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Original Paper

The determinants of unemployment in the regions of Nitra and Prešov

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ABSTRACT

The aim of the paper is to analyse and compares the factors influencing unemployment in two regions of Slovakia: Nitra and Prešov. The main objective was to identify and evaluate the factors that affect regional differences in unemployment. The statistical analysis is based on data from the Statistical Office of the Slovak Republic for the period 2001–2024. The study uses descriptive statistics and a t-test to examine the development of unemployment rates, the structure of job seekers by age and education, and the availability of job opportunities. The results show that the Prešov Region faces persistently higher unemployment. This is due to a lack of job opportunities. It is also due to a higher share of long-term unemployed people. And it is due to lower educational attainment. In contrast, the Nitra Region demonstrates greater economic stability, supported by stronger business activity, higher wages, and better infrastructure.

KEYWORDS: factors influencing unemployment, regional differences in unemployment, unemployment rate, problem of unemployment, number of unemployed

JEL CLASSIFICATION: E24, E66, J69

INTRODUCTION

Unemployment is a significant socio-economic problem of our time with global implications. There is no universal solution to this phenomenon, as its development is conditioned by the economic situation, political decisions, and other macroeconomic factors.

After 1989, the Slovak Republic underwent a fundamental economic transformation, which led to a transition to a market economy and the emergence of unemployment as an economic indicator. Before this period, full employment was typically ensured by administrative measures. The first registration of jobseekers in the Slovak Republic took place in February 1990, when 1,949 people were registered with the labour offices and the unemployment rate

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reached 0.07%. (Grekousis, 2018). At the end of 1990 there were 30,000 unemployed registered in Slovakia, the extreme growth came the following year and the number of unemployed exceeded 300,000 at an unemployment rate of 11.8% (Ermurachi, 2023). Mass unemployment is defined as a situation in which the unemployment rate exceeds 10%. Its occurrence is the result of a complex set of economic, social, and societal factors, which manifest themselves, for example, in the deterioration of the population's health, the weakening of family structures, and an increase in the incidence of socio-pathological phenomena. Unemployment usually arises as a result of a slowdown in economic activity, which has a negative impact on the overall performance of the national economy. According to Svabová et al. (2021), the Graduate Practice program is one of the key instruments of active labor market policy in the Slovak Republic, aimed at increasing the employability of young graduates. The measure is primarily intended for job seekers under the age of 26, and similar support mechanisms are also applied in other European Union member states.

The relationship between loneliness and unemployment among people of working age was analyzed by Casac and Román (2023). The authors point out that loneliness can increase the risk of unemployment, with this effect being more pronounced among people with poor physical health. These findings suggest the need for targeted intervention aimed at reducing loneliness, particularly through support from employers and public institutions. Such measures can contribute to improving the health and overall quality of life of individuals. The link between employment status and health is also confirmed by the findings of Ikar et al. (2022). Their analysis, based on data from two surveys, focused on the frequency of contacts with general practitioners and patients' subjective experiences. The findings showed that unemployed people sought out general practitioners more often than employed respondents, in 65.9% of cases compared to 42.9% of working people.

The transition from unemployment to returning to work is one of the key challenges facing the labor market. This issue was addressed by Caporale et al. (2022), who examined the relationship between individuals' health characteristics and their ability to re-enter the labor market. The research was conducted on a sample of the Finnish population aged 30 to 60 who experienced a period of unemployment between 2009 and 2018, with follow-up conducted over a two-year period from the start of unemployment. The findings point to a complex interaction between health status and employment status. Unemployment can initiate or exacerbate health problems, while existing health limitations can significantly complicate the process of reintegration into the labor market. The probability of successful employment is lowest among people with mental disorders or addictions, who face both health and social barriers to entering the labor market. Abrhám and Vošta (2022) examined the economic impact of unemployment in the context of the pandemic and what greatest negative impacts were experienced by young people. The COVID-19 pandemic has had a significant impact on the young population, which has found itself outside the labor market more often than other age groups. Many young people have lost their motivation to actively seek employment, highlighting their vulnerability during times of economic and social uncertainty. Additionally, an analysis of employment support units revealed that young people were more negative about the prospect of future employment than middle-aged people after the onset of the pandemic (Hayes,2025). Enache (2024) examined differences between firms created by unemployed people compared to firms created by employed people. Research shows that unemployed individuals are more likely to try to start their own small business. However, these entrepreneurial efforts are often unsuccessful. Support for entrepreneurship among the

unemployed clearly yields only limited results, with little impact on job creation and low productivity in the companies thus established. The development of the economic condition of the Slovak Republic in the context of the impacts of the pandemic caused by the virus known as SARS-CoV-2 is assessed by Tomková (2024) et al. The economic development and changes in the economic condition of Slovakia are compared with those of selected EU countries, taking into account the effects of previous global crises, with a particular focus on the impacts.

Social issues were part of the analyses conducted by the authors. Bieszk – Stolorz and Dmytrów (2022) dealt with social problems in the context of unemployment. The authors examined whether social enterprises in developed and developing countries face the same social challenges, pursue identical goals, and generate similar social impact. To this end, they reviewed 50 academic studies on social entrepreneurship, which provided a comprehensive picture of the issue. The analysis revealed a significant difference in the priority of the problems addressed. In developed countries, social enterprises focus primarily on "secondary social challenges," which include improving education, healthcare, environmental protection, and addressing wealth inequality. In contrast, enterprises in developing countries focus primarily on "primary social problems" such as illiteracy, low school attendance, poverty, unemployment, social exclusion, gender inequality, and poor healthcare infrastructure. Hayes (2025) analysed the social bases of the various levels of unemployment available and listed measures to eliminate unemployment.

Unemployment is a persistent problem in Slovakia, impacting the economy and creating various challenges for individuals. Escario (2022) examined unemployment across four regions of Slovakia between 1999 and 2016. The highest unemployment rates were recorded in the eastern parts of Slovakia, while the Bratislava region had the lowest rates. The analysis also highlighted the existence of gender differences in employment. Since 2016, female unemployment has increased by 22.73% in Bratislava, 86.11% in the west of the country, 29.41% in the central regions, and only 2.80% in the eastern regions. These figures indicate that the dynamics of female employment vary significantly between the different regions of Slovakia. Müller et al. (2020) addressed current unemployment issues in Slovakia, providing definitions, types, and an analysis of unemployment based on selected demographic factors.

MATERIAL AND METHODS

The data used to analyse the results were obtained from the Statistical Office of the Slovak Republic website (2025) and Eures Slovakia (2025). We will use the t-test to determine whether there is a significant difference in the consumption of dairy products. The t-test is used to determine whether the difference between sample means is statistically significant. Its name is derived from the t-score of the normal distribution. According to Eden and Yates (2009), Švábová et al. (2021) t-tests are the most commonly used statistical tests in various scientific fields, such as economics, medicine and others. Before using the F-test, it was necessary to verify that the values had a normal distribution. Our research sample consisted of data on unemployment in the Nitra and Prešov regions from 2001 to 2024. The focus of Gregušová (2025) is on the monitoring of key development indicators, including unemployment, the structure of applications by age and education, job availability, and other relevant factors. These data are drawn from official statistical databases.

The values shown in Table 1 were used to compare the number of unemployed people in each year. The aim of the research was therefore to determine whether the number of unemployed people in the regions under study differed significantly between 2001 and 2024.

The research hypotheses were proposed on the basis of theoretical knowledge and economic practice, with the aim of providing a practical solution to the economic challenges faced by the industry. The research tested the following hypothesis:

H0: The difference in the number of unemployed is not statistically significant when comparing the period 2001-2024.

H1: There is a statistically significant difference in the number of unemployed people when comparing the period 2001-2024.

RESULTS AND DISCUSSION

A t-test is a statistical test used to determine whether two population means are different when the variances are known and the sample size is large. The issue of t-tests has been addressed by authors such as Šoltés et al. (2015). Using t-test, we will test the null hypothesis. The t-test is a statistical test used to determine eures if the means of two populations are different when the variances are known and the sample size is greater than 30. Table 1 shows the number of unemployed persons in the Nitra and Prešov regions between 2001 and 2024.

Table 1 Number of unemployed persons in the Nitra and Prešov region

year	region Nitra	region Prešov	Slovakia	year	region Nitra	region Prešov	Slovakia
2024	3.67	7.94	5.2	2012	14.08	20.66	14.0
2023	3.62	6.36	5.8	2011	13.27	18.95	13.6
2022	3.85	9.98	6.1	2010	11.76	17.75	14.4
2021	4.80	10.75	6.9	2009	11.72	18.29	12.0
2020	5.50	11.39	6.7	2008	7.41	12.86	9.5
2019	2.93	8.19	5.8	2007	7.1	12.06	11.2
2018	3.12	8.61	6.5	2006	9.09	13.68	13.4
2017	4.05	9.68	8.1	2005	11.39	15.77	16.3
2016	6.96	13.91	9.7	2004	14.80	17.50	18.2
2015	9.71	15.50	11.5	2003	19.07	19.57	17.5
2014	11.21	17.45	11.5	2002	21.51	23.00	18.5
2013	12.52	19.35	14.2	2001	23.12	23.96	19.1

Source: data from the Central Office of Labour, Social Affairs and Family, author processing

In the table 2 we test the null hypothesis which states that there is a significant difference in the number of unemployed between Region Nitra and Region Prešov.

Table 2 shows that the absolute value of the t-test is 2.92 for the Nitra and Prešov regions (201-2024), and the critical value is 1.68 at the chosen significance level. The null hypothesis is rejected because the t-test value is greater than the critical value. We accept the alternative hypothesis. This means we accept that there is a significant difference in the number of unemployed people.

Table 2 Results of t-test

t-Test: Two-Sample Assuming Unequal Variances		
	Region Nitra	*Region Prešov*
Mean	9.84	14.38
Variance	33.75	24.1
Observations	24	24
t Stat	-2.92	
t Critical one-tail	1,68	

Source: own processing

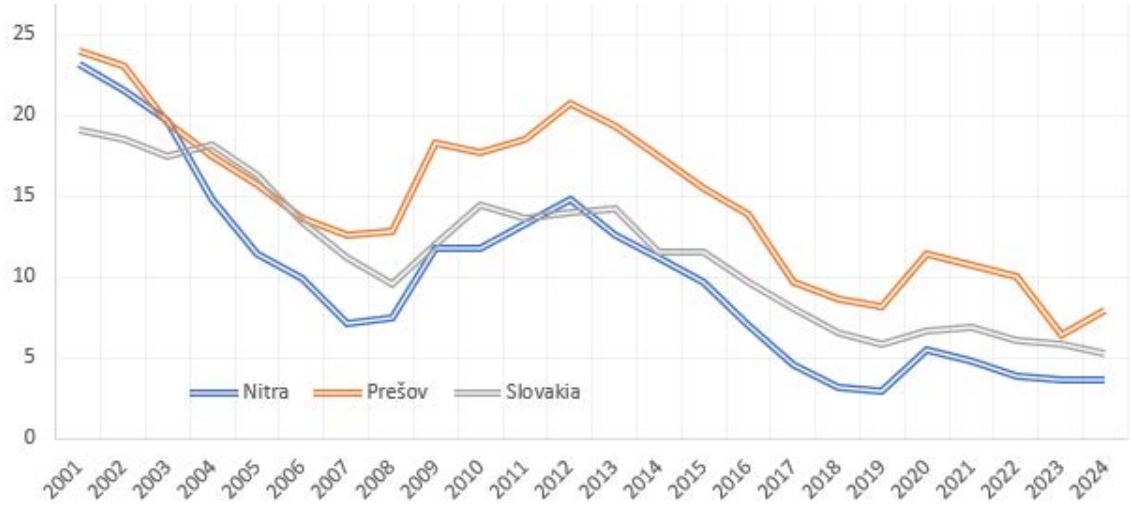

Figure 1 Long-term unemployment trends in selected regions (%)
Source: own calculation

Figure 1 shows the long-term development of unemployment, with periods of growth and decline alternating regularly.

Four main stages of development can be distinguished in the period under review:

2001–2008: Gradual decline in unemployment - initially high values (20–25% in Prešov, 15–18% in Nitra) fell by approximately 8–10 percentage points by 2008, this decline was linked to economic growth prior to the 2008 financial crisis.

2009–2013: Crisis period and renewed increase - the financial crisis caused a sharp rise in unemployment in 2009 – above 20% in Prešov, approximately 15% in Nitra, and around 14% on average across Slovakia, the peak was around 2013, followed by another decline.

2014–2019: Significant improvement in the labor market - unemployment reached its lowest level for the entire period during this period: Nitra: around 5–6%, Slovakia: approximately 7% and Prešov 9–10%, regional differences narrowed, but the Prešov region remained the worst in Slovakia.

2020–2024: Pandemic and post-pandemic increase - since 2020, there has been a renewed increase in unemployment, particularly in 2020–2021, from 2022, the trend improves slightly, but in 2024 the figures are still higher than before the pandemic, regional differences persist, although they are slightly decreasing.

Using analysis, we have identified factors that significantly influence the unemployment rate in the Nitra and Prešov regions.

The dearth of employment prospects: An Important Factor Affecting the Unemployment Rate, the Prešov region is characterized by a low ratio between the number of job vacancies and the number of job seekers. People who want to work often have no way of finding employment on the labor market. The Nitra region has better job opportunities and a lower unemployment rate compared to the Prešov region.

Population migration: The shortage of job opportunities leads to high unemployment, but also to a massive outflow of population, either to other regions of Slovakia, especially to the economically stronger Prešov district, or beyond the borders of the Slovak Republic. More remote districts such as Medzilaborce, Stropkov, and Snina are most affected by this situation because they lack an industrial base and sufficient industrial infrastructure. The concentration of job opportunities in the districts of Prešov and Poprad is not sufficient to meet the needs of the entire region.

Long-term unemployment: It is high in the Prešov region, with an average of more than 20,900 people long-term unemployed in 2023. In the Nitra region, long-term unemployment is lower and job seekers have a better chance of re-entering the labor market. Országhová and Chlebcová (2023) examined the relationship between the level of education of residents and the unemployment rate, focusing on evaluating data on the districts of the Nitra Region in the Slovak Republic. They confirmed that unemployment is lower in districts where residents have a higher level of education.

Level of education of the population: In the Prešov region, unemployment is highest among people with no education or only basic education. These people have less chance of finding a job, especially in an environment with a low number of jobs where employers prefer more qualified job seekers.

CONCLUSIONS

We compared the Nitra and Prešov regions and found that the Nitra region has better conditions in some ways. job availability, as reflected by a lower unemployment rate. In contrast, the Prešov region has a significant imbalance between job seekers and vacancies, resulting in persistently high unemployment. This region also experiences a higher population outflow to other regions and abroad. Our research also revealed that a higher proportion of the unemployed population in the Prešov region have low or basic levels of education. Additionally, a significant number of individuals aged 35-45 are out of work, and their skills no longer align with the demands of the labour market. Our research identified the following

factors: the level of education and age structure of the unemployed; job availability; and population migration. The number of long-term unemployed people represents a specific group with reduced chances of finding employment in the labour market, also plays a significant role. The Nitra region is characterised by more favourable labor market conditions, supported by a better balance between supply and demand for jobs and lower unemployment. In contrast, the Prešov Region faces deep-rooted structural problems. These include a high proportion of people with low levels of education. There is also long-term unemployment. There is a continuing outflow of labor. Addressing these disparities will require targeted measures to improve skills, increase job opportunities and reduce migration.

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