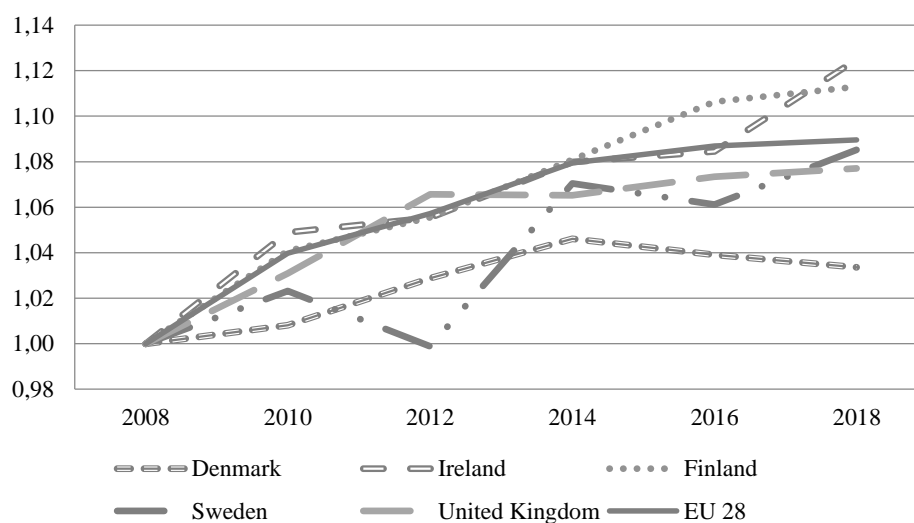
Source: Author’s own calculations based on data from UNECE (2020) and Eurostat (2021a, 2021b, 2022a)



**Figure 2. EPIOP in Bulgaria, Croatia, Romania, Slovenia, EU 28**

Source: Author’s own calculations based on data from UNECE (2020) and Eurostat (2021a, 2021b, 2022a)

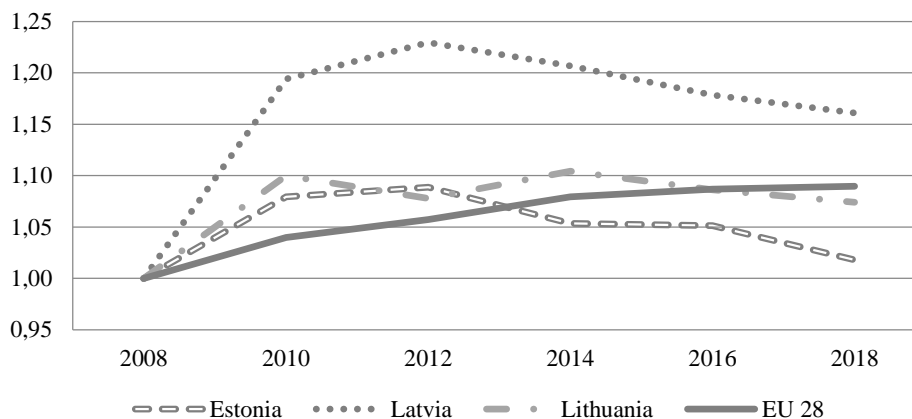
Figure 2 presents the development of the indices in the observed period in the countries of the south-eastern post-communist bloc in Europe, which includes Bulgaria, Croatia, Romania, Slovenia and for comparison EU 28. In the observed group, Bulgaria achieved the absolutely highest increase in the EPIOP index in 2016 – level 1, 23 points. It should be noted, however, that for Bulgaria the data for the lifelong learning indicator are not included in the whole period under review due to their unavailability. Slovenia has the lowest growth of the index in the group, when its maximum was 1.05 points in 2014. Romania was above the EU 28 average throughout the period with an increasing trend of the index. Croatia converged the most with the EU 28 average in the period under review. The development of the index in all the examined countries had a predominantly growing trend, which we consider to be a positive development concerning the use of the employment potential of older people in the labor market.



**Figure 3. EPIOP in Denmark, Ireland, Finland, Sweden, United Kingdom, EU 28**

Source: Author's own calculations based on data from UNECE (2020) and Eurostat (2021a, 2021b, 2022a)

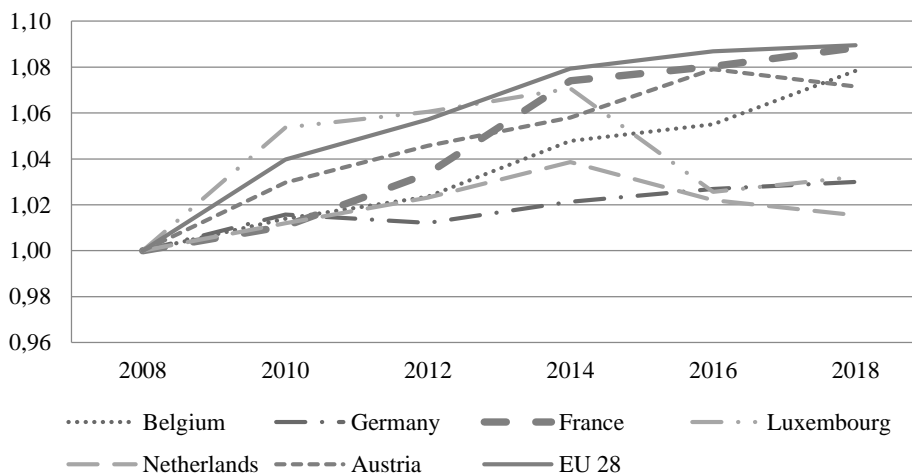
Figure 3 presents the development of the indices in the observed period in the group of countries in northern Europe and for comparison of EU 28. All the countries had a growing trend of the EPIOP index. Sweden had a significant drop in 2012 due to the absence of data for the healthy life years indicator. The countries converge significantly with the EU 28 average except Denmark. Ireland reached its highest level compared to the base year 2008 in 2018 – the level of 1.12 points. Denmark had the smallest growth in the EPIOP index and had been gradually declining since 2014. The development of the indices in all the monitored countries had a predominantly growing trend, which we consider to be a positive development with regard to using the employment potential of older people in the labor market.



**Figure 4. EPIOP in Estonia, Latvia, Lithuania, EU 28**

Source: Author’s own calculations based on data from UNECE (2020) and Eurostat (2021a, 2021b, 2022a)

Figure 4 presents the development of the EPIOP indices in the observed period in the group of Baltic countries: Estonia, Latvia, Lithuania and for comparison EU 28. In Latvia, the overall growth was the most significant and reached a maximum of 1.23 index points in 2012 (note Bulgaria had a top 1.23 in 2016), and since then it gradually declined. The index in Estonia had grown until 2012 – 1.09 points and then fell to the level of 1.02 points in 2018. Lithuania, after a sharp increase in 2010 to 1.10 points, had continued oscillating developments with significant convergence with the average EU 28 in 2016, after which it fell below the EU 28 average.

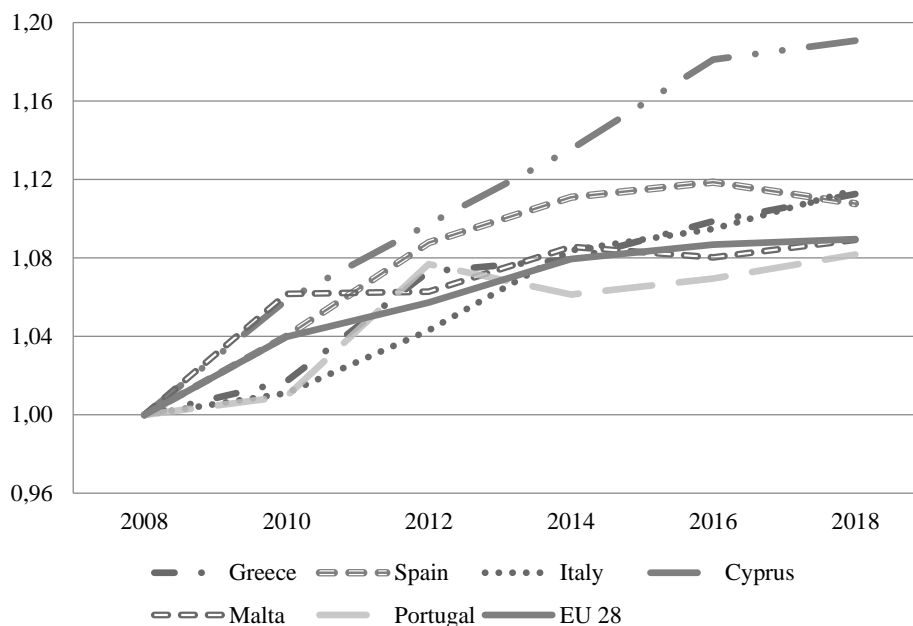


**Figure 5. EPIOP in Belgium, Germany, France, Luxembourg, Netherlands, Austria, EU 28**

Source: Author’s own calculations based on data from UNECE (2020) and Eurostat (2021a, 2021b, 2022a)



Figure 5 presents the development of the EPIOP indices in the observed period in the group of Central and Western European countries: Belgium, Germany, France, Luxembourg, the Netherlands, Austria and the EU 28 average. The highest values in the graph are exhibited by the EU 28 average; the other countries of the group are below the average during the entire observed period. Until 2012, only Luxembourg was over the EU 28 average. The values of the Luxembourg index are devoid of data on the employment rate of older people 65 years or over in 2008, 2016 and 2018. France had the strongest growth of the index with a maximum in 2018 at 1.09 among this group of countries. Germany and the Netherlands had minimal index growth throughout the period. This group of countries is characterized by high convergence with the EU 28 average and minimal index growth.



**Figure 6. EPIOP in Greece, Spain, Italy, Cyprus, Malta, Portugal, EU 28**

Source: Author's own calculations based on data from UNECE (2020) and Eurostat (2021a, 2021b, 2022a)

Figure 6 presents the development of the EPIOP indices in the observed period in the group of southern European countries: Greece, Spain, Italy, Cyprus, Malta, Portugal and the EU 28 average. Data for the employment indicators of Malta in 2008 and healthy life years of Italy in 2010 were not available, and thus are missing in the calculation of the indices. Cyprus reached the highest values of linear growth of the index in 2018 at the level of 1.19 points. The other countries oscillate and converge with the EU 28 average. None of the countries in the index fell below the base year 2008. The overall trend of country indices was increasing and converged with the EU 28 average except for the divergent Cyprus.

## Conclusions

The development of the use of the employment potential of older people in the labor market in the EU 28 countries in the observed period 2008-2018 was monitored through the employment potential index of older people (EPIOP). The value of the index for each country towards the base year 2008 did not fall below the level of 1.00 points, which means a progressive trend in the use of the employment potential, which was monitored with regard to employment, health, well-being and education factors. A positive finding is that the indices of individual countries had a predominantly increasing trend and converged to the EU 28 average. Latvia (max. 23%), Bulgaria (max. 23%) and Cyprus (19%) had significantly higher growth rates compared to the base year. The EPIOP index of these countries grew diametrically compared to other countries. For comparison, the EU 28 average had a maximum growth rate of 9%. Although we do not know exactly how Bulgaria deviates from the average due to the lack of data on lifelong learning, in Latvia and Cyprus the data are complete and we can attribute this to a very significant shift in the use of the employment potential of older people. The lowest growth in the indices were in Germany, the Netherlands, France, Denmark, Slovenia and the Czech Republic.

The limitations of the research are in the data unavailability for several countries in various years under review, which may be the future research direction to make the EPIOP more precise. The expected development in the coming years is that due to the pandemic, recession and war in Ukraine, the indices will decline, but the real measurements may reveal surprising values in the future.

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## WSKAŹNIK POTENCJAŁU ZATRUDNIENIA OSÓB STARSZYCH W UNII EUROPEJSKIEJ

**Streszczenie:** Starzenie się społeczeństwa w Europie niesie za sobą zwiększenie grupy osób starszych 65+. Ważne jest, aby nie tylko uwzględniać z perspektywy zarządzania państwem opracowywanie strategii i znajdowanie rozwiązań dla zjawisk związanych ze starzeniem się, takich jak rosnąca zależność gospodarcza osób starszych, ale również należy zwrócić uwagę na teorię i praktykę zarządzania zasobami ludzkimi i wiekiem w ramach wykorzystania potencjału pracy osób starszych na rynku pracy. W artykule skupiono się na charakterystyce czynników wykorzystania potencjału pracy osób starszych na rynku pracy, na podstawie których stworzono indeks potencjału pracy osób starszych (EPIOP), a następnie jego rozwoju w Unii Europejskiej (UE-28) w latach 2008-2018. Dane pochodzą z baz danych Eurostatu i EKG ONZ. Pozytywnym wnioskiem jest to, że indeksy poszczególnych krajów wykazywały głównie tendencję wzrostową i były zbieżne ze średnią UE-28, a żaden z krajów monitorowanych w indeksie nie spadł poniżej roku bazowego 2008 w całym analizowanym okresie. Łotwa (23%), Bułgaria (23%) i Cypr (19%) miały znacznie wyższe stopy wzrostu w porównaniu z rokiem bazowym. Najniższy wskaźnik potencjału pracy wzrósł w Niemczech, Holandii, Francji, Danii, Słowenii i Czechach. Średnia dla UE-28 osiągnęła maksymalny wzrost na poziomie 9%.

**Słowa kluczowe:** potencjał zatrudnienia, rynek pracy, starzenie się, osoby starsze

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