

# Immigrants on the Slovak labour market: who is more resilient to the impacts of COVID-19?

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## Abstract

*This paper presents findings on the effects of the COVID-19 pandemic on unemployment growth in the Slovak Republic. Based on the time series methodology, we analyse unemployment in the period from February 2020 to February 2021, taking into account several variable factors, such as gender, level of education and employment sector. Based on the results, we can state that female migrants are more resilient to the negative impacts of the pandemic. In addition, we have observed that education plays an important role and can be considered a significant factor that reduces the likelihood of losing one's job. The most significant decrease occurred among migrants with little or no education. The least vulnerable group consisted of tertiary-educated foreigners. In terms of occupation, the most vulnerable group were assemblers, plant operators, craft related workers and support staff. On the other hand, some professionals and technicians have weathered the negative aspects of the pandemic relatively well.*

**Keywords:** Slovakia, gender, migration, resilience, vulnerability, occupation, employment, COVID-19 pandemic

## Introduction

The sudden outbreak of the COVID-19 pandemic significantly hit the world. In March 2020, the spread of the COVID-19 coronavirus pandemic led the World Health Organization (WHO) to declare a global public health emergency. The SARS-Cov-2 coronavirus has infected millions of people all over the world. By 28 February 2021, over 110 million cases were confirmed in 220 countries and there were 2.5 million confirmed deaths (WHO, 2021). To slow down the spread of the

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disease, the Slovak government imposed various restrictive measures, such as limiting contact between people and curfews, which subsequently had a major impact on the economies of every country, including Slovakia and the whole region of V4. Measures were taken by the Slovak government to prevent the movement of people, which led to an economic downturn and affected sectors that employ many people. These sectors included service and trade businesses, namely restaurants and bars, as well as entertainment, but the measures undoubtedly also affected leisure and accommodation providers (Korinth, 2021), which led to higher unemployment. However, regardless of the sector and country affected, the crisis has a dramatic impact on the global workforce, and hundreds of millions of workers around the world have faced job losses. In the United States, for example, according to the US Department of Labour, more than 30 million people (more than 15 % of the entire workforce) have applied for unemployment benefits (Korniienko and Barchi, 2020). Certainly, the COVID-19 global pandemic has been one of the biggest challenges for the world economy in decades. The first available data suggest that a crisis deeper than the last global economic crisis of 2008 and 2009 awaits (Dudáš, 2020). The pandemic and its impact will lead to a number of legal entities ceasing to exist or restricting their activities, which will have long term consequences. The increased debt burden and significant loss of income by employers has already affected not only their employees but suppliers and business partners. Millions of people around the world are coping with job loss; however, higher unemployment is not necessarily related to the pandemic itself, as there might be changes in labour demand as well.

Since the article aims to comment on the impacts of the COVID-19 pandemic, a concise overview of the developing situation is essential. Slovakia recorded the first case of COVID-19 on 6 March 2020 and the first death attributed to the pandemic on 1 April 2020. As of 1 February 2021, Slovakia had 250,307 cases and 4,711 deaths<sup>1</sup>. The country's initial response was good, as several schools, universities and businesses were closed and border controls and a compulsory quarantine for people returning from abroad were introduced. However, the number of new cases began to increase in July 2020 (Ministry of Investment, Regional Development and Informatization of the Slovak Republic, 2021). In response, in late October and early November, Slovakia became the first country in the world to test its entire population (except for minors under 10 years of age) by using antigen tests (IZA, 2020; Holt, 2021). The overall economic impact of the COVID-19 pandemic on Slovakia in the first and second quarters of 2020 was relatively significant, as foreign demand experienced a sharp downturn. Slovakia's GDP decreased by 3.9 % and subsequently by 12.1 % year-over-year; these declines were slightly larger than those in any euro-area economies (IZA, 2020). The sharp downturn of the economy was reflected in a higher unemployment rate which peaked at 7.9 % in February

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<sup>1</sup> Worldometer (2020), COVID-19 Coronavirus Pandemic (retrieved from <https://www.worldometers.info/coronavirus/>).

2021 (Central Office of Labour, Social Affairs, and Family, 2021). Rising unemployment has also affected labour migration flows and foreign employees, leaving them without income and causing various health and psychological issues (Smaranda *et al.*, 2020). According to data from the Bureau of Border and Foreign Police (2021), after a long period, the inflow of new foreigners to Slovakia was hindered. In 2019, almost 22,000 foreigners acquired residence permits in Slovakia while in 2020, it was only 6,937. Based on these data, we assume that the COVID-19 pandemic also affected the domestic labour market.

The analysis presented in this paper deals with the question of whether the loss of employment is felt in the same way by the foreign labour force employed in Slovakia, as the immigrants who, according to many authors, present the most vulnerable part of the society in comparison with domestic employees (Lippens *et al.*, 2021), and constitute an important proportion of the overall labour force. They often deal with the cultural nature of vulnerability, such as stereotypes, lack of acceptance amongst the autochthonous society, institutional discrimination or inability to speak the local language (Chen and Hoy, 2011; Heikkilä, 2005). There by, this actuality was the most prevalent reason to compile an article concentrating solely on foreign labour force. The paper will address a range of questions concerning the employment of immigrants in Slovakia and their resilience to unexpected shocks on the labour market, meaning that immigrants show competence in response to significant risk exposure (Smith, 2006). It seeks to gather detailed information about gender discrepancies among immigrants, focusing on the unequal rate of unemployment between male and female workers. To date, no research that would clearly confirm similar findings concerning the Slovak labour market has been published.

## 1. Literature review

Since terms such as “migrant”, “immigrant” and “foreigner” are repeatedly used in the article, an adequate explanation is required. In the literature, the terms “migrant” and “immigrant” and their definitions diverge from one another. The umbrella term “migrant” is generally used to refer to an individual who, for various reasons, leaves their country of origin and settles in another country<sup>2</sup>. The term “immigrant” is used to refer to individuals of foreign origin from the perspective of the receiving state. However, the above definition of the term “migrant” does not convey the temporal aspect. We find different perspectives on this issue as well. Migration is generally seen as a change of residence between states that lasts for at least one year. Oucho (1998) considers a change of residence after just one month to be migration. Different definitions of “immigrant” can be found around the world. However, although Slovak official authorities use the term “foreigner” instead of

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<sup>2</sup> IOM (2019), Glossary on Migration, Geneva: IOM.

“migrant” or “immigrant”, we consider the use of this term to be contradictory. It does not sufficiently include all persons who are not members of the autochthonous society. From a legal point of view, only those who do not have the nationality of the country of destination should be considered foreigners. However, different countries allow immigrants or their descendants to obtain nationality if they meet the legal conditions. In our text, we will use the term “immigrant” to refer to a person with citizenship from another country who has obtained residence and work permits in Slovakia, regardless of the length of residence.

Different approaches to defining labour market resilience can be found in the literature. In general, the term resilience is understood as the ability to withstand, recover from and adapt to unexpected external shocks (Anderson *et al.*, 2020). Håkansson and Bejaković (2020) emphasize the role of measuring labour market vulnerability or sensitivity to recession shock. According to Fenger *et al.* (2014, p. 496), labour market resilience can be understood “as the inclusive capacity of the labour market to resist, withstand or quickly recover from negative exogenous shocks and disturbances and to renew, adjust or re-orientate in order to benefit from positive shocks”. The COVID-19 pandemic has also caused an economic shock in Slovakia and is still negatively affecting some sectors of the national economy, especially the services sector (gastronomy, hospitality, travel). Government anti-pandemic measures, bans on movement within and across countries and the lower demand for certain services have had a negative impact on the overall employment rate, as many firms have had to reduce their staff numbers.

The inequality among employees is one of the leading economic issues the governments around the world are obliged to face. Recent economic downturns have significantly increased economic inequality and affected economic sectors differently, since most human activities that drive the economy have been restricted or banned (Bottan *et al.*, 2020). In general, people working in the unstructured and non-mainstream employment sectors, such as taxi drivers, restaurant workers, small retail vendors, construction workers, industrial labourers, and so forth, are more likely to face a serious crisis to maintain their jobs (Karim *et al.*, 2020). For instance, in Spain, until the summer of 2011, the economic crisis fundamentally affected men, primarily in the construction sector, after the real estate bubble burst. However, as of the third quarter of 2011, the impact of the crisis reached other sectors of services (public administration, education, health), with women suffering a significant number of dismissals (López-Sala and Oso, 2015). This is closely related to sex differences, as there is lower participation of men applying for positions in the hospitality sector. This might be argued by a higher interest in working in other sectors, predominantly in industrial production (Přívoraand and Kiner, 2020). In fact, there are certain similarities between the economic crisis from 2008 and the economic recession caused by COVID-19. For instance, many workers who lost their jobs during the pandemic were from service sectors typically dependent on people, such as restaurants, retail businesses and personal services, and they tended

to be younger, with less education, and more likely female (von Wachter, 2020; Adams-Prassl *et al.*, 2020; Borland and Charlton, 2020). At the individual level, the most significant factors found to be important are age, education, gender, and family composition (Baum *et al.*, 2008) but, due to the reduced availability of information, this chapter provides a detailed review of various factors affecting employment for which there is evidence and which form part of our research.

Perhaps the most important of these factors is education, which significantly influences an individual's probability of unemployment regardless of age (Monastiriotis and Martelli, 2021). In this regard, we agree with other authors (Dewen *et al.*, 2010; Pompei and Selezneva, 2019) who claim that education and training can significantly increase the probability of being a wage earner, and that highly educated people experience a lower unemployment risk. When people consider the economic profitability of education, they tend to raise the level and quality of their studies, especially because of the better employment conditions, salary and career prospects (Planas, 2011). Thus, we can assume that one's level of education has a positive effect and brings benefits not only for society, but also for the labour market and economy as a whole. To verify our assumption, at this point, we set the following hypothesis:

H1: Immigrants with higher education are more resilient to job loss.

Thus, it can be anticipated that the unemployment rate decreases with a higher level of education and, consequently, the employment rate increases. In developed countries, over the past decades, employment in the manufacturing sector has been continuously declining and has been replaced by higher employment in the services sector, especially in finance, real estate, insurance, and business services (Kniivilä, 2006; Ocampo, 2006). Work in these sectors is generally conditioned by a certain level of education. Furthermore, the growing level of automation and the relocation of production facilities to countries outside the developed economies reduces the prospects of unskilled people, leading to the need for further education. Thus, individuals with higher levels of education are more likely to be employed than those with lower levels of education, and are less often threatened by job dismissal. Some surveys are centred on employee resilience and the financial crisis which hit the world economy in 2008 – 2009. According to Doran and Fingleton (2016), in comparison with people of lower education, individuals with post-secondary non-tertiary education and tertiary education are the most likely to be employed (Doran and Fingleton, 2016). However, some employers negatively contribute to higher unemployment, as many place too much importance on formal education and often search for people with higher education despite the fact that such an education is not necessary for the position. This approach often leads to educational mismatches, especially when it concerns immigrant workers (Chiswick and Miller, 2009; Perry, 2007; Piracha and Vadean, 2012).

The importance of education is intensively discussed in other fields as well. Concerning migration studies and the nexus of education and employment of foreigners, the human capital theory claims that migrants are also influenced by the level of education, experience, skills, and language command when choosing their country of destination. Migrants will choose a country where they can make use of their skills. Qualified migrants will choose a country where they will be able to apply their education, while the unskilled will prefer a country where there is a greater demand for low-skilled labour, such as in agriculture, construction, or other services (Chračková and Smrčková, 2015; Massey *et al.*, 1993). Such numerous migratory flows might contribute to a country's modernisation by bringing new human capital; on the other hand, a donor country, such as Ukraine, can be heavily affected by the brain-drain (Androshchuk and Chernenko, 2016). In any case, better educated migrants undoubtedly have higher income potential and are less likely to work illegally (Docquier *et al.*, 2012; Fleischmann and Dronkers, 2010).

The other important factor when examining unemployment and resilience is gender (female penalty), often seen as a measure of discrimination in the labour market (Monastiriotis and Martelli, 2021). The position of men and women in the labour market still depends to some extent on the traditional concept of social roles, where men are considered the breadwinners of the family and women are responsible for taking care of the children and the household. Due to the pandemic and the subsequent transition to the distance learning model, many families were forced to address the question of how to combine work responsibilities with parental duties. As distance learning is still ongoing in many countries, including Slovakia, and requires increased childcare, the increased burden on housewives can lead to longer-term inequalities which might result in lower participation of women in the labour market (Hupkau and Petrongolo, 2020). In today's society, this model is already considered outdated, but gender discrimination persists. As a result, the probability of employment increases if one is a male (Doran and Fingleton, 2016).

A similar paradigm can be found among migrant workers. Male migrant workers are more likely to choose to become wage earners than females (Dewen *et al.*, 2010). This is closely related to the fact that women are less likely to migrate abroad than men; although UN data show that the proportion of women among migrants has increased steadily during the past 45 years, the percentage increase has been modest (Morrison *et al.*, 2008). Based on previous evidence, it is clear that female workers tend to be more affected by labour market imbalances; however, this might be closely related to the sectoral structure of the labour market. For instance, in Spain, the 2008 crisis had little impact on the employment of women, since the strong loss of jobs was felt in the construction sector and to a lesser extent in associated and predominantly male employment sectors, such as industry and transportation (Gil-Alonso and Vidal-Coso, 2015).

On the other hand, some authors suggest (Cajner *et al.*, 2020) that the COVID-19 pandemic may have a negative impact on women's employment. Based on the

literature concerning gender, we are interested in the range of impacts of the COVID-19 pandemic in accordance with the main goal of the work among foreign workers. In this regard, the paper intends to verify the following hypothesis:

H2: Female immigrant workers are less resilient to job loss in comparison with male workers.

Ethnicity and citizenship also affect employment outcomes (Wang and Lysenko, 2014). If we are to look at the general employment structure, the share of ethnic and racial minority workers in skilled occupations tends to be lower than that of workers from the dominant ethnic group in most countries. Obviously, the differences in education certainly explain some of these disparities (United Nations, 2016). Some surveys conducted in the United States focused on examining disparities among people of minority race or ethnicity. They showed that African-American and Latinx employees might be vulnerable to negative economic shocks due to layoffs caused by COVID-19 because of relatively limited savings and wealth which, in the long-term view, contributes to racial inequality in the United States (Canilang *et al.*, 2020). An employee's origin, race or ethnicity might be an unfavourable factor affecting employment although it is frequently caused by a combination of different factors leading to curtailed employment opportunities. Couch *et al.* (2020) attached great importance to the unfavourable distribution of employment across occupations, lower skills, less potential experience and fewer opportunities to work remotely. On the other hand, the authors claim that the gap in BAME (black, Asian and minority ethnic) and Anglo-Saxon unemployment did not widen, because the unemployment rate increased by about the same amount across the two groups while, in fact, minority employees were partly protected due to a mix of the industries in which they are employed. Minority workers were disadvantaged later on as domestic citizens of Anglo-Saxon origin were disproportionately rehired (Couch *et al.*, 2020). In this regard, it is essential to stress the buffer theory, according to which migrants leave some labour sectors and jobs, such as in services or agriculture, that are once again occupied by natives, (López-Sala and Oso, 2015). The results of the research conducted in the UK show that, compared with the UK-born, white British, BAME migrants are more likely to experience job loss during the COVID-19 lockdown (Hu, 2020). A similar pattern held true for the 2008 economic crisis, as EU citizens had a higher probability of being employed than non-EU citizens (Doran and Fingleton, 2016).

## 2. Methods and data

Slovakia's geographical location and higher standard of living are extremely important factors that make it not only a transit country but also a destination for migrants, especially for economic migrants from former socialist countries, such as Bulgaria, Romania, Ukraine (Přívvara, 2021). Although Slovakia has historically

been considered a country of emigrants, according to Divinský (2007), the new socio-economic situation that developed in Europe and Slovakia after 1989 brought a major turnaround. After many years of population decline due to emigration, the Slovak Republic has recorded a growing official migrant population (Divinský, 2007). According to the latest data, there are 150,012 foreigners (2020/12) in Slovakia (Bureau of Border and Foreign Police, 2021) with temporary or permanent residence. The overall number of foreigners represents less than 2.8 percent of the total population. Of these, 90,806 were foreigners from countries outside the European Union: most were originally from Ukraine (42,162), followed by Serbia (16,005), Vietnam (6,798), Russia (5,658), and China (2,695). The Centre for Labour, Social Affairs and the Family keeps statistics that track their employment. According to their data, 69,012 foreigners are currently working in Slovakia (2020/12) (Central Office of Labour, Social Affairs, and Family, 2021).

In addition, the research is centred on examining the rate of unemployment in relation to the level of education, and on finding an answer to the hypothesis of whether unemployment growth equally affected all employees based on their education. In this case, lower-skilled workers are more at risk than university-educated workers (Adams-Prassl *et al.*, 2020). As education systems may vary between countries, it is essential to determine a classification of education. The educational levels used in the Slovak Republic and EU countries are based on the International Standard Classification of Education-97 (ISCED-97) (International Labour Organization, 2021) – an international classification for organising education programmes and related qualifications by levels and fields (Ministry of Education, Science, Research and Sports of the Slovak Republic, 2021). However, the levels of education must be adjusted to the COLSAF classification, and related levels of education are put into four clusters. In terms of occupation, we opted for the International Classification of Occupations (ISCO) system, which is commonly used in national contexts for the collection and dissemination of statistics.

To prove or debunk the hypotheses, data (from 02/2020 to 02/2021) compiled by the Central Office of Labour, Social Affairs, and Family (COLSAF) will be analysed and compared (in percentage points) on a monthly basis. One of the complications we dealt with when preparing the article was the relative lack of data. Our primary goal was to identify the educational structure of male and female workers, as well as their education levels and occupations; we hoped this would help us calculate the significance of each variable. However, since the data we obtained were not suitable to meet our goals, we opted for the time series method. We also need to stress slight deviations in our calculations since not all information about migrants in Slovakia is processed and available. The fact that the data only include legal employment represented another obstacle. We did not possess any data about illegal employees or immigrants. The time series method enables us to precisely gauge monthly fluctuations and shows how the number of examined immigrants



changed over time. In addition, this method can be used for forecasting future trends. It has the following formula:

$$Tc_{\Delta t} = \frac{y_t - y_{t-1}}{y_{t-1}} * 100$$

where  $T$  means time series,  $c$  refers to the relative increment coefficient, and  $y_t$  is the observed period for time  $t$ .

In addition to dealing with education and gender, the literature review chapter presents sectors of the economy that are more likely to suffer from extraordinary layoffs during economic crises and recessions.

**Table 1. Examined variables**

Gender	Male	
	Female	
Educational Level	NS+PE (Group 1)	No schooling (NS) Primary education (PE)
	LSE+SE (Group 2)	Lower secondary education (LSE) Secondary education (SE)
	USE+GUSE+PNE (Group 3)	Upper secondary education (USE) General upper secondary education (GUSE) Post-secondary non-tertiary education (PNE)
	FTE+STE+TTE (Group 4)	First stage of tertiary education (FTE) Second stage of tertiary education (STE) Third stage of tertiary education (TTE)
	Occupation	Managers Professionals Technicians and associate professionals Clerical support workers Service and sales workers Skilled agricultural, forestry and fishery workers Craft and related trades workers Plant and machine operators and assemblers Elementary occupations

Source: Authors' representation

### 3. Results and discussion

The following section presents the results which we obtained according to the time series methodology. A study centred on the nexus between the labour market and the pandemic conducted in the United States, China, South Korea, Italy and the United Kingdom (Dang and Nguyen, 2020) suggests that women are more likely to lose their jobs permanently due to the outbreak. The authors of the study argue that women expect a decline in income compared to men. For this reason, they can reduce

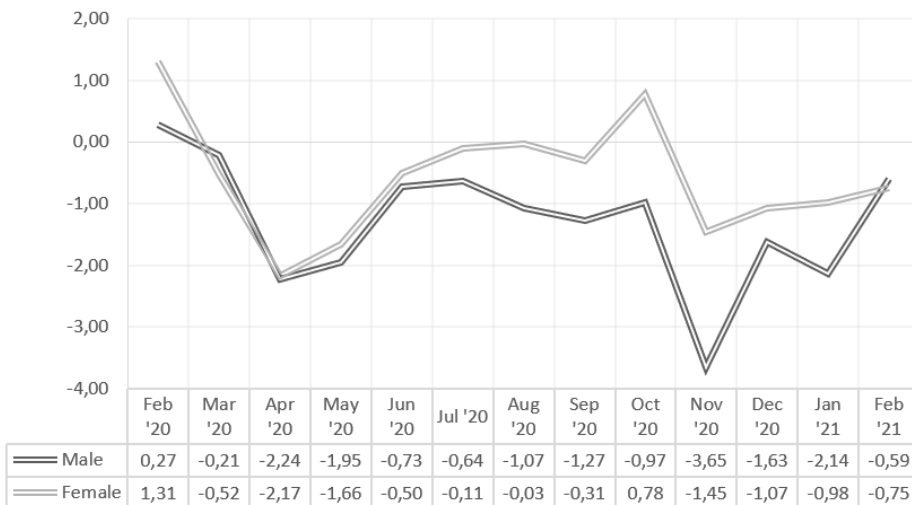
consumption and increase their savings. In the first half of 2020, Foucault and Galasso (2020) examined the labour market in 12 economically developed countries and concluded that, during the pandemic, women in countries such as Austria, Germany, Poland and Sweden stopped working rather than men. Thus, while we expected that women are more vulnerable in the labour market than men, we analysed the growth of unemployment of both genders.

Unemployment escalated higher for men than for women and, in contrast, female unemployment appears to be more resistant to decline. A similar effect was registered in Chile during the COVID-19 pandemic (Rivera and Castro, 2021). The first effects of the Corona crisis on the unemployment rate can be observed at the beginning of the examined period. In the initial phase of our analysis, there was an overall increase in the number of migrant workers in Slovakia, predominantly women. However, in the next period – March 2020, the total number of employed foreigners decreased. A significant decline especially affected female migrants, yet, in the following period, the share of female and male migrants decreased at approximately the same rate (2.17 – 2.24 %). Our analysis reveals that the unemployment for both groups of migrants continued in May and June 2020, at a range of 1.66 – 1.95 %. The number of unemployed also increased in June 2020 at a rate of 0.73 % for men and 0.50 % for females. The initial phase of the relatively sharp unemployment growth was followed by a continuous rise in the subsequent period, but at a slower rate – especially for female migrants; in July 2020, their number decreased by 0.11 % compared to the previous month and, in August, only by 0.03 %. Male migrants were affected more significantly than female migrants. In the same period, the number of male foreign workers decreased by 0.64 % and, in the following month, by up to 1.07 %. Figure 1 shows that, in October 2020, the number of female foreign employees increased by 0.78 % compared to September. Based on the time series, during the period between November 2020 and February 2021, the pandemic mainly affected male migrants. Specifically, in November, we recorded the largest relative drop in employees by 3.65 %, while we recorded a decrease by 1.45 % for females. In the last analysed period, the rate of decline stabilized at approximately the same level for both groups. Our findings might be surprising, but certain a similarity could have been witnessed in Asia, particularly in the Philippines, where male unemployment deteriorated more than female unemployment due to the bigger decline in the tradeable and industrial sectors (Lim, 2000). In some cases, as Taylor *et al.* (2011) claim, male employment is prone to recover more quickly than female employment.

We believe that women can react differently than men for several reasons. For instance, the unequal pay between men and women could have been decisive this dilemma. According to the data of the Statistical Office of the Slovak Republic (2020), the average monthly gross wage of men was 1,399 euros, while women earned 283 euros less. Given this unequal remuneration, we assumed that wage levels would dictate who would assume a greater role in childcare during the

pandemic. Wage disparities between men and women thus lead to a deepening of inequalities of parental roles. However, based on our observations, we can reject the hypothesis (H2) that *female immigrant workers are less resilient to job loss in comparison with male workers* since the pandemic crisis had a greater effect on male migrant workers employed in Slovakia. In February 2020, COLSAF registered 57,275 male workers and 19,813 female workers of other nationalities, while in February 2021, their numbers were 48,322 and 18,372, respectively. This represents a year-on-year decrease by 15.63 % for men and 7.27 % for women.

**Figure 1. Employment of immigrants based on gender 02/2020 – 02/2021 (in %)**



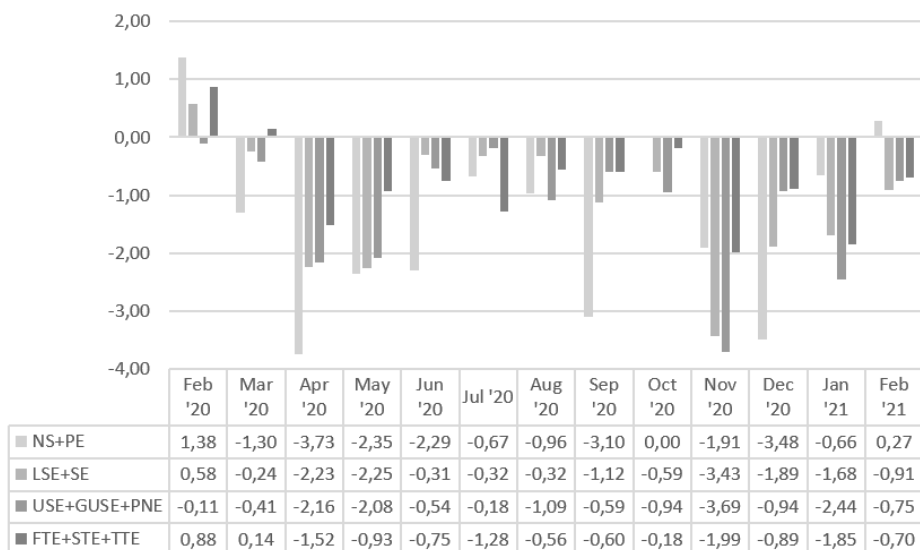
Source: Authors' representation based on COLSAF (2000 – 2021)

Given the adverse impact of the COVID-19 pandemic on global economies, issues related to education and employment are at the forefront of the interest of politicians, employers, but also researchers. Education directly affects the economy, having an important impact on its future overall development, and is becoming increasingly important in the knowledge-based society, primarily at a time of significant social and economic change.

The following section discusses unemployment growth in terms of education according to the International Standard Classification of Education-97 codes, which have been collapsed into groups as stated in Table 1. We assume that educational differences also explain the higher unemployment rates among some migrant groups. While some variables, such as gender, are not necessarily related to economic recession and consequent layoffs, others, such as education, might be relevant. In the first time period, before the outbreak of the COVID-19 pandemic, there was a 1.38 % increase of migrants with either no or primary education. Only Group 3,

representing migrants with USE, GUSE, and PNE, experienced no increase during the analysed period. The first case of COVID-19 in Slovakia was registered in March and led to the adoption of certain restrictions. The measures mostly affected migrant employees with primary or no education, while foreigners with any form of secondary education experienced a relatively small decrease, no more than 0.41 % compared to the previous month. The number of the tertiary educated employed even increased by 0.14 %. However, in April, we can observe a significant downturn among all examined groups. The most vulnerable was Group 1, while Groups 2 and 3 experienced a decline of 2.23 % and 2.16 %, respectively. In the next month, the growth of unemployment affected Groups 1, 2, and 3 more or less evenly, while Group 4 was found to be the most resilient; however, in July 2020, the pandemic disproportionately affected tertiary educated foreigners. The existing literature shows that it is essential to take into account that migrants have poorer school-to-work transitions, and that higher educational attainment is not correlated to labour market success (Manhica *et al.*, 2018). In the same way, the current crisis affected the secondary educated in November 2020, when their number decreased by approximately 3.50 %. At the beginning of 2021, all of the observed groups were affected by layoffs while in February 2020, there was higher unemployment among primary educated migrants (including migrants with no education). To conclude, we can certainly accept the hypothesis (H1) that *immigrants with higher education are more resilient to job loss*.

**Figure 2. Employment of immigrants based on education 2020-2021 (in %)**



Note: To understand the abbreviations used in the figure, see *Table 1*.

Source: Authors' representation based on COLSAF

In terms of year-on-year rates, the overall number of Group 1 employees was reduced by 17.36 %, Group 2 by 13.81 %, Group 3 by 14.86 % and Group 4 by 9.78 %. Group 2 migrants, possessing a lower level of education than Group 3 migrants, were slightly more resilient to the unfavourable impacts of the pandemic. The most significant difference (7.58 %) was recorded between Group 1 and 3. According to the figures, we believe that education has the potential of mitigating unfavourable labour market outcomes.

The unemployment among individual groups of migrants has been previously discussed. However, we were also interested in finding out which sectors experienced the most significant reduction in employees, and the percentage of the decrease from February 2020 to February 2021. Managers experienced an approximate decrease of 9 percent (258 employees). At the end of the analysed period, COLSAF registered 2,620 foreign workers performing the profession of manager. For professionals, we recorded a year-on-year increase of 32 employees, amounting to a total of 6,859, which represents a 0.47 % year-on-year increase. This was probably due to the higher demand for medical workers who are included in this category.

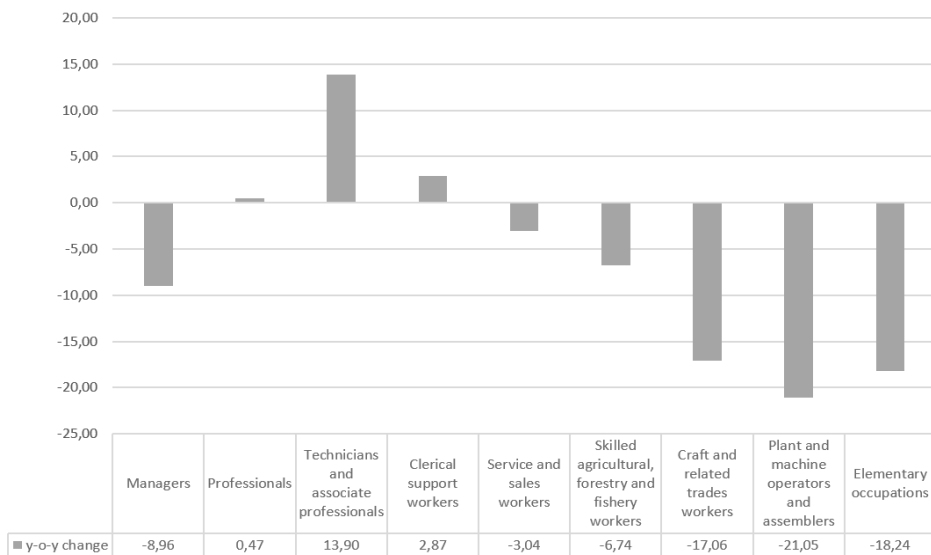
Foreign technicians and associate professionals recorded a 13.90% increase (from 3,526 to 4,016 employees). A lesser increase among clerical support workers was also recorded. It is evident that the negative impact of the COVID-19 pandemic was more severe for workers more exposed to disease and those who work in proximity to co-workers (machine operators, assemblers, etc.), while the effects were significantly less weighty for employees who could work remotely, such as clerical workers (Béland *et al.*, 2020). Their numbers increased from 3,733 to 3,840. It mostly concerns less qualified workers who, due to the nature of their work, cannot perform work from home (Adams-Prassl *et al.*, 2020). The total number of service and sales workers declined by 167 employees, which represents a decrease by 3.04 %. The situation among skilled agricultural, forestry and fishery workers was slightly worse. The number of migrants working in the agricultural sector decreased by 6.74 % between February 2020 and February 2021, which represents a drop by only 32 employees.

The most dramatic decline was suffered by craft and related trades workers, plant and machine operators, assemblers and elementary workers. In the first case, there was a decrease by 1,825 from the original 10,699, while for elementary workers there was a more than an 18 percent decrease. In absolute figures, this represents a reduction by 2,133 employees, whose number, according to the data, was 9,564 in February 2021. The largest employers of foreigners in Slovakia are found in the industrial sector. At the beginning of the observed period, 31,226 non-Slovaks worked as plant and machine operators, but this number fell to 24,653, a decrease by more than 6,500 employees. Certain similarities were witnessed in the U.S labour market, as well, where the increased resilience of essential and “front-line” workers

was also detected by Forsythe *et al.* (2000), while the largest losses were in the leisure and hospitality industry.

Education and work are closely linked elements that make up any democratic society. Individuals who suffer a higher level of social injustice (such as layoffs) are usually characterized by educational deficiencies and, consequently, by a high unemployment rate. Highly skilled immigrants have higher employment levels compared to less educated immigrants (Irastorza and Bevelander, 2021). Similar phenomena might be observed in Slovakia, as foreigners with less education are less resilient to the pandemic. We assume that educational levels are reflected in the occupational structure. Thus, sectors which are thought to employ the most people with lower education are more vulnerable to impacts of economic crises or recessions.

**Figure 3. Unemployment growth of immigrants based on occupation 02/2020 – 02/2021 (in %)**



Source: Authors' representation based on COLSAF

In the case of Slovakia, a certain correlation can be found between Figures 2 and 3. The most vulnerable individuals (from Group 1) are expected to perform elementary and supportive tasks, or work in craft and related trades, and as plant and machine operators and assemblers. On the other hand, tertiary educated migrants are the most resilient. Based on Figure 3, we noted an increase of technicians and professionals – professions which normally require a certain level of university education. Similar conclusions were also presented by Couch *et al.* (2020). They

point out that higher unemployment growth predominantly concerns service workers, sales workers and manufacturers.

Some authors (Cajner *et al.*, 2020; Dang and Nguyen, 2020; Maestriperieri, 2021) claim that gender is a variable which might have a more significant impact on the most vulnerable segments of societies. However, as the data suggest, this is not the case for Slovakia. Lower unemployment growth might be related to the sectors in which female migrant workers are employed. While drawing conclusions, we considered the fact that female migrant applicants tend to seek jobs in the hospitality industry and work as sales and service workers (Bråten *et al.*, 2012), posts which do not require physical strength. Since the most significant layoffs affected assemblers, craft workers and support staff – typically male professions, this greatly contributed to the lower rate of unemployment of female workers. Gil-Alonso and Vidal-Coso (2015) found a similar scenario in Spain where, until the summer of 2011, it was a basically male crisis, with hardly any direct impact on female employment.

## Conclusions

The COVID-19 crisis has had serious impacts on the economy and labour market of Slovakia. The results from our study suggest that the impacts are unequally distributed across the foreign population. The paper aimed to analyse the resilience of migrant employment during the COVID-19 pandemic in the context of Slovakia, while taking into account variables, such as gender, education, and occupation. There is a significant difference between male and female migrant workers. The data obtained using time series methodology revealed that female migrants were more resilient to the unfavourable impacts of the COVID-19 pandemic between February 2020 and February 2021. On the other hand, unemployment growth of male foreign workers almost doubled compared to that of women migrants. Unemployment rates rose symmetrically but, since June 2020, we observed certain discrepancies between genders (Figure 1). Therefore, we reject our hypothesis and claim that male foreigners employed in Slovakia were unequivocally hit disproportionately hard by COVID-19.

The paper also examines educational patterns in unemployment impacts of COVID-19 (Figure 2). Workers with little or no education are significantly more likely to have lost their job, while individuals possessing secondary or tertiary education are considered more vulnerable to negative impacts of the pandemic. The most dramatic drop of primary-educated employees or workers with no education can be observed from April to June 2020 and September, November, and December 2020. When speaking of the secondary and tertiary educated, their relative proportion decreased significantly during April, May, and November 2020, as well as in January 2021.

The article has also focused on the occupational structure and related unemployment growth. The most vulnerable sectors are industries comprising

assemblers and machine operators. Craft workers and support staff are also among the least resilient occupations. On the other hand, the overall number of technicians and associate professionals increased. Growth, albeit to a lesser extent, was also recorded for clerical support workers and professionals (Figure 3). Further research on this topic is planned. It will focus on a comparison of migrant workers and the domestic population, as our intention is to find out if the migrant status is associated with lower resilience to unfavourable conditions on the labour market.

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