Research and analysis of the employment strategy of the V4 countries in the light of individual and organisational responses

Research and analysis of the employment strategy of the V4 countries in the light of individual and organisational responses

József Poór, Zsuzsanna Szeiner, Norbert Gyurián, Szilvia Módosné Szalai, Imrich Antalik, Erika Varga (eds)

Research monograph

Komárno
2023

Research and analysis of the employment strategy of the V4 countries in the light of individual and organisational responses

József Poór, Zsuzsanna Szeiner, Norbert Gyurián, Szilvia Módosné Szalai, Imrich Antalik, Erika Varga (eds)

Chief editors:

József Poór DSc, CMC university professor	PhDr Zsuzsanna Szeiner PhD lecturer	Ing. Norbert Gyurián PhD lecturer
Szilvia Szalai Módosné PhD lecturer	PhDr Imrich Antalik associate professor	Dr. habil. Erika Varga PhD associate professor

Authors:

- PhDr. Imrich Antalik PhD associate professor, J. Selye University (Slovakia)
- Klaudia Balázs Mgr., PhD student, (Collegium Talentum) J. Selye University (Slovakia)
- Mgr. Zdeněk Caha, MBA, Ph.D., Head of institute, Českých Budějovicí, Technology and Economic University, (Czech Republic)
- Norbert Gyurián PhD lecturer, J. Selye University (Slovakia)
- Lukasz Háromszéki, PhD, professor, Wroclaw University of Economics, Wroclaw, (Poland)
- Szonja Jenei, PhD candidate, J. Selye University (Slovakia)
- Kálmán Botond Géza PhD assistant professor, Kodolányi János University, (Budapest, Hungary)
- Szilvia Szalai Módosné, PhD teaching assistant, Széchenyi István University (Hungary)
- Sylvia Molnár Mgr., PhD student, J. Selye University (Slovakia)
- József Poór DSc. CMC , full professor, J. Selye University (Slovakia)
- Marzena Stor, PhD, professor, Wroclaw University of Economics, Wroclaw, (Poland)
- PhDr. Silvia Kosár Tóbiás, PhD, assistant professor, J. Selye University (Slovakia)
- Arnold Tóth Dr. habil, PhD, associate professor, Budapest Business University, Budapest, Hungary
- PhDr. Zsuzsanna Szeiner PhD lecturer, J. Selye University (Slovakia)
- Erika Varga Dr. habil, PhD associate professor, Hungarian University of Agriculture and Life Sciences Gödöllő (Hungary)

Reviewers:

Szilárd Berke associate professor Óbuda University	Csilla Judit Suhajda PhD associate professor Hungarian University of Agriculture and Life Sciences

Web programming:
Dr. Róbert Sinka e-learning expert

Editor:
Dr. Tamás Kolbe

Publisher:
J Selye University
Hradná ul. 21. Komárno, Slovakia

Year of publication: 2023

ISBN: 978-80-8122-490-4 EAN: 9788081224904

Výskum a analýza stratégií zamestnanosti v krajinách V4
Research and analysis of employment strategies in V4 countries

Slovak Republic under the grant 1/0688/21

Contents

Introduction
(József Poór)

"The only constant in life is change."
Heraclitus[1]

In recent years, the labour market in the former Eastern bloc countries has changed significantly, altering the way workers relate to employers. Two or three decades ago, life-long employment in one company or organization was common. Today, this is no longer the case.

One of the key issues in these countries today is the dramatic increase in labour shortages, which have been influenced by a variety of factors, including post-regime emigration, adverse demographic factors, the economic crisis and wage differentials within the European Union (Brixiova et al., 2009). Today, the three crisis factors accompany the aforementioned causes.

The emergence of new technologies, robotization and the rise of artificial intelligence have also had and will continue to have a significant impact on the labour market. If we look at the various forecasts and projections associated with this, for the first time in a few years, only traditional work (e.g., repetitive, heavy physical effort, etc.) may not have labour shortage; instead, a significant labour surplus (Harari, 2018). Some argue that today's labour shortage areas will soon disappear due to new types of robotization (Ford, 2016). Recent research suggests that 47% of jobs in the US are 'at risk' due to robotization (Hess & Ludwig, 2017). With the present research, we have carried out the following tasks in relation to the above trends:

- First, we reviewed the most important literature sources on the socio-economic situation and labour market in Central and Eastern European countries (Czech Republic, Poland, Hungary and Slovakia), drawing on literature sources. This gave us a general picture of the labour market situation in the countries under study.
- We have developed an analytical model based on which we have been able to investigate through empirical research (online survey) the degree of labour market turnover in these countries, the main causes, the typical instruments of labour retention from the point of view of organizations and individual workers.
- We have analyzed, for the V4 countries, the responses of the companies and institutions surveyed to the questionnaire, which government measures are helping to address the problems and tensions in the labour markets.
- We also look at what efficiency improvement and robotization programmers are planned or have been introduced by the responding organizations.

[1] Greek philosopher from Ephesus (near modern Kuşadası, Turkey), active around 500 BC, best known for his doctrine that things are always changing (universal fluxus) (Stanford Encyclopedia of Philosophy)

Our research report is divided into three major sections.

- In Chapter 1 and 2, we present the theoretical basis of our research and describe the research methodology we used.
- Chapter 3 presents summary statistics and our analysis of our empirical research among individual workers in the V4 countries.
- Chapter 4 provides summary statistics and analysis of our empirical research among organizations (companies and institutions) in the V4 countries.
- Chapter 5 provides a list of organizations that responded to our research questionnaire.

The research described here cannot, of course, cover all aspects of the subject due to the limitations of space, time and capacity. Here we have only outlined the main trends and tendencies.

We would like to express our special thanks for the support of the VEGA research project Výskum a analýza stratégií zamestnanosti v krajinách V4 (Research and analysis of employment strategies in the V4 countries) No. 1/0688/21 at the Faculty of Economics and Informatics of J. Selye University.

References to Introduction

1. Brixiova, Z., Li, W. & Yousef, T. (2009). Skill shortages and labour market outcomes in Central Europe. *Economic Systems*, 33 (1), 45–59.
2. Harari, N. Y. (2018*). 21 lessons for the 21st century*. London: Johnatan Cape.
3. Hess, D.E. & Ludwig, K. (2017). *Humility Is the New Smart Rethinking Human Excellence in the Smart machine Age.* Oakland: Berrett–Koehler Publishers Inc.
4. Stanford Encyclopedia of Philosophy (2023). https://plato.stanford.edu/entries/heraclitus/ (Accessed: 21 July 2023)

1 Theoretical basics

(Zsuzsanna Szeiner, Norbert Gyurián, Katalin Balogh, Szonja Jenei, Szilvia Szalai Módosné, Zsolt Kőmüves, Klaudia Balázs, Erika Varga, József Poór)

"Experience without theory is blind, but theory without experience is just an intellectual game."
Immanuel Kant[2]

1.1 The social and economic environment of research

The Visegrad countries have a specific entrepreneurial environment, one of the most pronounced elements of which is the characteristics of the labour market (Battisti et al., 2022). In the last three years, three major changes have influenced and are influencing HRM systems in organizations and institutions around the world, including in the region and in the two countries studied in this paper, the Czech Republic and Hungary. Unprecedented closures, unprecedented in previous crises, have required and triggered an unprecedented wave of measures (Parker, 2020). The Covid-19 crisis has severely affected the export-oriented economies of the V4 countries, ending a period of steady growth from 2016 to 2019, during which incomes have grown steadily and unemployment rates have fallen to a 30-year low.

After the first wave had passed and as the second wave emerged, it became clear that the pandemic would result in a very significant economic downturn of 4-6% for the whole world, including the V4 countries (Bittner,2020), with the exception of China (+2%). The strong vaccination campaigns that have been launched in the meantime have led to a light at the end of the tunnel – the possibility of 4-6% growth following the downturns.

Not all companies and organizations have been affected equally by the global crisis. There were winners and losers. For example, global technology (tech) or online commerce companies saw significant profit growth in 2020, while the tourism and hospitality sectors suffered significant losses. This crisis also highlighted the fact that larger and better prepared organizations or public institutions have found it easier to weather this global human catastrophe.

During the recovery from the pandemic, GDP growth in the V4 countries was positive. This was also largely due to the fact that a significant number of organizations saw the coronavirus crisis not only as a problem but also as an opportunity. Thus, among other things, we have seen the end of the era of a low-wage export-led economy. New measures are needed to ensure the survival of organizations and the physical and mental wellbeing of their employees.

[2] Immanuel Kant (1724–1804) German philosopher and an influential thinker of the Enlightenment.

However, the process of recovery from the Covid-19 crisis and the initial recovery could be overshadowed by a new crisis, triggered by Russia's war with Ukraine [22]. The war in Europe has had global economic repercussions in the last month, culminating in rapidly rising inflation in Europe and an increase in raw material shortages and insecurity. However, the aforementioned trends have recently changed significantly and have improved the business outlook and moderated inflation.

1.2 Labour market trends (past, present and future)

The labour market is a component of the market economy and as such an economic institution where the allocation and distribution of labour takes place, so the labour market is nothing more than the totality of relations related to the sale of labour in a given period and under given conditions (Csehné, 2011). The labour market is a set of exchanges between two formally equivalent actors (worker and employer), which involve the linking of workers with work experiences (jobs) and the movement of workers between work experiences (jobs) (Galasi & Varga, 2005).

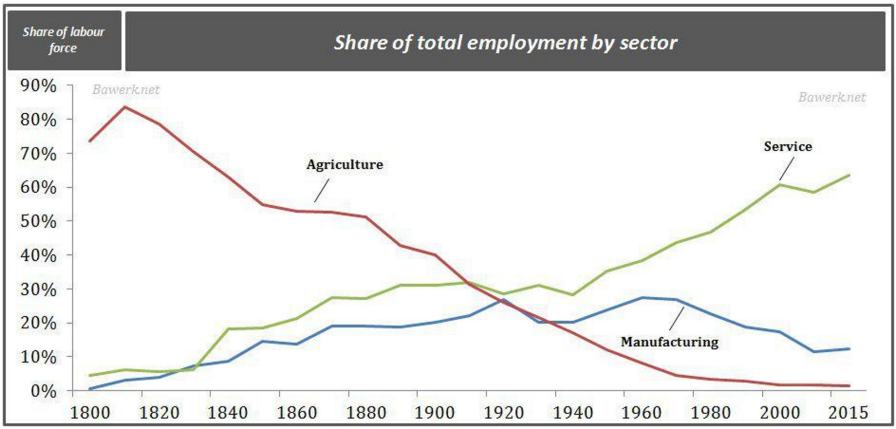
The basic categories of the labour market are wages, labour demand and labour supply. The equilibrium state of the labour market depends on their interrelationship (Tóthné, 2004). Factors that affect labour supply include

- demographic process (natural increase or decrease, migration, changes in age composition, etc.),
- the size of the labour supply (the population of working age, with adequate mental and physical capacity),
- the willingness of the working-age population to work, as a function of the choice of alternatives (leisure time versus working time, wages versus unemployment benefits),
- economically active population (employed, unemployed (Tímár, 1991)).

The labour market is constantly and rapidly changing, and we live in a world where there is huge competition in every market: for buyers in the market for goods and services, for investors in the capital market, for the best workers in the labour market. The image of work and of the ideal employer is also changing rapidly, with globalization, innovation and automation radically changing the supply and demand side of the labour market (Domokos, Jakovác & Németh, 2016).

The significant changes in the labour market in the developed world are illustrated by the US example in Figure 1-1, which illustrates the transformation that took place between 1800 and 2015. Today (US, 2021), the share of employment in agriculture is 1.3%, in industry 12.8% and in services 80%. Similar trends can be seen in EU labour market statistics: agriculture (3.8%), industry (16%) and services (80.2%).

Figure 1-1: Changes in the USA labour market (1800–2015)



Source: US, 2021

Unemployment in Europe rose sharply during the crisis of the 1970s, remaining below 3 per cent in the EU15 until 1974, but fluctuated in the 7-11 per cent range from the 1980s onwards (Artner, 2018). Today, the labour market is in a situation of successive changes. In many European countries, high unemployment after the 2008 global economic crisis has been followed by a rapid decline in unemployment. The labour market is now experiencing shortages in many jobs and organizations are finding it difficult to find the right people for those jobs, with a growing number of shortages.

There is a growing outflow of workers abroad and, in parallel, a growing willingness to work abroad. With the accession of the transition countries to the EU, migration between Member States has taken on a new momentum and has generated a different pattern than before. The primary purpose of this new type of migration is to work. Skilled workers are leaving Eastern European countries and heading west in search of a better living. The labour shortages in the countries they leave are thus becoming more frequent, placing a heavy burden on organizations, which are finding it difficult to replace the missing labour.

The HR systems and labour markets of Eastern European countries face a number of challenges (Stachova et al., 2020). Labour shortages, skills shortages, are increasingly absent from the market. After the oversupply of labour that was typical in the past, it is no longer workers who are typically looking for work, but employers who are looking for people. The problem for companies is therefore not improving the selection process but having no one to screen. The emergence of new technologies has also led to a need for new ways of communicating about recruitment. In addition to all this, there is also the need to face up to the fact that today's generation has different needs in the workplace. Engagement is difficult for Generation Y, but they also expect to take pride in their work and the company they work for (digitalhungary.hu).

In the V4 countries, with the exception of Slovakia, natural population growth has been negative for some time. While the net emigration balance is negative, with the exception of the Czech Republic (Astrov, 2019).

Overall, the labour market in the V4 countries is facing a future where labour shortages are becoming more and more severe in more and more countries, and it is becoming increasingly difficult to retain staff within organizations. Reducing staff turnover is an increasing challenge for organizations. In the future, organizations will pay attention to this problem, and competition for skilled labour will increase. Companies that can retain valuable staff and reduce turnover within their organization will gain an advantage in the competitive market, and companies that can innovate, be open to innovation and boldly move towards robotization and automation will make significant progress. Of course, there is a need for a thorough analysis of the negative or positive effects of automation on the labour market and how to respond to these effects in the future (Cho - Kim, 2018, Eurostat, 2018). So, a new opportunity, a new direction, is emerging as a solution to the labour shortage and it is robotization. The pace of development of robotics and artificial intelligence is a cause for concern, as it may lead to job losses, once referred to by Keynes (1930) as 'technological unemployment'.

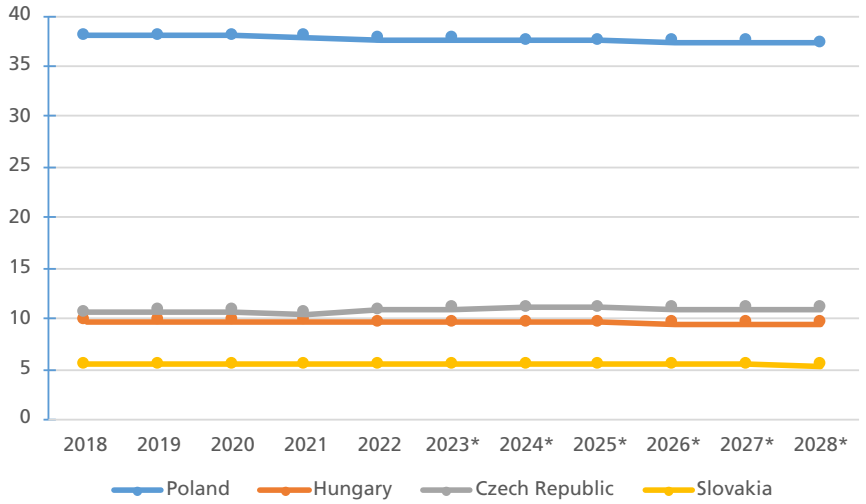
1.3 Migration-demographics

1.3.1 Changes in the main demographic indicators of the visegrad countries

The Visegrad countries now have a population of over 60 million people. Poland has the largest population (nearly 38 million), which is significantly ahead of the other Visegrad countries. In second place is the Czech Republic (with more than 10 million inhabitants), followed by Hungary (almost 10 million) and Slovakia (with more than 5 million). The evolution of the total population of the Visegrad countries and its projection for the coming years is shown in Figure 1.

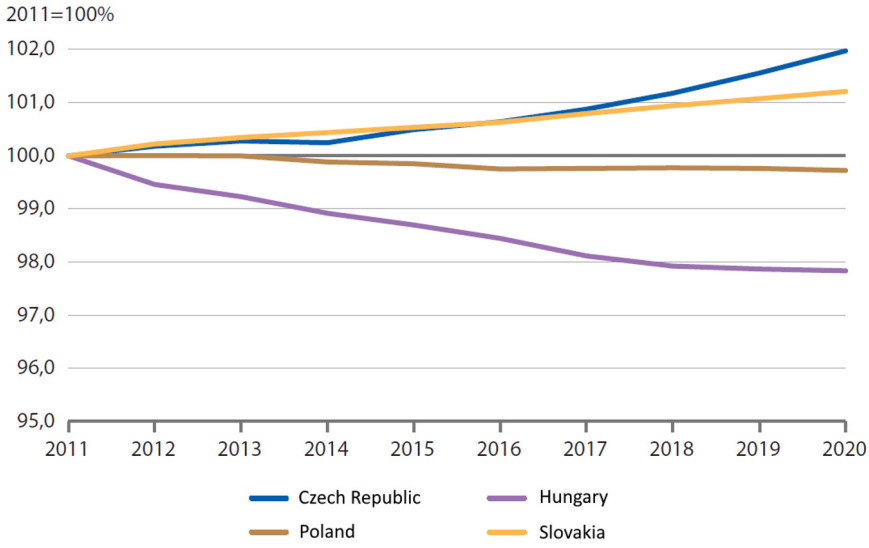
Figure 1-2 illustrates the significant difference in the size of Poland's population compared to the other Visegrad countries, which accounts for more than 50% of the total population of the Visegrad countries. The population of the Visegrad countries has been influenced by a number of political, economic and social factors over the past decades, as shown in Figure 1-3.

Figure 1-2: Changes in population in the V4 countries (2018–2028, million people)*



Source: authors' own editing based on CSO data

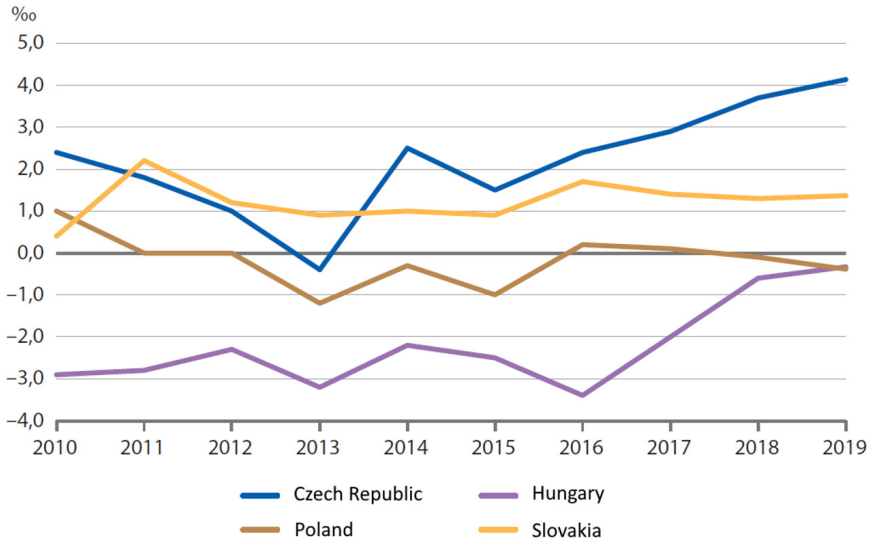
Figure 1-3: Changes in population in the V4 countries (2011–2020, % change)



Source: CSO: The demographic characteristics of the Visegrad countries

The Czech Republic has the fastest population growth among the Visegrad countries, as shown in Figures 1-4. Slovakia also shows an increase in population. Poland shows a slight decrease in population, while Hungary shows the most spectacular decrease in population. The evolution of the population of the countries under study is also illustrated in Figures 1-4, which show the evolution of the actual increase/decrease per thousand inhabitants.

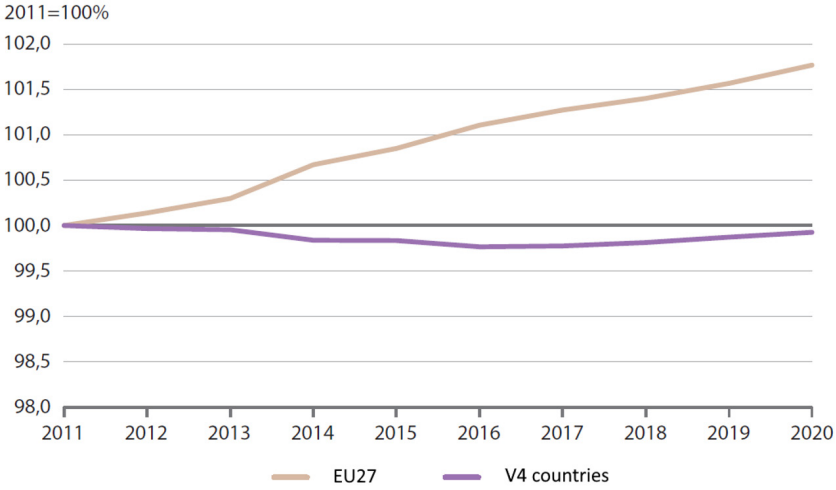
Figure 1-4: Actual increase/decrease per thousand population in the V4 countries (2010–2019, % change)



Source: CSO: The demographic characteristics of the Visegrad countries

Figures 1-4 show the evolution of the indicator variables for the Visegrad countries. Only Slovakia shows a balanced positive evolution of the indicator over the whole period under examination. The Czech Republic shows the most significant positive development, despite a slight negative development in 2013. The most significant negative development is observed in Hungary, which has eased considerably since 2016.

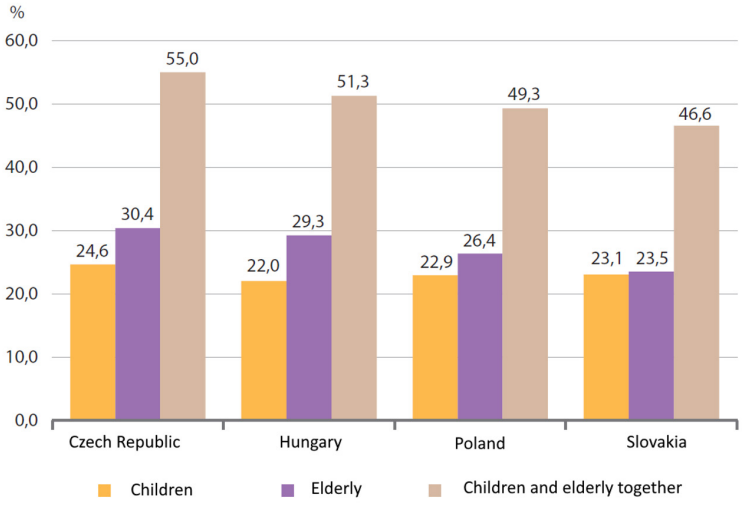
Figure 1-5: Population trends, EU and V4 and V4 average (2011–2020, % change)



Source: CSO: The demographic characteristics of the Visegrad countries

A comparison of population trends in the Visegrad countries and the European Union shows a positive trend for the European Union and a negative trend for the Visegrad countries. This development is due to a wide range of factors, the most controversial of which has been the phenomenon of migration in recent decades.

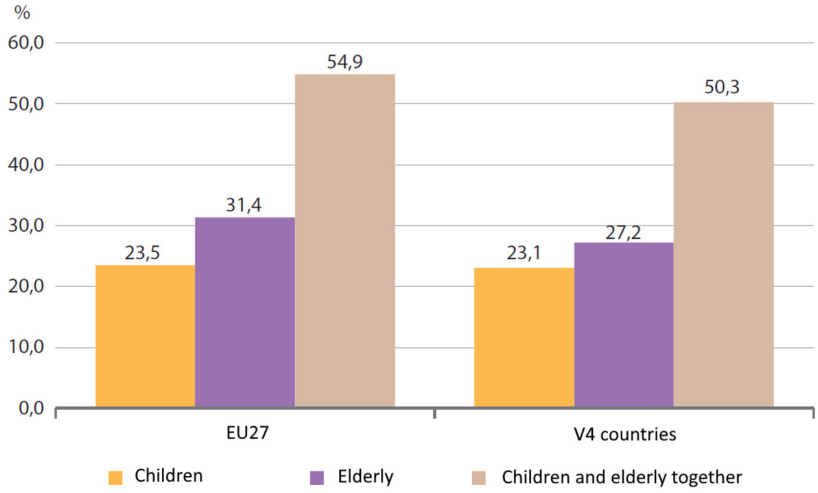
Figure 1-6: Dependency ratios in the V4 countries (1 January 2019)



Source: CSO: The demographic characteristics of the Visegrad countries

The overall economic performance of a state is significantly affected by the composition of its population and the proportion of its working-age and dependent population in relation to the total population. Figures 1-6 show the dependency ratios of the Visegrad countries. The highest values for this indicator are found in the Czech Republic (55%) and the lowest in Slovakia (46.6%). Family support systems in the Visegrad countries have recently been extended by a number of instruments. These have mainly targeted large families, but families with one or two children now also benefit from larger benefits (Pátkainé, 2022).

Figure 1-7 Dependency ratios, EU and V4 and V4 average (1 January 2019)



Source: CSO: The demographic characteristics of the Visegrad countries

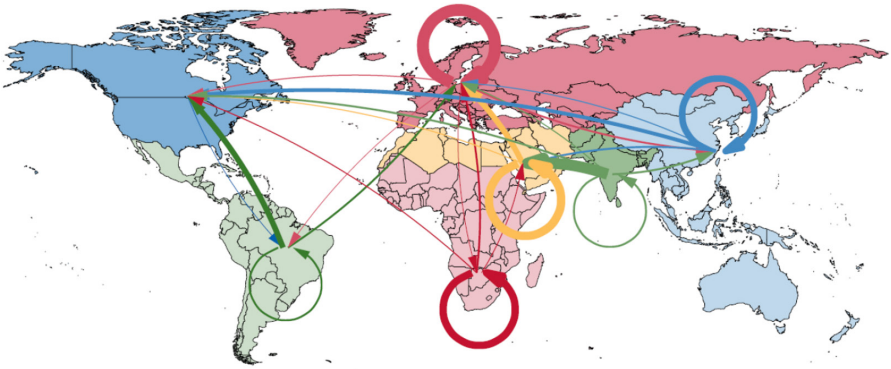
A comparison of the dependency ratios of the Visegrad countries and the EU is shown in Figures 1-7. The figure shows lower values for the indicator in the Visegrad countries (50.3% in total, of which 23.1% are children and 27.2% are elderly). For the EU, the indicator is higher than in the Visegrad countries, 54.9% in total (of which 23.5% are children and 31.4% are elderly).

1.3.2 Impact of Migration on the visegrad countries

Migration, as human displacement or movement has been observed continuously since ancient times. The phenomenon is not new and was not first observed in the 21st century. Its economic and social effects shape the future of nations and states. Some argue that migration has created or shaped states, or even entire peoples, or conversely, that it has

swept away peoples and states (Hautzinger-Hegedüs-Klenner, 2014). The best-known migration flows of our time are shown in Figures 1-8.

Figure 1-8: Migration waves between 2010 and 2020

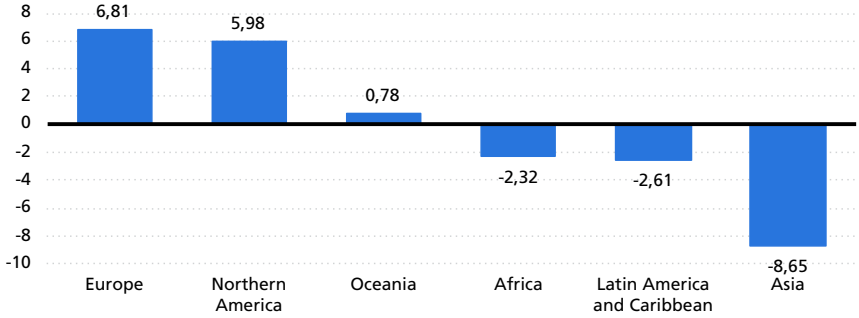


Source: IMF. World Economic Outlook (2020)

There are several approaches to the theoretical underpinnings of migration. Fundamentally, the definition of migration relies on the existence of displacement, i.e., the migration of persons as an act that has taken place. An indispensable element of migration is the individual or the group that is the cause of this act, i.e., the migrant (group of migrants). It is important, however, to define the limits of the interpretation of migration, where the question of what kind of human movement can be included in the conceptual interpretation of migration is crucial. The displacement of populations was essentially determined by the need to survive and make a living, the need to learn, the human desire to conquer and the flight of people in the face of disasters (Tóth, 2001).

The study of migration is not a simple process, as there is no unified and comprehensive theory of migration in terms of a clear definition of permanent and temporary displacement, and it is not sufficient to look at it from the perspective of a single discipline to understand the migration process in a complex way. An examination of the migration balance of the world's continents reveals the continents to which migration has been directed in recent years. This is shown in Figures 1-9, and the positive balance for Europe and North America is clearly visible.

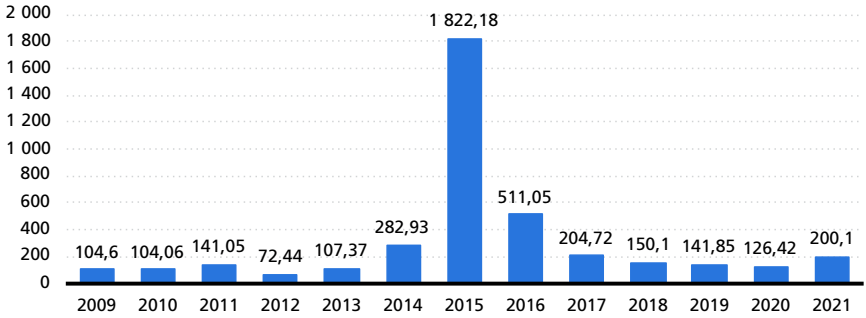
Figure 1-9: Estimated migration balances by continent (2015–2020, million persons, immigration minus emigration)



Source: Statista (2023a)https://www.statista.com/statistics/273000/estimated-migration-balance-by-continent/

Figures 1 to 9 show the continents where the countries of destination of migration are located. In the Americas, the United States of America and Canada were/are targeted by migrants, and in Europe, the European Union and its older Member States. The consequence of this is negative balances for Africa, South America and Asia.

Figure 1-10: Number of people crossing the EU border illegally (2009–2021, 1000 persons)

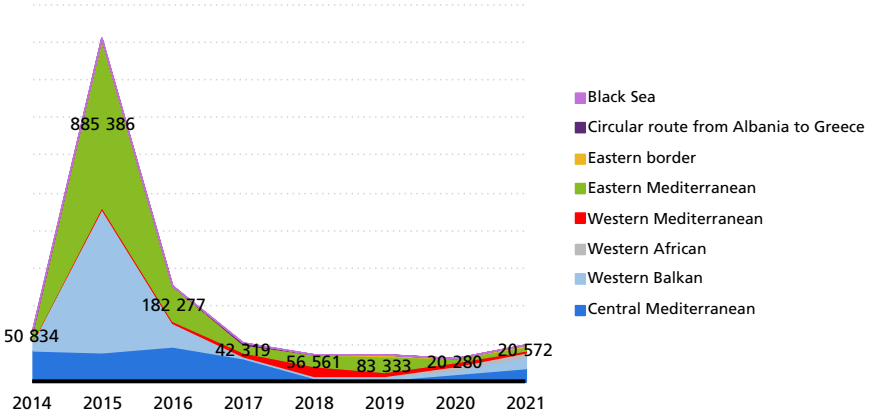


Source: Statista, (2023b) https://www.statista.com/statistics/454775/number-of-illegal-entries-between-bcps-to-the-eu/)

If the subjects of migration wish to transfer their permanent residence from one country to another in a way that is not in accordance with the law and they do not have refugee status, they are considered illegal migrants (Ritecz, 2002).

In recent years, the number of immigrants entering the European Union illegally has been growing to unprecedented levels in 2015 and 2016 (Bartkó, 2019).

Figure 1-11: Number of illegal border crossings into the European Union (by route)

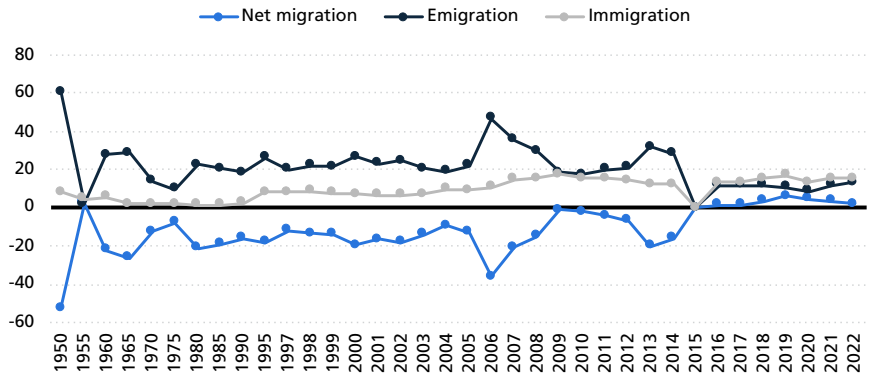


Source: Statista, (2023c)https://www.statista.com/statistics/454910/illegal-border-crossing-between-bcps-to-the-eu/

Over the past few years, there have been persistent attempts to cross the external borders of the European Union from several directions. The routes and the number of illegal border crossings are shown in Figure 10.

In the next step, the individual migration balances of the Visegrad countries are examined. The evolution of Poland's migration balance from 1950 to 2022 is shown in Figures 1-12. In the early 1950s, a large emigration was observed, which had a negative impact on the value of the balance and on the population of Poland. Emigration values exceeded immigration values in almost every year during the period under study. The exceptions are the year 1955 and the period from 2015 onwards. Other more spectacular developments in immigration and emigration occurred in 2006 and 2013.

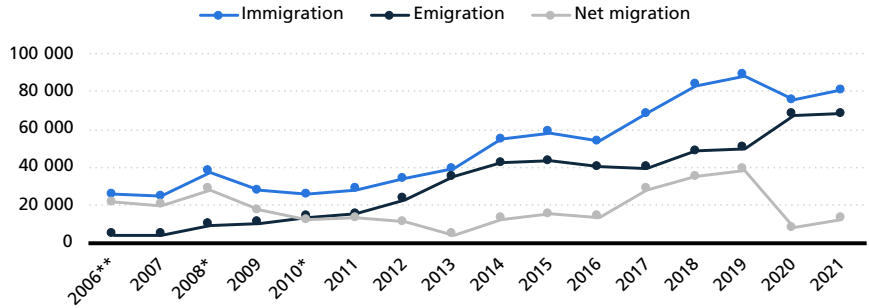
Figures 1-12: Net international migration, emigration and immigration in Poland (1950–2022, 1000 persons)



Source: Statista, (2023d) https://www.statista.com/study/63909/the-visegrad-group/

It is also important to look at the migration balances of the other Visegrad countries. The evolution of Hungary's migration balance from 2006 to 2021 is shown in Figure 1-13.

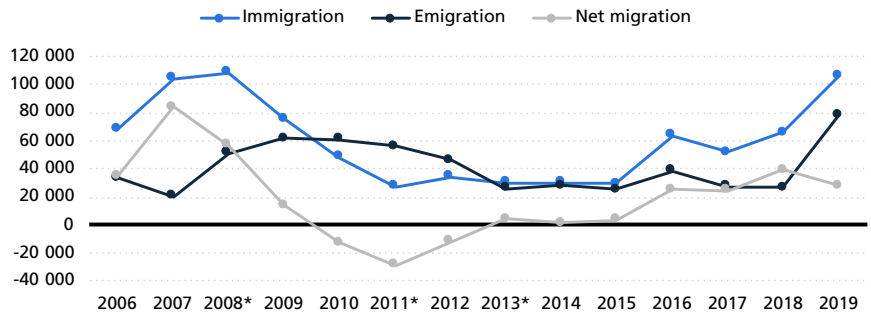
Figure 1-13: Net international migration, emigration and immigration in Hungary (2006–2021)



Source: Statista, (2023) https://www.statista.com/study/63909/the-visegrad-group/)

Hungary's migration balance has been positive every year throughout the period under review. The trend in immigration and emigration has been similar, but immigration has exceeded emigration in all years. Despite the positive migration balance, Hungary's population continued to decline.

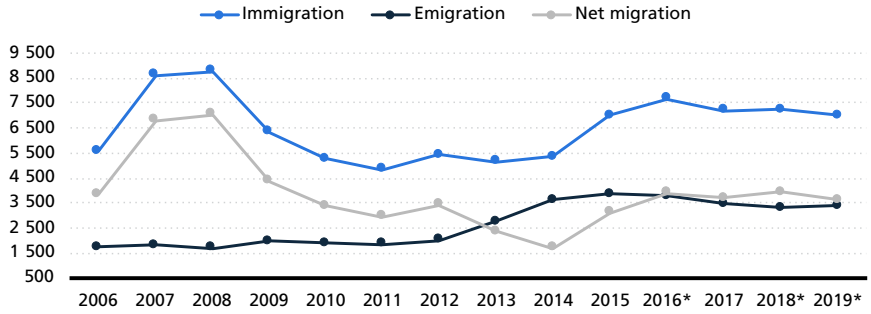
Figure 1-14: Net international migration, emigration and immigration in the Czech Republic (2006–2019)



Source: Statista, (2023) https://www.statista.com/study/63909/the-visegrad-group/)

The Czech Republic's migration balance has been broadly positive over the period observed. The exception is the period 2010–2012. The highest values for immigration were observed in 2007, 2008 and 2019. From 2008 onwards, a steady decrease in immigration values can be observed, followed by a steady increase from 2017 onwards. The highest values for emigration were observed in 2009, 2010, 2011 and 2019. The lowest values for emigration were observed in 2007, followed by a continuous increase from 2013 to 2018.

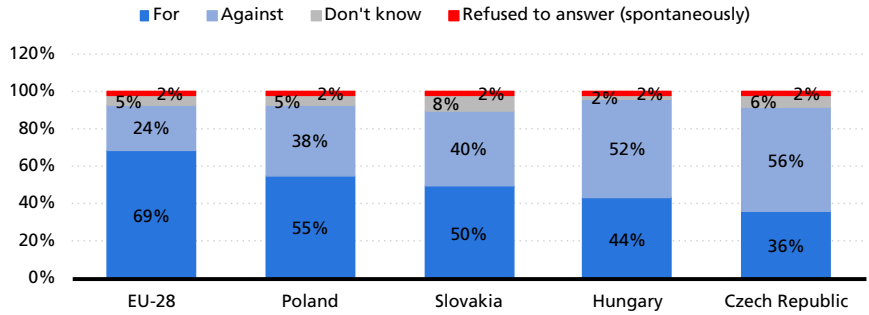
Figures 1-15: Net international migration, emigration and immigration in Slovakia (2006–2019)



Source: Statista, (2023) https://www.statista.com/study/63909/the-visegrad-group/

Last but not least, we examine Slovakia's migration balance from 2006 to 2019, the evolution of which can be seen in Figure 14. The migration balance reached a positive value every year, meaning that immigration exceeded emigration every year. Compared to the other Visegrad countries, in the case of Slovakia, the values of immigration and emigration were not in the tens of thousands. The highest values of immigration and emigration were observed in 2007 and 2008.

1-16. Figure: The opinion of the residents of the Visegrad countries on the European migration policy (2018, % distribution of respondents)

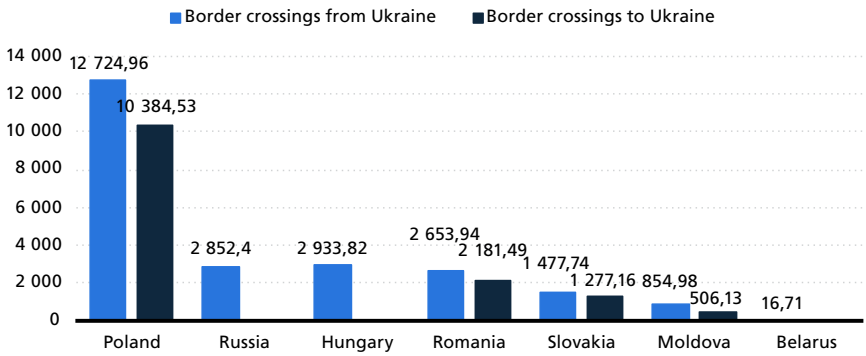


Source: Statista (2023) https://www.statista.com/study/63909/the-visegrad-group/)

Migration has increased spectacularly since 2015, which has generated tension among the population of the Visegrad countries. Figure 1-16. show the opinion of the residents of the Visegrad countries regarding migration, which includes the results of a survey carried out in 2018. As shown in the figure, 69% of the total population of the European Union supports migration. In the case of the Visegrad countries, support for migration falls significantly short of this result. The highest value can be observed in the case of Poland (55%), and the lowest value in the case of the Czech Republic (36%). On the other hand, the group opposing migration makes up 24% of the respondents in the case of the entire population of the European Union. Among the Visegrad countries, a higher proportion of respondents oppose migration in all cases. The proportion of these respondents is highest in the Czech Republic (56%) and Hungary (52%).

The year 2022 was another milestone in the development of migration. The Ukrainian-Russian war conflict forced a large number of the population of the affected region to leave their homes. After that, the Central and Eastern European countries had to prepare for a high number of migrations, which is confirmed by Figure 1-17.

Figure 1-17: Number of border crossings between Ukraine and Central and Eastern European countries after Russia's invasion of Ukraine (February 24, 2023 – September 10, 2023, 1,000 people)



Source: Statista (2023) https://www.statista.com/statistics/1293403/cee-ukrainian-refugees-by-country/)

As shown in the figure, the number of border crossings between Ukraine and CEE countries from February 24, 2023 to June 26, 2023 was very high. The largest migration was observed on the Polish-Ukrainian border, and almost 13 million people came from Ukraine to Poland. The number of people crossing the border to Ukraine was also high. More than 10 million people. Hungary ranks second in terms of the number of people arriving from Ukraine, followed by Russia, Romania and Slovakia.

1.4 Turnover and retention from the perspective of the individual

1.4.1 Turnover

High turnover presents many challenges to the leaders of organizations, mainly it has economic effects, i.e., it can entail high costs. High employee turnover is one of the biggest challenges for all organizations. High turnover can have economic, psychological and organizational consequences. Nowadays, organizations pay more and more attention and importance to this issue, as they have now become aware that a high level of employee turnover has a negative impact on organizational performance (Chen, Lin & Lien, 2010).

In the field of human resources management, turnover refers to the migration of the workforce, employees changing jobs, leaving the workplace. Turnover shows the number of terminated employment relationships at the company within a given period, as well as the percentage of this phenomenon. Turnover is one of the most important performance indicators within human resources management. Within an organization, if this indicator begins to increase, it immediately draws the attention of managers to individual problems and errors. These problems can hinder the successful and effective

operation of the organization in the long term. Being aware of this, serious attention must be paid to turnover within the organization and, where appropriate, this phenomenon must be influenced (Munkajog, 2016; Staw, 1980).

Determining the optimal level of the turnover rate is not a simple process, since we would think that very low turnover is best for an organization. However, this is not entirely true, as too low turnover implies that there is no movement, development and displacement within the organization since everything is constant and the whole organization can fade into this permanence. High turnover certainly draws attention to processes that the company must make efforts to eliminate, and measures must be taken to reduce them. (Huselid, 1995)

Turnover always has financial consequences; it always involves losses and costs for the organization. Several factors can influence turnover, such as the average age of employees, the workplace environment, co-worker relationships or employee satisfaction. One of the key factors in turnover is employee satisfaction. When individuals are dissatisfied with their work and do not achieve their individual goals in the organization, they tend to change jobs (Carsten and Spector, 1987). Furthermore, it can increase turnover tendency when there are complicated interpersonal relationships within an organization, and it becomes difficult for employees to manage the relationship with colleagues, that is, employees have to invest a lot of energy in the continuous formation of relationships with colleagues (Zhang, 2016).

Overall, it can be said that turnover has both negative and positive effects on the functioning of the organization. Negative effects are clearly the costs related to those leaving the organization and new employees arriving in their place. Another negative for the organization is the loss of valuable knowledge and skills associated with the old workforce, which is especially problematic if the departing employee uses these skills and experiences with competitors. At the same time, it can be evaluated as a positive effect that turnover can lead to the departure of unmotivated, underperforming employees, which in turn can positively influence the organization's performance.

1.4.2 Retention

In organizations today, not only attracting talent has become more and more difficult, but also retaining them. Because most of the time, during a long, time-consuming selection, it is only possible to find the right, potential employee who may be suitable for the given job. In many cases, it is not possible to carry out this process alone, in which case we have to call in external specialists, labour brokers, and headhunters. Nowadays, it is as difficult for an organization to retain its workforce as it is to acquire it. That is why it is necessary for businesses to be able to retain the workforce they have already acquired. How, with what? Primarily, with a workplace environment in which the worker feels good (Surji, 2013).

The level of wages and other benefits is also important from the point of view of retention; however, this trend is increasingly overshadowed by other demands of employees. In the case of physical labour, another influencing factor is treatment. If an employee's work is recognized, appreciated, and their needs are listened to, it also has a motivating effect on their performance and commitment (Workforce, 2019; Gere, 2019).

In general, it has become more and more important for most employees to work in a good mood and to be given challenging but solvable tasks. So, in summary, employee retention and reducing employee turnover are key to any successful organization.

1.5 Robotisation

The radical development of robotization also requires a paradigm shift in the labour market, as labour market actors are not prepared for the ever-accelerating effects. The impact of robotization is wide-ranging, but at a different pace, not only in relation to countries, but also along companies and fields of expertise. While robots are appearing not only in robot cells, but also in households and offices, the majority of employees still do not have any experience in working with robots, controlling robots, or sharing tasks with robots. Even in the development of artificial intelligence, external observers are mostly external observers of the process, the development of which and its specific level are seldom provided with accurate information. In this accelerating process, but with a significant lack of information, the actors of the labour market must or should react in a market-like manner.

1.5.1 Impact of Robotisation on the labour market

Robots have been important since the 1960s, especially in the automotive industry. The year 2006 can be considered the main turning point of robotization, when the automotive industry no longer uses most robots, according to Ostergaard (2017). Thanks to the precise work of robots, the turning point of 2006 brought the possibility of the rapid production of high-quality products to other industries as well. Robots are therefore widespread in all industries, from surgical robots to logistics. The result of this ever-closer relationship between technological, natural and social systems, between the difference in their level of development and their ability to change, can be the result of an increasingly significant tension.

According to Bowles (2014), 54% of jobs in Europe are at risk from the effects of robotization. Arntz, Gregory and Zierahn (2016, 2017) are more optimistic regarding the effects of robotization, in their opinion, employees have chosen many occupations that cannot be easily or cost-effectively automated for the time being

The debate has been going on for a long time about the fact that robotization, new digitalization technologies and, nowadays, artificial intelligence (AI) are causing signi-

ficantly or completely new demands on employees. Several authors believe that hundreds of millions of people may lose their jobs because of this, both in physical and mental work (Susskind, & Susskind, 2015; Hess, & Ludwig, 2017).

A comprehensive survey by PWC (2018) suggests that automation will permeate not only simple computing tasks, but also more structured data analysis within a few years. It mainly refers to data-centric sectors such as financial services. According to the survey, the support of office tasks, communication, and decision-making may also fall under the influence of robotization within a short period of time. According to them, the strong impact of robotization will be significant in the field of logistics in the near future, as well as in the construction industry, strengthening the role of drones and robots in the workplace of the future. Based on their data, automation will clearly affect those countries where the majority of jobs are based on lower qualifications, so it may affect up to 40% of the labour force in Eastern European countries. With regard to East Asian and Scandinavian countries, it refers to an effect of only 20-25 percent, due to the dominance of jobs typically built for a higher level of education.

Other authors believe that new technologies not only destroy, but can also create millions of jobs (Harari, 2018).

Summarizing the survey's industry data, the seven most affected areas in terms of automation and robotization, in the order of impact in the near future:

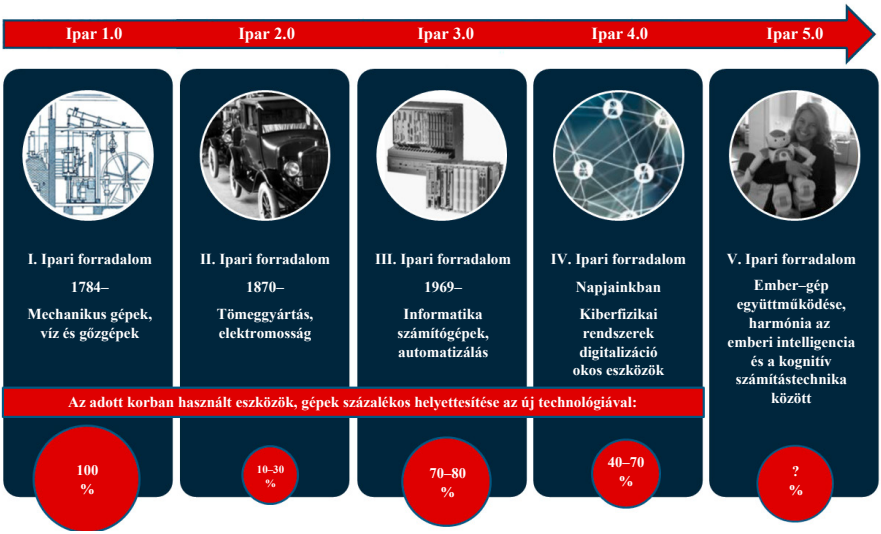
1. Shipping and storage
2. Production
3. Construction industry
4. Administrative and service sector
5. Wholesale and retail trade
6. Public administration and protection
7. Finance and insurance

Smith and Anderson (2014) summarize the expected effects of technological development in the following three points:

1. Technological development may displace certain jobs, but overall, the creation of new jobs has typically dominated.
2. The characteristic and strength of the labour market so far is its adaptability. Unique human abilities may come to the fore in the new jobs, i.e., the robotization of mechanical tasks may direct the human workforce towards more creative tasks.
3. As a result of technological development, unnecessarily difficult and burdensome work is pushed out of the human labour market, thus creating an opportunity for work to have a more positive impact in society and to bring benefits from a social point of view.

The mechanization of industrial plants and companies has changed significantly over the past 250 years. According to some opinions, the 5th Industrial Revolution (Industry 5.0) will soon occur, which will offer humanity much more humane and environment-oriented solutions than before. (Figure 1-18).

Figure 1-18: The most important stages of the industrial revolutions

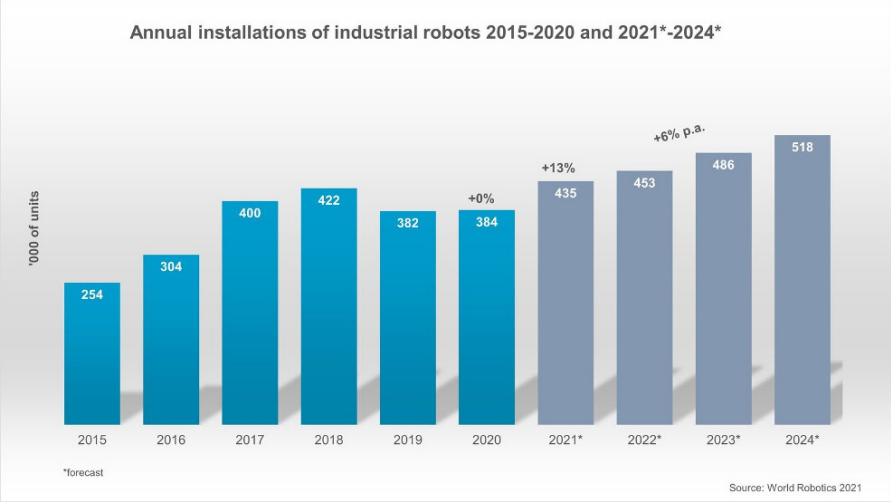


Source: Némethy K. & Poór J. (2018)

1.5.2 Level of Robotisation

Based on statistics from World Robotics (2019), by 2020, 4 million industrial robots will work in factories worldwide. Based on a detailed analysis of the data, it can be seen that between 2017 and 2018, the automotive industry, although it is still at the forefront of industrial robots, only showed an increase of two percent, while the food industry increased by thirty-two percent in the area of robotization in one year. With a clearly negative sign, a decrease of almost 14 percent can be seen in the electronics industry, as well as a six percent decrease in the robotization of the plastics industry and the chemical industry. At the global level, South Korea, Japan, the United States, China and Germany are represented at the top with 74 percent of the industrial robots market. The year 2021 is characterized by recovery from the Covid-19 pandemic. Global robot deployments are expected to rebound strongly and by 13% (IFR, 2021).

Figure 1-19: Installing robots (2015–2025)



Source: IFR (2021)

Based on the statistical data of IFR (2018) summarizing the year 2017, the first five places in the number of robots per ten thousand workers are Korea, Singapore, Germany, Japan and Sweden, in order. Germany, Sweden, Denmark, Belgium, Italy, the Netherlands, Austria, Spain, Slovakia, Slovenia, Finland, France, Switzerland and the Czech Republic are in the 21st ranking worldwide, above the world average, focusing on the EU countries.

Based on the latest data from the IFR (2019) for the year 2018, Singapore is no longer at the top of the ranking, which means that in 2018, the most robotized country is already Singapore. The latest statistics have already brought many changes. China overtook the Czech Republic in robotization, Slovenia jumped from 16th to 13th thanks to its developments, while Slovakia slipped to the 16th most robotized country in 2018 in the list of 21 in the world. Austria retained its 2017 position in 2018 as well.

According to the global data of the International Robotics Association (2018) (2019), the number of industrial robots per ten thousand workers is constantly increasing. Based on the numbers, there are clearly radical changes taking place with regard to the robotization of workplaces in Asia.

1.5.3 Radical growth of the service robot market

Summarizing the statistical data of the International Federation of Robotics (IFR, 2019) for 2018, the market for service robots shows radical growth, especially with regard to service robots for individual use, which can be divided into two areas, service robots for home use and entertainment purposes. Its impact on retail trade, and based on this,

its positive impact on businesses, is clear. While industrial robots are difficult to reach for small businesses due to their high cost, it is possible to break into the market due to the affordable and ever-decreasing price of personal use home and entertainment robots. This process – which can be seen in the market of service robots – will have a great impact on the labour market of small and medium-sized enterprises from both the employee and employer side.

Based on the study by Manyika et al. (2017), in 60% of occupations, 30% of tasks can be taken over by robots, workplaces are not threatened by robotization to the same extent. They mostly emphasize in their study that automation does not primarily replace but redefines the majority of occupations. In the field of services, strong automation in telemarketing, tax and legal matters is highlighted, as well as, for example, the role of robots appearing in fast food restaurants, from the kitchen to serving or welcoming guests.

The radical spread of robotization and the development of artificial intelligence will have a wide-ranging impact on the labour market in the coming decades. The surveys clearly indicate that human labour will be replaced along easily automated processes, as well as in those jobs where either the opportunities provided by technology are more cost-effective or the labour shortage in the market. While in the past decades the development of industrial robots primarily threatened jobs in factories, and as a result robotization was far from the everyday life of the majority of people, the development of service robots and the development of artificial intelligence brought about the appearance of robots that are already in all workplaces, but also in households. and are increasingly found during our leisure activities. Both in terms of the opinion of the longitudinal studies and the opinion of the individual, we have a mixed vision of the future. What is certain is that the picture is clear as to which will be the professions in which, in the first round, the appearance of robots will have a radical effect.

1.6 References to Chapter 1

1. Arnitz, M., Gregory,T. & Zierahn,U. (2016). *The risk of automation for jobs in OECD countries: a comparative analysis*. Paris: OECD Social, Employment and Migration Working Papers,
2. Artner, A. (2018). Worrying trends in the EU labour market (in Hungarian). *Statisztikai Szemle,* 96 (4), 341–374.
3. Astrov, V. (2019). *Labour Market Trends in Visegrád Countries: Implications for Austria*. Vienna: The Vienna Institute for International Economic Studies. Wiener Institut für Internationale Wirtschaftsvergleiche.
4. Bartkó R. (2019). The link between illegal migration and terrorism in the light of EUROPOL and FRONTEX reports (in Hungarian). In Current issues in the fight against terrorism in the 21st century. Gondolat Kiadó, Budapest, pp. 157-183. ISBN 9789636939212.

5. Battisti,E., Alfriero, S.& Leonidou, E. (2022). Remote working and digital transformation during the COVID-19 pandemic: Economic–financial impacts and psychological drivers for employees. In: *Journal of Business Research*. 150, 38-50.
6. Bittner,J. (2020). *Ekonomické nerovnosti a Koronavirus*. In: Krize a příležitosti. Ekonomické a sociální dopady epidemie Covid-19, 2020. Rosa Luxemburg Stiftung. ISBN 978-80-907997-1-4.
7. Bowles, J., (2014). *The Computerization of European Jobs*. Bruegel, Brussels.
8. Carsten, J.M. & Spector, P.E. (1987). Unemployment, job satisfaction, and employee turnover: A meta-analysis test of the Muchinsky model. *Journal of Applied Psychology*, 72, 374-381.
9. Chen, M. F., Lin, C. P. & Lien, G. Y. (2011). Modeling job stress as a mediating role in predicting turnover intention. *The Service Industries Journal*, 31 (8),1327–1345.
10. Cho, J.& Kim, J. (2018). Identifying Factors Reinforcing Robotization: Interactive Forces of Employment, Working Hour and Wage. *Sustainability.* 10 (490), 1-21.
11. Csehné Papp, I. (2011). Employment policy (in Hungarian). https://www.tankonyvtar.hu/hu/tartalom/tamop412A/2010–0019_foglalkoztataspolitika/index.html. (Accessed: 2019.06.13.)
12. Domokos, L., Jakovác, K.& Németh, E. (2016). Challenges of Public Sector due to Labour Market. (In Hungarian) *Pénzügyi Szemle* https://www.penzugyiszemle.hu/tanulmanyok-eloadasok/a-kozszfera-munkaeropiaci-kihivasai (Accessed:2019.01.10.)
13. Eurostat (2017). Economic performance and forecast economic. https://ec.europa.eu/info/business-economy-euro/economic-performance-and forecasts/economic-forecasts_en. (Accessed:2019.06.13.)
14. Galasi P. & Varga J. (2005). *Labour Market and Education*. (In Hungarian) Budapest: MTA Közgazdaságtudományi Intézet.
15. Gere, D (2019). Retention of Labour Force. (In Hungarian) https://munkaadoknak.cvonline.hu/a-munkaero-megtartasa/ (Accessed:2019.11.20.)
16. Hautzinger, Hegedüs& Klenner (2014). *The theory of migration* (in Hungarian). Nemzetközi Közszolgálati és Tankönyv Kiadó Zrt. 102 p. ISBN 978-615-5305-54-2.
17. Hess, D.E., & Ludwig, K. (2017). *Humility Is the New Smart Rethinking Human Excellence in the Smart machine Age*. Berrett–Koehler Publishers Inc.
18. Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*. 38 (3), 635-672.
19. IFR (2019). International Federation Robotics Executive Summary World Robotics 2019 IndustrialRobotshttps://ifr.org/downloads/press2018/Executive%20Summary%20WR%202019%20Industrial%20Robots.pdf (Accessed:2019.08.20)

20. IFR (2021). IFR (International Federation Robotics) presents World Robotics 2021 reports. https://ifr.org/ifr-press-releases/news/robot-sales-rise-again (Accessed 21 July 2023)
21. International Monetary Fund (2020). *World Economic Outlook: The Great Lockdown. Chapter 4: The Macroeconomic Effects of Global Migration*. Washington DC, April.
22. Kozák A. (2022). An HR-based approach to workforce retention. *Marketing & Menedzsment*, *56*(4), 5-14. https://doi.org/10.15170/MM.2022.56.04.01
23. Kozák A., & Dajnoki K. (2019). Employee opinions on measures aimed at retaining the workforce. (In Hungarian) *Taylor Gazdálkodás- és Szervezéstudományi Folyóirat*, 36(2), 56- 65.
24. KSH. (CSO). *The demographic characteristics of the Visegrad countries* https://www.ksh.hu/docs/hun/xftp/idoszaki/pdf/V4_demografiai_jellemzok.pdf
25. Manyika, J., Susan L., Chui, M., Bughin, J., Woetzel, J., Batra, P., Ko, R.& Sanghvi, S. (2017). Jobs lost, jobs gained: Workforce transitions in a time of automation. McKinsey Global Institute.
26. Munkajog (2016). The fluctuation. (In Hungarian). https://szakszervezetek.hu/dokumentumok/munkajog/6427-a-fluktuacio. (Accessed:2019.11.20)
27. Némethy, K.& Poór J. (2018). The workplace of the future on the threshold of IPAR 5.0. (In Hungarian) *Munkaügyi Szemle*, 62(1), 9-**17.**
28. Ostergaard H. E. (2017). Universal Robots, Welcome to industry 5.0 The human touch revolution is now under way https://cdn2.hubspot.net/hubfs/2631781/HQ%20Content%20and%20Enablers/HQ% 20Enablers/White%20papers/Welcome%20to%20Industry%205.0_Esben%20%C3% 98stergaard.pdf (Accessed:2019.08.04.)
29. Parker, L. D. (2020). The COVID-19 office in transition: cost, efficiency and the social responsibility business case. In: *Accounting, Auditing and Accountability Journal,* 33(8),1943–1967.
30. Pátkainé Bende A. (2022). The Response of the Visegrad Countries to Demographic Challenges–Focus on Family Policies (in Hungarian). *Polgári Szemle*, 18(1–3), 235-249.
31. Poór J., Kálmán B., Varga E., Szeiner Zs., Kovács É.I., Kerekes K., Tóth A., Pató B. Sz., Kunos I. & Dajnoki K. (2022). *Coronavirus Crisis Challenges and HR Responses in Six Countries of Central and Eastern Europe. Komárno:* J. Selye University, ISBN: 978-80-8122-424-9.
32. Ritecz Gy. (2002). *The impact of illegal migration and EU accession on the Hungarian Border Guard's green border surveillance*. PhD dissertation. Nemzeti Közszolgálati Egyetem, Budapest.
33. Smith, A.& Anderson, J. (2014). *AI, Robotics, and the Future of Jobs*. Pew Research Center.

34. Stachova, K., Stacho Z., Raišienė, A.G. & Barokova, A. (2020). Human resource management trends in Slovakia. *Journal of International Studies*, 13(3), 320-331. doi:10.14254/2071–8330.2020/13-3/21.

35. Statista (2023a). https://www.statista.com/statistics/273000/estimated-migration-balance-by-continent/

36. Statista (2023b). https://www.statista.com/statistics/454775/number-of-illegal-entries-between-bcps-to-the-eu/

37. Statista (2023c). https://www.statista.com/statistics/454910/illegal-border-crossing-between-bcps-to-the-eu/

38. Statista (2023d). https://www.statista.com/study/63909/the-visegrad-group/

39. Statista (2023e). https://www.statista.com/statistics/1293403/cee-ukrainian-refugees-by-country/

40. Staw, B. M. (1980). The consequences of turnover. *Journal of Occupational Behavior*, 1. 253-273.

41. Surji, K.M. (2013). The Negative Effect and Consequences of Employee Turnover and Retention on the Organization and Its Staff. *European Journal of Business and Management*, 5 (25), 52-65.

42. Susskind, R., & Susskind, D. (2015). *The Future of the Professions: how technology will transform the work of human experts*. Oxford: Oxford University Press.

43. Tímár J. (1991). The economics of labour force supply. Budapest: Aula Kiadó.

44. Tooze**,** A. (2022). Ukraine's War Has Already Changed the World's Economy. Foreignpoliy.https://foreignpolicy.com/2022/04/05/ukraine-russia-war-world-economy/ (Accessed:2022. 04 1.).

45. Tóth P., P. (2001). Population movements in Hungary in the 19th and 20th centuries. In *Migration and the European Union*. Ministry of Social and Family Affairs. Budapest. ISBN 9630066548.

46. Workforce (2019). Employee retention: money is not everything. (In Hungarian) https://www.origo.hu/gazdasag/20190705-a-cegek-munaeromegtartasi-strategiaja.html. (Accessed: 2019.11.20.)

47. World Robotics (2019). Executive Summary World Robotics 2019 Industrial Robots. https://ifr.org/downloads/press2018/Executive%20Summary%20WR%202019%20Industrial%20Robots.pdf. (Accessed: 2023.07.21.)

48. Zhang, Y.J. (2016). A Review of Employee Turnover Influence Factor and Countermeasure, *Journal of Human Resource and Sustainability Studies*, 4, 85-91.

2 Country overview

In the following, we present the general economic, social, and labour market characteristics of the four V4 countries included in our empirical research.

2.1 Czech Republic (Zsuzsanna Szeiner, Caha Zdeněk, Klaudia Balázs)

As one of the V4 countries, the Czech Republic is also located in Central Europe. The area of the country is 77,867 km^2

Population: 10.644.842 people
Population density: 136,7 people/km^2
Languages: Czech
National minorities: Slovak, Polish
Capital: Praha

2.1.1 Socio-economic overview

2.1.1.1 General overview

The Czech Republic is located in Central-Western Europe on an area of 78,866 km2, bordered by Germany and Austria to the west and Poland and Slovakia to the east. The country has a rich historical past, is more Western-like in its industrial traditions and culturally mixed, i.e., Western- and Central European. The Czech Republic has a population of 10.7 million. (World Bank, 2020).

According to archaeological finds and written records, the population of its area has changed several times throughout the history. In ancient times, the Celts lived in the area (the name Bohemia has risen from this time). The area was ruled by the Germans in the 1st century and then became part of the Roman Empire from the 2nd century (Pánek-Tuma, 2009). The Slavs, who still inhabit the area, arrived in the 6th century,

founded the Great Moravian Empire, and in the 9th century, similarly to other European nations, adopted Christianity. The Czech Kingdom was established in 1086 as part of the Roman Empire. Its population was already largely Slavic and Germanic. A large number of German artisan and handicraftsman came to the Czech cities during the 11th century than in the 13th-14th century, Jewish settlers arrived (Kavka, 1993). In the Czech Republic, the beginnings of modern industry date back to the reign of the 15th century Emperor Rudolf II., when the first industrial technologies and thinking along with the germs of modern science appeared (Komlos, 1992). The Czech industry have been developed on a fast pace, by the 19th century it became the most industrialized part of the Austro-Hungarian Monarchy, 70% of its industry had located in Czechia (Pánek-Tuma, 2009). At the same time, it retained its largely feudal character until before the Industrial Revolution. The industry was dominated by craft production controlled by the guild system (Klíma, 1955). The Czech Republic is relatively rich in raw materials, large quantities of uranium ore and graphite are mined. It has the largest lithium deposit in Europe. Silver mining (Kutná Hora, Stříbro) has been widely used in the Czech Republic since the 12th century, (mainly for manufacturing jewelleries and minting) and to a lesser extent gold mining as well (Jílové u Prahy, Kašperské Hory) (Nový, 1972).

The 19th century was marked by industrial revolution across Europe. New inventions have brought about rapid socio-economic change. Even before this period, Czech engineers and inventors had an extensive network with European and American engineers of the age. Czech professionals were at the forefront of technical inventions during the Industrial Revolution, with significant achievements in the field of heavy industry (Masaryk Academy of Labor, online). Meanwhile, in addition to the heavy industry, several factories were established in the textile industry (cotton spinning machine factory), the food industry (sugar production, beer production), vehicle production (tram, car, motorbike, aircraft), and later in arms production (Frucht 2005). Four decades after the WWII, the Czech Republic (as part of Czechoslovakia from 1918) belonged to the "Eastern Bloc", lagging behind Western-type industrial development, but able to maintain and develop its traditional industries and key factories. These include among others the Škoda car factory, the Pilsner brewery or the Baťa shoe factory.

Since 1989 the country has developed into an open, export-oriented economy, became independent of Slovakia in 1993 and entered its own development path. It joined the European Union in 2004 but did not enter the Schengen area. It is a member of NATO and the first country in the region to become a member of the OECD. The backbone of Czech industry is the production of electrical, electronic and optical devices as well as cars, transport vehicles and machinery (Havel, 2018). These innovative sectors are characterized not only by their high share of exports, but also by the lion's share of private R&D funding, with the result that the share of the creative industries is steadily increasing. The number of Czech university students is currently one of the fastest growing in Europe. Over the last seven years, the number of people employed in R&D in companies and universities has increased by 50% (OECD, 2022). R&D funding exceeds 2% of GDP, an increasing share of which is provided by domestic small and medium-sized enterprises. An extensive infrastructure of research centers has been built in the Czech Republic in recent years. Centers such as ELI (Extreme Light Infrastructure), CEITEC (Central European Institute of Technology) or IT4Innovations have managed to build an extensive network with foreign partners through which they have access to excellent equipment and scientists (OECD, 2022). This has helped the Czech Republic to succeed in areas such as information technology, nanotechnology, biotechnology, the nuclear and non-nuclear energy sectors, the aerospace industry and the chemical industry (Havel, 2018). In recent years, a number of innovative domestic companies have emerged, especially in the aviation industry and IT, significantly increasing the global competitiveness of the Czech economy.

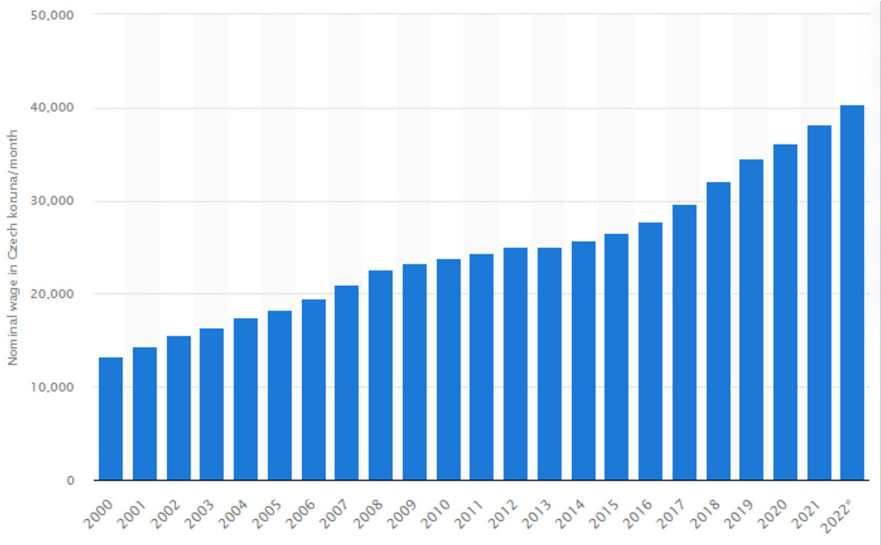
2.1.1.2 Socio-economic characteristics

The Czech Republic is a medium-sized, developed country in the heart of Europe. It has a long industrial tradition and a relatively decentralized administration covering 14 regions and more than 6,000 municipalities. The population is linguistically homogeneous; the official language is Czech. Religious beliefs are traditionally low, with only 20% of the population religious. The unemployment rate is among the lowest in Europe in recent years (in the third quarter of 2021, the unemployment rate was 2.7 percent).

It is characterized by a vibrant cultural and rapidly evolving scientific life. Here is one of the earliest universities in the Central European region, the world-famous Charles University was founded by Charles IV in 1348. Its education system is world-renowned and of a high standard. There are about seventy higher education institutions here that are frequent destinations for international students from all over the world. There are currently 42,000 foreign students studying at Czech universities (ČSU, 2022). The Czech Republic has an exceptionally high rate of education among the widest sections of the population. More than 94% of adults aged 25-64 have at least a high school diploma (OECD average is 40.3%) (OECD, 2020).

The education system is characterized by a relatively high degree of autonomy of schools at all levels of education. Total public expenditure on education as a share of GDP is 4.6% (EC, 2020), while the OECD average is 3.1%. The Czech Republic has enjoyed stable economic growth, low inflation and low unemployment in recent years. Income inequality (Gini coefficient 0.25) is the third lowest among OECD countries. According to statista.com (online), the average monthly gross salary in 2021 was CZK 38,300 (approx. EUR 1,500), see Figure 2. In 2018, the proportion of those at risk of income poverty (relative poverty) was 10% of the population, while those living in absolute poverty were 8%. Income poverty affected 10% of households with children in 2018. The Czech Republic has one of the highest homelessness rates in the European Union (0.65% of the population) (Lánský-Tomková, 2019).

Figure 2-1: Average monthly gross wage in Czechia from 2000 to 2022 (in Czech koruna per full-time equivalent employee)



Source: https://www.statista.com/statistics/1268010/czechia-average-monthly-gross-wage/

Since the 1990s, a growing problem has been the deterioration of natural population growth and the aging of the population, i.e., the steady decline in the number of people between the ages of 15 to 64 (Astrov 2020). Between 2000 and 2010, the Czech Republic saw a 6.2% decline in the working-age population. Eurostat forecasts that this trend will continue in the coming decades. Between 2015 and 2040, the Czech Republic may see a further 9% decline in the working age population, including the share of 15-44 year old, while the number of 45-64 year old is expected to increase (Káčerová & Ondačková, 2015; Eurostat, 2020).

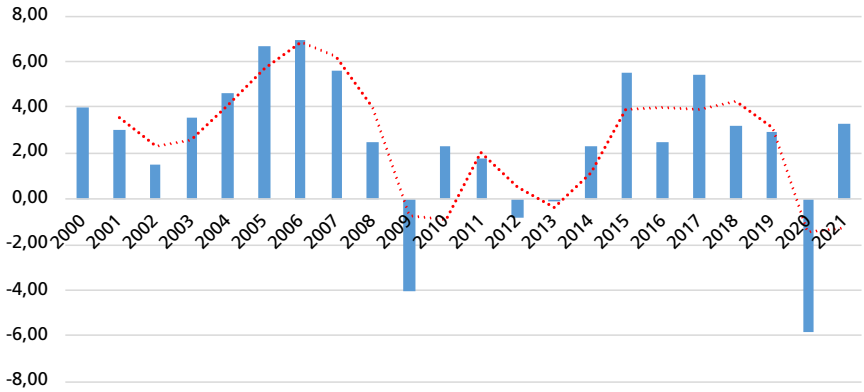
2.1.1.3 Economic development

The Czech Republic is considered as an advanced economy, with a nominal GDP per capita of $ 17,800, that is 81% of the European Union average (Eurostat, 2021). Some of 58% of income is generated by services, 40% by industry and 2% by agriculture (Statista, 2020). The structure of employment distribution is similar, with 60% of those employed in the service sector, 37% in industry and 3% in agriculture (Statista, 2019). As a medium-sized, open, export-oriented economy, the Czech Republic is heavily dependent on foreign demand. It produces 71% of its goods for export (World Bank, 2020). Intra-EU trade accounts for 84% of exports, from which 32% is headed to Germany, 8% to Slovakia and 6% to Poland. Other major trading partners are the United States and the Russian Federation. Its main export products are cars, machinery, info-communication technologies. The automotive industry accounts for 20% of total exports and 10% of GDP (Eurostat, 2021).

The Covid-19 crisis hit the Czech economy hard, with a 5.8% decline in 2020. Looking at the six years before the Covid crisis (2014–2019), the Czech economy grew by an average of 3.6% per year.

The average growth rate was 3.4% between 2000 and 2009 (Eurostat, 2022), the decade average was worsened by the international financial crisis of 2008/09, while the Czech economy was able to grow by almost 7% in 2006 and 2007. The figure clearly shows that the recovery from the 2008 financial crisis has dragged on, but in 2015 the Czech economy experienced a strong recovery.

Figure 2-2: Real GDP per capita growth 2000–2021



Source: own editing based on Eurostat data

FDI has played a significant role in creating post-transition stability and economic recovery. The countries of the Central and Eastern European region, including the Czech Republic, have tried to provide favorable conditions for the involvement of FDI.

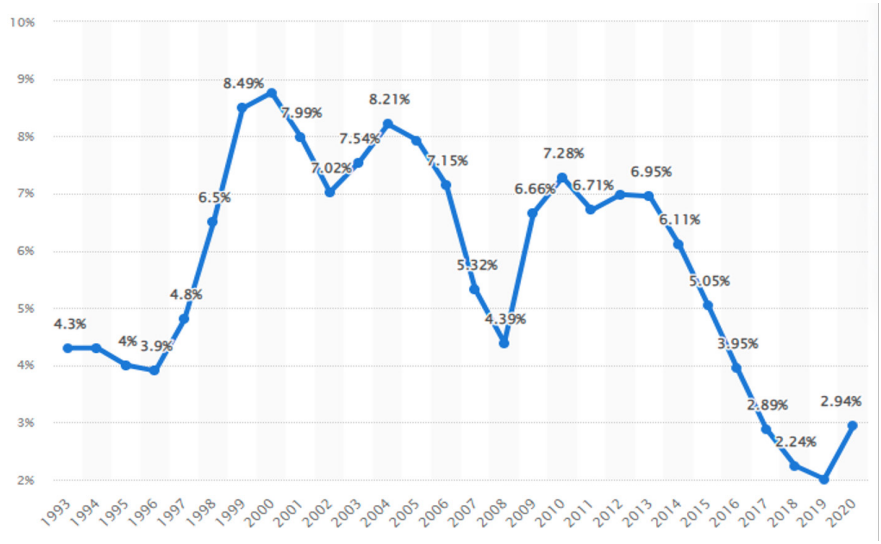
MNCs (multinational companies) were granted income tax relief, employment creation support and discounted land prices for up to 10 years. Some large investments have been granted strategic investment status, which has been accompanied by significant tax relief and a higher proportion of other financial support. MNCs are subject to 19% corporate tax and, where applicable, 15% withholding tax on dividends (Szabo, 2019). The largest volume of inward FDI arrived in the country in the early 1990s. Today, Czech companies merge with foreign companies – about 85 percent of income generation is owned by foreign companies, most of which come from Europe and less than five percent from non-European countries.

2.1.2 Labour market

The labour market situation in the Czech Republic is characterized by significant regional differences. This is particularly evident when comparing the northern and eastern regions of the country with Central Bohemia or the capital, Prague. In 2021, the unemployment rate in Prague increased from 2.4% to 3.62% annually due to epidemiological measures. The highest unemployment rates were in Karlovy Vary (6%), Ústí nad Labem (6%) and the Moravian-Silesian region (5.8%). In some regions, however, unemployment was low, e.g., in the Pardubice region (2.77%) and in the Hradec Králové region (3.13%). According to the Czech Labor Office, the unemployment rate in the Czech Republic as a whole in 2021 was 3.6 percent, which is an increase compared to the previous year. Despite the unemployment, hundreds of thousands of vacancies are still advertised (Hutt, 2022). The largest employers in the Czech Republic are ŠKODA AUTO a.s. (35.400 employees), ČEZ (České Energetické Závody) a.s. (28.000 employees), the České dráhy (Czech Railways, 14.400 employees) and Česká pošta s.p. (Czech Post, 11.000 employees). The country's labour market relies heavily on foreign guest workers and is also able to attract foreign workers from different parts of the world. The Czech Republic is the only one in the region where net migration has a positive value, i.e., where there are fewer migrants than foreign workers. According to the Czech Statistical Office, the net migration was 110,000 in 2020. According to Eurostat employment statistics, the majority of foreign workers come from the neighboring countries. Mainly from Slovakia and Poland, as well as from the more distant Romania. Workers from non-EU countries are also present in large numbers in the Czech labour market, mainly from Ukraine, Belarus, the Russian Federation, Vietnam, the USA, Cuba, India and Mongolia. According to the Ministry of the Interior, a total of about 630,000 foreign workers are employed in the Czech Republic, and labour shortages are still hampering growth in some areas. From seasonal work in agriculture thru heavy industry to hospitality, the lack of available labour is causing problems for businesses as they try to adapt to the post-pandemic reality. However, events with longer-term effects are a matter of concern currently. The Ukrainian-Russian conflict could severely affect the Czech economy due to its general mobilization announced in Ukraine. According to a report by the Czech Labor Office, in December 2021, 195,000 Ukrainians worked in the Czech Republic, which is about one-third of foreigners living and

working in the Czech Republic. According to Eurostat's foreign affiliate statistics (FATS), almost a third of all jobs in the Czech Republic are provided by multinational companies (MNCs), more than in any other Central and Eastern European country. MNCs can provide higher wages their per-employee spending is about 25% higher than the national average. The productivity of workers in multinational companies is 60% higher, while the per capita turnover is almost twice the national average (Szabo, 2019).

Figure 2-3: Unemployment rate 1993–2020



Source: Statista.com, 2020

2.1.3 Summary

The Czech Republic is characterized by a developed, industrialized economy and a highly pragmatic, individualistic society. Its history is intertwined with the history of Europe, it was part of Western Europe (Roman Empire), then Central Europe (Astro-Hungarian Empire), and then the "Eastern Bloc" for four decades in its modern history. The oldest still existing alliance, to which it is a part of, is the strategic cooperation between the Visegrad Four, i.e., the Czech Republic, Slovakia, Hungary and Poland. The Czech Republic has existed in its current form since 1993, although the history of the people and the country can be traced back a thousand year. The form of the government is parliamentary democracy. The Czech Republic is classified as a developed economy, although per capita income could not yet rich the EU average. Its traditional industries are mechanical engineering, electronics, automotive, textile industry, chemicals, and brewing. The country's strategic location, well-developed infrastructure and skilled workforce have enabled the small country of 10.7 million people to become an important

regional and international manufacturing centre and consumer market in Central and Eastern Europe. It has historically served as the industrial centre of the Austro-Hungarian Monarchy and is still one of the most industrialized countries in the region. With one of the lowest unemployment-rate in the EU, labour shortages are reflected in rising wages, especially in the technology and knowledge-based sectors. Already during the transition, the government focused on the development of innovative technologies in order to improve the country's global competitiveness. Prior to the Covid-19 pandemic, the Czech economy was characterized by modest but stable GDP growth, followed by a record decline in GDP in 2020, from which the country has been slowly but surely moving towards the annual growth of 2-3%. The Czech Republic is focusing more than ever on investing in research and development. In 2020, R&D spending reached 1.99 percent of GDP, the highest in the Czech Republic's history and the tenth highest in the EU. According to Czech Investment, every third of a total of 106 investment projects in 2017 was a so-called high-tech project, a project highly technologically oriented or linked to research and development activities (Czech Invest, 2018). Unsurprisingly, the majority of innovation spending comes from the business sector, with the automotive industry still being the main beneficiary. The country's latest innovation strategy (2019–2030) has set the goal of making science, research and innovation an absolute priority in the country, focusing on knowledge-based production, technological solutions and services.

2.1.4 References to subchapter 2.1

1 Astrov, V. (2019). Labour market trends in Visegrád countries: Implications for Austria, Policy Notes and Reports, No. 33, The Vienna Institute for International Economic Studies (wiiw), Vienna

2 CzechInvest (2018). V roce 2017 dojednal CzechInvest investice za více než 65 miliard korun. Available online at: https://www.czechinvest.org/cz/Homepage/Novinky/Cerven-2018/V-roce-2017-dojednal-CzechInvest-investice-za-vice-nez-65-miliard-korun

3 European Commissio[n] (2022). Czech Republic: Political and economic situation. Available online at: https://eacea.ec.europa.eu/national-policies/eurydice/content/political-and-economic-situation-21_en

4 European Commissio[n] Labour market information: Czechia Available online at: https://ec.europa.eu/eures/public/living-and-working/labour-market-information/labour-market-information-czechia_en

5 European Commissio[n] National Policies: Political, social and economic background and trends Available online at: https://eacea.ec.europa.eu/national-policies/eurydice/content/political-social-and-economic-background-and-trends-21_en

6 Eurostat (2022). Real GDP per capita. Available online at: https://ec.europa.eu/eurostat/databrowser/view/sdg_08_10/default/table

7 Frucht, R. C. (2005). *Eastern Europe: An introduction to the people, lands, and culture*. Santa Barbara, Calif: ABC-CLIO.

8 Havel, Z. (2018). *The most generous R&D funding country regularly collaborates with Czech researchers.* Available online at: http://www.czech-research.com/the-most-generous-rd-funding-country-regularly-collaborates-with-czech-researchers/

9 Hutt, D. (2022). Czech unemployment is the lowest in Europe. That may not be a good thing. *Euronews-My Europe.* https://www.euronews.com/my-europe/2022/03/16/czech-unemployment-is-the-lowest-in-europe-that-may-not-be-a-good-thing

10 Káčerová, M. & Ondačková, J. (2015).The process of population ageing in countries of Visegrad Group. *Erdkunde*, 69(1), 49-68.

11 Kavka, F.(1993). *Vláda Karla IV. za jeho císařství, I., II.,* Praha.

12 Klíma, A.(1955). *Manufakturní období v Čechách*, Praha.

13 Komlos, J. (1992). Nutrition and Economic Development in the Eighteenth-Century Habsburg Monarchy. *Economic Development and Cultural Change* 40(3).

14 Lánský, O. & Tomková, S. (2019). Inequalities in Czech Republic. In: Beales, S. & Gelber, G.(Eds.) Falling through the cracks exposing inequalities in the EU and beyond. *European Environmental Bureau,* European Union. Available online at: https://eeb.org/wp-content/uploads/2019/06/FALLING-THROUGH-THE-CRACKS-JUNE-2019.pdf

15 Masaryk Academy of Labour. https://www.mua.cas.cz/en/masaryk-academy-of-labour-masarykova-akademie-prace-685

16 Nový, R.(1972). *Přemyslovský stát 11. a 12. století,* Praha.

17 OECD. Adult Education Level Available online at: https://data.oecd.org/eduatt/adult-education-level.htm

18 OECD. *Czech Republic: Fourth industrial revolut*ion. Available online at: https://www.oecd.org/industry/czech-republic-fourth-industrial-revolution.htm

19 Pánek, J., & Tuma, O. (2009). *A history of the Czech lands*. Prague: Charles University.

20 Statista (2019). Czech Republic: Distribution of employment by economic sector from 2009 to 2019 Available online at: https://www.statista.com/statistics/369881/employment-by-economic-sector-in-czech-republic/

21 Statista (2020). *Czech Republic: Distribution of gross domestic product (GDP) across economic sectors 2010 to 2020* Available online at: https://www.statista.com/statistics/369830/share-of-economic-sectors-in-the-gdp-czech-republic/

22 Szabo, S. (2019). FDI in the Czech Republic: A Visegrád Comparison. Economic Brief 042. doi:10.2765/367654 Luxembourg: Publications Office of the European Union. https://ec.europa.eu/info/sites/default/files/economy-finance/eb042_en.pdf

23 World Bank (2020. Exports of goods and services (% of GDP) – Czech Republic Available online at: https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?locations=CZ

2.2 Poland (Norbert Gyurián, Marzena Stor, Łukasz Haromszeki)

Poland is located in East-Central Europe on an area of 312,696 km² and a population of 38.2 million people (OECD, 2021).

Population:	38.420.678 people
Population density:	123 people/km²
Languages:	Polish
National minorities:	Silesian, Ukrainian
Capital:	Warsaw

2.2.1 Socio-economic overview

2.2.1.1 General overview

It is located between the Baltic Sea to the north, the Sudetes and the Carpathians to the south, predominantly in the Vistula and Odra basins. It is bordered by Russia and Lithuania to the north, Belarus and Ukraine to the east, Slovakia and the Czech Republic to the south, and Germany to the west. It looks back on more than a thousand years of history, during which its geographical location has changed several times.

The territory of the Polish state was gradually formed during the early Middle Ages. The way to create the country naturally appeared in early literature and mythology. One of the most important merits of the first Polish king, Bolesław I the Brave, in connection with the Polish land, was the designation of the country's borders (Tapolcai, 2003).

One of the main points of reference for the Polish sense of identity is the relationship with the area and its changes. We also include the state of landlessness, which occurred during Poland's great historical past. It was in the past centuries that Poland became a toy of great powers or a part of them (Schmidt, 2020).

The issue of Polish independence faced many problems in the Polish countryside, which was divided into three parts at the end of the 19th century. These problems increased

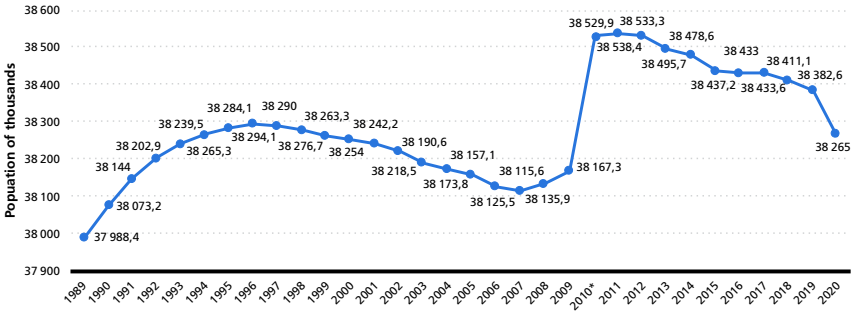
even more during the outbreak of the First World War. This was also due to the fact that the opposing great powers had different views on Polish independence (Kapronczay, 2014).

Poland's ethnic spatial structure and the centre of gravity of its settlement area changed to a large extent several times during the 20th century. The political borders of Poland formed after the world wars did not completely cover the ethnic tribal area. Poland had to face the problem of a large number of minorities after the First World War, and then with large waves of migration after the Second World War. As the country's borders moved westward, the centre of gravity of the ethnic area also shifted, despite this, the number of those who defined themselves as Poles in the former Polish territories was several hundreds of thousands (Bottlik, 2013).

The geographical borders of Poland as known today were formed after the Second World War as a defining state of its region. Liberation from socialism can be regarded as a decisive event from an economic point of view. As it was observed in other states of Central and Eastern Europe, Poland also struggled with serious economic difficulties during the transition to a market economy. The transition to a market economy entailed a great sacrifice, which was accompanied by a large increase in unemployment, organized crime, and insecurity. Like other countries in the region, the 1990s were characterized by strong privatization and painful reforms. It can be said that the austerity measures adopted in connection with the introduction of the market economy and then the stabilization of the economy have paid off today. After the first difficult years, economic growth started. It became a member state of the European Union from May 1, 2004. Today, Poland's economy can be considered an important participant in the Euro-Atlantic economic world.

From a logistical point of view, Poland's great advantage is that it is located in the middle of Europe, at the intersection of the main communication routes. This gives investors easy access to the markets of the European Union and Eastern European countries (IR Global, 2022).

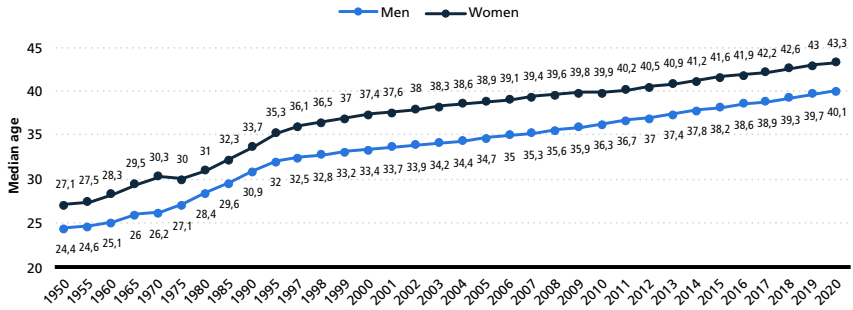
Figure 2-4: Population of Poland 1989 to 2020 (in 1000s)



Source: Statista – Countries & Regions – Demographics of Poland

Figure 2-4 shows the growth of Poland's population in the period from 1989 to 2020. The population of Poland was around 3.8 million, making it one of the dominant states in the region, both politically and economically. The population of the state did not change significantly. One of the biggest increases was observed in 2010.

Figure 2-5: Median age of the population of Poland from 1950 to 2020, by gender

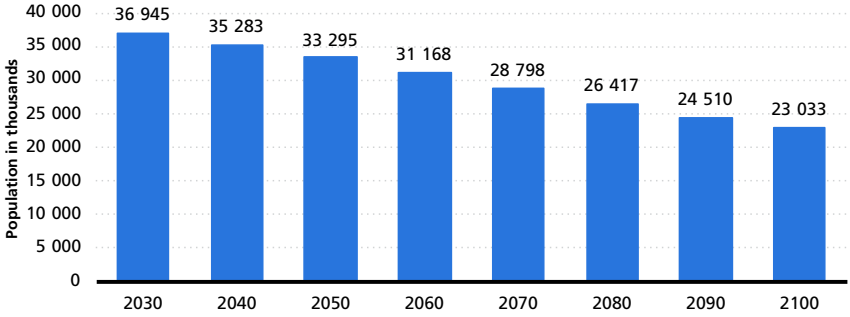


Source: Statista – Countries & Regions – Demographics of Poland

When examining the growth of the population, it is also important to examine the median age of the population. Graph 2 shows the growth of the median age of the population of Poland.

The forecast of the population growth is presented in Figure 3. The prognosis is not positive regarding the growth of Poland's population. It can be clearly seen that the country's population is expected to decrease by more than 13 million by 2100, which represents a 37.66% decrease in the state's population.

Figure 2-6: Population forecast for Poland from 2030 to 2100 (in 1,000s)

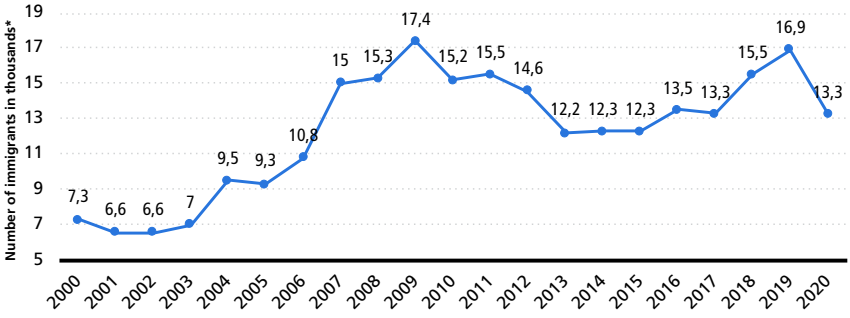


Source: Statista – Countries & Regions – Demographics of Poland

2.2.1.2 Socio-economic characteristics

With its territory, Poland can be classified as one of the largest states, the 69th in the world and the 9th in Europe. Poland is divided into 16 provinces, consisting, in total, of 66 cities with district rights, 314 districts, and 2,477 municipalities.

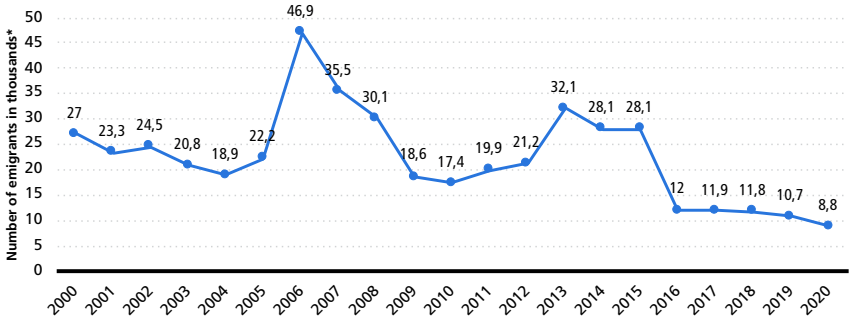
Figure 2-7: Immigration to Poland from 2000 to 2020 (in 1,000s)



Source: Statista – Countries & Regions – Demographics of Poland

The growth of the state's population is greatly influenced by migration. Graph 4 shows the growth of the immigration of individuals in the period 2000–2020. We can see that the greatest increase of the indicator can be observed from 2003 to 2009 and from 2015 to 2019.

Figure 2-8: Emigration from Poland from 2000 to 2020 (in 1,000s)



Source: Statista – Countries & Regions – Demographics of Poland

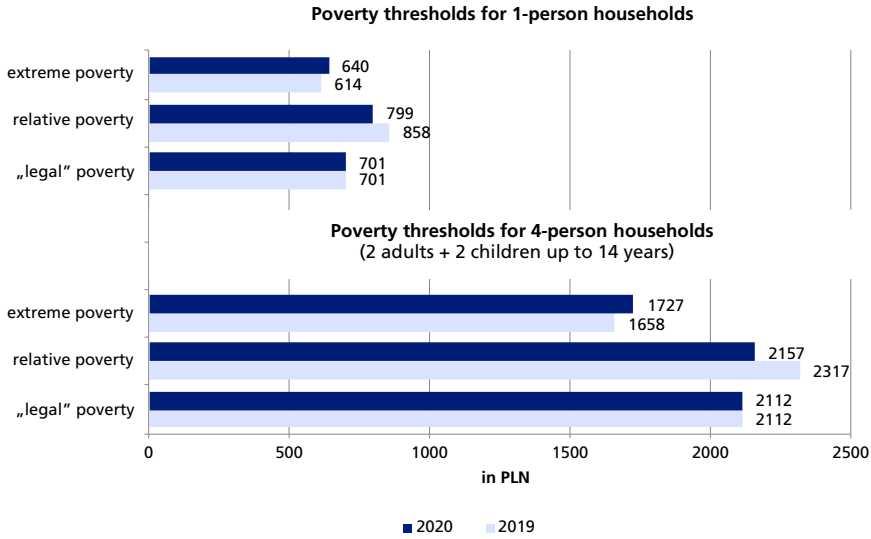
On the other hand, it is necessary to take into account the number of emigrants from the country. As shown in Figure 5, the number of emigrants increased the most from 2005 to 2006 and from 2012 to 2013. From 2006 to 2010, as well as from 2015 to the present, a significant decline can be observed in the development of the indicator's values. When examining the development of the values of the two graphs, it is clearly visible that immigration was basically stronger in the first half of the examined period. The other half of the examined period is characterized by a substantial increase in emigration values.

There are more than 500 higher education institutions in Poland. The names of many important Nobel Prize-winning researchers are associated with Polish higher education, including Marie Curie and Nicolaus Copernicus. More than 14 Polish universities are listed in the QS World University Rankings today, while 23 are in the top 300 in the QS EECA University Rankings. The most important universities in Poland include the University of Warsaw, Jagiellonian University, Warsaw University of Technology, Wroclaw University of Science and Technology, University of Wroclaw, etc. (TOPUNIVERSITIES, 2022).

25% of the Polish adult population (aged 25-64) have a master's degree, while the EU22 average is 17%. In the case of neighboring states, the average value of the indicator is 23% in Slovakia, 19% in the Czech Republic, 11% in Germany, 15% in Lithuania and 14% in Hungary. Spending on higher education in Poland was 1.4% of gross domestic product in 2019. The average value of the indicator for the EU22 was 1.30 of the gross domestic product. In the surrounding states, the value of the indicator is 1.1% in Slovakia, 19% in the Czech Republic, 0.7% in Germany, 0.8% in Lithuania and 0.9% in Hungary (OECD, 2022).

The extreme poverty rate was around 5% in Poland in 2020. The value of the indicator was 4% in 2019. The deterioration of the financial situation of some households and the increase in extreme poverty in Poland can be attributed to the economic measures/ restrictions adopted after the outbreak of the Covid-19 pandemic. The increase in extreme poverty affected most population groups, but the extent of change varied. The value of the relative poverty rate decreased to approximately 12%, and the legal poverty rate remained at around 9% (Statistics Poland, 2022).

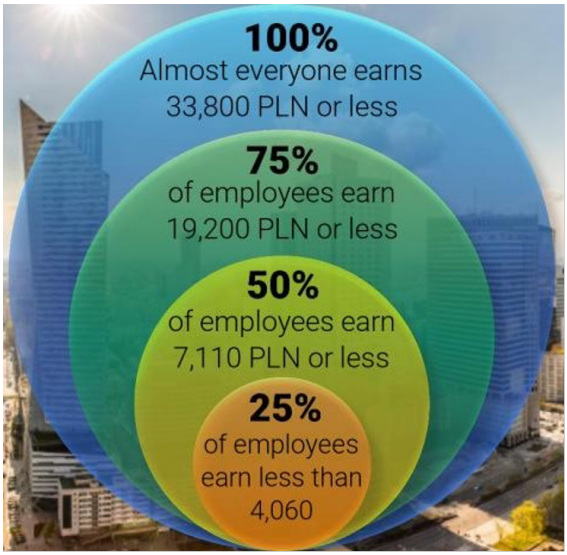
Figure 2-9: Poverty thresholds for selected types of households in the years 2019–2020 (on average per month in the 4th quarter)



Source: Statista – Statistics Poland

The average gross wage in Poland increased continuously in 2022, surpassing even the positive forecast of economists. The growth of the past period reached the highest growth rate since 2008 (Openiazoch.zoznam.sk, 2022).

Figure 2-10: Average monthly salary in Poland in 2022



Source: own editing based on the salaryexplorer.com web survey

Several studies have been conducted on the investigation of the gender wage gap in Poland. The significant reduction in wage differences between men and women among younger workers in 2006–2010 can be attributed to the increase in the minimum wage level. The results of the conducted research confirm that the minimum wage policy can be a suitable tool for reducing the gender wage gap in the case of Poland, however, possible unemployment effects must be taken into account (Majchrowska-Strawinski, 2018).

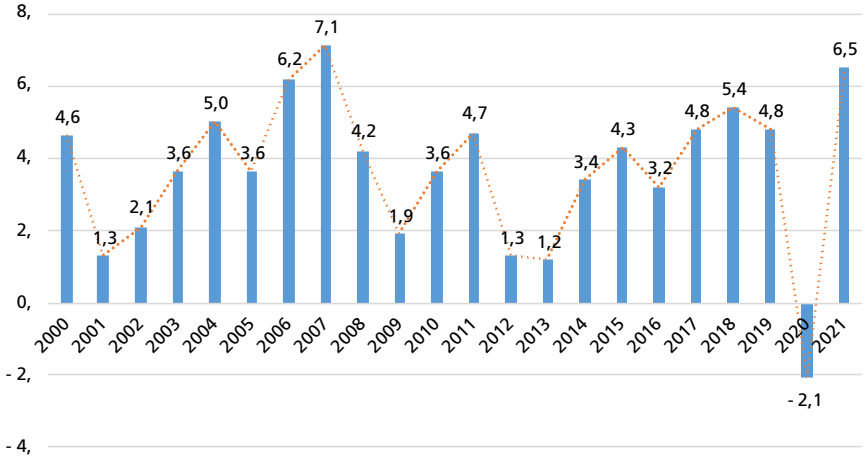
2.2.1.3 Economic development

The economic measures introduced after the change of regime had a great impact on the current level of development of Poland's economy. It belonged to the Eastern Bloc along with Hungary, the Czech Republic and Slovakia. After the difficult years following the regime change, it was only at the end of the 90s that a greater degree of economic growth was achieved. After joining the European Union, significant economic development took place, and today it is one of the key players in the region. Today, Poland's economy can be considered an industrialized mixed economy with a developed market. Nominal GDP per capita is US$17,840.92 (The World Bank, 2021). 55.61% of the gross domestic product was created by services, 29.3% by industry and 2.37% by agriculture in 2021 (Statista, 2022). The structure of the employment distribution is similar, 55.6% of those employed work in the service sector, 29.3% in industry, and 2.37% in agriculture (Statista, 2022). Poland can be classified as an export-oriented country. Its exports are 29% to Germany,

6% to the Czech Republic, 5.7% to France, 5.1% to the United Kingdom, 4.5% to Italy and 4.4% to the Netherlands, etc. is aimed at. (Trading Economics, 2022).

Poland's economy grew continuously before the Covid-19 pandemic, which was more than 4.5% in 2019. And the poverty and unemployment rates were at historic lows, well below the OECD average. Over the past two decades, Poland has seen solid growth, rising household incomes and falling inequality (OECD, 2022).

Figure 2-11: Real GDP per capita growth, Poland 2000–2021



Source: own editing based on Eurostat data

The Covid-19 crisis caused a 2.1% decline in the Polish economy in 2020. In the following year, the economy managed to recover from the difficulties relatively quickly, with 6.5% growth in 2021. Looking at the six years before the Covid crisis (2014–2019), the growth of the Polish economy exceeded 3% every year.

Nowadays, energy security has become a key issue, which also contributes to the smooth growth of the states' economies. Thanks to the investments made, Poland's energy independence in the fields of electricity, heat and transport is expected to have a positive impact on the country's economic development. Further development of the renewable energy sector may allow Poland to increase its energy security, as well as the opportunity to become an energy exporter and benefit from it (Iglinski et al., 2022).

2.2.2 Labour market

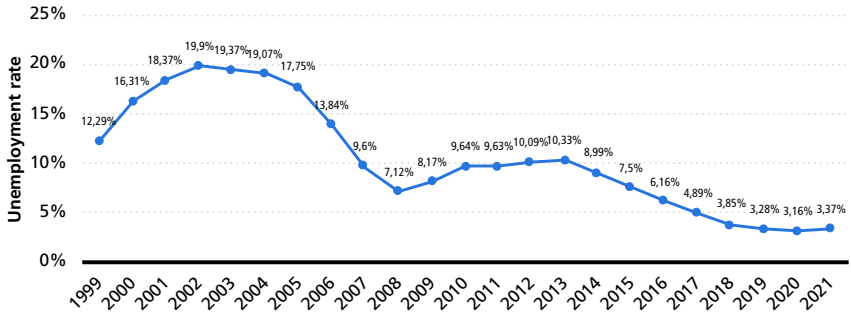
Poland's advantage is highly qualified employees. The number of well-educated university graduates in Poland is increasing every year. Thanks to their knowledge and skills, they are valued employees, especially in the high-tech sector (IR Global, 2022).

The labour market indicators in Poland are improving year by year, and their values are constantly approaching the EU average. The unemployment rate has been continuously decreasing since 2013. The positive development of the indicators changed in 2020 as a result of the Covid-19 pandemic. At that time, only a slowdown was observed in the growth of the main labour market indicators.

The unemployment rate reached 5.1% in May 2022, compared to 5.2% in April (at that time, the employment offices registered about 852,000 unemployed people) (TREND, 2022).

Inequalities in terms of unemployment between regions of Poland have been significant for years. The reason for this is the imbalance in both the socio-economic development and geographical location of the regions. At the end of June 2021, the difference between the lowest and highest unemployment rates in the provinces was 5.7 percentage points (3.5% in Wielkopolskie Province, 9.2% in Warmińsko-Mazurskie Province) (EURES, 2022).

Figure 2-12: Unemployment rate 1999–2021



Source: Statista – Countries & Regions – Demographics of Poland

There are 37.4% of companies are operating in Services, 15.5% in Finance, Insurance, and Real Estate, 11.9% are in retail trade, 8.7% in Construction, 6.7% in Manufacturing, 6.6% in Wholesale Trade, 6.0% in Transportation, Communications, Electric, Gas, and Sanitary Services, 5.1% in Agriculture, Forestry, and Fishing, etc. in Poland (HitHorizons, 2022).

The 5 largest employers in Poland include POCZTA POLSKA S A (74,824 employees), JERONIMO MARTINS POLSKA S A (74,350 employees), ZAKLAD UBEZPIECZEN SPOLECZNYCH (44,887 employees), POLSKA GRUPA GÓRNICZA S A (39,559 employees) and PKP POLSKIE LINIE KOLEJOWE S A (38,834 employees).

2.2.3 Summary

Poland, as confirmed by the previous sections, can be considered a democratic country with a developed economy and a high quality of life index. Thanks to the great historical past, which includes many trials as well as many glorious events, it has continuously strengthened the self-awareness of Poles. Nowadays, as an integral part of the European Union, it plays an important economic and political role on the European continent. It is a member of the Visegrad Four Alliance, which can be considered one of the oldest strategic cooperations.

In terms of tourism, it also offers many opportunities, from bathing in the sea to sailing on the lake to skiing and mountain climbing. This statement is also proven by the fact that approximately 20 million tourists visited Poland annually before the COVID-19 pandemic (EURES, 2022).

For more than 30 years, Poland has remained one of the most attractive destinations for foreign investment. It has a balanced economy, an established macroeconomic position, and unique conditions for operating and opening a business. The dominant part of foreign direct investments (FDI) is reinvested income, which proves the loyalty of investors to the Polish market. According to the NBP balance of payments statistics, after three quarters of 2021, nearly 19 billion euros were transferred in the form of foreign direct investments (FDI) to Poland, which represents a 60% increase (IR Global, 2022).

2.2.4 References to subchapter 2.2

1 Bottlik, Zs. (2013). Geographical study of the Polish ethnic homeland (in Hungarian). *Földrajzi közlemények*, 137(2).

2 EURES (2022). Labour market information: Poland. Available online at: https://eures.ec.europa.eu/living-and-working/labour-market-information/labour-market-information-poland_en

3 HitHorizons (2022). Industry Breakdown of Companies in Poland. Available online at: https://www.hithorizons.com/eu/analyses/country-statistics/poland

4 Iglinski, B., Pietrzak, M., Kiełkowska, U., Skrzatek, M., Kumar, G. & Piechota, G. (2022). The assessment of renewable energy in Poland on the background of the world renewable energy sector. *Energy,* 261.

5 IR Global (2022). Doing Business In Poland 2022. Available online at: https://www.irglobal.com/article/doing-business-in-poland-2022/

6 Kapronczay, K. (2014). Polish unity in the years of the First World War (in Hungarian). *Valóság*, 57(11).

7 Majchrowska, A. & Strawinski, P. (2018). Impact of minimum wage increase on gender wage gap: Case of Poland. *Economic Modelling,* 70, 174-175.

8 OECD (2022). Education at a Glance 2022: OECD Indicators, *OECD Publishing*, Paris. Available online at: https://doi.org/10.1787/3197152b-en

9 OECD (2022). Poland: investing in a greener, fairer economy will strengthen recovery from COVID-19 crisis. Available online at: https://www.oecd.org/newsroom/poland-investing-in-a-greener-fairer-economy-will-strengthen-recovery-from-covid-19-crisis.htm

10 Openiazoch.zoznam.sk (2022). Priemerná hrubá mzda v Poľsku aj zamestnanosť v decembri vzrástli. Available online at: https://openiazoch.zoznam.sk/cl/220207/Priemerna-hruba-mzda-v-Polsku-aj-zamestnanost-v-decembri-vzrastli

11 Schmidt, A. (2020). Three seas wash ... Poland's regional ambitions as a great power in the 21st century and its roots (in Hungarian). *Pólusok folyóirat*, 1(1).

12 Statistics Poland (2022). Economic poverty rates in Poland in 2020. Available online at: https://stat.gov.pl/en/topics/living-conditions/social-assistance/economic-poverty-rates-in-poland-in-2020,4,8.html

13 Tapolcai, L. (2003). The sea and the mountains in Polish national mythology in the 12th-17th centuries (in Hungarian). *Világtörténet*. 2, 16-33.

14 The World Bank (2022). World Development Indicators. Available online at: https://datatopics.worldbank.org/world-development-indicators/

15 TOPUNIVERSITIES (2022). Study in Poland. Available online at: https://www.topuniversities.com/where-to-study/europe/poland/guide

16 Trading Economics (2022). Poland Exports By Country. Available online at: https://tradingeconomics.com/poland/exports-by-country

17 TREND (2022). Nezamestnanosť v Poľsku sa v máji priblížila k 5 percentám. Available online at: https://www.trend.sk/spravy/nezamestnanost-polsku-maji-priblizila-5-percentam

2.3 Hungary
(Zsolt Kőmüves, Botond Kálmán, Arnold Tóth, József Poór)

As one of the V4 countries, Hungary is located in Central Europe, in the middle of the Carpathian Basin, and has been an independent parliamentary republic since 1989. It is bordered by Slovakia to the north, Ukraine to the northeast, Romania to the east and southeast, Serbia and Croatia to the south, Slovenia to the southwest, and Austria to the west. With an area of 93,036 square kilometres and a population of nearly ten million people, it is one of the medium-sized and medium-populated member states of the European Union.

Population:	9,610,451 people (2022)
Population density:	104 people/km^2
Languages:	Hungarian
National minorities:	Armenian, Bulgarian, Croatian, German, Greek, Polish, Roma, Romanian, Ruthenian, Serbian, Slovak, Slovene and Ukrainian
Capital:	Budapest

2.3.1 Socio-economic overview

2.3.1.1 General overview

Hungary is a central European country that is located in both the northern and eastern hemispheres. It shares 2,106 km (1,309 mi) long land border with 7 countries – Slovakia (627 km or 390 mi), Romania (424 km or 263 mi), Croatia (348 km or 216 mi), Austria

(321 km or 199 mi), Serbia (164 km or 102 mi), Ukraine (128 km or 80 mi), and Slovenia (94 km or 58 mi). (Government of Hungary, 2023).

https://geology.com/world/hungary-satellite-image.shtml

Hungary is spread across a total area of 93,030 sq. km (35,920 sq. mi), out of which 89,608 sq. km (34,598 sq. mi) is land area and 3,420 sq. km (1,320 sq. mi) is water area. It is a landlocked country and has no coastline. While Kékes is the highest elevation point at 1,014 m (3,327 ft), Tisza River is the lowest point at 78 m (256 ft). The mean elevation of Hungary is 143 m (469 ft).

As of 1 January 2022, the population of Hungary was estimated to be 9,610,451 people. This is a decrease of -0.32 % (-30,949 people) compared to population of 9,641,400 the year before. In 2021 the natural increase was negative, as the number of deaths exceeded the number of live births by 36,734. Due to external migration, the population increased by 5,785. The sex ratio of the total population was 0.904 (904 males per 1,000 females) which is lower than global sex ratio. The global sex ratio in the world was approximately 1,016 males to 1,000 females as of 2021.

Below are the key figures for Hungary population in 2021:

- 90,051 live births
- 126,784 deaths
- Natural increase: -36,734 people
- Net migration: 5,785 people
- 4,563,369 males as of 31 December 2021
- 5,047,082 females as of 31 December 2021 (UN, 2022).

2.3.1.2 Socio-economic characteristics

Hungary's population – relative to the current territory of the country – reached its historical maximum in 1981, with 10 million 713 thousand people, and since then the population has been continuously decreasing. The country's population was 9 million 764 thousand on January 1, 2019, 14.3 thousand less than a year earlier. The main reason for the decrease in population was the natural population decline of 41,300 people resulting from the balance of births and deaths, which was moderated by the positive balance of international immigration and emigration, estimated at 27,000 people (KSH, 2019).

Hungary's economic growth was dynamic in the period between 2000 and 2006, with an annual rate between 3.8 and 5.0 percent. During this period, the Hungarian economy was strongly integrated into the EU economy, through foreign operating capital, as well as pre-accession funds and development resources to help catch up. At the same time, after accession, the Hungarian economy expanded the slowest of the former socialist countries, its growth rate barely exceeding the EU-28 average. This situation has changed since the low point in 2012, especially after 2016, when the growth of the Hungarian economy was again more dynamic. At that time, it was tied for 2nd-5th place among Central and Eastern European countries (Lengyel - Varga, 2018). So, in terms of the growth rate of the Hungarian economy, the 2017-18 period brought dynamic expansion again. In line with expectations, the previous slowdown in GDP stopped already in the first half of 2017, and annual growth jumped to 4.1% and 4.9% in 2018.

Hungary's GDP per capita (calculated at purchasing power parity) was 65% of the EU average in 2010, and 70% in 2018. With this, Hungary took 24th place in the 2018 EU ranking.

In 2017 and 2018, the focus of economic growth shifted from external demand to internal demand. As a result of the improved labour market environment and real wage growth, households also spent more on consumption in 2018. The volume of actual consumption by households, which represents the largest part of internal consumption, roughly 60% of GDP, decreased by 2.3% in 2012, after which it continuously increased by 4.6% in 2018 compared to the previous year (KSH, 2019).

In the years following the crisis, Hungary's foreign trade performance reflected the economic performance of its important EU export markets. Between 2010 and 2016, foreign trade contributed positively to the growth of the Hungarian economy as a whole.

The economic performance of the country is significantly influenced by the business sector. At the end of 2018, there were more than 1.9 million economic organizations in the administrative registers, which was 2.1% more than a year earlier. At the end of 2018, 92% of economic organizations were made up of enterprises, and their proportion has remained essentially unchanged over the past decade. Thanks to the growth of self-employed people, especially sole proprietors, the number of enterprises increased by 2.2%, while the number of cooperative enterprises decreased by 1.6%.

The number of limited liability companies (kft.), representing the largest share of social enterprises, decreased by 1.0% in one year. The decrease has been continuous since 2014, mainly as a result of raising the minimum amount of the share capital back to HUF 3 million. In contrast, the number of joint-stock companies is growing almost continuously (KSH, 2019).

The economic weight of small and medium-sized enterprises is significant in the Hungarian economy. 99% of enterprises operating in Hungary are classified as small and medium-sized enterprises. Their economic involvement is relatively stable, and they play the biggest role in employment.

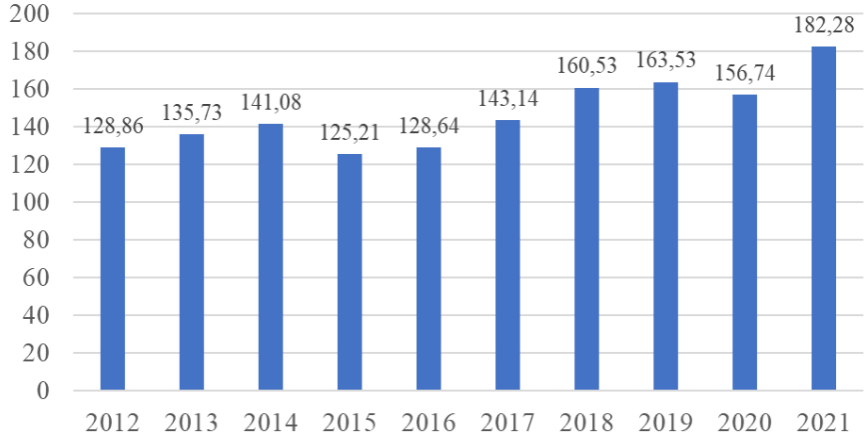
2.3.1.3 Economic development

The war in Ukraine and the global pandemic remains the main geopolitical factors shaping the economic environment in which the Hungarian government must shape its response and the economy must adapt. A look at the latest GDP figures shows that the Hungarian economy is booming, and similar trends can be seen in the labour market (Figure 2-14). In the first two quarters of 2022, Hungarian GDP grew by 7.3 percent. In Q2 2022, Hungarian GDP grew by 6.5 percent compared to Q2 2021; only two countries (Portugal and Slovenia) outperformed Hungary in the EU (Moldicz, 2022). With the exception of agriculture, all sectors performed well, and output in tourism, manufacturing, retail trade, finance, and the IT sector was above average. Labor market trends are positive, as the unemployment rate was 3.3% in May-July, a decrease of 0.8 percentage points compared to the corresponding period last year. The number of employed persons in May-July was 4.7 million, 52 thousand more than in the corresponding period last year. Moreover, contrary to expectations, industrial production was not affected by the Ukrainian war, as the latest data show. The sector's output grew by 1.1 percent in July compared to June and by 6.6 percent compared to June 2021. The sector closed the gap caused by the global pandemic and recovered quickly. The question remains how companies can adapt to the new economic environment created by skyrocketing utility prices.

In August 2022, the consumer price index was 15.6 percent compared to August 2021. Over the past year, food prices have skyrocketed, and the annual price increase here has been the largest at 30.9 percent. Consumer durables became 14.8 percent more expensive over those 12 months, services prices rose 7.7 percent, and the price index for beverages, tobacco, and spirits grew 13.1 percent. The rise in utility prices will most likely trigger new waves of price increases, experts say (Pénzcentrum 2022).

The Gross Domestic Product (GDP) in Hungary was worth 182.28 billion US dollars in 2021, according to official data from the World Bank. The GDP value of Hungary represents 0.14 percent of the world economy (World Bank 2022).

Figure 2-14: GDP of Hungary (2012–2021)



source https://tradingeconomics.com/hungary/gdp

2.3.2 Labour market

The unemployment rate was 3.8 percent in the age group between 15 and 74 in October 2022. Based on the 3-month moving average, the unemployment rate for males was 3.7 percent, and the unemployment rate for females was 3.5 percent in July-September 2022. The number of unemployed 15–24-year-olds fell to 34 thousand, and their unemployment rate decreased by 3. 7 percentage points to 10.8%, but they still accounted for 19.2% of the total unemployed. The unemployment rate for 25–54-year-olds remained essentially unchanged at 3.2% (-0.1 percentage points), while the unemployment rate for 55–74-year-olds increased by 0.3 percentage points to 3.0% (Eures, 2023). The unemployment rate was highest in North Hungary (6.0%) and lowest in Central Transdanubia (1.9%). Compared to the same period last year, the rate increased slightly in three regions, South Transdanubia (0.1 percentage points), Budapest (0.3 percentage points) and West Transdanubia (0.5 percentage points), while the other regions saw a decrease, most notably in North Great Plain (1.2 percentage points). The average time spent looking for a job was 9.2 months, with 33.9% of the unemployed having been looking for a job for at least a year. The number of employed persons in August-October was 4 million 714 thousand, which is 17 thousand more than in the corresponding period of 2021 (KSH, 2022).

Among 15–64-year-olds, 4 million 601 thousand were classified as employed, with an employment rate of 74.7% for the age group. For men, the number of people in employment was essentially unchanged at 2 million 435 thousand, with an employment rate of 79.0%. For women, the number of persons employed increased by 25 thousand to 2 million 166 thousand. Table 2-1 shows the evolution of the employment ratio by gender.

Table 2-1: Employment rate by sex (within population aged 15-64 years, 3 months moving average)

%	2017.08	2018.08	2019.08	2020.08	2021.08	2022.08
males	75,9	77	77,4	77,7	78,6	79
females	65,7	67,1	67,3	67,3	69,1	70,3

https://www.ksh.hu/docs/eng/xftp/gyor/fog/efog2210.html?utm_source=kshhu&utm_medium=banner&utm_campaign=theme-labour

According to the survey conducted by ManpowerGroup, about 26 percent of domestic employers plan to lay off employees, while only 20 percent of companies intend to hire in the future. The net employment indicator (the difference between plans to hire and lay off employees) is broadly negative, with only manufacturing showing a positive value (3 percent), while massive layoffs are planned in IT, technology, communications and media. In the banking, insurance and real estate sectors, roughly equal numbers of people are expected to be hired and laid off (Moldicz, 2022).

The vacancies came from Borsod-Abaúj-Zemplén, Szabolcs-Szatmár-Bereg County and the capital city. The skilled occupations most sought by jobseekers in 2021 were as follows: General office administrator, shop assistant, truck driver, lorry driver, cook, mechanical machine assembler, work and production organiser, bartender, locksmith, welder, flame cutter, waiter (Eures, 2022).

According to official data from the Hungarian Central Statistical Office, the average wage in Hungary in 2022 is 467,300 forints per month, equivalent to 1,345 U.S. dollars at current exchange rates. After paying taxes, Hungarian workers have 322,100 forints ($930) at their disposal. Compared to the same period last year (January-December) the average wage in Hungary has increased by 13.7%.

Table 2-2 illustrates average salary in Hungary by sector of economy (WageCentre, 2022).

- Business sector – 476,800 (gross)/317,100 (net)
- Budgetary institutions – 436,200 (gross)/290,000 (net)
- Non-profit institutions – 479,300 (gross)/318,700 (net)

The highest incomes in Hungary were recorded in financial and insurance activities (HUF 785,197) and the lowest in accommodation and catering services (HUF 303,300). The average gross earnings of full-time Hungarians was HUF 508,100 for men and HUF 427,200 for women. Taking into account inflation for 2021 of 7.9% compared to the same period last year, real wages in Hungary increased by 5.4%.

Table 2-2: Average salary in Hungary by sector of economy

Sector of economy	Forint per month	Dollars per month
Financial and insurance	785,197	2,265
Information and communication	764,111	2,200
Professional, scientific and technical activities	658,022	1,895
Electricity, gas, steam and air conditioning supply	616,968	1,780
Public administration and defence	512,183	1,475
Manufacturing	473,224	1,365
Arts, entertainment and recreation	460,586	1,325
Mining and quarrying	460,367	1,325
Transportation and storage	459,841	1,325
Wholesale and retail trade	439,847	1,270
Education	427,524	1,230
Human health and social work	415,494	1,195
Real estate operations	394,960	1,140
Water supply, sewerage, waste management and remediation	387,451	1,115
Administrative and support services	387,401	1,115
Construction	369,523	1,065
Fishing, agriculture and forestry	348,903	1,005
Accommodation and food service	303,260	875
Other services	376,231	1,085

https://wagecentre.com/work/work-in-europe/salary-in-hungary

The conditions on the labour market can still be improved because there is structural unemployment on the labour market, which means that the structure of labour supply does not exactly match the structure of demand. In our case, there is an over-supply in areas with white-collar jobs and over-demand in areas where mainly blue-collar workers are needed. The literature distinguishes three other types of unemployment: frictional, seasonal and cyclical. The first occurs when people move between jobs and the period in between is called frictional unemployment, while cyclical unemployment occurs when the economy experiences slump and this is the main reason for layoffs. Since Hungarian economy is booming, there is no cyclical unemployment, and there are also seasonal labour shortages in certain sectors. The most obvious problems are in the hospitality and tourism sectors, where many workers migrated during the Covid pandemic, found work in logistics, trade and other sectors, and did not return after the pandemic. To make matters worse, foreign workers generally do not speak Hungarian and language skills are required in this sector.

Because of these problems, the Hungarian government has allowed no-EU citizens to work as foreign workers. The procedure for recruiting foreign workers abroad has been simplified by the Hungarian government. The regulation applies to qualified employers and employment agencies that can hire foreign workers without a work permit. The regulation can be applied to workers from the Philippines, Vietnam, Mongolia, Belarus, Indonesia, Montenegro, Kazakhstan, Northern Macedonia and Bosnia and Herzegovina. These companies must also meet certain requirements:

- It is a registered worker renting agency or firm from the EU,
- The company must provide collateral worth 50 million HUF;
- The average number of employees must be at least 500 before the application is submitted;
- Reliable infrastructure, a solid financial background, no government debt;
- Accurate data can be provided by the company on time.
- The company's activity does not pose a risk to national security.

In downtown Budapest, it is already common for customers to be able to order in restaurants in English only, which is not a problem because most of the guests come from abroad and Hungarian guests can also order in English. According to labour market analyses, workers from the Philippines and Indonesia have good chances of being employed in the Hungarian hospitality industry, as the English skills of workers from this region are good. Contrary to expectations, these workers do not use Hungary as a stepping stone to jobs in the West – unlike workers from Serbia and Ukraine. Indonesian and Filipino workers generally find Hungarian wages attractive (Ministry of Economic Development, 2022).

Another channel through which labour market conditions can be improved is the integration of young people, especially students from high schools and universities, into the labour market. According to the Association of Hungarian Student Enterprises, retail, hospitality, agriculture and manufacturing are the most popular sectors for summer jobs among young people. The average gross hourly wage is between HUF 1,500 and 1,600 in Budapest, the larger cities and around Lake Balaton. In other regions, the average hourly wage is 20 percent lower. Experts emphasize that summer jobs have gained popularity as young people under 25 will be exempt from income tax as of Jan. 1, 2022. While the number of students working in the summer was between 65 and 70 thousand, this number may increase up to 75 thousand.

We should add that companies are also interested in hiring young people, because the Ministry of Technology and Industry has just launched a programme that provides financial support for the employment of young people between 16 and 25 years of age who are enrolled in study programmes either in high schools or universities, are not employed elsewhere and do not have their own business. Daily work hours are limited to 6 hours if students work for a municipality or local government, and 8 hours if they work in agriculture, hospitality, or tourism. The programme covers three-quarters of

the students' wages. The programme begins July 1, 2022, and businesses have until June 15, 2022, to apply for this opportunity. Per capita support can vary from HUF 150,000 to HUF 195,000, depending on the workplace.

2.3.3 References to subchapter 2.3

1 Treaty of Amsterdam (1997). *Official Journal of the European Communities*, C 340(40). http://eur-lex.europa.eu/legal-content/HU/TXT/?uri=CELEX:11997D/TXT

2 Bacsák, D., Hajdu, M., Horváth, Á. Nábelek, F., Sturcz, A. (2021). *Rövidtávú munkaerőpiaci prognózis 2022/2.* Institute for Economic and Enterprise Research – Hungarian Chamber of Commerce and Industry. https://gvi.hu/files/researches/661/prognozis_2021_2_tanulmany_211215.pdf

3 Bakonyi, E. (2010). *Possible means of extending the working age of employees* (in Hungarian) [Doctoral dissertation, University of Pécs]. https://pea.lib.pte.hu/bitstream/handle/pea/15532/barakonyi-eszter-tezis-hun-2010.pdf?sequence=2&isAllowed=y

4 Berde, É. & Bittmann, F. (2021). Examining the job application chances of older workers using the vignette method (in Hungarian). *Labor Review* (Új Munkaügyi Szemle), 2(2), 21–35. https://www.metropolitan.hu/upload/efc670b27edeb975d747ea785a667acee1a9c1b0.pdf

5 Berde, É. & Drabancz, Á. (2021). The changing role of the elderly in the „workplace of the future" – an analysis of the discrimination that occurs when the elderly are employed (in Hungarian). *Labor Review* (Új Munkaügyi Szemle) 2(3), 46-58.

6 Bruder, E. & Szabó, E. (2022). *Mobility-related expectations of Hungarian employees and their fulfillment through the example of three Western European countries (in Hungarian).* In Obádovics, Cs. & Széles, Z. (Eds.), History – society – countryside: Jubilee study volume II (Történelem – társadalom – vidék: Jubileumi tanulmánykötet II.) (pp. 133–151). Sopron University Press. https://doi.org/10.35511/978-963-334-430-9

7 Darmawan, D., Mardikaningsih, R., Sinambela, E. A., Arifin, S., Putra, A. R., Hariani, M., Irfan, M., Al Hakim, Y. R. & Issalillah, F. (2020). The quality of human resources, job performance and employee loyalty. *International Journal of Psychosocial Rehabilitation*, 24(3), 2580-2592.

8 Egyensúly Intézet (2021). *How can everyone have a job? Background study on the adjustment disorders of the Hungarian labor market (in Hungarian)* https://egyensulyintezet.hu/wp-content/uploads/2022/02/ei_hogyan_legyen_hattertanulmany_web.pdf

9 Eurostat (2014) *Persons working part-time or with a second job, 2004–14.* https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Persons_work-

ing_part-time_or_with_a_second_job,_2004%E2%80%9314_(%25_of_total_employment)_YB16.png

10 Eurostat. (2017). *Employment rate by age group* (1993-2016). https://ec.europa.eu/eurostat/statistics-explained/images/f/fb/Employment_rate_by_age_group%2C_1993-2016_%28%25%29.png

11 Galasi, P. (2006). *Overtraining, undertraining and earnings* (in Hungarian). In Kolosi, T., Tóth, I. G. & Vukovich, G. (Eds.), Societal report 2004 (pp. 259–271). TÁRKI. https://www.tarki.hu/adatbank-h/kutjel/pdf/a802.pdf

12 Ministry of Economic Development (2022). *The main characteristics of the employment of foreign citizens in Hungary in 2022* (in Hungarian). https://nfsz.munka.hu/nfsz/document/3/1/4/1/doc_url/Elemzes_a_kulfoldiek_magyarorszagi_munkavallalasarol_2022.pdf

13 Gödör, Zs. (2022). A blessing or a curse? Factors determining the future of work and the labor market. *Deliberationes Scientific Journal, 15*(1), 44-54.

14 Illésy, M. & Huszár, Á. (2022). Technological development and the labor market: how does automation affect jobs in Hungary? *Statisztical Review 100*(2), 137-161.

15 IMF. (2021). *Policy Responses to COVID19.* https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19

16 Kajdi, L. (2021). *Migration in the light of remittances – focusing on the Hungarian processes of the last decade* [Doctoral dissertation, University of Pécs]. https://pea.lib.pte.hu/bitstream/handle/pea/33938/kajdi-laszlo-phd-2022.pdf?sequence=1

17 Kálmán, B. G. (2022). *New competences and lifelong learning cultures for industry 4.0.* https://doi.org/10.13140/RG.2.2.32966.75846

18 Kiss, É. & Varga, G. (2022). Domestic higher education and corporate collaborations from the point of view of Industry 4.0. *Educatio,* 30(3), 522–531. https://doi.org/10.1556/2063.30.2021.3.12

19 Kovács, M., Nemeskéri, Zs. & Vámosi, T. (2022). Determinants of working capacity in the logistics area of a given large company -Part I. (in Hungarian). *Labor Review (Új Munkaügyi Szemle) 3*(3), 39-53.

20 Kováts, G., & Derényi, A. (2023). *The first decade of dual education in Hungarian higher education. Results, risks, opportunities* In: Kováts, G. & Derényi, A (Eds.). Corvinus University of Budapest. https://unipub.lib.uni-corvinus.hu/8268/

21 Köllő, J., Oblath, G. & Scharle, Á. (2022). Labor market situation before the outbreak of the epidemic. *Statistical Office Publications* https://www.ksh.hu/s/kiadvanyok/munkaeropiaci-folyamatok-2022-iii-negyedev/index.html

22 Statistical Office. (2023). *Man and Woman* Központi Statisztikai Hivatal. https://www.ksh.hu/ferfiak-es-nok

23 Lengyel, T. (2023). Examining the training system of a multinational company in the context of the companies' expectations and adult learning. *Labor Review (Új Munkaügyi Szemle)* 4(1), https://www.metropolitan.hu/upload/a71078b997d9029136d45f40b45984647ab82862.pdf

24 Sven,S., Jánoskuti, L., Havas, A., Puskás, P. & Békés, Márton (2020). *Take off. The trajectory of Hungarian economic growth until 2030. https://www.mckinsey.com/hu/~/media/McKinsey/Locations/Europe%20and%20Middle%20East/Hungary/Our%20Insights/Flying%20start%20Powering%20up%20Hungary%20for%20a%20decade%20of%20growth/McK-Hungary-2030-Report-HU.pdf*

25 N-Global. (2016). Garantált bérminimum iskolai végzettség hiányában. Munkaügyi Levelek (online), 135, 1. http://nglobal.hu/index.php?r=StaticPage/View/9

26 Obádovics, Cs., Kulcsár, L., & Gödri, I. (2022). Examination of the demographic and social characteristics of Hungarians returning from abroad and the factors affecting their mobility. *Demogrphy* 65(2022). https://doi.org/10.21543/Dem.65.1.3

27 Piirtju. (2019). Foglalkoztatási statisztikák. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Employment_statistics/hu

28 Ruff, T. (2022). Foreign mobility plans of young Hungarians. In Obádovics, Cs. & Széles, Z. (Eds.), *History – society – countryside: Jubilee study volume II. (Történelem – társadalom – vidék: Jubileumi tanulmánykötet II.)* (pp. 152–166). Sopron University Press. https://doi.org/10.35511/978-963-334-430-9

29 Surman, V., Fülesdi, A., Galavics, D. & Jenei, B. (2023). *The symbiosis of university and industry – Cooperation of Hungarian National Bank & Budapest University of Technology and Economics.* https://mnbprogram.bme.hu/2023/05/31/az-egyetem-es-az-ipar-szimbiozisa/

30 Tardos, K. (2017). *Age and equal opportunities* (in Hungarian). http://www.belvedere.meridionale.hu/letolt/Tardos%20Katalin%20Eletkor%20es%20esely-egyenloseg.pdf

31 Tóth, K. (2022). International experiences of the introduction of dual education through the examples of some countries. *International Journal of Engineering and Management Sciences*, 7(1). https://doi.org/10.21791/IJEMS.2022.1.7

32 UN (2022) *World Population Prospects 2022*https://population.un.org/wpp/Publications/Files/WPP2022_Release-Note-rev1.pdf)

33 Vaskövi, Á. & Ráduly, D. (2022). Pension systems and forms of pension savings in the Visegrad countries. (in Hungarian). Insurance And Risk, 9(3–4), pp. 38–71. https://doi.org/10.18530/BK.2022.3-4.38

2.4 Slovakia
(Imrich Antalik, Silvia Kosár Tóbiás, Irma Rácz Pothaczky, Zsuzsanna Szeiner)

Slovakia is located in the middle of the European continent. Its area is 49,034 km^2.

Politically, however, the country belonged to Eastern Europe for forty years, which basically determines its recent history. As a result, Slovakia is one of the transitive, emerging markets, which, has already had the characteristics of a developed market economy in terms of almost all of its indicators by now.

Population:	5,450,421 people
Density:	111.1 people/km^2
Languages:	Slovak
Ethnic minorities:	Hungarian 6%, Czech, Ukrainian, Polish
Capital city:	Bratislava

2.4.1 Socio-economic development

2.4.1.1 General overview

Slovakia became an independent state on 1 January 1993. The country has a Western culture, but its national emancipation was supported from the East in the older periods, so until the late 1990s there was both a European orientation and a reasserted Russian orientation. The country took a definitive direction in 1998, when a Euro-Atlantic liberal market-oriented government took over. The new government, which enjoyed broad social support, accelerated the process of Western European integration (European

Union, OECD), implemented a number of comprehensive reform measures (tax reform, pension reform, new labour code, etc.) and saw a major breakthrough in the boosting of car production. It was then that a large inflow of foreign capital started to take off, resulting in accelerated economic growth. There was a year (2007) when annual GDP growth exceeded 10%. This is when Slovakia became a regional success story.

In 2006, another major domestic political turnaround took place, and a left-wing government was again elected. However, the reforms implemented by the previous government were not fundamentally changed and economic growth remained unbroken, making Slovakia the first country in the region to switch to the euro.

However, for all its successes, Slovak society is fraught with tensions, extremist ideas are gaining support, and the political system is riddled with corruption. Slovakia's low turnout in EU elections is a sign of its lack of interest in European ideas.

2.4.1.2 Economic development

Slovakia is a member of several international and supranational organizations, such as the OECD, WTO, the European Union and the euro zone, which was introduced in 2009. Slovakia is successfully catching up with the more advanced EU countries, with economic growth above the EU average in the medium term, while the rate of monetary depreciation has been very low, with deflation in 2015 and 2016. The country's main economic indicators in 2018, based on preliminary calculations, were as follows.

Table 2-3: Slovakia's selected economic indicators (2018)

indicator	value	unit
gross national product at current prices	90 202	M EUR
inflation	2.5	%
economic growth	4.1	%
unemployment rate	6.6	%
activity rate	59.8	%
exports	79.8	Bn EUR
imports	77.3	Bn EUR
share of main trading partner (Germany)	17.7	%
share of exports in GDP	97.3	%
share of main export product (machinery and equipment)	61	%
average wage	1 024	EUR
nominal industrial wage	1 117	EUR
debt rating (S&P)	A+	-
Doing Business*	42nd place	-

*Source: Slovenská republika v číslach 2019, Štatistický úrad Slovenskej republiky, Bratislava 2019; *World Bank*

In 2018, 22% of the population had tertiary education, below the EU average of 28.7%.

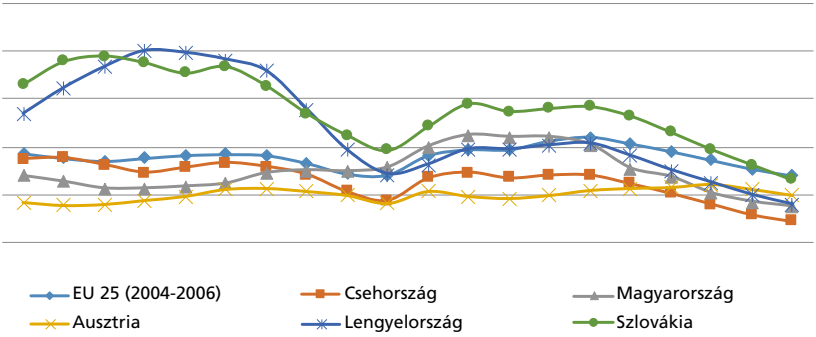
The total length of motorways was 482 km, and even 30 years after the change of regime, the western and eastern halves of the country are still not connected.

The car manufacturing sector is the main driver of Slovakia's economy. There are four companies (Volkswagen, Peugeot Citroën, KIA, Landrover Jaguar) with plants in the country. The number of cars produced is growing rapidly, despite minor declines, with 1 091 422 cars rolling off the production line in 2018, compared to 429 014 10 years ago (2009). Road motor vehicles accounted for 28% of the country's exports in 2016.

2.4.2 Labour market

One of the most important economic and social problems in Slovakia was the high unemployment rate, which was well below the level in neighboring countries and the EU. An analysis of data over the last 20 years shows that only Poland had slightly worse figures than the V4 during the dotcom crisis. Slovakia only reached the EU average in 2018 but is still the region's tail ender.

Figure 2-15: The unemployment rate of the V4 countries, Austria and EU25



Source: Eurostat

There are significant regional differences in all areas at national level, including employment. This is partly geographical, partly historical and partly political. The west-north-west – east-south-east development axis, which is common in Europe, is very much present here. The current geographical distribution of the country's industry began to emerge after the creation of Czechoslovakia in 1919. The Váh River became the centre of Slovak industrial development, and the country's capital was made Bratislava, on the south-western border. After the change of regime in 1990, Slovakia's capital began to grow rapidly, while sub-regions, or districts, with high unemployment were formed in the south and east. This difference is somewhat obscured by the NUTS3 districting,

which was mainly shaped by current political considerations. In December 2017, 14 of Slovakia's 72 districts had unemployment rates above twice the national rate of 11.88%.

Wages are also rising dynamically thanks to the general economic recovery, but there are also significant regional differences.

Table 2-4: Employment data for districts in Slovakia

district	area [km²]	population [1000 persons] 2017	economic activity [%]		nominal gross wages
			activity	difference from the national value	
Bratislava district	2 053	650 838	65.4	5.5	1 200
Nagyszombat district	4 146	562 372	62.1	2.2	890
Trenčín district	4 502	587 364	59.0	-0.9	895
Nitra district	6 344	678 692	59.1	-0.8	789
Zsolna district	6 809	691 023	58.8	-1.1	855
Banská Bystrica district	9 454	649 788	60.6	0.7	807
Eperjes district	8 973	823 826	59.4	-0.5	734
Kosice district	6 754	799 217	56.5	-3.4	869
Total Slovakia	49 034	5 443 120	59.9	0	954

Source: Štatistická ročenka regiónov Slovenska 2018,
Štatistický úrad Slovenskej republiky, Bratislava, 2019

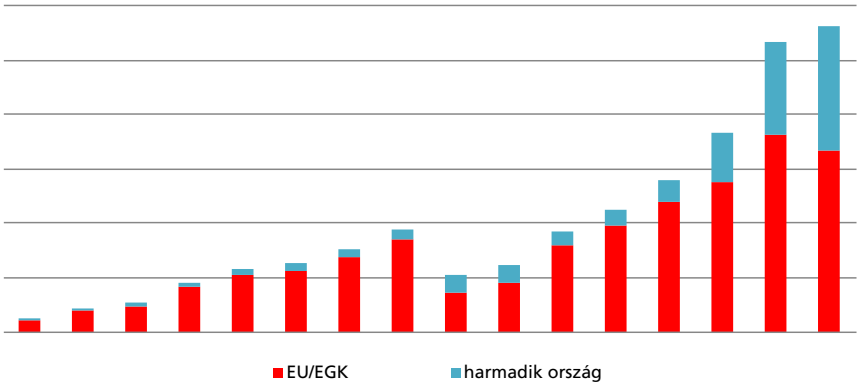
Wages by educational attainment were as follows (Slovenská republika v číslach 2019).

- full secondary education: € 1 087
- full secondary education: € 1 112
- upper secondary education, bachelor's degree: € 1 255
- higher education, master's degree: € 1 641
- Doctorate: € 1 690

In Slovakia, labour shortages started to emerge around 2017. This is not yet a general phenomenon, but is generally confined to large cities, especially the capital, and certain sectors. The reasons are manifold. Inadequate training (IT specialists), emigration (e.g., doctors), long neglected training of skilled workers (various technical professions, operators), but also continuing low wages and seasonal variations in the workload (catering) all play a role. A significant influx of foreign workers started in 2018. The structural shift is reflected in the surge this year in the number of third-country workers arriving from third countries, who are primarily blue-collar workers, i.e., those who

find work directly in production. By far the largest numbers come from Ukraine and Serbia. Most of the EU countries are from Romania, so they are also likely to be mostly employed in factories.

Figure 2-16: Foreign labour force in Slovakia [person]



Source: Slovak Labour, Social and Family Office. Note: There was no decrease in 2012, but the methodology changed. Since then, not only how many people have arrived in the country, but also how many people are realistically staying in the country, are recorded.

However, the employment trend for foreign nationals is uncertain. Their presence will probably continue to be needed, but their numbers will certainly not increase at the same rate. This is based on the negative surprise that Slovak economic growth in the second quarter rose by only 2%, about half of the previous year's rate, so the full-year outlook is also more modest. Several major companies, including Kosice Ironworks and Volkswagen, have announced or already implemented redundancies. However, it is fair to say that despite the slowdown, there are no signs of an economic downturn in Slovakia, although the dynamic rise in employment seems to be breaking.

2.4.3 References to Subchapter 2.4

1. Arntz, M., T. Gregory and U. Zierahn (2016), The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis, *OECD Social, Employment and Migration Working Papers,* No. 189, OECD Publishing, Paris, https://doi.org/10.1787/5jlz9h56dvq7-en.
2. Artner, A. (2018). Worrying tendencies in the labour market of the European Union (in Hungarian). *Statistical Reivew (Statisztikai Szemle)* 96 (4), pp.341–374.
3. Bowles, J., (2014). *The Computerization of European Jobs.* (Blog post). https://www.bruegel.org/blog-post/computerisation-european-jobs

4. Brixiova, Z., Li, W. &Yousef, T. (2009). Skill shortages and labor market outcomes in Central Europe. *Economic Systems*, 33 (1.), pp.45–59.
5. Carsten, J.M. & Spector, P.E. (1987). Unemployment, job satisfaction, and employee turnover: A meta-analysis test of the Muchinsky model. *Journal of Applied Psychology*, 72, pp. 374-381.
6. Chen, M.F., Lin, C.P. & Lien, G.Y. (2011) Modelling job stress as a mediating role in predicting turnover intention, *The Service Industries Journal,* 31(8), 1327–1345, DOI: 10.1080/02642060903437543.
7. Cho, J. & Kim, J. (2018). Identifying Factors Reinforcing Robotization: Interactive Forces of Employment, Working Hour and Wage. *Sustainability* 10 (2), pp. 1-21. https://doi.org/10.3390/su10020490
8. Csehné Papp, I. (2011). *Employment policy* (in Hungarian) https://www.tankonyvtar.hu/hu/tartalom/tamop412A/2010-0019_foglalkoztataspolitika/index.html
9. Digital Hungary (2019). *The labour market has entered a new era* (in Hungarian) https://www.digitalhungary.hu/e-volution/uj-korszakba-lepett-be-a-munkaeropiac/4410/
10. Domokos, L., Jakovác, K. & Németh, E. (2016). *The labour market challenges of the public sector* (in Hungarian). https://www.penzugyiszemle.hu/tanulmanyok-eloadasok/a-kozszfera-munkaeropiaci-kihivasai
11. Eggert, K. (2018). *Lithuania recruits guest workers, leaves identity crisis for later.* https://www.dw.com/en/lithuania-recruits-guest-workers-leaves-identity-crisis-for-later/a-45519519
12. Eurostat (2018). *Economic performance and forecast economic*. https://ec.europa.eu/info/business-economy-euro/economic-performance-and forecasts/economic-forecasts_en
13. Eurostat (2019). Unemployment rate. https://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics
14. Evans, A. (1997). *Benchmarking.* Economic and Legal Book Publishing Co. Budapest.
15. Fabók, B. (2018). *A country that will quickly subjugate Eastern Europe before it is depopulated* (in Hungarian) https://g7.hu/kozelet/20181225/az-orszag-amely-meggyorsan-maga-ala-gyuri-kelet-europat-mielott-elneptelenedik/
16. Ford, M. (2016). *Age of robots*. Budapest: HVG *books.*
17. Galasi, P.&Varga, J. (2005). Labour market and education (in Hungarian). *Institute of Economics*, MTA Budapest.
18. Gallup. (2019). *Facing the Future – U.S., U.K. and Canadian citizens call for a unified skills strategy for the AI age* https://www.northeastern.edu/gallup/pdf/Northeastern_Gallup_AI_2019.pdf

19. Gere, D. (2019). *Labour force retention* (in Hungarian). https://munkaadoknak.cvonline.hu/a-munkaero-megtartasa/

20. Harari, N. Y. (2018). *21 lessons for the 21st century.* London: Johnatan Cape.

21. Hess, D.E.& Ludwig, K. (2017). *Humility Is the New Smart Rethinking Human Excellence in the Smart machine Age.* Oakland: Berrett–Koehler Publishers **Inc.**

22. Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal.* 38 (3), pp.635-672.

23. International Robotics Federation (2019). Executive Summary World Robotics 2019 -Industrial Robots https://ifr.org/downloads/press2018/Executive%20Summary%20WR%202019%20Industrial%20Robots.pdf (Accessed:2019.08.20)

24. Kahanec, M.& Kureková, L. (2011). European Union expansion and migration, *Policy Paper: 36,* Institute for the Study of Labor (IZA), Bonn.

25. Karácsony, P. & Bálint, F. (2016). The impact of social and economic factors on the unemployment rate in the Kosice district from 1993 to the present (in Hungarian). *Tér És Társadalom*, 30 (2), pp. 70-80.

26. Karácsony, P.& Varga, M. (2010). Regional differences in the domestic labour market (in Hungarian). *Labour Review (Munkaügyi Szemle)* 54(4), p. 86-91.

27. Keynes, J. M. (1930). *Economic Possibilities for Our Grandchildren*. Essays in Persuasion, New York: Norton Co.

28. Lengyel, I. & Varga, A. (2018). The spatial limits of Hungarian economic growth – situation and basic dilemmas (in Hungarian). *Economic Review (Közgazdasági Szemle)* 65. pp. 499–524.

29. Lipták, K. (2014). Unemployment or unemployment? – On the labour market situation in Hungary. (in Hungarian). *Acta Carolus Robertus,* 4 (2), pp. 57-69.

30. Manyika, J., Susan L., Chui, M., Bughin, J., Woetzel, J., Batra, P., Ko, R. & Sanghvi, S. (2017). *Jobs lost, jobs gained: Workforce transitions in a time of automation*. McKinsey Global Institute.

31. Ostergaard H. E., Universal Robots, Welcome to industry 5.0 The human touch revolution is now under way https://industrialmachinerydigest.com/industrial-news/white-papers/welcome-industry-5-0-human-touch-revolution-now-way/

32. Poór, J., Juhász, T., Hámori, T., Karácsony, P., Machova, R.& Csapó, I. (2018). Some issues of labour shortages in the Central- Hungarian region – based on an empirical study. Etcs – *Journal of Social Sciences (Metszetek – Társadalomtudományi Folyóirat)* 7 (4), pp.7-23.

3 The methodological basics of the research

(Szilvia Szalai Módosné, Norbert Gyurián, Zsuzsanna Szeiner, József Poór)

"Common sense dictates that we take a method and try it. If it doesn't work, admit it honestly and try something else. But first, let's try something"
Franklin D. Roosevelt[3]

3.1 Objectives of research

With the research presented in our study, we are trying to achieve the following goals:

- The results of our investigations point to the situation in the labour market of the V4 countries based on the responses of individuals.
- Based on the answers of the individuals we analyzed what trends and tendencies can be experienced in the labour markets of the V4 countries in terms of labour shortages and labour force retention.
- We separately examined how the coronavirus crisis (Covid-19) and Russia's war with Ukraine affected the expectations of individuals regarding work.
- We also looked into how efficiency improvement and robotization affected the responding employees.

3.2 Methods and methodology of the research

In the field of human resource management, the question is often raised – this is especially true for multinational companies or when applying a specific rule of the EU – whether the applicable method or rule would be universal or a different solution for each country would be the most appropriate.

The labour shortage, which is the subject of our research, the retention of the labour force or the robotization that helps to solve it in the longer term are all issues for which the previously proposed solutions are equally valid.

As we wrote in the introduction of our research report, we first reviewed the most important literature sources published in connection with the economic and social situation and labour market of the Visegrad V4 countries (Czech Republic, Poland, Hungary and Slovakia), relying on specialized literature sources. In this way, we had a general picture of the labour market situation of the examined countries.

[3] Franklin D. Roosevelt (1882–1945), 32nd President of the United States (1933-45), the only president to be elected to office four times. (Britannica, 2023)

Our empirical investigation is basically ex-post (Usunier et al., 2017), i.e., based on the actual data of the observation period, we examined the practices related to labour shortages and labour retention, as well as robotization, both regionally and for the eight countries examined.

In order to facilitate statistical analyses, the questionnaire uses closed questions in most cases. We asked the respondents to indicate the most characteristic of the pre-formulated answers that largely cover the investigated topics. The individual questionnaire used in the four countries consists of the following 6 main parts:

1. Demographic block: We examined the personal characteristics of the responding individual employee with a total of eight questions.
2. Employment block: In the second part of our questionnaire, we examined the employment characteristics of individual respondents with nine questions.
3. Reasons for changing jobs: We used two questions to examine the opinions of the respondents regarding changing jobs.
4. Labour shortage, turnover, layoffs: In this section, we analyzed the respondents' experiences and opinions related to labour shortages, turnover, and layoffs with two questions.
5. Effects of the coronavirus and the Russian-Ukrainian war on employment: In this part of our questionnaire, we used four questions to analyses the opinions of our respondents on the effects of Covid-19 and Russia's war with Ukraine on their organizations and employment.
6. Robotization: In the last part of our questionnaire, we examined the possible effects of robotization on employment and the labour market.

We received most of the answers via an online web survey. Our findings contained in the research report were based on the use of general statistical methods (average, frequency, distribution).

3.3 Limits and further directions

As we stated earlier, various forms of labour shortages have become common in our region. Such a complex issue can be examined from many different angles. As a result, we can highlight a number of limiting factors.

- The available time and financial framework made it possible to examine the aspects of the farming and management side in the framework of the current research.
- A data collection covering four countries is also a very complex task. The possibilities of the snowball research method made it possible to collect a different number of answers in each Visegrad country.
- Since our research was basically benchmarking (Evans, 1977), the answers collected per country are not representative.

Our plans include that the analyses presented in our study have been and will be expanded with multivariate statistical tests in our previous and future publications.

3.4 References to Chapter 3

1. Béresné B. & Maklári E. (2021). The economic and labour market effects of the Covid-19 epidemic in the European Union in the past year, with particular regard to Hungary. *International Journal of Engineering and Management Sciences,* 6(4), 67-79
2. Britannica (2023). https://www.britannica.com/biography/Franklin-D-Roosevelt (Accessed: 21 July, 2023)
3. Evans, I. S. (1977). The Selection of Class Intervals. *Contemporary Cartography*, 2(1), 98-124.
4. Kazár K. (2014). PLS path analysis and its application to the study of the psychological sense of a brand community. (In Hungarian) *Statisztikai Szemle*, 92(1), 33–52.
5. Sajtos L.& Mitev A. (2007). *SPSS Research and Data Analysis Handbook*. (In Hungarian) Budapest: Aliena Kiadó.
6. Usunier, J. C., Van Herk, H. & Lee, J. A. (2017). *International and Cross-Cultural Business Research*. Los Angeles: Sage.

4 Summary of the empirical data of the individual responses of the examined countries

(Norbert Gyurián, Szilvia Szalai Módosné, Szonja Jenei, Erika Varga, József Poór)

4.1 Total sample

In the following part the aggregated statistical analyses of the V4 countries (Czech Republic, Hungary, Poland and Slovakia) are presented.

4.1.1 Demographics

4.1.1.1 Countries of employment and residence of respondents

In the end, 2,126 persons/employees from the four countries of the region answered our survey.

Based on the analysis of belonging to the labour market in Table 4-1:

- **Hungary** represents the largest group of respondents, more than half of all participants (1234 people, 58.0%).
- **Slovakia and Poland** follow with significant participation, with 335 people (15.8%) and 302 people (14.2%) participating.
- The **Czech Republic** provides the fewest participants to the study, but still a significant number, 255 people (12.0%).
- The total number of participants is 2126, which fully adds up to 100.0%.

The table shows that the majority of people participating in the research work in Hungary, which enables a detailed examination of the country's labour market. Employees from the other V4 countries are also present in a significant proportion, enabling comparison between countries. These data can be important in the analysis of differences in labour market trends and policies between V4 countries.

Table 4-1: Country of employment of participating persons/employees (N, %)

Country	N	%
Czech Republic (CZ)	255	12.0%
Hungary (HU)	1234	58.0%
Poland (PL)	302	14.2%
Slovakia (SK)	335	15.8%
Total	2126	100.0%

Table 4-2 shades the picture based on the place of residence.

- A significant part of the sample consists of respondents living in Hungary (1180 people, 55.5%), which indicates that the research data mainly comes from the population of Hungary.
- The participation of the residents of Slovakia and Poland is significant, together they make up almost a third of the sample.
- The Czech Republic represents the smallest share of the V4 countries in the sample, although a significant number of respondents (11.7%) still come from there.
- During the data collection, responses also come from other non-V4 countries, but these cases are in a negligible proportion (less than 1% in total).
- The option "I do not want to define" indicates that a respondent did not declare the place of residence.
- The "Total" line shows the total number of respondents and the overall ratio, which is 2126 people and 100%.

This information can be essential for evaluating the sampling strategy and the geographic distribution of respondents. When interpreting the results of the research, it should be taken into account that a significant part of the sample is made up of the population of a single country, which may distort the general conclusions about the V4 countries.

Table 4-2: Residences of participating persons/employees (N, %)

Country	N	%
Czech Republic (CZ)	248	11.7%
Hungary (HU)	1180	55.5%
Poland (PL)	302	14.2%
Slovakia (SK)	369	17.4%
Romania (RO)	7	0.3%
Serbia (SE)	4	0.2%
Ukraine (UA)	2	0.0%
United Kingdom (UK)	2	0.1%
Belgium (B)	1	0.0%
Germany (D)	2	0.1%
Do not want to define	1	0.0%
Total	2126	100.0

4.1.1.2 Gender of respondents

Below is a summary of the gender information received from the V4 countries:

- In the Czech Republic (CZ), more than two-thirds of respondents are women (64.3%), while the proportion of men is 35.7%.
- In Hungary (HU), the proportion of women is similarly high (67.2%), and that of men is 31.4%.
- In Poland (PL), the distribution of respondents approaches parity, the proportion of men (52.0%) is higher than that of women (48.0%).
- In Slovakia (SK), women represent more than half of all respondents (57.9%), and the proportion of men is 40.0%.
- The number of respondents in the "Other" category is very low, a total of 6 people, which makes up 0.3% of the sample.
- The number of people who answered "I cannot / do not want to define" is 19, which represents 0.9% of all respondents.
- The total number of respondents in the four V4 countries is 2,126, where, based on the aggregated data, the proportion of women (62.7%) is significantly higher than that of men (36.2%).

These data can be important for examining gender differences in the labour market, for example in terms of employment, job positions or equal treatment. The results may also indicate that gender differences among the research participants may affect the research results, for example, if women and men give different answers to certain questions or have different experiences.

Table 4-3: Gender of respondents (N, %)

Gender		Country				
		CZ	HU	PL	SK	Total
Male	N	91	387	157	134	769
	%	35.7%	31.4%	52.0%	40.0%	36.2%
Female	N	164	829	145	194	1332
	%	64.3%	67.2%	48.0%	57.9%	62.7%
Other	N	0	5	0	1	6
	%	0.0%	0.4%	0.0%	0.3%	0.3%
I cannot / do not want to define	N	0	13	0	6	19
	%	0.0%	1.1%	0.0%	1.8%	0.9%
Total	N	255	1234	302	335	2126
	%	100.0%	100.0%	100.0%	100.0%	100.0%

4.1.1.3 Age of respondents

Table 3 5 shows the age of the respondents.

- The 18-29 age group is present in the largest proportion of respondents in all countries, especially in the Czech Republic (69.8%) and Hungary (63.4%).
- In Poland, the age group over 60 is represented in the largest proportion (25.5%), which is significantly different from what is seen in other countries.
- The 30-39-year-old and 40-59-year-old age groups are represented in a similar proportion in the four countries, with values between 14.1-28.1%.
- A very small number of respondents chose the " I cannot / do not want to define " option, which amounts to a total of 0.6%.
- In terms of the total number of respondents, there are 2,126 people, where, based on the aggregated data, the 18-29 age group dominates (57.7%).

These data can be important for studying generational differences in the labour market, for example in terms of career opportunities, job mobility or entry into the labour market. The high proportion of the age group over 60 in Poland is particularly noteworthy, which may allow conclusions about the characteristics of the labour market or research sampling.

Table 4-4: Age of respondents (N, %)

Age		Country				
		CZ	HU	PL	SK	Total
18-29	N	178	782	69	198	1227
	%	69.8%	63.4%	22.8%	59.1%	57.7%
30-39	N	36	206	71	59	372
	%	14.1%	16.7%	23.5%	17.6%	17.5%
40-59	N	38	227	85	67	417
	%	14.9%	18.4%	28.1%	20.0%	19.6%
60 or above	N	2	10	77	8	97
	%	0.8%	0.8%	25.5%	2.4%	4.6%
I cannot / do not want to define	N	1	9	0	3	13
	%	0.4%	0.7%	0.0%	0.9%	0.6%
Total	1	255	1234	302	335	2126
	7.7%	100.0%	100.0%	100.0%	100.0%	100.0%

4.1.1.4 Highest level of qualification

- The educational level of the respondents is shown in Table 3 7. The highest percentage of people with a high school diploma are represented in all countries, except for Poland, where the proportion of people with vocational qualifications is the highest (19.2%).
- In the Czech Republic and Hungary, more than a third of the respondents have a higher education bachelor's degree (BSC/BA).
- Poland stands out with the proportion of those who received a master's degree (MSC/MA) (28.5%), while in the other countries this proportion is around 10%.

Table 4-5: Qualification of respondents (N, %)

Qualification		Country				
		CZ	HU	PL	SK	Total
elementary	N	0	6	2	1	9
	%	0.0%	0.5%	0.7%	0.3%	0.4%
vocational	N	4	34	58	23	119
	%	1.6%	2.8%	19.2%	6.9%	5.6%
secondary	N	145	488	83	146	862
	%	56.9%	39.5%	27.5%	43.6%	40.5%
vocational higher education or technical	N	9	209	27	32	277
	%	3.5%	16.9%	8.9%	9.6%	13.0%
bachelor (BSC/BA)	N	78	400	35	92	605
	%	30.6%	32.4%	11.6%	27.5%	28.5%
master (MSC/MA)	N	14	89	86	33	222
	%	5.5%	7.2%	28.5%	9.9%	10.4%
scientific degree (PhD or higher)	N	5	5	11	4	25
	%	2.0%	0.4%	3.6%	1.2%	1.2%
I cannot / do not want to define	N	0	3	0	4	7
	%	0.0%	0.2%	0.0%	1.2%	0.3%
Total	N	255	1234	302	335	2126
	%	100.0%	100.0%	100.0%	100.0%	100.0%

- The proportion of people with a primary education is extremely low in all countries, totaling only 0.4%.
- The number of people with a scientific degree (PhD and higher) is relatively low, a total of 25 people, which is 1.2% of all respondents.
- The number of people who answered " I cannot / do not want to define " is 7, which represents 0.3% of all respondents.
- In terms of the total number of respondents, there are 2,126 people, where, based on the aggregated data, the proportion of those with higher education qualifications dominates (39.1%).

These data can be important for examining the correlations between educational levels and the labour market, as well as for analyzing the distribution according to educational levels in individual countries. Of particular importance is the significant difference between the proportion of those with a vocational qualification and those with a higher education master's degree between the individual countries, which may affect the structure of the labour market and the quality of employment.

4.1.1.5 Distance from workplace

Table 3-6 examines commuting, travelling to work.

- The majority of respondents live and work in the same settlement in all countries, especially in Poland, where this proportion is the highest (74.8%).
- Long-distance commuters (those who live and work in another settlement) are a significant part of the respondents, especially among those who travel to work over a distance of more than 25 km.
- The least are those who live in the same settlement, but still work more than 25 km away (3.0%).
- In Poland, no respondent indicated a distance of more than 25 km between the place of residence and the workplace.
- The number of those who answered " I cannot / do not want to define " represents a relatively small part (2.3%).
- In terms of the total number of respondents, there are 2,126 people, where, based on the aggregated data, the proportion of people living and working in the same settlement dominates (60.0%).

These data can be useful for examining labour mobility and commuting patterns in the V4 countries. The data can point to characteristics of regional economies, such as where jobs are located relative to residential areas, and how that might affect labour markets and urban development.

Table 4-6: Distance between residence and workplace of respondents (N,%)

Distance from work			Country				
			CZ	HU	PL	SK	Total
The same settlement	25 km<	N	147	728	226	175	1276
		%	57.6%	59.0%	74.8%	52.2%	60.0%
	>25 km	N	4	28	16	16	64
		%	1.6%	2.3%	5.3%	4.8%	3.0%
Different settlement	25 km<	N	56	188	23	64	331
		%	22.0%	15.2%	7.6%	19.1%	15.6%
	>25 km	N	16	129	0	44	189
		%	6.3%	10.5%	0.0%	13.1%	8.9%
Different settlement	>50 km	N	14	87	18	13	132
		%	5.5%	7.1%	6.0%	3.9%	6.2%
	>100 km	N	13	41	19	12	85
		%	5.1%	3.3%	6.3%	3.6%	4.0%
	I cannot / do not want to define	N	5	33	0	11	49
		%	2.0%	2.7%	0.0%	3.3%	2.3%
	Total	N	255	1234	302	335	2126
		%	100.0%	100.0%	100.0%	100.0%	100.0%

4.1.1.6 Income of respondents

Based on the data the following conclusions can be drawn (Table 3-7)

- The majority of respondents in all countries fall into the average income category, where they represent nearly half of all respondents (49.0%).
- The strongly below average income category includes the fewest respondents, a total of 4.8%.
- The proportion of those who cannot / do not want to define is relatively small (3.7%), which may indicate that the majority of respondents were willing to share their income data.
- In Poland, the proportion of respondents belonging to the income category that is well above the average is the highest (6.6%).
- In Hungary, the proportion of the above-average income category is the highest (21.1%), which exceeds the values measured in the other V4 countries.
- In terms of the total number of respondents, there are 2,126 people, where, based on the aggregated data, the average and above-average income categories dominate.

These data can be useful for examining income inequality and income distribution in the V4 countries. Based on the results, income differences can be mapped, which can influence the labour market, consumer Behaviour and economic policies.

Table 4-7: Income of respondents based on self-declaration (N,%) (Question:I.6.)

Income		Country				
		CZ	HU	PL	SK	Total
well below average	N	11	49	24	19	103
	%	4.3%	4.0%	7.9%	5.7%	4.8%
below average	N	76	234	71	79	460
	%	29.8%	19.0%	23.5%	23.6%	21.6%
average	N	120	612	137	172	1041
	%	47.1%	49.6%	45.4%	51.3%	49.0%
above average	N	35	260	49	45	389
	%	13.7%	21.1%	16.2%	13.4%	18.3%
well above average	N	3	23	20	9	55
	%	1.2%	1.9%	6.6%	2.7%	2.6%
I cannot / do not want to define	N	10	56	1	11	78
	%	3.9%	4.5%	0.3%	3.3%	3.7%
Total	N	255	1234	302	335	2126
	%	100.0%	100.0%	100.0%	100.0%	100.0%

4.1.2 Employment

4.1.2.1 Gaining work experience

- The majority of respondents gained work experience in Hungary (50.9%), which significantly exceeds the data of other countries (Table 4-6).
- In the Czech Republic, Poland and Slovakia, the proportion of people with work experience is similar (11.6%, 11.5% and 15.3%).
- The figures for Romania and Serbia are quite low (1.3% and 0.7%), which may indicate that these countries are less attractive to workers compared to the V4 countries.
- In Austria, the rate is slightly higher (3.3%), which can be explained by proximity and higher wages.
- The Other category, which probably includes other countries, represents 5.3% of all respondents.

- The total number of respondents is 2,543, which indicates that some respondents have work experience in several countries, as this number exceeds the number of respondents in the previous tables.

This table can be useful for analyzing the regional mobility of the labour market and the attractiveness of the labour market in different countries. The high numbers in Hungary and the other V4 countries may indicate the relative strength of the labour markets there, while the proportion of foreign experience may provide important information about the migration patterns of employees.

Table 4-8: Countries where the participants gained work experience (N, %)

Country	N	%
Czech Republic (CZ)	295	11.6%
Hungary (HU)	1295	50.9%
Poland (PL)	293	11.5%
Slovakia (SK)	388	15.3%
Romania (RO)	34	1.3%
Serbia (SE)	19	0.7%
Austria (AT)	85	3.3%
Other	134	5.3%
Total	2543	100.0%

- Most of the respondents work in Hungary, where they represent more than half of all respondents (56.6%).
- The proportion of workers in the Czech Republic, Poland and Slovakia is similar and in total accounts for almost half of the respondents.
- Romania, Serbia and Austria show low numbers, which may indicate that they count as less popular workplaces among workers in the V4 countries.
- The Other category, which probably includes other countries, represents 0.6% of all respondents.
- In terms of the total number of respondents, there are 2,173 people, which indicates that some respondents may have worked in several countries, or that there was a change compared to the number of respondents in the previous tables.

This table can provide information about the geographical distribution of the labour market and the attractiveness of job opportunities in each country. The high numbers in Hungary may indicate that it offers favorable working conditions and opportunities for employees, while the labour market situation in other countries may vary.

Table 4-9: The country where respondents work (N, %)

Country	N	%
Czech Republic (CZ)	265	12.2%
Hungary (HU)	1231	56.6%
Poland (PL)	282	13.0%
Slovakia (SK)	335	15.4%
Romania (RO)	16	0.7%
Serbia (SE)	9	0.4%
Austria (AT)	22	1.0%
Other	13	0.6%
Total	2173	100.0%

- Most of the respondents would like to work in Hungary, where 40.3% of all respondents would like to work.
- Austria is extremely popular among the respondents as a preferred workplace, 21.9% of them would like to work there, which is probably explained by the higher salary levels and better working conditions.
- Slovakia is also relatively popular among respondents, 13.0% of them want to work there.
- Romania and Serbia show a low preference (0.8% and 0.9%), which may indicate that these countries are less attractive for workers from the V4 countries.
- The Other category, which probably includes other countries, represents 6.7% of all respondents.
- In terms of the total number of respondents, there are 2,907 people, which indicates that the respondents could imagine working in several countries, or that there has been a change compared to the number of respondents in the previous tables.

This table can provide valuable insight into which countries' labour markets appear to be the most attractive for workers in the V4 countries. Understanding preferences can help in the development of labour market strategies and regional development policies.

Table 4-10: The country where respondents would work (N, %)

Country	N	%
Czech Republic (CZ)	277	9.5%
Hungary (HU)	1172	40.3%
Poland (PL)	199	6.8%
Slovakia (SK)	379	13.0%
Romania (RO)	24	0.8%
Serbia (SE)	26	0.9%
Austria (AT)	636	21.9%
Other	194	6.7%
Total	2907	100.0%

4.1.2.2 Respondents' form of employment

Full-time employment is the most common form of employment in V4 countries, 60.4% of respondents work in this form (table 3.11). This ratio is the highest in Hungary (65.2%), while it is the lowest in Slovakia (51.0%).

Table 4-11: Respondents' or employees' form of employment (N,%) (Question: II.9.)

Form of employment		Country				
		CZ	HU	PL	SK	Total
full time job	N	127	805	180	171	1283
	%	50.0%	65.2%	59.6%	51.0%	60.4%
part-time job	N	29	254	42	89	414
	%	11.4%	20.6%	13.9%	26.6%	19.5%
simplified employment	N	91	40	34	5	170
	%	35.8%	3.2%	11.3%	1.5%	8.0%
agency contract	N	2	32	0	16	50
	%	0.8%	2.6%	0.0%	4.8%	2.4%
entrepreneur	N	21	89	20	42	172
	%	8.3%	7.2%	6.6%	12.5%	8.1%

Form of employment		Country				
		CZ	HU	PL	SK	Total
other independent activity	N	5	30	21	16	72
	%	2.0%	2.4%	7.0%	4.8%	3.4%
Relationship with several employers at the same time	N	7	23	5	8	43
	%	2.8%	1.9%	1.7%	2.4%	2.0%

- Part-time employment is relatively popular in Hungary (20.6%) and Slovakia (26.6%), accounting for nearly a fifth of all respondents.
- Simplified employment is exceptionally high in the Czech Republic (35.8%), while it is significantly lower in the other countries, especially in Slovakia (1.5%).
- The number of contract workers is low, especially in Poland, where there are no such workers at all.
- The proportion of entrepreneurs is the highest in Slovakia (12.5%), while in the other countries this proportion varies between 8.3% and 6.6%.
- The number of people engaged in other independent activities and employed by several employers at the same time is relatively low in all countries.

These data provide important information about the structure of the labour market of the V4 countries and the preferences of employment forms. Different ratios can shed light on the labour law environment of individual countries and the flexibility of the labour market.

4.1.2.3 Industry of the respondents' main activity

Table 4-10 analyses breakdown by industry.

- The agriculture, forestry and fishing sectors employ a small percentage of the respondents, especially in Slovakia the proportion is higher (6.0%).
- The number of workers in the mining and quarrying sector is very low, especially in the Czech Republic and Slovakia, where they are not represented at all among the respondents.
- The number of workers in the FMCG sector is also low, most respondents in this sector came from Hungary (0.8%).
- The manufacturing industry attracts a significant number of respondents, especially in the Czech Republic (14.9%) and Poland (12.3%).
- The construction industry and the trade and vehicle repair sectors also represent a significant proportion, in Poland the construction industry is exceptionally high (11.9%), while in the field of trade Hungarian respondents are in the majority (10.8%).

- The areas of public administration, defense, compulsory social insurance and education are outstanding in Hungary (10.9% in total), while the Czech Republic leads in the field of education (9.8%).
- The number of workers in the field of health and social care is low in all countries, most respondents in this sector come from Poland (5.0%).
- The other services sector, which includes, among others, trade union advocacy and computer repair, is the highest in Poland (15.2%).
- The I cannot /do not want to define option is higher in Hungary and Slovakia, which may indicate that the respondents are less willing or able to define their industry affiliation.

The table shows that the distribution by industry differs significantly in the individual V4 countries. This difference can provide important information about the structure of national economies and the relative importance of individual sectors. Those industries that are represented in a higher proportion are likely to play an important role in the economy of that country.

Table 4-12: Breakdown by industry (N, %)

Industry		Country				
		CZ	HU	PL	SK	Total
agriculture, forestry, fishing	N	6	17	8	20	51
	%	2.4%	1.4%	2.6%	6.0%	2.4%
mining, quarrying	N	0	5	4	0	9
	%	0.0%	0.4%	1.3%	0.0%	0.4%
FMCG	N	0	10	0	1	11
	%	0.0%	0.8%	0.0%	0.3%	0.5%
manufacturing industry	N	38	35	37	14	124
	%	14.9%	2.8%	12.3%	4.2%	5.8%
electricity, gas, heat supply, air conditioning	N	10	27	5	3	45
	%	3.9%	2.2%	1.7%	0.9%	2.1%
water supply, wastewater collection and treatment, waste management, decontamination	N	3	8	0	3	14
	%	1.2%	0.6%	0.0%	0.9%	0.7%
building industry	N	14	40	36	24	114
	%	5.5%	3.2%	11.9%	7.2%	5.4%
trade, vehicle repair	N	29	133	19	39	220
	%	11.4%	10.8%	6.3%	11.6%	10.3%

Industry		Country				
		CZ	HU	PL	SK	Total
transportation, storage	N	11	90	6	20	127
	%	4.3%	7.3%	2.0%	6.0%	6.0%
accommodation service, hospitality	N	21	81	11	31	144
	%	8.2%	6.6%	3.6%	9.3%	6.8%
information, communication	N	4	37	14	10	65
	%	1.6%	3.0%	4.6%	3.0%	3.1%
financial and insurance activity	N	19	119	18	17	173
	%	7.5%	9.6%	6.0%	5.1%	8.1%
real estate transactions	N	8	8	4	8	28
	%	3.1%	0.6%	1.3%	2.4%	1.3%
professional, scientific, technical activity	N	6	40	8	12	66
	%	2.4%	3.2%	2.6%	3.6%	3.1%
administrative and service support activities	N	15	87	28	25	155
	%	5.9%	7.1%	9.3%	7.5%	7.3%
public administration, defense, mandatory social insurance	N	3	134	11	7	155
	%	1.2%	10.9%	3.6%	2.1%	7.3%
education	N	25	66	22	23	136
	%	9.8%	5.3%	7.3%	6.9%	6.4%
human health and social care	N	11	31	15	7	64
	%	4.3%	2.5%	5.0%	2.1%	3.0%
art, entertainment, leisure	N	8	23	6	15	52
	%	3.1%	1.9%	2.0%	4.5%	2.4%
other services (for example trade union advocacy, church activities, computer repair, hairdressing, funerals, etc.)	N	9	54	46	9	118
	%	3.5%	4.4%	15.2%	2.7%	5.6%
household employer activity, production of products, provision of services for own consumption	N	1	5	2	3	11
	%	0.4%	0.4%	0.7%	0.9%	0.5%
organization other than the above	N	0	33	0	4	37
	%	0.0%	2.7%	0.0%	1.2%	1.7%
I cannot /do not want to define	N	14	151	2	40	207
	%	5.5%	12.2%	0.7%	11.9%	9.7%

4.1.2.4 Years of earning activity

From Table 4-13, we can find out the years of the respondent's earning activity.

- The youngest employees (under 5 years of employment) form the largest group, especially in Slovakia (46.3%) and Hungary (43.6%).
- Those with 5-10 years of work experience show a relatively even distribution, nearly one fifth of the respondents belong to this category.
- The number of respondents with 10-20 years of work experience is already smaller, especially in the Czech Republic, their proportion is low (9.8%).
- The proportion of those with 20-30 years of work experience accounts for approximately one tenth of the respondents.
- Among those with 30-40 years of work experience, Poles stand out (22.5%), while this ratio is lower in other countries.
- The number of people with over 40 years of work experience is negligible, there are only 2 people in total.
- The "I cannot/do not want to define" category has a relatively high rate in Poland (15.6%), which may indicate that there is uncertainty or reluctance among respondents to share information.

These data provide important insight into the level of work experience of employees in the V4 countries. It can be observed that younger workers with less work experience predominate, which can affect the dynamics of the labour market and the demands for workplace training and career development.

Table 4-13: Years of employment of the respondent (N, %)

Years of earning activity		Country				
		CZ	HU	PL	SK	Total
5 years<	N	106	538	44	155	843
	%	41.6%	43.6%	14.6%	46.3%	39.7%
5-10 years	N	79	229	42	60	410
	%	31.0%	18.6%	13.9%	17.9%	19.3%
10-20 years	N	25	192	51	55	323
	%	9.8%	15.6%	16.9%	16.4%	15.2%
20-30 years	N	24	126	49	27	226
	%	9.4%	10.2%	16.2%	8.1%	10.6%
30-40 years	N	8	65	68	14	155
	%	3.1%	5.3%	22.5%	4.2%	7.3%

Years of earning activity		Country				
		CZ	HU	PL	SK	Total
=>40 years	N	0	1	1	0	2
	%	0.0%	0.1%	0.3%	0.0%	0.1%
I cannot/do not want to define	N	13	83	47	24	167
	%	5.1%	6.7%	15.6%	7.2%	7.9%

4.1.2.5 Number of workplaces

The loyalty of the respondents can also be tested by the number of workplaces (Table 4-14)

Table 4-14: Number of workplaces of respondents so far (N, %)

Number of workplaces		Country				
		CZ	HU	PL	SK	Total
The current one is the first	N	49	248	50	60	407
	%	19.2%	20.1%	16.6%	17.9%	19.1%
2-4	N	156	715	180	204	1255
	%	61.2%	57.9%	59.6%	60.9%	59.0%
5-9	N	35	182	47	43	307
	%	13.7%	14.7%	15.6%	12.8%	14.4%
=>10	N	6	35	24	6	71
	%	2.4%	2.8%	7.9%	1.8%	3.3%
I cannot/ do not want to define	N	9	54	1	22	86
	%	3.5%	4.4%	0.3%	6.6%	4.0%

- About a fifth of the respondents indicated that their current workplace was their first; this ratio is relatively evenly distributed between countries.
- The largest group consists of respondents who have had 2-4 workplaces, they make up almost 60% of the entire group of respondents. This may indicate that changing jobs is common among employees.
- The number of people working in 5-9 jobs is quite balanced, nearly 15% of the respondents belong to this category.
- There are far fewer respondents who worked at 10 or more jobs, and their proportion varies. It is higher in Poland (7.9%), which may indicate a greater willingness to

change jobs or a wide range of career building opportunities.

- A small part of the respondents did not want to give the number of their previous jobs, especially in Slovakia this ratio is higher (6.6%).

These data provide important information on labour market mobility and the frequency of job changes in the V4 countries. High job turnover rates show the dynamics of the labour market and the willingness of employees to change. A higher number of "I do not know/do not want to define" answers can shed light on this.

4.1.2.6 Number of years spent at the current workplace

- Almost a third of the respondents indicated that they have not worked at their current workplace for a year (Table 4-15), which represents the highest percentage, especially in Hungary (37.6%).
- Those who have been at their current workplace for 1-3 years also represent a large proportion, especially in Hungary (30.3%).
- About a fifth of the respondents in Hungary and Slovakia fall for the period between 3-5 years, while in the other countries it is slightly less.
- The number of people who spend 5-10 years at their current workplace is quite balanced, but in Poland this proportion is higher (23.5%).
- The proportion of those who have completed 10-20 years is much lower, but still significant.
- There are fewer people who have been in their current job for 20-30 years, and this rate is around 4% in all countries, except for Poland, where it is higher (8.6%).
- The number of those who have spent 30-40 years at their current workplace and those who have worked there for at least 40 years is already negligible.
- A small percentage of respondents did not want to state how long they have been working at their current workplace, this rate is the highest in Slovakia (5.1%).

These data can shed light on job stability and employee loyalty in the V4 countries, as well as labour mobility and frequent job changes. The high percentage of the 1–3-year group and the exceptionally high percentage of the group under one year suggest that job changes are common in the region.

Table 4-15: Respondent's years at the current workplace (N,%)

Years at the current workplace		Country				
		CZ	HU	PL	SK	Total
Less than a year	N	69	464	30	82	645
	%	27.1%	37.6%	9.9%	24.5%	30.3%
1-3 years	N	69	284	48	71	472
	%	27.1%	23.0%	15.9%	21.2%	22.2%
3-5 years	N	44	138	49	60	291
	%	17.3%	11.2%	16.2%	17.9%	13.7%
5-10 years	N	41	142	48	54	285
	%	16.1%	11.5%	15.9%	16.1%	13.4%
10-20 years	N	14	101	71	31	217
	%	5.5%	8.2%	23.5%	9.3%	10.2%
20-30 years	N	6	40	26	12	84
	%	2.4%	3.2%	8.6%	3.6%	4.0%
30-40 years	N	1	9	16	5	31
	%	0.4%	0.7%	5.3%	1.5%	1.5%
min. 40 years	N	1	3	13	3	20
	%	0.4%	0.2%	4.3%	0.9%	0.9%
I cannot/ do not want to define	N	10	53	1	17	81
	%	3.9%	4.3%	0.3%	5.1%	3.8%

4.1.2.7 Position of respondents

Table 4-15 summarizes the positions of the responding employees.

- Workers in manual jobs: The largest number of respondents working in manual jobs are in Slovakia (36.4%), and the fewest in Hungary (16.8%). In total, this category represents 22.1% of respondents.
- Workers in intellectual positions: Hungary stands out with its high proportion (52.9%), while in the other countries this proportion ranges between 20.8% and 39.4%. This category accounts for 44% of all respondents.
- Junior managers: Among the respondents, the proportion of lower-level managers in the Czech Republic is the highest (23.1%), while this proportion is lower in the other countries.

- Middle managers: The proportion of middle managers is relatively low in all countries, accounting for 10.4% of the total group of respondents.
- Senior managers: Senior managers represent a small percentage of respondents; their overall proportion is 3.9%.
- Entrepreneurs, in a legal relationship similar to an employee: In this category, the respondents work in a ratio ranging from 9.0% to 11.2%, the overall ratio is 10.6%.
- I cannot/do not want to define: most of the respondents did not want to give their job title, this ratio is the highest in Slovakia (36.4%).

Table 4-16: Position of participant/employee (N,%)

Position of respondent		Country				
		CZ	HU	PL	SK	Total
manual	N	61	207	79	122	469
	%	23.9%	16.8%	26.2%	36.4%	22.1%
intellectual	N	53	653	119	111	936
	%	20.8%	52.9%	39.4%	33.1%	44.0%
junior manager	N	59	90	25	18	192
	%	23.1%	7.3%	8.3%	5.4%	9.0%
middle manager	N	50	101	38	32	221
	%	19.6%	8.2%	12.6%	9.6%	10.4%
senior manager	N	9	45	11	18	83
	%	3.5%	3.6%	3.6%	5.4%	3.9%
as an entrepreneur similar to employee	N	23	138	30	34	225
	%	9.0%	11.2%	9.9%	10.1%	10.6%
I cannot/do not want to define	N	61	207	79	122	469
	%	23.9%	16.8%	26.2%	36.4%	22.1%

These data can help to understand the structure of the workforce in the V4 countries and shed light on the distribution of different levels of management and professional positions. A high proportion of white-collar jobs in Hungary may indicate a high proportion of the highly qualified workforce, while a high proportion of the "I cannot/do not want to define" category may indicate uncertainty in the perception of the labour market.

4.1.2.8 Ownership

Table 4-18 summarizes the ownership form of the respondents' company.

- **State-owned, municipally owned**: Most of the respondents in Poland (31.8%) work for state-owned or municipally owned organizations, while the fewest in the Czech Republic (16.5%).
- **Domestically privately owned**: The largest number of respondents working for domestically privately owned organizations are again found in the Czech Republic and Poland (46.3% and 46.0%, respectively), indicating that these countries have a significant private sector.

Table 4-17: Distribution of ownership (N,%)

Ownership		Country				
		CZ	HU	PL	SK	Total
state owned, municipally owned	N	42	311	96	71	520
	%	16.5%	25.2%	31.8%	21.2%	24.5%
domestically, privately owned	N	118	409	139	148	814
	%	46.3%	33.1%	46.0%	44.2%	38.3%
foreign, privately owned	N	72	315	31	66	484
	%	28.2%	25.5%	10.3%	19.7%	22.8%
nonprofit organization	N	2	26	26	4	58
	%	0.8%	2.1%	8.6%	1.2%	2.7%
other: …		2	18	8	3	31
		0.8%	1.5%	2.6%	0.9%	1.5%
I cannot/do not want to define		19	155	2	43	219
		7.5%	12.6%	0.7%	12.8%	10.3%

- Foreign, privately owned: Most of the respondents in the Czech Republic work for foreign privately owned organizations (28.2%). This ratio is the smallest in Poland (10.3%), which may suggest that employment in organizations controlled by foreign investors is less common there.
- Non-profit organization: Here again, the percentage of respondents is the highest in Poland (8.6%), which indicates that the non-profit sector plays a significant role in the labour market.
- Other forms of ownership: Few answers were received in the "other" category, which may include, for example, self-employed persons or other organizations operating in non-typical legal forms.

- I cannot/do not want to define: Some of the respondents did not provide information about the ownership form of the organization. The highest proportion in this category is in Hungary (12.6%) and Slovakia (12.8%).

This database can provide insight into the type of organizations respondents are employed with, which information can be useful for analyzing the labour market and economic structure in the V4 countries.

4.1.2.9 Size – number of employees

More than half of the respondents work for organizations with fewer than 250 employees (60.5%). The proportion of organizations larger than this (>250 people) was (39.5%). This is reflected in Table 3-18.

- Micro-enterprises (0-9 employees). The proportion of respondents working for the smallest organizations is the highest in Slovakia, while the lowest in Hungary.
- Small businesses (between 10 and 49 people). Most respondents work in Poland among small businesses, which shows the importance of this segment of the labour market in this country.
- Medium-sized enterprises (between 50 and 249 employees). In Slovakia, most respondents work in this size category, while in Hungary their proportion is the lowest.
- Large enterprises (between 250-499 people). In the Czech Republic and Poland, more than 10% of respondents work for large enterprises.
- Very large enterprises (between 500 and 1,999 employees). Their proportion is the highest in Hungary, which may suggest that larger enterprises are important players in the labour market.
- Giant enterprises (2,000 employees or more). Hungary has the highest proportion of people working for the largest enterprises, while Slovakia has the lowest.
- I don't know/don't want to give: The respondents who did not want to give the number of employees of the organization were the highest in the Hungarian and Slovak data.

These data can help to understand the distribution of organizational sizes of the respondents and its potential impact on the labour market. In particular, the importance of small and medium-sized enterprises (SMEs) in the V4 countries is emphasized.

Table 4-18: Size – number of employees distribution (N, %)

Number of employees			Country				
			CZ	HU	PL	SK	Total
Total number	0-9	N	47	169	70	92	378
		%	18.4%	13.7%	23.2%	27.5%	17.8%
	10-49	N	54	266	91	90	501
		%	21.2%	21.6%	30.1%	26.9%	23.6%
	50-249	N	48	209	65	85	407
		%	18.8%	16.9%	21.5%	25.4%	19.1%
	250-499	N	28	115	35	21	199
		%	11.0%	9.3%	11.6%	6.3%	9.4%
	500-1999	N	21	157	20	15	213
		%	8.2%	12.7%	6.6%	4.5%	10.0%
	2000 or more	N	41	207	20	6	274
		%	16.1%	16.8%	6.6%	1.8%	12.9%
	I cannot/do not want to define	N	16	111	1	26	154
		%	6.3%	9.0%	0.3%	7.8%	7.2%

4.1.3 Reasons for job change

4.1.3.1 Workplace deficiencies

In Table 4-20, the workplace deficiencies expressed by the respondents working in V4 countries are listed based on average evaluations, which reflect how typical the given deficiency is. The shortcomings were evaluated on a scale from 1 to 10, where higher numbers mean more typical and complete.

Here is the analysis based on the table:

- Flexible working hours: Based on the average values, this shortcoming is extremely important for the respondents, especially in the Czech Republic and Poland.
- Better accessibility, shorter journey: The average value is high in all four V4 countries, which suggests that respondents place a high value on this factor.

- Predictable time schedule, limitation of overtime: outstandingly guaranteed in Poland and the Czech Republic.
- Remote work option: It has a medium role, which may indicate that this option is increasingly expected in the modern work environment.
- Work schedules that leave weekends, holidays, and nights free: This is especially present in the Czech Republic and Poland.
- Higher wages: All countries show a medium level of deficiencies.
- A larger, diverse, flexible benefit framework: The respondents consider this factor to be moderately important.
- Travel and housing support: The evaluation is exceptionally high in Hungary, which shows that this type of support is more common for the respondents here.
- Ownership, employee shares: Hungary has the highest rating, which indicates that the respondents are guaranteed participation in the organization's success.
- More frequent wage payments: This proves to be an important existing factor in all countries.
- Long-term career opportunity: For the respondents, it is important that the possibility of building a career is ensured in the long term.
- Professional respect and recognition: highly guaranteed in Hungary and the Czech Republic.
- Continuing education: An important, but not the most critical, deficiency in all countries.
- Higher position in the short term: Respondents rate this option as moderately important.
- Challenging, creative work: Respondents generally value challenge and creativity at work.
- Opportunity to gain work experience abroad: the best in Hungary.
- Good working environment: Respondents consider a good working environment important in all countries.
- Ensuring adequate catering: A factor present in all countries, but not the most adequate.

Overall, the table shows that for employees, flexible working hours, better accessibility and higher wages are among the most typical shortcomings. In addition, the respondents place great emphasis on the balance between work and private life, as well as the possibility of career development and professional recognition.

Table 4-19: Workplace deficiencies (averages)
(1 – great deficiencies, 10 – no deficiencies at all)

No.	Deficiencies	Averages				
		CZ	PL	HU	SK	Total
1	Flexible working hours	7.20	7.16	6.83	6.76	7.05
2	Better accessibility. shorter journey	7.48	7.28	7.02	7.15	7.24
3	Predictable time schedule. limitation of overtime	6.85	7.16	6.82	6.88	7.03
4	Remote work option	5.44	5.88	5.86	5.87	5.82
5	A work schedule that leaves weekends. holidays. and nights free	7.58	7.31	7.19	6.66	7.22
6	Higher wages	5.43	5.24	5.25	5.40	5.29
7	Larger. diverse. flexible benefit framework	5.96	5.39	5.63	5.49	5.51
8	Travel and housing support	4.94	5.55	6.40	5.68	5.62
9	Ownership. employee shares	4.47	5.23	5.75	5.38	5.24
10	More frequent salary payments	6.92	6.49	6.57	6.08	6.49
11	Long-term career opportunity	6.97	6.67	6.25	6.40	6.60
12	Professional respect and recognition	7.00	6.24	7.06	6.20	6.44
13	Continuous training	6.68	6.01	6.34	6.11	6.15
14	Higher position in the short term	5.57	5.55	6.04	5.59	5.63
15	Challenging. creative work	6.30	6.38	6.73	6.34	6.42
16	Opportunity to gain work experience abroad	5.37	5.23	6.11	5.53	5.43
17	A good co-working community	7.58	7.36	7.02	7.01	7.28
18	Suitable leaders	7.01	6.60	6.46	6.66	6.64
19	A workplace the employee can be proud of	6.72	6.60	6.49	6.62	6.60
20	Programmes organized for workers and family members	5.47	5.75	5.77	5.61	5.70
21	Compliance with occupational health and safety rules by the workplace	7.97	7.58	6.93	7.28	7.48
22	A working environment independent of weather conditions	8.50	7.83	7.36	7.09	7.72
23	Adequate dressing and cleaning options	7.86	7.74	6.82	7.33	7.55
24	Health measures to prevent infections	7.25	7.95	6.86	7.20	7.59
25	Providing adequate catering	6.51	6.30	6.14	6.76	6.38

4.1.3.2 Respondents' performance and loyalty to their workplace

Table 4-20 shows the self-assessed performance of employees at their workplace in the V4 countries. The table appears to have two rows of data: one showing the average value of the performance (on a scale of 1 to 10), while the other reflects the percentage of positive ratings for the performance.

- Average performance: Respondents rated their performance the highest in the Czech Republic (8.47), while the average rating was the lowest in Poland (7.58). The latter may be a sign that Polish employees evaluate their own performance more strictly or are less satisfied with their work.
- Rate of positive evaluations: 84.69% of Czech respondents evaluated their performance positively, which is the highest rate among the four countries. This rate is again the lowest in Poland (75.81%), which is in line with the lower value of the average value.

This data can be useful for employers and HR professionals to understand how employees evaluate their own performance and to compare the self-evaluations of employees working in different countries. Higher values reflecting greater satisfaction may be important for employee retention and workplace morale.

Table 4-20: Performance at work (Average,%)
(1 – I hardly perform, 10 – I perform the maximum)

Performance		CZ	HU	PL	SK	Total
Performance at work	N	8.47	8.39	7.58	8.08	8.23
	%	84.69%	83.92%	75.81%	80.85%	82.34%

The table shows the level of loyalty expressed by employees towards their workplace in the V4 countries. It reflects two different ways of loyalty: on the one hand, the average value of loyalty (on a scale from 1 to 10), and on the other hand, the percentage of positive evaluations reflecting high loyalty.

- Loyalty average: Czech respondents showed the highest loyalty average (8.17), which indicates that they feel the most committed to their workplace. Slovakia has the lowest average loyalty (7.65).
- Rate of positive evaluations: The rate of positive evaluations shows a similar trend, where the Czech Republic has the highest rate (81.65%), and Slovakia has the lowest rate (76.53%). This indicates that Czech employees have a greater sense of commitment and are likely to plan for a longer term with their current workplace.

Loyalty values (Table 4-21) are of great importance to organizations, as they are directly related to employee retention and workplace morale. High loyalty can contribute to the company's long-term stability and employee productivity. Lower values of loyalty can draw attention to areas where employee engagement and satisfaction need to be improved.

Table 4-21: Loyalty to workplace (Average,%)
(Question:III.18b.) (1 – I am hardly loyal, 10 – I am entirely loyal)

Loyalty		CZ	HU	PL	SK	Total
Loyalty to workplace	N	8.17	7.84	7.89	7.65	7.86
	%	81.65%	78.42%	78.87%	76.53%	78.58%

4.1.4 Shortage, turnover, layoff

4.1.4.1 Shortage, turnover and layoff at the respondents' workplace

Turnover

- Hungary shows the highest turnover (61.7%), which suggests that the labour market there is perhaps the most dynamic, or perhaps the number of changes between jobs is the largest (Table 4-22).
- The lower rates shown by the Czech Republic and Slovakia (both below 50%) may indicate that the labour market there is more stable or that job changes are less frequent.

Labour shortage:

- Here too, Hungary is in the lead (61.3%), which can pose serious challenges for employers in finding the right workforce.
- Poland shows the lowest value (53.3%), which suggests that there is perhaps a better balance between labour supply and demand.

Layoff:

These values show that among the V4 countries, the highest unemployment rates were registered in Poland and Slovakia. These values suggest that there is more job insecurity in these parts of the labour market, or that there have been structural changes in the economy that have resulted in more layoffs.

Economic and social impacts

A high rate of layoffs can have a significant social and economic impact:

- **Unemployment**: Layoffs can increase the unemployment rate, which can put additional pressure on social security systems.
- **Consumption**: Uncertainty may reduce household consumption, which may slow economic growth.
- **Vocational training and retraining**: Persistently high unemployment rates can encourage governments and companies to invest more in retraining and continuous professional development of the workforce.

Political consequences

- **Labour policies**: High unemployment rates may require changes in labour market policies, such as strengthening workers' rights or combating unemployment.
- **Electoral dynamics**: Job insecurity can influence voter preferences and political power balances.

Some possible explanations and trends behind high labour shortages and turnover rates:

Trends behind labour shortages:

1. **Economic Growth:** During periods of rapid economic growth, companies require more labour, which may exceed the supply of available qualified labour.
2. **Demographic Changes**: Due to the aging of the population or the emigration of young people of working age, the labour supply may decrease, which may lead to a labour shortage.
3. **Education System and Skills**: If the education system is not able to adequately respond to the changing needs of the labour market, then employers cannot find enough skilled or properly trained workers.
4. **Technological Changes**: Due to the spread of Industry 4.0 and digitization, an increasing number of highly skilled workers are needed, which may further exacerbate labour shortages, especially in highly skilled positions.

Trends behind fluctuation:

1. **Labour Mobility**: Increasing mobility among employees, alternating job opportunities and the willingness to quickly change jobs can increase turnover.
2. **Labour market flexibility**: The labour market policies of some countries can promote flexibility, which can make it easier for employees to change jobs.
3. **Job Satisfaction**: Low job satisfaction, non-competitive wages and the improvement of working conditions in other companies can also contribute to the high turnover rate.
4. **Economic Changes and Uncertainty**: In the event of economic uncertainty, employees tend to switch to jobs that are more stable or offer better opportunities, thereby increasing turnover.

Table 4-22: Shortage, turnover and layoff at the workplace (N,%)
(1= very low,..... 5 very high)

Labour fluctuation at work		Country				
		CZ	HU	PL	SK	Total
Turnover	N	2.79	3.09	2.72	2.68	2.93
	%	55.7%	61.7%	54.4%	53.6%	58.7%
Shortage	N	3.00	3.06	2.66	2.80	2.96
	%	60.1%	61.3%	53.3%	56.0%	59.1%
Layoff	N	1.97	1.93	2.21	2.32	2.04
	%	39.4%	38.6%	44.2%	46.4%	40.7%

4.1.4.2 Shortage, turnover and layoff in the respondents' position

In the following, we will review the situation of shortage, turnover and layoff based on the respondents' position

- In the case of turnover, it can be seen (Table 4-26) that the respondents in all countries experience a significant number of job changes in their jobs, this value is the highest in jobs in Hungary and the lowest in jobs in the Czech Republic.
- The "N" values of the labour shortage indicate the extent to which the labour market is unable to satisfy the demand for labour in the respondents' occupations.
- The "N" values for layoffs are lower, which may indicate that layoffs are less frequent than job changes.
- The percentage values show the proportion of events in the jobs.
- The high percentage values of the turnover show that there are a large number of job changes in the jobs.
- The percentage values of the labour shortage are almost of the same magnitude, which may indicate that the imbalance between labour market demand and supply is a general problem in jobs.
- Redundancy percentages are lower, but still significant, especially in Slovakia.

Interpretation:

- The high values of turnover and labour shortage suggest that there is a significant movement of labour in the respondents' jobs. This may be a sign that workers are frequently changing jobs in search of better opportunities or in response to job dissatisfaction.
- The dismissal data show that dismissals also occur in jobs, but the number and proportion of incidents are smaller compared to turnover and labour shortages.

- Overall, the data indicate that the labour markets of the V4 countries are facing changes, and a certain degree of instability, which employers and employees alike need to manage.

Table 4-23: Labour shortage, turnover and layoff in different positions (Average, %) (1= very low,..... 5 very high)

Labour fluctuation in positions		Country				
		CZ	HU	PL	SK	Total
Turnover	N	2.48	2.89	2.58	2.68	2.76
	%	49.7%	57.8%	51.7%	53.6%	55.3%
Shortage	N	2.73	2.94	2.64	2.82	2.85
	%	54.6%	58.9%	52.8%	56.4%	57.1%
Layoff	N	1.90	1.96	2.21	2.37	2.06
	%	38.0%	39.3%	44.2%	47.4%	41.1%

4.1.4.3 Shortage, turnover and layoff in the respondents' industry (sector)

In the following, we will review based on the shortage, turnover and layoff in the respondents' position:

Turnover

- The values of "N" indicate the absolute numbers that show the number of shifts between jobs (Table 4-24). The highest value can be seen in Hungary (3.21), which may indicate that there is greater workplace mobility in this economic sector, possibly due to employee dissatisfaction or the search for better opportunities.
- The percentage data show the fluctuation in relation to the total workforce. Here too, Hungary is in the lead (64.3%), which confirms the above observation that the willingness of employees to change jobs in the economic sector of the respondents is high.

Shortage

- The "N" values of the labour shortage show how significant the lack of suitable labour is in the respondent's economic sector. The Hungarian data (3.32) are the highest here as well, which is in line with the high turnover values and may indicate that the economic sector is having difficulties in finding or retaining the right workforce.
- The percentage values (66.5% in Hungary) indicate that there is a significant need for new workforce or replacement of the existing workforce in the economic sector.

Layoff

- The "N" values of layoffs reflect the number of workers laid off. Here, Slovakia is in the lead (2.63), which may indicate that companies in the respondent's economic sector are perhaps more often forced to make structural changes or reduce their workforce.
- The percentage values (52.6% in Slovakia) show the proportion of layoffs in the economic sector. A high ratio may indicate problems in the stability of the economic sector or changes in labour needs.

  Based on the above values, we can conclude that labour mobility is high in the respondent's economic branch, which can pose a challenge to companies in retaining the workforce and recruiting suitable professionals. High turnover and shortage rates indicate that there are difficulties filling existing positions in the industry, and companies need to proactively address issues of employee satisfaction and retention. The rate of layoffs, particularly in Slovakia, indicates that companies in the industry may be facing systemic changes that could affect workforce stability and employment prospects.

Table 4-24: Shortage, turnover and layoff per industry (Average)
(1= very low,..... 5 very high)

Industry, fluctuation		Country				
		CZ	HU	PL	SK	Total
Turnover	N	2.88	3.21	2.62	2.79	3.02
	%	57.7%	64.3%	52.5%	55.8%	60.4%
Shortage	N	3.13	3.32	2.69	2.95	3.15
	%	62.5%	66.5%	53.8%	59.1%	63.0%
Layoff	N	2.28	2.37	2.31	2.63	2.39
	%	45.5%	47.3%	46.1%	52.6%	47.7%

4.1.4.4 Shortage, turnover and layoff in the respondents' country

In the following, we will review the shortage, turnover and layoff based on the respondents' country position:

Turnover

- "N" values indicate the absolute numbers that show the number of shifts between jobs (Table 3-5). Hungary stands out with the highest value (3.59), which indicates that the respondents' country has the highest workplace mobility here.
- The percentage values show the relative rate of fluctuation. Hungary is also in the lead here (71.8%), indicating that a significant number of employees on the labour market changed jobs within a given period.

Shortage

- The "N" values of the labour shortage show the number of positions left unfilled in each country. Once again, Hungary is in the most difficult situation (3.73), which may indicate that there is the greatest need to recruit new workers or to replace existing workers.
- The percentage data (66.7% is the total value) indicate that there is a significant need for a new workforce or replacement of the existing workforce in the respondents' country, especially in Hungary, where this ratio is the highest.

  Conclusions that can be drawn from the data:
- The high turnover and labour shortage values indicate that the labour market situation in the respondents' country is extremely busy and challenging.
- Hungary stands out compared to the other V4 countries, which is characterized by the increased dynamism of the labour market and the challenges of retaining and recruiting the workforce.
- These dynamics of the labour market may also indicate that companies are having difficulty adapting to rapidly changing economic conditions and should pay more attention to labour retention and responsiveness to the labour market.
- A high turnover rate can indicate a number of factors, including employee dissatisfaction, lack of competitive wages or working conditions, and labour market flexibility or lack thereof.

  These results shed light on the general trends and challenges of companies operating in the respondents' country and the labour market and highlight the importance of workforce retention and recruitment in an ever-changing economic environment.

Layoff

- The "N" values indicate the absolute numbers that show the number of workers laid off. The highest value is observed in Slovakia (2.80), which indicates that the largest number of layoffs took place here in the respondents' country.
- The percentage values show the proportion of layoffs in relation to the total workforce. This rate is the highest in Slovakia (56.0%), indicating that a significant part of the labour market has faced layoffs.

High discharge values can be caused by several reasons. Companies may be experiencing economic difficulties or undergoing restructuring, leading to job losses. In some cases, layoffs may be the result of changes in labour market demand and supply, for example, if demand in a particular sector decreases or if fewer workers are needed due to technological advances.

Table 4-25: Shortage, turnover and layoff per country (Average)
(Question: III. 19d.)(1= very low,..... 5 very high)

National labour fluctuation		Country				
		CZ	HU	PL	SK	Total
Turnover	N	2.91	3.59	2.89	3.15	3.34
	%	58.2%	71.8%	57.8%	62.9%	66.7%
Shortage	N	3.24	3.73	2.79	3.25	3.46
	%	64.8%	74.7%	55.8%	65.1%	69.2%
Layoff	N	2.57	2.91	2.54	2.90	2.81
	%	51.4%	58.2%	50.8%	58.0%	56.3%

The results of the detailed analysis show that changes in the labour market can have a significant impact on the lives and careers of employees living in the respondents' country. Knowing these data, decision-makers and company managers are better able to develop strategies to increase labour market stability and improve employee safety. The high percentage of layoffs is particularly worrying in Slovakia, where the labour market conditions should be examined in more detail.

4.1.4.5 It is difficult to find a workplace that meets the expectations of the respondents

Based on the table below, we list the obstacles by country in descending order of importance

Czech Republic (CZ)

1. I have already found the ideal workplace. (2.63)
2. I do not have the necessary professional experience. (2.53)
3. I do not spend enough energy on the search. (2.45)
4. I do not have the right education. (2.32)
5. My language skills are not sufficient. (2.21)
6. My communication skills are poor. (1.77)
7. The ideal workplace pays little. (1.68)
8. I cannot move there, I'm not mobile. (1.63)
9. I am not a good team player. (1.60)
10. I cannot commute. (1.60)
11. Because of gender, age, religion, or belonging to a minority. (1.56)
12. I have no good references. (1.51)
13. I do not have good relationships. (1.42)

Hungary (HU)

1. I have already found the ideal workplace. (2.54)
2. I do not have the necessary professional experience. (2.44)
3. My language skills are not sufficient. (2.33)
4. I do not spend enough energy on the search. (2.32)
5. I do not have the right education. (2.24)
6. The ideal workplace pays little. (2.22)
7. I cannot move there; I am not mobile. (2.18)
8. I do not have good relationships. (2.16)
9. I cannot commute. (1.97)
10. I have no good references. (1.76)
11. Because of gender, age, religion, or belonging to a minority. (1.50)
12. My communication skills are poor. (1.46)
13. I am not a good team player. (1.36)

Poland (PL)

1. I do not spend enough energy on the search. (2.57)
2. I have already found the ideal workplace. (2.56)
3. My language skills are not sufficient. (2.38)
4. I do not have good relationships. (2.31)
5. I cannot move there; I am not mobile. (2.21)
6. The ideal workplace pays little. (2.14)
7. I cannot commute. (2.10)
8. I do not have the necessary professional experience. (2.05)
9. I do not have the right education. (2.02)
10. I am not a good team player. (1.96)
11. I have no good references. (1.94)
12. My communication skills are poor. (1.92)
13. Due to gender, age, religion, or belonging to a minority. (1.86)

Slovakia (SK)

1. I have already found the ideal workplace. (2.56)
2. I do not spend enough energy on the search. (2.42)
3. The ideal workplace pays little. (2.39)
4. My language skills are not sufficient. (2.33)

5. I cannot move there; I am not mobile. (2.28)
6. I do not have the necessary professional experience. (2.20)
7. I cannot commute. (2.11)
8. I do not have the right education. (2.06)
9. I do not have good relationships. (2.06)
10. I have no good references. (1.82)
11. My communication skills are poor. (1.76)
12. I am not a good team player. (1.68)
13. Due to gender, age, religion, or belonging to a minority. (1.62)

The listed points reflect the most important obstacles indicated by the respondents of the given country in finding the ideal workplace. These data can be useful in the development of labour market strategies and in the development of education and training programmes.

Based on the order of the individual V4 countries, the following interpretations can be given:

Czech Republic (CZ)

For the Czech respondents, the biggest obstacle to finding the ideal workplace is that they have already found their ideal workplace, which may indicate that they are satisfied with their current working conditions. Professional experience and sufficient energy investment are also significant factors, which suggests that employees are aware of the importance of personal development and active search. The lack of education and language skills is also an important aspect, but less emphasized. Interpersonal skills and social relationships appear to be less important.

Hungary (HU)

According to the Hungarian respondents, finding the ideal workplace is also related to the satisfaction of the existing workplace and the lack of professional experience. Language skills and commitment to active search closely follow these barriers. The level of pay and the issue of mobility also receive significant weight. It is interesting that the importance of personal relationships is quite high, which may indicate a "who do you know" culture in the context of job search.

Poland (PL)

Polish respondents place particular emphasis on the need for an active search and already finding the ideal workplace. Language skills and social relations also play a prominent role, which indicates the importance of the social and communication aspects of the job search process. The lack of professional experience and education is relatively less emphasized, which may indicate that the Polish labour market is perhaps more flexible in terms of qualifications.

Slovakia (SK)

For Slovak respondents, active search and existing job satisfaction are the biggest obstacles to finding an ideal workplace. The importance of salary is also high, which may indicate that the level of income is a priority for employees. Mobility and language skills are also important factors that point to the globalization of the labour market and the importance of movement between workplaces.

Table 4-26: Obstacles of finding an ideal workplace
(Average) 1= very low,..... 5 very high)

No.	Difficulty of finding	Countries				Total
		CZ	HU	PL	SK	
1.	**I have already found the ideal workplace.**	2.63	2.54	2.56	2.56	2.56
2.	**I do not put enough energy into searching.**	2.45	2.32	2.57	2.42	2.39
3.	**I do not have the necessary professional experience.**	2.53	2.44	2.05	2.20	2.35
4.	**I do not have the right qualifications.**	2.32	2.24	2.02	2.06	2.19
5.	**My language skills are not sufficient.**	2.21	2.33	2.38	2.33	2.32
6.	**I am not a good team player.**	1.60	1.36	1.96	1.68	1.53
7.	**My communication skills are poor.**	1.77	1.46	1.92	1.76	1.62
8.	**I do not have any good references.**	1.51	1.76	1.94	1.82	1.77
9.	**I do not have good relationships.**	1.42	2.16	2.31	2.06	2.08
10.	**The ideal workplace pays little.**	1.68	2.22	2.14	2.39	2.17
11.	**I cannot commute.**	1.60	1.97	2.10	2.11	1.97
12.	**I cannot move there; I am not mobile.**	1.63	2.18	2.21	2.28	2.14
13.	**No, because of age, religion, belonging to a minority.**	1.56	1.50	1.86	1.62	1.58

General remarks

- I have already found the ideal job: This statement is in the top three in all countries, which may indicate that many of the respondents feel that they have already found the right position and are therefore not actively looking for it (Table 3.26).
- Professional experience and training: These barriers tend to be high on the list, showing the importance of developing education and training opportunities.
- Language skills: The importance of language skills varies between countries, but is generally ranked in the middle, which may reflect the internationalization of the labour market.

- Social relations and communication skills: These obstacles are lower in the ranking, which indicates that the respondents consider them less of a decisive factor, although in Hungary "connections" seem more important.
- Mobility and commuting: These barriers vary from country to country, showing that the availability of jobs and the willingness of workers to relocate are significant factors.

These results can highlight country-specific challenges and opportunities when designing labour market interventions and policies.

4.1.5 Impact of the coronavirus and the Russian-Ukrainian war

4.1.5.1 Deciding against taking the COVID vaccination as a reason for leaving

Table 4-27 shows the impact of COVID-19 vaccination uptake on the number of respondents leaving the workplace. The table shows the following data:

- "Impacted": number (N) and percent (%) of respondents who say the vaccination had an impact on absenteeism at work.
- "Not impacted": number (N) and percentage (%) of respondents who think that the vaccination has not had an impact on absenteeism at work.
- 'Do not know/no comment': number (N) and percentage (%) of respondents who could not say or did not wish to comment on the impact of vaccination on absenteeism.

Data are available by country (CZ, HU, PL, SK) and in aggregate.

The following interpretation can be made from the data in the table:

Impacted

- Among all respondents, the highest proportion of Polish respondents (23.5%) perceived that the vaccination had an impact on absenteeism.
- This proportion is lower in the Czech Republic (10.2%) and Slovakia (15.8%), which may indicate that the impact of vaccination on absenteeism was less significant or that people are less sensitive to this issue.
- In Hungary (15.9%) the figures are close to the average (16.3%).

Not impacted

- The majority of respondents, around two thirds (67.6% overall), think that vaccination has no impact on absenteeism.
- Poland has the highest proportion (76.2%) of respondents who think it has no effect, which may seem contradictory with the high percentage of 'has an effect'.
- The trend is similar in the Czech Republic (70.2%), Hungary (65.5%) and Slovakia (66.0%), but the difference is less significant.

Do not know/ no comment

- There is a significant proportion of respondents who could not say or did not wish to say whether vaccination had an impact on their leaving (16.1% overall).
- This proportion is higher in the Czech Republic (19.6%) and Slovakia (18.2%) and almost negligible in Poland (0.3%), which may indicate that respondents there are more certain about their opinion or less reluctant to answer.

Overall, the table shows that a significant proportion of respondents believe that COVID vaccination has no effect on absenteeism, but the number of those who believe that it does have an effect is not negligible. The high number of "I do not know/ no comment" responses may also reflect uncertainty or lack of information. Differences between countries may require further investigation to understand the reasons behind the data, including socio-economic circumstances, labour market dynamics and local attitudes towards vaccination.

Table 4-28: Impact of uptake of coronavirus vaccination on out-migration (N, %)

vaccination/leaving		CZ	HU	PL	SK	Total
impacted	N	26	196	71	53	346
	%	10.2%	15.9%	23.5%	15.8%	16.3%
not impacted	N	179	808	230	221	1438
	%	70.2%	65.5%	76.2%	66.0%	67.6%
do not know / no comment	N	50	230	1	61	342
	%	19.6%	18.6%	0.3%	18.2%	16.1%

4.1.5.2 Impact of the Russian-Ukrainian war on the organization

Table 3-31 "Impact of the Russian-Ukrainian war" provides the following data for the responding organizations:

- "Impacted": number (N) and percentage (%) of respondents who think the war has had an impact on departures in their organization.
- "Not impacted": number (N) and percentage (%) of respondents who think the war has no impact on the departures in their organization.
- 'Do not know/no comment': number (N) and percentage (%) of respondents who do not know or do not wish to comment on the impact of the war on departures.

The data are given by country (CZ, HU, PL, SK) and aggregated (Total).

Let us now interpret the table in more detail:

Impacted

- Poland has the highest proportion of respondents (29.8%) who think that the war has had an impact on departures, which is understandable given that Poland is directly involved in hosting Ukrainian refugees and the economic consequences of the conflict.
- The proportion is lower in the Czech Republic (14.1%), Slovakia (12.5%) and Hungary (10.2%), although higher in the Czech Republic than in Hungary and Slovakia. This indicates that the indirect effects of war affect organizations to varying degrees in these countries.

Not impacted

- The majority of respondents (68.2% overall) believe that the war has had no impact on departures in their organization. This indicates that the direct labour market consequences of the war are limited or that organizations are managing the situation successfully.
- The proportions are similar across countries, ranging from 66.3% to 69.5%, suggesting that the impact of the war does not vary significantly across the V4 countries.

Do not know/ no comment

- There is a high proportion of respondents (18.0% overall) who do not know or do not wish to comment on the impact of the war. This may indicate that some respondents are uncertain about the direct or indirect effects of the war.
- The Czech Republic (19.6%) and Slovakia (20.9%) have higher percentages, while in Poland (0.7%) almost all were able to express an opinion, which again may reflect the higher degree of awareness or involvement of the Polish public.

General comments

- The data show that the majority of respondents believe that the Russian-Ukrainian war has no direct impact on the labour market in the V4 countries.
- Poland stands out, with a higher proportion of respondents perceiving the impact of the war, which was to be expected given its geographical and political proximity.
- The high percentage of 'Don't know/no comment' indicates that organizations may not yet fully understand the long-term effects of the war or may not wish to comment on this politically sensitive issue.

Overall, the table shows that the majority of responding organizations have not experienced a direct impact in terms of departures due to the war, but the number of those who believe that there is such an impact, especially in Poland, is not negligible. The uncertainty in the responses suggests that the long-term effects of the war are not yet fully known or appreciated.

Table 4-29: Impact of the Russian-Ukrainian war on labour retention (N, %) (Question:22)

war/leaving		CZ	HU	PL	SK	Total
impacted	N	36	126	90	42	294
	%	14.1%	10.2%	29.8%	12.5%	13.8%
not impacted	N	169	847	210	223	1449
	%	66.3%	68.6%	69.5%	66.6%	68.2%
do not know/ no comment	N	50	261	2	70	383
	%	19.6%	21.2%	0.7%	20.9%	18.0%

4.1.5.3 Impact of labour flows on the organization

The table "Labour flows" provides the following information on labour movements in the responding organizations:

1. recruitment of new colleagues due to increasing workload
2. departure of colleagues due to reduced workload
3. high proportion of people leaving due to refusal to vaccinate

The values (N) indicate the extent to which the given factor was present in the responding organizations in each V4 country (Czech Republic – CZ, Hungary – HU, Poland – PL, Slovakia – SK) and overall (Total). The "N" values probably represent an average value on a given scale, where a higher value indicates a higher frequency or impact.

Recruitment of new colleagues due to increasing workload

- This value is highest (2.36) for the Hungarian respondents' organizations, which may indicate that a significant proportion of responding organizations in Hungary have increased workloads, which they have managed by hiring new colleagues.
- Czech (1.75) and Polish (1.87) respondents reported lower levels of new recruitment, while Slovak respondents (2.29) reported a similarly high value as Hungarians.

Departure of colleagues due to reduced workload

- The Slovak respondents (1.98) reported the highest value here, which may indicate that more people left due to reduced workload in Slovak responding organizations.
- Czech (1.45) and Hungarian (1.80) respondents reported lower values, suggesting less significant job reductions or departures.

High proportion of people leaving due to refusal to vaccinate

- Polish respondents (1.77) and Slovak respondents (1.76) reported higher values, which may suggest that in these countries there were a higher number of organizational departures due to refusal to vaccinate.
- Czech (1.47) and Hungarian (1.59) respondents reported lower levels of departures due to refusal to vaccinate.

General remarks

- The table shows that the V4 countries were affected by staff movements for different reasons and to different degrees. Changes in job responsibilities and attitudes towards vaccination appear to be particularly important factors in the workforce dynamics of organizations.
- New recruitments and departures also shed light on the economic situation in the countries and their response to the COVID-19 epidemic.
- Departures due to non-vaccination raise important social and health issues that may also reflect cultural and political differences between countries.
- The aggregate figures (Total) can help to understand overall trends in the V4 region, but the table does not show variations within countries, which may require further investigation.

Table 4-30: Labour flows in the organization (average)
(1 not typical 4 very typical)

Labour flows		Country				
		CZ	HU	PL	SK	Total
Recruitment of new colleagues due to increasing workload	N	1.75	2.36	1.87	2.29	2.21
Departure of colleagues due to reduced workload	N	1.45	1.80	1.86	1.98	1.80
High proportion of people leaving due to refusal to vaccinate	N	1.47	1.59	1.77	1.76	1.63

4.1.5.4 Return to the normal way of life

According to Table 4-31, Hungary and the Czech Republic (14.5%, 14.1%) are most likely to consider that they are already operating at a higher level than before the crisis. In all countries, more than 30% consider that they have already reached the pre-crisis level.

In Poland and Slovakia (17.9%, 16.1%), many companies do not believe that the situation will return to normal by the end of 2023. Poland has a low proportion of no respondents, while the other countries have over 15%.

Table 4-31 Return to the normal way of life (N, %)

Return		Country				
		CZ	HU	PL	SK	Total
we are already operating at a higher level	N	36	179	32	42	289
	%	14.1%	14.5%	10.6%	12.5%	13.6%
we are already operating at the same level	N	92	415	102	108	717
	%	36.1%	33.6%	33.8%	32.2%	33.7%
by the end of 2022	N	26	41	46	18	131
	%	10.2%	3.3%	15.2%	5.4%	6.2%
by mid-2023	N	14	90	42	31	177
	%	5.5%	7.3%	13.9%	9.3%	8.3%
by the end of 2023	N	11	83	24	26	144
	%	4.3%	6.7%	7.9%	7.8%	6.8%
will take longer than this	N	27	165	54	54	300
	%	10.6%	13.4%	17.9%	16.1%	14.1%
cannot/do not want to specify	N	49	261	2	56	368
	%	19.2%	21.2%	0.7%	16.7%	17.3%

4.1.6 Robotisation

The table shows the importance of and attitudes towards robotization in each V4 country and in aggregate. The data show on a scale of 1 to 5 how important respondents consider each statement to be, where 1 indicates "not important" and 5 indicates "very important". The following statements are included in the table:

1. "Robotization is already a threat to many jobs."
2. "Robotization is already a threat to many positions within the organization."
3. "Robotization is a threat to my own position within the organization."
4. "Robotization will be a threat to many jobs in 5-10 years."
5. "Robotization will be a threat to many jobs in 10-20 years."
6. "Robotization will be a threat to many positions within the organization in 10-20 years."
7. "Robotization in 10-20 years will be a threat to my own position within the organization."
8. "New jobs will not be created in the economy to the extent that those who lose their jobs due to robotization can be employed."

Based on the data, the following conclusions can be drawn:

- In relation to the first statement, Hungarian respondents (3.15) feel most threatened by robotization in their jobs, while Polish respondents (2.77) see it as less of a threat in the present.
- In terms of current positions within the organization, Czech respondents (3.00) feel the most threatened, while Hungarian respondents (2.61) feel the least.
- In terms of the future security of individual positions, Polish respondents (2.52) see themselves most at risk in the next 10-20 years, while Czech (1.90) and Hungarian (1.88) respondents attach less importance to this possibility.
- In terms of the long-term vision, Hungarian respondents (3.57) believe that robotization could pose a major threat to many jobs in 5-10 years, while Polish respondents (3.08) are less convinced.
- Looking 10-20 years ahead, Hungarian respondents again attach higher importance to the threats of robotisation (3.37), while Polish respondents (2.91) are again the least concerned.
- Czech (3.33) and Hungarian (3.28) respondents are similarly pessimistic about the creation of new jobs, while Polish respondents (3.18) are slightly less gloomy.

The general trends for Slovak respondents are as follows:

- Threat to current jobs: Slovak respondents (2.97) attach a medium level of importance to the threat posed by robotisation to jobs in the present. This is lower than the value reported by Hungarian respondents, but higher than the perceived threat by Polish respondents.
- Threats to positions within the organisation: Slovak respondents (2.91) also give a medium importance to the threat of robotisation here, which is similar to their perception of the threat to jobs in the present.
- Threat to their own position: Slovak respondents (1.88) give low importance to the threat that robotisation poses to their own position in the next 10-20 years. This suggests that, although they see the general impact of robotisation, they are less likely to think that they will be directly affected.
- Threat to future jobs: Slovak respondents (3.14) believe that robotisation could pose a significant threat to many jobs in 5-10 years' time. This is close to the level of concern reported by Hungarian respondents.
- Threats in the longer term: Slovak respondents (3.03) believe that there will still be a threat in 10-20 years' time, but this is lower than for the 5–10-year horizon. This may indicate that Slovak respondents believe that the impact of robotization may diminish over time or that the labour market will adapt to it.
- The question of new jobs: Slovak respondents (3.12) consider that new jobs are unlikely to be created to the extent that they can employ those who have lost their jobs due to robotization. This value is close to that of Czech and Hungarian respondents.

Overall, Slovakian respondents consider that robotization will have a significant impact on the labour market, especially in the medium to long term, but see their own positions as less at risk. They are also not optimistic about the creation of new jobs to compensate for job losses due to robotization.

4.1.7 Conclusions

The data suggest that respondents from the V4 countries generally recognize the potential threats of robotization to the labour market, especially in the medium and long term. Hungarian respondents tend to be the most concerned, while Polish respondents seem to be less concerned about the current and future effects of robotization. As regards personal positions, respondents generally feel less threatened by robotization in the coming decades. The data also show that respondents believe that the economy will not necessarily be able to create new jobs to compensate for jobs lost due to robotization.

Table 4-32: Perceived threats of robotization by level, job creation in Slovakia (Average) (1 = strongly disagree, 5 – strongly agree)

Robotization statement	Countries	Average
Robotization is already **threatening many jobs.**	Czech Republic (CZ)	2.97
	Hungary (HU)	3.15
	Poland (PL)	2.77
	Slovakia (SK)	3.13
	Total	3.07
Robotization is already a **threat to many positions within organizations.**	Czech Republic (CZ)	3.00
	Hungary (HU)	2.61
	Poland (PL)	2.77
	Slovakia (SK)	2.85
	Total	2.72
Robotization is a **threat to my own position within the organization.**	Czech Republic (CZ)	1.90
	Hungary (HU)	1.88
	Poland (PL)	2.52
	Slovakia (SK)	2.30
	Total	2.04
In 5-10 years robotization will be a **threat to many jobs.**	Czech Republic (CZ)	3.32
	Hungary (HU)	3.57
	Poland (PL)	3.08
	Slovakia (SK)	3.47
	Total	3.45

Robotization statement	Countries	Average
In 5-10 years robotization will be a **threat to many positions within the organization.**	Czech Republic (CZ)	2.73
	Hungary (HU)	3.04
	Poland (PL)	2.83
	Slovakia (SK)	3.11
	Total	2.98
In 5-10 years robotization will be a **threat to my own position in the organization.**	Czech Republic (CZ)	2.19
	Hungary (HU)	2.35
	Poland (PL)	2.75
	Slovakia (SK)	2.64
	Total	2.44
In 10-20 years robotization will be a **threat to many jobs.**	Czech Republic (CZ)	3.58
	Hungary (HU)	3.83
	Poland (PL)	3.11
	Slovakia (SK)	3.67
	Total	3.67
In 10-20 years robotization will be a **threat to many positions within the organization.**	Czech Republic (CZ)	2.98
	Hungary (HU)	3.37
	Poland (PL)	2.91
	Slovakia (SK)	3.29
	Total	3.25
In 10-20 years robotization will be a **threat to my own position within the organization.**	Czech Republic (CZ)	2.43
	Hungary (HU)	2.77
	Poland (PL)	2.90
	Slovakia (SK)	2.89
	Total	2.77
New jobs will not be created in the economy to the extent that those who lose their jobs due to robotization can be employed.	Czech Republic (CZ)	3.33
	Hungary (HU)	3.28
	Poland (PL)	3.18
	Slovakia (SK)	3.28

4.2 References to Chapter 4

1 Adhikary, P., Sheppard, Z. A., Keen, S., & van Teijlingen, E. (2018). Health and well-being of Nepalese migrant workers abroad. *International journal of migration, health and social care*, *14*(1), 96-105.

2 Ajala, E. M. (2013). Quality of work life and workers wellbeing: The industrial social workers approach. *IFE Psychologia: An International Journal*, *21*(2), 46-56.

3 Alberti, G., Holgate, J., & Tapia, M. (2013). Organising migrants as workers or as migrant workers? Intersectionality, trade unions and precarious work. *The International Journal of Human Resource Management*, *24*(22), 4132–4148.

4 Bielicki, J. A., Duval, X., Gobat, N., Goossens, H., Koopmans, M., Tacconelli, E., & van der Werf, S. (2020). Monitoring approaches for health-care workers during the COVID-19 pandemic. *The Lancet infectious diseases*, *20*(10), e261-e267.

5 Böckerman, P., Bryson, A., & Ilmakunnas, P. (2012). Does high involvement management improve worker wellbeing?. Journal of Economic Behavior & Organization, 84(2), 660-680.

6 Bryson, A., Clark, A. E., Freeman, R. B., & Green, C. P. (2016). Share capitalism and worker wellbeing. Labour Economics, 42, 151-158.

7 Di Mattei, V. E., Perego, G., Milano, F., Mazzetti, M., Taranto, P., Di Pierro, R., a De Panfilis, Ch., Madeddu, F., Preti, E. (2021). The "healthcare workers' wellbeing (Benessere operatori)" project: a picture of the mental health conditions of Italian healthcare workers during the first wave of the COVID-19 pandemic

8 Fassani, F., & Mazza, J. (2020). *A vulnerable workforce: Migrant workers in the COVID-19 pandemic*. Luxembourg: Publications Office of the European Union.

9 Greenberg, N. (2020). Mental health of health-care workers in the COVID-19 era. *Nature Reviews Nephrology*, *16*(8), 425-426.

10 Gyurián Nagy N., Gyurián, N. (2022). Leadership Style and ITS Impact on the Relationship Between Leader and Employee in South Slovakia Region. *Acta Oeconomica Cassoviensia*. 15(1), 25-35.

11 Gyurián Nagy N., Gyurián, N., Koczmann, K. (2021). Changing working conditions in time of Covid-19 pandemic (in Hungarian). *Vállalkozásfejlesztés a 21. században: Üzleti megoldások és gyakorlati tapasztalatok a menedzsment területén*. Budapest : Óbudai Egyetem, 47-65.

12 Gyurián, N., Jenei, Sz., Módosné Sz. Sz. V., Balog, K., Caha, Z., Poór, J. (2023). Employee behaviour at the start of the recovery from the pandemic and the Russian-Ukrainian conflict (in Hungarian). *14th International Conference of J. Selye University 2022. Section of Economics, Mathematics and Informatics. Komárno : Univerzita J. Selyeho*, 81-94.

13 Hall, H. (2020). The effect of the COVID-19 pandemic on healthcare workers' mental health. *Jaapa*, *33*(7), 45-48.

14 Isham, A., Mair, S., & Jackson, T. (2021). Worker wellbeing and productivity in advanced economies: Re-examining the link. *Ecological Economics*, *184*, 106989.

15 Jenei, Sz., Módosné Sz. Sz. V., Gyurián, N., Balog, K., Caha, Z., Poór, J. (2022). Employee Attitudes in the Czech Republic and Hungary Amid of Two Crises. *RELIK 2022: Reprodukce lidského kapitálu – vzájemné vazby a souvislosti. Vysoká škola ekonomická v Praze. Oeconomica Nakladatelstvi VŠE*. 15, 280-289.

16 Keller, K. I., Gyurián Nagy N., Gyurián, N. (2022). Assessing organisational culture in an economically developed region in the shadow of the Covid-19 epidemic (in Hungarian). *Vállalkozásfejlesztés a 21. században: Az üzleti szervezetek túlélési esélyei napjaink legújabb kihívásainak idején.* Budapest : Óbudai Egyetem, 63-79.

17 Koh, D. (2020). Migrant workers and COVID-19. *Occupational and environmental medicine*, *77*(9), 634-636.

18 Nieuwenhuis, R., & Yerkes, M. A. (2021). Workers' well-being in the context of the first year of the COVID-19 pandemic. Community, Work & Family, 24(2), 226-235.

19 Parreñas, R. S. (2012). The reproductive labour of migrant workers. *Global networks*, *12*(2), 269-275.

20 Reid, A., Ronda–Perez, E., & Schenker, M. B. (2021). Migrant workers, essential work, and COVID-19. *American Journal of Industrial Medicine*, *64*(2), 73-77.

21 Ronda Perez, E., Benavides, F. G., Levecque, K., Love, J. G., Felt, E., & Van Rossem, R. (2012). Differences in working conditions and employment arrangements among migrant and non-migrant workers in Europe. *Ethnicity & health*, *17*(6), 563-577.

22 Salvatori, A. (2010). Labour contract regulations and workers' wellbeing: International longitudinal evidence. Labour Economics, 17(4), 667-678.

23 Samers, M., & Collyer, M. (2016). *Migration*. Taylor & Francis.

24 Suresh, R., James, J., & RSj, B. (2020). Migrant workers at crossroads–The COVID-19 pandemic and the migrant experience in India. *Social Work in Public Health*, *35*(7), 633-643.

25 Tomlin, J., Dalgleish-Warburton, B., & Lamph, G. (2020). Psychosocial support for healthcare workers during the COVID-19 pandemic. *Frontiers in Psychology*, *11*, 1960.

26 Tunon, M., & Baruah, N. (2012). Public attitudes towards migrant workers in Asia. *Migration and Development*, *1*(1), 149-162.

27 Vizheh, M., Qorbani, M., Arzaghi, S. M., Muhidin, S., Javanmard, Z., & Esmaeili, M. (2020). The mental health of healthcare workers in the COVID-19 pandemic: A systematic review. *Journal of Diabetes & Metabolic Disorders*, *19*, 1967–1978.

28 Wickramasekara, P. (2013). Globalisation, international labour migration and the rights of migrant workers. In *Globalisation and Migration* (pp. 21-38). Routledge.

29 Wijngaards, I., King, O. C., Burger, M. J., & van Exel, J. (2021). Worker well-being: What it is, and how it should be measured. *Applied Research in Quality of Life*, 1-38.

5 Summary of the empirical data from the countries studied from an organisational perspective

(Zsuzsanna Szeiner, Klaudia Balázs, Sylvia Molnár, Szilvia Szalai Módosné)

5.1 Total sample

5.2 Responding organisations

Our research was conducted in the V4 countries, where 45.7% of the total sample, i.e., 391 respondents from Hungary, were represented by organizations from the Czech Republic, which accounted for 25.6% of the total sample, 219 organizations participated in the survey, 14.8% from Slovakia with 127 respondents and a similar contribution from Poland, with 13.9%, or 119 respondents.

Finally, 856 organizations (companies, institutions) from four countries in the region responded to our survey.

Table 5-1: Breakdown of participating organizations by country (N, %)

Country	N	%
Czech Republic (CZ)	219	25.6 %
Hungary (HU)	391	45.7 %
Poland (PL)	119	13.9 %
Slovakia (SK)	127	14.8 %
Total	856	100.0 %

5.2.1 Sectors

In terms of sectoral distribution, there are significant differences in the proportions. The service sector was the most represented sector, accounting for 21.9% of the total sample, i.e., 184 out of 865 organizations indicated the service sector as their activity classification. The trade sector was also represented in a similarly high proportion, 19.2%, with 161 respondents, and the industry sector in 18%, with 151 respondents. The financial services sector represents 6.7% of the total sample, with 56 responding organizations active in this sector, public administration 5% with 42 respondents, information technology 4.6% with 39 respondents, logistics services 4.2% with 35 respondents and agriculture 3.9% with 33 respondents. Of the organizations surveyed, the three sectors with the lowest proportion of respondents were: energy – 2.6% (22 respondents), fast moving consumer goods – 1.4% (12 respondents) and telecommunications – 1.2% (10 respondents). 11.3% of the organizations surveyed classified their activities in the other sector, representing 95 respondents.

The sectoral distribution of the proportion of organizations active in each sector differs

partly between countries. For the Czech Republic, the highest proportion of organizations from the commercial sector participated in the survey (23% – 50 respondents), the lowest proportion from the FMCG and IT sectors (1.4% – 3 respondents) and the telecommunications sector was not represented. In Hungary, as in the whole sample, the highest participation was in the services sector (25.5% – 98 respondents) and the lowest in telecommunications (0.8% – 3 respondents). In the case of Poland, the highest participation was also in the services sector (21.2% – 25 respondents), while the lowest was in the energy sector (1.7% – 2 respondents). In Slovakia, as in the Czech Republic, the commercial sector was overwhelmingly represented (24% – 29 respondents), with the lowest participation from telecommunications (1.7% – 2 respondents) and no participation from the FMCG sector.

Table 5-2: Sectoral distribution in the countries surveyed (N, %)

Sectoral distribution			Countries				
			CZ	HU	PL	SK	Total
Industries	Industry	N	45	61	21	24	151
		%	20.7%	15.9%	17.8%	19.8%	18.0%
	Commerce	N	50	61	21	29	161
		%	23.0%	15.9%	17.8%	24.0%	19.2%
	FMCG	N	3	6	3	0	12
		%	1.4%	1.6%	2.5%	0.0%	1.4%
	Finance	N	23	23	6	4	56
		%	10.6%	6.0%	5.1%	3.3%	6.7%
	Information technology	N	3	18	9	9	39
		%	1.4%	4.7%	7.6%	7.4%	4.6%
	Telecommunication	N	0	3	5	2	10
		%	0.0%	0.8%	4.2%	1.7%	1.2%
	Logistics	N	6	13	8	8	35
		%	2.8%	3.4%	6.8%	6.6%	4.2%
	Energetics	N	5	10	2	5	22
		%	2.3%	2.6%	1.7%	4.1%	2.6%
	Agriculture	N	7	14	5	7	33
		%	3.2%	3.6%	4.2%	5.8%	3.9%
	Services	N	44	98	25	17	184
		%	20.3%	25.5%	21.2%	14.0%	21.9%
	Public administration	N	11	24	4	3	42
		%	5.1%	6.3%	3.4%	2.5%	5.0%
	Other	N	20	53	9	13	95
		%	9.2%	13.8%	7.6%	10.7%	11.3%
	Total	N	217	384	118	121	840
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.2.2 Ownership

Most of the responses came from domestic private organizations. The proportion of foreign and mixed-owned organizations was over 19%. 25.2% were domestic public institutions.

In terms of form of ownership, 55.1% of the total sample were domestic private companies, 461 organizations in number. 25.2% were domestic public (211 respondents), 14% were foreign (117 respondents) and 5.7% were mixed (48 respondents).

The order of proportions is the same for the total sample for all countries except Poland. In Poland, 63.9% (76 organizations) of the surveyed organizations are nationally owned, 18.5% (22 organizations) are nationally public, 13.4% (16 organizations) are mixed and 4.2% (5 organizations) are foreign. For the Czech Republic, 53.2% (115 organizations) of the organizations are domestic, 29.2% (63 organizations) are domestic public, 12.5% (27 organizations) are foreign and 5.1% (11 organizations) are mixed. The breakdown by type of ownership of organizations in Hungary is as follows: 51.2% (195 organizations) are domestic, 25.7% (98 organizations) are domestic public, 19.7% (75 organizations) are foreign and 3.4% (13 organizations) are mixed. For organizations in Slovakia, the distribution of proportions is as follows: 62% (75 organizations) are domestically owned, 23.1% (28 organizations) are publicly owned, 8.3% (10 organizations) are foreign owned and 6.6% (8 organizations) are mixed owned.

Table 5-3: Distribution of ownership in the countries surveyed (N, %)

Distribution of ownership			Countries				
			CZ	HU	PL	SK	Total
Ownership	Domestic private	N	115	195	76	75	461
		%	53.2%	51.2%	63.9%	62.0%	55.1%
	Domestic public	N	63	98	22	28	211
		%	29.2%	25.7%	18.5%	23.1%	25.2%
	Foreign	N	27	75	5	10	117
		%	12.5%	19.7%	4.2%	8.3%	14.0%
	Mixed	N	11	13	16	8	48
		%	5.1%	3.4%	13.4%	6.6%	5.7%
	Total	N	216	381	119	121	837
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.2.3 Size – number of employees

The largest share of organizations in the V4 countries surveyed were those with 10-50 employees, 20.3% (170 organizations), followed by those with over 1,000 employees, 18.8% (157 organizations), and those with 2-9 employees, 16.6% (139 organizations). Organizations with 51-100 employees were represented by 11.5% (96 organizations), those with 251-500 employees by 11% (92 organizations), those with 101-250 employees by 10.4% (87 organizations), those with 501-1000 employees by 8% (67 organizations) and the smallest proportion of organizations with the smallest number of employees by 3.3% (28 organizations).

In the Czech Republic, the largest proportion (21.7%) was made up of organizations with more than 1,000 employees (47 organizations) and the smallest proportion (5.5%-12 organizations) of organizations with 0-1 employees. In Hungary, the largest proportion (21.6%) was made up of organizations with 10-50 employees and the smallest proportion (1.8%) of organizations with 0-1 employees (7 organizations). Poland, similar to the Czech sample, had the highest proportion of organizations with the largest number of employees (21% – 25 organizations) and the lowest proportion of organizations with the smallest number of employees (2.5% – 3 organizations). Organizations in Slovakia were represented in the following way: the highest proportion of organizations with 10-50 employees (27.5% – 33 organizations) and the lowest proportion of organizations with between 501 and 1000 employees (2.5% – 3 organizations), unlike the other countries.

Table 5-4: Distribution of size – number of employees in the countries surveyed (N, %)

Distribution by the number of employees			Countries				
			CZ	HU	PL	SK	Total
Total number of employees	0-1	N	12	7	3	6	28
		%	5.5%	1.8%	2.5%	5.0%	3.3%
	between 2-9	N	31	64	14	30	139
		%	14.3%	16.8%	11.8%	25.0%	16.6%
	between 10-50	N	39	82	16	33	170
		%	18.0%	21.6%	13.4%	27.5%	20.3%
	between 51-100	N	31	40	14	11	96
		%	14.3%	10.5%	11.8%	9.2%	11.5%
	between 101-250	N	17	37	15	18	87
		%	7.8%	9.7%	12.6%	15.0%	10.4%
	between 251-500	N	24	37	18	13	92
		%	11.1%	9.7%	15.1%	10.8%	11.0%
	between 501-1000	N	16	34	14	3	67
		%	7.4%	8.9%	11.8%	2.5%	8.0%
	above1000	N	47	79	25	6	157
		%	21.7%	20.8%	21.0%	5.0%	18.8%
	Total	N	217	380	119	120	836
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.2.4 Turnover – budget

The responding organizations were represented in the survey in the following order of annual turnover for the total sample: the highest proportion (23.1%) of organizations between EUR 300,001 and EUR 3,000,000, 21.1% between EUR 30,001 and EUR 300,000, 17.7% between EUR 3,001 and EUR 3,000,000, and 17.7% between EUR 3,001 and EUR 3,000,000. 000,001 – 30,000,000 EUR, 13.7% between 30,000,001 – 300,000,000 EUR, 13.6% the largest, those with a turnover of over 300,000,000 EUR, and 10.8% the smallest, those with a turnover (budget) of less than 30,000 EUR.

Table 5-5: Distribution of turnover-budget in the countries surveyed (N, %)

Distribution by turnover			Countries				
			CZ	HU	PL	SK	Total
Annual turnover (budget)	below 30.000 EUR	N	25	48	5	10	88
		%	11.7%	13.1%	4.2%	8.3%	10.8%
	between 30.001 – 300.000 EUR	N	53	70	13	37	173
		%	24.9%	19.1%	10.9%	30.8%	21.1%
	between 300.001 – 3.000.000 EUR	N	55	79	23	32	189
		%	25.8%	21.6%	19.3%	26.7%	23.1%
	between 3.000.001 – 30.000.000 EUR	N	30	68	26	21	145
		%	14.1%	18.6%	21.8%	17.5%	17.7%
	between 30.000.001 – 300.000.000 EUR	N	28	45	24	15	112
		%	13.1%	12.3%	20.2%	12.5%	13.7%
	above 300.000.000 EUR	N	22	56	28	5	111
		%	10.3%	15.3%	23.5%	4.2%	13.6%
	Total	N	213	366	119	120	818
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.3 Effects of the uncertain economic situation

5.3.1 Impact of coronavirus on the organisation

Our research explored the perceptions of organizations on the extent to which they perceived the impact of the coronavirus crisis on staff retention. Across the whole sample, the vast majority of responding organizations answered in the negative, i.e., that the coronavirus crisis had had no impact on retention in their organization. This is also true when analyzed by country, with the exception of Poland, where the answer to this question was overwhelmingly in the affirmative. Looking at the aggregate data for the V4 countries, 52.8% of organizations (393 organizations) were not affected by the coronavirus crisis in terms of staff retention, while 47.2% (352 organizations)

were. At country level, 64% of respondents in the Czech Republic were not affected (114 organizations), 36% were affected (64 organizations), 56.3% of respondents in Hungary were not affected (200 organizations), 43.7% were affected, 61.3% of respondents in Slovakia were not affected (57 organizations) and 38.7% were affected. In Poland, the opposite view was expressed by 18.5% (22 organizations) of organizations, which said that it had no impact and 81.5% (97 organizations) that it had had an impact.

Table 5-6: Impact of the coronavirus crisis on labour retention in the countries surveyed (N, %)

Coronavirus			Countries				
			CZ	HU	PL	SK	Total
Opinion	Affected	N	64	155	97	36	352
		%	36.00%	43.70%	81.50%	38.70%	47.20%
	Not affected	N	114	200	22	57	393
		%	64.00%	56.30%	18.50%	61.30%	52.80%
	Total	N	178	355	119	93	745
		%	100.00%	100.00%	100.00%	100.00%	100.00%

5.3.2 Impact of the russian-ukrainian war on the organisation

In our research, we have not only examined the impact of the coronavirus in the context of labour retention, but also the Russian-Ukrainian war. The responses, although different in proportion, were essentially the same as for the coronavirus. In total, 520 organizations, or 69.9% of respondents, indicated that there was no impact and 224 organizations, or 30.1%, indicated that the Russian-Ukrainian war had an impact on retention in their organization. In the case of the Czech Republic, 133 organizations (75.1%) indicated that the war has no impact, while 44 organizations (24.9%) perceived the war to have an impact, in the case of Hungary 277 organizations (78%) indicated no impact, 78 organizations perceived an impact, and in the case of Slovakia 72 organizations indicated no impact (77.4%) and 21 organizations (22.6%) perceived the war to have an impact on staff retention. Poland also has the opposite perception of the war compared to the three countries, with 81 organizations (68.1%) saying that the war has an impact on labour retention and 38 organizations (31.9%) saying it has no impact.

Table 5-7: Impact of the Russia-Ukraine war on labour retention in the countries surveyed (N, %)

Russian-Ukrainian war			Countries				
			CZ	HU	PL	SK	Total
Opinion	Affected	N	44	78	81	21	224
		%	24.9%	22.0%	68.1%	22.6%	30.1%
	Not affected	N	133	277	38	72	520
		%	75.1%	78.0%	31.9%	77.4%	69.9%
	Total	N	177	355	119	93	744
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.3.3 Impact of labour shortage on the organisation

In our survey, we investigated how the V4 countries perceive the problem of labour shortages and whether it affects their organizations. The responses varied from country to country, and looking at the aggregate data, we see that the majority of organizations indicated that labour shortages have an impact on their organization. 55.9% (415 organizations) of the organizations surveyed are experiencing the impact of labour shortages, while 44.1% (328 organizations) are not.

The responses are not uniform when looking at the country breakdown, for example in the Czech Republic the answer "no impact" is more frequently selected (56.7% – 102 organizations) and 78 organizations, i.e., 43.3% of respondents, think it has an impact. Similar views are held by Slovakian organizations, but with a greater difference in proportions (55 organizations, or 62.5% of respondents, say they have no impact and 33 organizations, or 37.5%, say they have an impact). Hungary and Poland have a different view, but also show a difference in proportions. In Hungary, 208 organizations (58.4%) are affected and 148 (41.6%) are not affected, while in Poland 96 organizations (80.7%) are affected and 23 (19.3%) consider that they are not affected by labour shortages.

Table 5-8: Impact of labour shortages on the organization in the countries surveyed (N, %)

Impact of labour shortage			Countries				
			CZ	HU	PL	SK	Total
Opinion	Affected	N	78	208	96	33	415
		%	43.3%	58.4%	80.7%	37.5%	55.9%
	Not affected	N	102	148	23	55	328
		%	56.7%	41.6%	19.3%	62.5%	44.1%
	Total	N	180	356	119	88	743
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.4 Changes in fluctuation

5.4.1 Hard-to-fill jobs

Hard-to-fill jobs were evaluated by aggregating the number of mentions in the countries surveyed. Out of 843 mentions, respondents identified IT as the most difficult job to fill in 34 cases, followed by salesperson with 33 mentions and accountant with 32 mentions. The ranking continued with physical positions such as driver (27) and operator, cook and cleaner, which respondents identified 26 times. The least difficult positions to fill, according to the responses, were the positions of manager (13) and supervisor (12) (Tables 5-9)

Table 5-9: Hard-to-fill jobs mentioned in the surveyed countries (N, %)

Positions	Mentions, N	Mentions, %
IT	34	2.60%
sales assistant	33	2.53%
accountant	32	2.45%
driver	27	2.07%
operator	26	1.99%
cook	26	1.99%
cleaner	26	1.99%
assembly worker	23	1.76%
financial officer	23	1.76%
warehouse worker	22	1.68%
salespersons	21	1.61%
customer relations officer	20	1.53%
HR positions	18	1.38%
sales associate	18	1.38%
machine operator	17	1.30%
technician	17	1.30%
project manager	16	1.23%
electrician	16	1.23%
purchasing specialist	15	1.15%
CNC operator	15	1.15%
engineer	15	1.15%
administrative assistant	13	1.00%
logistics specialist	13	1.00%
cashier	13	1.00%
management assistant	13	1.00%
manager	12	0.92%

5.4.2 Time to fill a vacancy

Among the countries included in the survey, the Czech Republic reached a maximum of 96 weeks to fill a job, so the Czech Republic also had the worst average. However, when analyzing the mode data, while Hungary and Poland require 8 weeks to fill a job, the Czech Republic and Slovakia require 4 weeks, which is the same as the most frequently reported value for the countries surveyed (Tables 5-10).

Table 5-10: Average number of weeks to fill a vacancy in the countries surveyed (Characteristics)

Characteristics	Value in weeks, countries				
	CZ	HU	PL	SK	Total
Mean	11.67	11.26	10.94	8.34	10.75
Standard deviation	13.01	10.77	10.37	12.47	11.84
Minimum	1	2	2	1	1
Maximum	96	80	88	80	96
Median	6.75	9.00	9.00	5.00	7.50
Mode	4.00	8.00	8.00	4.00	4.00

5.5 Causes of labour shortages

The analysis of the reasons for labour shortages is based on the average of the responses of the countries surveyed. Regardless of the nature of the work, the labour problem can be traced back to 3 characteristic causes, which are the same for both physical and mental workers. The main causes of labour shortages are low wages and competition from competitors, but there is also a shortage of labour due to a lack of skills (Tables 5-11).

Table 5-11: Causes of labour shortages in the countries surveyed (Average)
(Please rate the prevalence of each cause for the job category 1=not at all and 5=very prevalent)

Causes	Professionals with tertiary education	Sales staff	Administrative staff	Physical workers
Competition from competitors	3.349	2.983	2.786	3.351
Wages too low	3.331	3.006	3.026	3.361
Lack of skilled labour	3.065	2.594	2.572	3.071
Emigration from abroad	2.497	2.026	1.909	2.427
Problems with the education system	2.473	2.058	2.055	2.303
Poor working conditions	1.879	1.935	1.828	2.328
Emergency due to Covid 19	2.256	2.597	2.238	2.538

Causes	Professionals with tertiary education	Sales staff	Adminis-trative staff	Physical workers
Russian-Ukrainian crisis	1.797	2.014	1.713	2.136
Situation due to	1.850	1.931	1.872	2.161
Lack of transport infrastructure (difficult access to the workplace	2.430	2.596	2.199	2.530

5.6 Programmes to manage labour shortage and staff retention

5.6.1 Recruitment to retain the necessary number of employees

The most common method used to overcome labour shortages is a self-recruitment programmed, used by 59.4% of employers. Nearly similar proportions of employers use on-the-job testing days (38.1%) and employee referral schemes (35.6%). When filling vacant positions, employers replace the missing workforce by retraining existing staff at a rate of 25.4% (Table 5-12).

Table 5-12: Recruitment to fill labour shortages in the countries surveyed (N, %)

Methods of recruitment	Occurrence	
	Frequency	%
Own recruitment programmed	454	59.4%
Staff referral programmed	272	35.6%
Request for information from the employment office	117	15.3%
Reference from previous job	77	10.1%
Probation days	291	38.1%
Internal recruitment / retraining	194	25.4%
Re-employment of former colleagues	118	15.4%
Internship programmed	100	13.1%
Assistance from headhunter/ recruitment agency	122	16.0%
Other	11	1.4%

5.6.2 Applied Workforce retention methods

When assessing the tools to support retention, organizations were given the opportunity to indicate which ones they already use, plan to introduce and which ones they do not plan to introduce or are unable to introduce into their own practice. The most commonly used workforce retention measures by organizations are the provision of company cars

(28.6%), the development of a career management system (16%) and the use of atypical forms of employment (17.23%). 21.2% of respondents are currently planning to attract future employees by running dual training schemes, but a further 28.2% are planning to introduce such cooperation. Among future plans, the most frequent are the introduction of atypical forms of employment (27.8%), the provision of a company car (24.9%) and the development of a career management system (24%). The development of a long-term incentive programmed (26.4%) and building an employee brand (25.1%) are not in the interest of respondents, while 60.1% are not interested in introducing a performance appraisal system and 58.7% are not able to apply training in their own practice.

Table 5-13: Typical employee retention programmers in the countries surveyed (N, %)

Programmed	breakdown in %					Total (N=100%)
	currently employed	planned to be employed	not planned to employ	cannot be employed	little knowledge of that	
Restructuring of the wage and salary system	9.0%	20.6%	20.5%	42.3%	7.6%	723 100%
Long-term incentive programmed	15.6%	17.9%	26.4%	32.0%	8.1%	716 100%
Performance appraisal system	8.7%	10.6%	16.6%	60.1%	4.0%	724 100%
Company car allowance	28.6%	24.9%	7.7%	34.4%	4.3%	724 100%
Measuring employee satisfaction and engagement	8.9%	20.7%	23.9%	39.8%	6.7%	719 100%
Flexible working hours	14.5%	14.2%	12.0%	56.4%	2.8%	723 100%
Atypical forms of employment	17.2%	27.8%	8.8%	31.7%	14.5%	716 100%
Wellbeing	8.8%	20.7%	24.6%	27.3%	18.6%	719 100%
Career management	16.0%	24.0%	23.7%	28.0%	8.4%	718 100%
Use of dual training	21.2%	28.4%	17.4%	20.7%	12.2%	711 100%
Individual development programmed	12.0%	21.8%	23.3%	33.9%	8.9%	716 100%
Employee brand building	11.3%	21.4%	25.1%	31.1%	11.1%	718 100%
Training organization	4.8%	13.9%	18.3%	58.7%	4.3%	726 100%
Other:	10.9%	28.7%	9.9%	17.8%	32.7%	101 100%

5.6.3 Efficiency of measures employed

In terms of retention efficiency, the factors listed were most often rated as either rather typical or entirely typical. The aspects that most influence employee comfort are illustrated by aggregating the scores of 4 and 5 for each factor. The top 3 factors rated by respondents were a good working atmosphere (89.7%), stability (85.5%) and the personality of the manager (78.5%).

Table 5-14: Typical factors for employee retention in the countries surveyed (N, %)

	breakdown in %					Total (%)
	Not typical at all (1)	Rather not typical (2)	Both typical and not (3)	Rather typical (4)	Quite typical (5)	
personality of the leader	2.2%	4.9%	14.4%	40.2%	38.3%	731
workplace atmosphere	1.0%	2.3%	7.0%	37.8%	51.9%	728
job interview as a first impression	5.3%	15.5%	31.4%	35.1%	12.7%	730
career development opportunities	2.1%	8.5%	22.5%	39.1%	27.7%	728
flexibility	1.4%	4.8%	18.2%	42.1%	33.5%	731
feedback	2.9%	6.9%	27.6%	42.0%	20.6%	727
predictable career path	3.6%	10.0%	28.2%	37.1%	21.0%	727
stability	1.6%	2.3%	10.6%	37.1%	48.4%	728
other	25.8%	4.2%	26.3%	20.0%	23.8%	240

5.6.4 Typical retention strategies

Among retention strategies, 48.4% of employers focus on training, but 34% of respondents provide longer training periods. The third most popular solution is the use of mentors, used by 31% of organizations (Table 5-15).

Table 5-15: Typical retention strategies in the countries surveyed (N, %)

Typical retention strategies	Occurrence	
	Frequency	%
Mentoring	237	31.0%
Ensuring longer training period	260	34.0%
Involvement in managerial decision making	104	13.6%
Trainings	370	48.4%
Job rotation	131	17.1%
Other	186	24.3%

5.7 Respondents– demographics

5.7.1 Gender of respondents

The gender breakdown of respondents in the countries surveyed is as follows. The Czech sample is 40% male and 60% female, while the Hungarian sample is split 40-60% male and 40% female. In the Polish and Slovak samples, the gender distribution of respondents is almost 50/50.

Table 5-16: Gender of respondents in the countries surveyed (N, %)

Gender of respondents			Countries				
			CZ	HU	PL	SK	Total
Gender	Male	N	60	118	57	44	279
		%	39.7%	39.6%	48.7%	53.0%	43.0%
	Female	N	91	180	59	39	369
		%	60.3%	60.4%	50.4%	47.0%	56.9%
	Not declared	N	0	0	1	0	1
		%	0.0%	0.0%	0.9%	0.0%	0.2%
	Total	N	151	298	117	83	649
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.7.2 Age of respondents

In terms of age distribution, the Czech sample is the youngest, with more than half of respondents under 30. In all four samples, those under 40 make up a larger proportion of the sample. The proportion of respondents aged between 40 and 60 exceeds 40% only in the Slovak and Hungarian samples.

Table 5-17: Age of respondents in the countries surveyed (N, %)

Age of respondents		Countries				
		CZ	HU	PL	SK	Total
18-29	N	97	111	41	20	269
	%	55.1%	32.3%	34.5%	22.0%	36.8%
30-39	N	36	89	36	29	190
	%	20.5%	25.9%	30.3%	31.9%	26.0%
40-59	N	40	133	30	40	243
	%	22.7%	38.7%	25.2%	44.0%	33.3%
60 or over	N	3	11	12	2	28
	%	1.7%	3.2%	10.1%	2.2%	3.8%
Total	N	176	344	119	91	730
	%	100.0%	100.0%	100.0%	100.0%	100.0%

5.7.3 Job titles

The largest proportion of respondents to the survey are the company's bottom, middle and top managers and the owner. The share of subordinates in the Czech and Hungarian samples is one third of the respondents. In the Slovak and Polish samples their share is below 18%.

Table 5-18: Respondents' job titles in the countries surveyed (N, %)

Position			Countries				
			CZ	HU	PL	SK	Total
Job title	Employee	N	57	122	21	16	216
		%	32.4%	35.7%	17.6%	17.4%	29.6%
	Junior manager	N	39	18	25	16	98
		%	22.2%	5.3%	21.0%	17.4%	13.4%
	Middle manager	N	45	78	23	13	159
		%	25.6%	22.8%	19.3%	14.1%	21.8%
	Senior manager	N	23	62	29	15	129
		%	13.1%	18.1%	24.4%	16.3%	17.7%
	Owner	N	10	57	21	29	117
		%	5.7%	16.7%	17.6%	31.5%	16.0%
	Other	N	2	5	0	3	10
		%	1.1%	1.5%	0.0%	3.3%	1.4%
	All	N	176	342	119	92	729
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.7.4 Highest level of education of the respondents

Around one third of respondents in the Czech sample, half in the Slovak sample, 68% in the Polish sample and 83% in the Hungarian sample have a tertiary education. 98% of respondents in the Czech sample, 99% in the Hungarian sample, 96% in the Polish sample and 88% in the Slovak sample have at least a school leaving certificate.

Table 5-19: Education level of respondents in the countries surveyed (N, %)

Highest qualification			Countries				
			CZ	HU	PL	SK	Total
Qualification	Primary school	N	0	0	5	0	5
		%	0.0%	0.0%	4.2%	0.0%	0.7%
	Vocational school	N	2	3	0	11	16
		%	1.1%	0.9%	0.0%	12.0%	2.2%
	Upper secondary school or vocational upper secondary school with school leaving certificate	N	92	30	23	23	168
		%	52.6%	8.8%	19.3%	25.0%	23.1%
	Matura-based training	N	20	24	10	9	63
		%	11.4%	7.0%	8.4%	9.8%	8.7%
	Tertiary education	N	61	285	81	49	476
		%	34.9%	83.3%	68.1%	53.3%	65.4%
	All	N	175	342	119	92	728
		%	100.0%	100.0%	100.0%	100.0%	100.0%

5.8 References to Chapter 5

1 Árva, L. (2023). The future of work in the global labor market after the COVID epidemic. (In Hungarian) *New Labour Market Review (Új Munkaügyi Szemle)* 4(5), pp. 1-3. https://www.munkaugyiszemle.hu/munka-jovoje-covid-jarvany-utani-globalis-munkaeropiacon

2 Bakker, A. B., Demerouti, E. & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management,* 43(1), pp. 83–104. https://doi.org/10.1002/hrm.20004

3 Bite, P., Szombathely, M. K., & Vasa, L. (2020). The concept of labour migration from the perspective of Central and Eastern Europe. *Economics & Sociology, 13*(1), pp. 197-216. https://doi.org/10.14254/2071-789X.2020/13-1/13

4 Boyd, C. M., Bakker, A. B., Pignata, S., Winefield, A. H., Gillespie, N. & Stough, C. (2011). A longitudinal test of the job demands-resources model among Australian university academics. *Applied Psychology,* 60(1), 112–140. https://doi.org/10.1111/j.1464-0597.2010.00429.x

5 Brixiova, Z., Li, W. & Yousef, T. (2009). Skill shortages and labor market outcomes in Central Europe. *Economic Systems,* 33(1), 45–59. https://doi.org/10.1016/j.ecosys.2008.07.002

6 Brunello, G., & Wruuck, P. (2021). Skill shortages and skill mismatch: A review of the literature. *Journal of Economic Surveys, 35(*4), 1145–1167. https://doi.org/10.1111/joes.12424

7 Causa, O., Abendschein, m., Luu, N., Soldani, E. & Soriolo, C. (2022). *The post-COVID-19 rise in labour shortages.* OECD Economics Department Working Papers, No. 1721, OECD Publishing, Paris. https://doi.org/10.1787/18151973

8 Cseh-Papp, I., Varga, E., Szira, Z. & Hajós L. (2018). The controversial nature of workfare programmes. *Acta Regionalia et Environmentalica, 5*(1), pp. 10-14. https://doi.org/10.2478/aree-2018-0003

9 Dajnoki K. & Héder M. (2017). New winds are blowing – HR's answer to the challenges of globalization and change. *Journal of the Hungarian Military Science Society***,** *27*(E-szám), 84-93. https://doi.org/10.17047/HADTUD.2017.27.E.84

10 Fazekas K., Kónya I. & Krekó J. (2020). Labor market mirror 2020. (In Hungarian) Economic and Regional Scientific Research Center, (Közgazdaság- és Regionális Tudományi Kutatóközpont, ELKH.) https://kti.krtk.hu/wp-content/uploads/2022/01/mt_2020_hun_mpt.pdf

11 Gelencsér, M., Szigeti, O. & Szabó-Szentgróti, G., 2020. Employee retention in the manufacturing sector (In Hungarian). *Budapest Management Review (Vezetésutdomány), 51*(9), 67-79. https://doi.org/10.14267/VEZTUD.2020.09.06

12 Grotte, J., Pató, G. & Hollósy-Vadász, G. 2021. HR challenges during the pandemic in the domestic hotel and catering industry in Hungary (In Hungarian) *New Labour Market Review (Új Munkaügyi Szemle*), 2(1), 65-77.

13 Harari, N. Y. (2018). *21 lessons for the 21st century.* London: Jonathan Cape.

14 Hess, D.E. & Ludwig, K. (2017). *Humility Is the New Smart Rethinking Human Excellence in the Smart machine Age*. Oakland: Berrett–Koehler Publishers Inc.

15 Hu, Q., Schaufeli, W. B. & Taris, T. W. (2013). Does equity mediate the effects of job demands and job resources on work outcomes? An extension of the job demands-resources model. *Career Development International, 18*(4), pp. 357–376. https://doi.org/10.1108/CDI-12-2012-0126

16 Hutt, D. (2022). Czech unemployment is the lowest in Europe. That may not be a good thing. *Euronews-My Europe*. https://www.euronews.com/my-europe/2022/03/16/czech-unemployment-is-the-lowest-in-europe-that-may-not-be-a-good-thing

17 Hutter, C., & Weber, E. (2022). *Russia-Ukraine war: Short-run production and labour market effects of the energy crisis (No. 10/2022).* IAB-Discussion Paper. https://doi.org/10.48720/IAB.DP.2210

18 Illésy, M. & Huszár, Á. (2022). Technological development and the labor market: how does automation affect jobs in Hungary? (In Hungarian) *Statistical Review (Statisztikai Szemle)*, *100*(2), 137–161. https://doi.org/10.20311/stat2022.2.hu0137

19 Inoue, A., Kawakami, N., Tsuno, K., Shimazu, A., Tomioka, K. & Nakanishi, M. (2012). Job demands, job resources and work engagement of Japanese employees: A prospective cohort study. *International Archives of Occupational and Environmental Health,* 86(4), 441–449. https://doi.org/10.1007/s00420-012-0777-1

20 Káčerová, M. & Ondačková, J. (2015).The process of population ageing in countries of Visegrad Group. *Erdkunde*, 69(1), 49-68.

21 Karácsony P., & Pásztó V. 2021. Analysis of the labor market situation in the European Union during the coronavirus crisis. (In Hungarian) *European Mirror (Európai Tükör)*, 24(2), 101–115. https://doi.org/10.32559/et.2021.2.6

22 Kőmüves, Zs., Szabó, Sz., Szabó-Szentgróti, G. & Hollósy-Vadász, G. (2022). Labour retention in South Transdanubia during the pandemic (In Hungarian). *Modern Geografia, 17*(3), pp. 13-27. http://doi.org/10.15170/MG.2022.17.03.02

23 Kozák, A. (2022). An HR-based approach to workforce retention. (In Hungarian) *Marketing & Menedzsment*, 56(4), 5-14. https://doi.org/10.15170/MM.2022.56.04.01

24 Kozák, A. & Dajnoki, K. (2019). Employee opinions on measures aimed at retaining the workforce. (In Hungarian) *Taylor Journal of Business and Organizational Sciences, Taylor (Gazdálkodás- és Szervezéstudományi Folyóirat)*, 36(2), 56- 65.

25 KSH (2022). Labor market. The most important labor market indicators. *KSH (Hungarian Statistical Office)* (In Hungarian) https://www.ksh.hu/s/helyzetkep-2022/#/kiadvany/munkaeropiac/a-fontosabb-munkaeropiaci-jelzoszamok

26 KSH (2023). *Labour force KSH (Hungarian Statistical Office)* (In Hungarian) https://www.ksh.hu/munkaero

27 Mauno, S., Kinnunen, U. & Ruokolainen, M. (2007). Job demands and resources as antecedents of work engagement: a longitudinal study. *Journal of Vocational Behavior, 70*(1), 149–171. https://doi.org/10.1016/j.jvb.2006.09.002

28 Müller, T., Schulten, T., & Drahokoupil, J. (2022). Job retention schemes in Europe during the COVID-19 pandemic–different shapes and sizes and the role of collective bargaining. Transfer: *European Review of Labour and Research, 28*(2), pp. 247-265. https://doi.org/10.1177/1024258922108980

29 Pató, G. Sz. B., Grotte, J., Poór, J. & Hollósy-Vadász, G. (2022). HR responses to the third wave of Covid, in the case of different ownership backgrounds (In Hungarian). *New Labour Market Review (Új Munkaügyi Szemle), 3*(1), pp. 15-26.

30 Poór, J., Juhász, T., Hazafi, Z., Szakács, G. and Kovács Á. (2019). Analysis of employee turnover and labor shortage in the public sector in the light of a national empirical research. (In Hungarian) *Opus et Educatio, 6*(3), 310-324. https://doi.org/10.3311/ope.331

31 Poór, J., Szabó-Szentgróti, G., Veresné, V. K., Varga, E., Hollósy-Vadász, G. & Kőmüves Zs., (2023). *Labour shortage, labour retention and robotisation problems*

and solutions – gricultural organisations. Gödöllő: Hungarian University of Agriculture and Life Sciences.

32 Schiffer A. (2023). The war only made visible the great geopolitical reorganization of the world. (In Hungarian) *Infostart*.https://infostart.hu/interju/2023/05/26/schiffer-andras-a-haboru-csak-lathatova-tette-a-vilag-nagy-geopolitikai-atrendezodeset

33 Susskind, R. & Susskind, D. (2015). *The Future of the Professions: how technology will transform the work of human experts*. Oxford: Oxford University Press.

34 U.S. Bureau of Labor Statistics (2023). *Employment Projections*. https://www.bls.gov/emp/tables/employment-by-major-industry-sector.htm

35 Verick, S., Schmidt-klau, D., & Lee, S. (2022). Is this time really different? How the impact of the COVID-19 crisis on labour markets contrasts with that of the global financial crisis of 2008–09. *International Labour Review, 161*(1), 125-148. https://doi.org/10.1111/ilr.12230