

SPECIFICS OF LABOR MOBILITY IN AREAS OF THE SLOVAK REPUBLIC

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Abstract

In June of this year, an amendment to the Act on Employment Services came into force in Slovakia, to make the conditions for entitlement to a work-related allowance and a work mobility allowance more attractive. However, in addition to the costs of labor mobility also other determinants influence the decision-making of individuals on the allocation of time to the commuting to and from work. The aim of the scientific paper is to quantify the average weekly time spent on commuting in the Slovak Republic at NUTS 2 level and to identify the differences in the determinants affecting the labor mobility in the surveyed areas. From the source database, which is the result of a questionnaire survey conducted in April 2017, we use data on employed respondents aged 15-64 in a total of 1 537. In the statistical testing, we use regular logistic regression, Kruskal-Wallis test and Fisher exact test.

Keywords

Labor Market, Labor Mobility, Commuting, Determinants, Slovak Republic

I. Introduction

An individual entering the labor market has, in addition to human capital, the time that divides between paid work, unpaid work (childcare, cleaning, shopping, etc.) and leisure time. Time spent in paid work does not only include time spent at work, but also time spent on commuting to and from work. Thus, labor mobility is important in terms of time allocation in households in the context of work-life balance. At the same time, it is one of the key factors affecting labor supply flexibility, which is being put under increasing pressure from labor market needs.

The labor market in Slovakia is characterized by certain specifics. The imbalance between labor demand and supply has been manifested in the Slovak Republic since its inception. With respect to economic theory, we believe that, in view of the unemployment rate, its value should be at the level of the natural rate of unemployment, which e.g. Kličková, Kotlán et al. (2012) consider one of the indicators of the balance of the labor market. We can say that at present the unemployment rate in Slovakia is reaching its historical minimum and oscillates around the natural level. Nevertheless, the labor market situation is not satisfactory. Chovanculiak (2018) talks about two-dimensional Slovakia. On the one hand, there are regions such as Bratislava, Trnava and Trenčín, where the unemployment rate is below (or around) 4 %, and we can state that unemployment in these counties is not a problem. There is rather the opposite problem - the labor shortages. On the other hand, there are Banská Bystrica, Prešov and Košice region, where the unemployment rate is around 10 % or more.

In general, it can be said that the western part of Slovakia is characterized by a considerable concentration of economic activities, which, in addition to the location of the capital itself and transport accessibility, creates all the prerequisites for the expansion of the labor market in this territory. On the contrary, the eastern part of Slovakia and some districts of central Slovakia are also affected by their position and lower economic activity. The persistent problems with long-term and structural unemployment deepen the regional differences within the economy that have both microeconomic implications for the individual as well as the macroeconomic effects for the national economy. According to Workie and Štefánik (2014), efforts to eliminate these labor market distortions proved unsatisfactory during the existence of the Slovak Republic in particular through a passive labor market policy with the use of various instruments and did not produce desirable results.

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Despite significant regional differences in employment levels, regional labor mobility in Slovakia is relatively low and limits the assignment of vacancies to suitable job applications. Among factors that obstruct the labor mobility include poor transport infrastructure, relatively high travel and accommodation costs, and a poorly developed rental market. The situation is compounded by the unsatisfactory infrastructure and business environment that hinder the inflow of investment and job creation (Country Report Slovakia, 2016).

Whether and how much time individuals are willing to spend on commuting is influenced by many factors that policy makers should explore and take into account. Nevertheless, so far there are no analyzes in Slovakia concerning the phenomenon of labor mobility in its different dimensions. We believe that general surveys carried out in relation to the issue do not provide a relevant basis and sufficient starting points for economic policy makers. The implementation of an active and passive labor market policy following the reevaluation of the approach to higher financial support for labor mobility is becoming, to some extent, an economic experiment that may or may not produce the expected results.

For these reasons, we reflect on the current amendment (with effect from June 1, 2018) to the Employment Services Act no. 5/2004 Coll. in the selected paragraphs (§53, §53a, §53b, §53c), in order to promote labor mobility and reduce interregional disparities; the conditions for entitlement to a job attendance allowance and a work mobility allowance are becoming more attractive (the maximum monthly amount of these allowances increases). The allowance shall be granted monthly to cover part of the travel expenses for attendance from the place of residence or from the place of temporary residence of the employee to the place of employment stated in the contract of employment and back. In the year 2017, 5,719 applications were received for a job attendance allowance, of which 5,281 applications were approved (92.34 %). In 2017, a total of 5,252 applicants were provided for job attendance, of which 1,735 men (33,03 %) and 3,517 women (66,97 %) in the total grant amount of € 923,688. In 2017, compared to the previous year, there was an increase in the total number of applicants by 341 applicants and a reduction of the total amount of funding granted by € 34 236 (ÚPSVaR, 2018).

In addition to this, a transfer allowance is introduced to cover the costs of moving a citizen to a new permanent residence. These changes are intended to increase not only the daily labor mobility (in commuting theory) but also to make the change of residence more attractive, i.e. transfer to another territory. Recognition of the factors that affect labor mobility of economically active citizens becomes a possible basis for further implications of labor market policies.

Regional differences in the labor market in Slovakia stem from several of the aforementioned factors, e.g. location of territory, hard and soft infrastructure, availability of services, concentration of institutions and others. Labor market flexibility is a key factor not only for the competitiveness of the country but also for its regions. According to Eamets and Jaakson (2014), labor mobility is one of the essential components of labor market flexibility. In general, we distinguish spatial and structural mobility. While spatial mobility is related to getting employees to work, structural mobility reflects the ability of the workforce to change jobs between departments, or to adapt to new jobs and qualifications. The primary data from our research provides a sufficient basis for deducing conclusions and consequences following the spatial mobility of the labor force in Slovakia and finding the specificities between the regions of the country.

Many models of labor mobility at national and international level are presented in the literature. Many of them describe international migration versus internal (national) migration or interregional migration in Europe or elsewhere in the world. Methods and techniques used to analyze and investigate labor mobility include (Bălan, Vasile and Stănescu, 2013): the Markov chains method, the Harris-Todaro model with its variants and extensions, gravity model, models for the study of the economic impact of labour mobility in enlarged Europe, models for the study of researches mobility, models for the study of labour mobility through wage flexibility, models to characterize the impact of labour mobility on macroeconomic indicators.

Even though we assume that labor mobility increases the flexibility of the labor market and thus contributes to reducing regional economic disparities, there is no unambiguous answer from the theoretical point of view. According to traditional neoclassical models, migration should reduce regional differences. Dominating the impact of labor mobility on labor supply contributes to the convergence of labor market conditions. According to the traditional approach, therefore, there are no significant impacts on labor demand. As stated by Niebuhr et al. (2009), more recent theories suggest that job mobility strengthens the differences in regional employment, respectively unemployment and wages. In the relevant models, the impact of mobility is not limited to job offer, but is based on the impact on labor demand. According to some models of economic geography (Sudekum 2005, Epifani and Gancia 2005) migration can, due to external effects, lead to widening of differences in regional labor markets. Workers move to regions with low unemployment and high wages. Thus, labor market conditions in these prosperous regions further improve, while in the regions of origin the situation does not change.

Selective migration can also result in increasing regional disparities (Burda and Wyplosz 1992, Feser and Sweeney 2003). The inflow of high-skilled workers gives rise to productivity growth and increasing wages of workers in region of destination, whereas labor market conditions deteriorate in the region of origin. These effects of selective migration are due to complementarities among different factors of production in a neoclassical production function (Niebuhr et al., 2009).

The mobility and its determinants, as well as penetration in relation to the labor market at national or regional level and related implications for economic practice, are in the centre of attention in a number of studies.

Normally, in labor mobility and its determinants research, the basic demographic and economic characteristics of respondents are taken into account. It helps to generalize knowledge and draw more concrete conclusions. Handy et al. (2005), Sandow (2008) and Schwanen (2004) confirm the indirect dependence between the age of respondents and the length of commuting to and from work. Other studies, e.g. Manaugh et al. (2010), Mercado and Páez (2009) do not confirm the uniqueness of causality between age and labor mobility. These conflicting conclusions are attributed, in particular, to the diversity of the historical-cultural givens of the countries under consideration, as well as to the different lifestyles of the people in these countries, which are subject to constant change. Decision making on labor mobility is clearly influenced by subjective (psychological) factors of individuals as confirmed by Lykken and Tellegen (1996) and Fujita and Diener (2005).

Another determinant that significantly influences labor mobility is the level of education of respondents. High flexibility and labor mobility for highly educated respondents, who are often times also financially independent, confirm in their study Kahikara and Sorensen (2004). Frenkel, Bendit and Kaplan (2013) conclude that localization of the territory and its facilities impact on the decision-making of more educated individuals as a result of mobility on the labor market, more than socio-economic determinants.

Uramová and Orviská et al. (2016) deal with selected contexts in the sphere of labor mobility especially in the economy of Slovakia. They examine it from the point of view of gender differences and confirm the fact that higher mobility in terms of time spent by travel-to-work is monitored by men. Frändberg, Vilhelmson (2011), who studied labor mobility in Sweden, also came to the similar conclusions in the case of gender differences. They note the fact that in the 21st century there is a reduction in the time spent by commuting for men, mainly due to infrastructure modernization and the overall change in the use of transport. Research shows that among all groups of respondents, the willingness of men is greatest in overcoming the daily commuting distance, which is also likely to be related to the higher number of hours, spent on paid employment. These findings are comparable to the results of the study of the labor mobility of women who are single (Bäckström, Sandow, 2016).

A common feature of all carried out research studies is the effort to identify determinants that impact on labor mobility and its generalization. It turns out that the decision of individuals and households on the allocation of time is predominantly aimed at achieving a subjectively felt balance between time

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spent at work and out of work, which is largely conditioned by the attitudes, family circumstances and economic choices of the individual or households. Due to the gravity of the issue and its specificity not only in countries but also in the regions of these countries, we consider it important to deal with the examining the determinants of labor mobility at the level of the regions of Slovakia, which are characterized by considerable disparities. The conclusions of our research can contribute to shaping public employment policies at various levels of government in Slovakia.

II. Methodology and results

The aim of the scientific paper is to quantify the average weekly time spent on commuting to and from work in the Slovak Republic at NUTS 2 level and to identify the differences in the determinants affecting the labor mobility in the surveyed areas. In the analysis, we focus on the labor supply – employed. The labor mobility is understood as a willingness to travel to and from work depending on the time spent on commuting expressed in minutes, respectively in hours per week. We use the primary data resulting from the project VEGA 1/0621/17 “Decision-making Process of Slovak Households about Allocation of Time for Paid and Unpaid Work and Household Strategies’ Impact on Selected Areas of the Economic Practice”. From the source database, which is the result of a questionnaire survey conducted in April 2017, we use data on economically active (employed) respondents aged 15-64 in a total of 1 537. In the statistical testing, we use regular logistic regression, Kruskal-Wallis test and Fisher exact test.

Commuting (or travel-to-work as a synonym) is a phenomenon that is not dealt in Slovakia adequately so far. We believe that knowing the detailed context of what determines the final decisions of employed on how much time they spend on commuting to work on average per week is one of the key issues of the labor market at present. Already processed results of the primary survey conducted in 2016 under VEGA 1/0905/16 in the area of labor mobility have confirmed the minimum existence of differences in the time spent on commuting between men and women, which has prompted us to deal with the issue in more detail. While the interviewed men spent on commuting on an average of 2.4 hours per week, women only 1.9 hours on average per week. Similarly, men spend more time in paid work. Based on the analysis of our findings, we found that labor mobility in Slovakia is affected by the gender, the status of the activity and the income category of the respondents. On the contrary, age and education of the respondents have no effect (Mazúrová et al., 2017).

In the next part of the paper, we will focus more closely on the study of labor mobility and the elucidation of selected determinants that can theoretically influence it. When analyzing the results of the survey, we take into account the respondents' belonging to the Slovak Republics within the administrative division at NUTS 2 level (4 statistical units: Bratislava region, Western region, Middle region, Eastern region). Economic differentiation of regions in Slovakia was indicated in the introduction. It creates a presumption for the differences in the behavior of the economically active population as a result of the allocation of their time on paid work as well as on commuting.

In connection with the purpose of the paper, we have formulated the research assumption 1:

We assume that there is a significant difference in the average time spent on commuting to and from work among the areas of the Slovak Republic at NUTS 2 level.

This assumption was verified using a nonparametric Kruskal-Wallis test; the results are presented in Table 1.

Table 1 – Kruskal-Wallis test of commuting in average value per week

Test statistics			
Commuting to and from work (main job) in average value per week			
	Kruskal-Wallis		25,577
	df		3
	Asymp. Sig.		0,000
	Monte Carlo Sig.	Sig.	,000
		99% Confidence Interval	Lower Bound 0,000 Upper Bound 0,000

Source: Own processing using primary data from the VEGA Project no. 1/0621/17

Based on the results, we can state that within the Slovak Republic there are significant differences in the average weekly time spent on commuting to and from the main job for the employed respondents. Based on the above, we accept the research assumption 1 and justify the need to deal with the labor mobility in Slovakia in more detail and to identify the differences in the various areas. In Table 2, we present the average weekly time spent on commuting of respondents, as well as the median value for individual areas in Slovakia, to complete the verified assumption.

Table 2 - Average weekly time spent on commuting to and from work in Slovakia and in its areas

Area	Number of respondents	Mean	Median
Bratislava region	169	4,2032	4,0000
Western Slovakia	249	4,5305	2,5000
Middle Slovakia	396	3,6022	2,5000
Eastern Slovakia	358	3,8057	2,5000
Total	1171	3,9480	2,5000

Source: Own processing using primary data from the VEGA Project no. 1/0621/17

Based on results in Table 2, we can estimate that respondents across the Slovak Republic spend on commuting to and from work on average of 4 hours per week. By interpreting the median value, we note that half of the respondents are spending on travel-to-work for up to 2.5 hours per week. At the same time, we found out that respondents in the Bratislava region spend most time on commuting, an average of 4 hours per week. At this point, it is necessary to consider, apart from the time, the distance that respondents overcome. Given the traffic situation in the capital, it is likely that respondents travel a short distance longer due to traffic jam. Examining not only the time but also the distance traveled in the context of labor mobility and the mode of transport will be the subject of our further research.

The relatively lowest average time spent on commuting was found out in Central Slovakia, approximately 3.6 hours per week. The difference between Western and Central Slovakia is roughly equivalent to 1 hour per week, which we do not consider surprising to be based on the level of economic development in the surveyed areas.

In order to meet the aim of the paper, it is necessary to identify the determinants that affect the individual when deciding on the allocation of time in favor of commuting. We have explored demographic and economic determinants, which are standardly tested as determinants of labor mobility in foreign research. In order to support our claim to the need for a more detailed examination of the selected determinants, we found out whether there are differences in the examined determinants in the various areas of the SR, regardless of labor mobility. We tested Kruskal-Wallis test and Fisher Exact test. The test results are shown in Table 3.

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Table 3 Testing the significance of selected demographic and economic determinants in the areas of Slovakia

Test statistics							
		Education	Nbr. of children 0 -5 yrs.	Nbr. of children 6 – 14 yrs.	Main job (hrs.)	Net monthly income	
Kruskal-Wallis		77,134	10,877	9,697	6,720	87,057	
df		3	3	3	3	3	
Asymp. Sig.		0,000	0,012	0,021	0,081	0,000	
Monte Carlo Sig.	Sig.	,000 ^c	,013 ^c	,020 ^c	,083 ^c	,000 ^c	
	99% Conf. Interval	Lower Bound	0,000	0,010	0,016	0,076	0,000
		Upper Bound	0,000	0,016	0,024	0,090	0,000
Test statistics							
		Type of housing	Organization of work	Place of work	Sector		
Fisher Exact Test		51,593	30,835	30,367	14,35		
Monte Carlo Sig.	Sig.	,000 ^b	,002 ^b	,013 ^b	,013 ^b		
	99% Conf. Interval	Lower Bound	0,000	0,001	0,010	0,010	
		Upper Bound	0,000	0,002	0,016	0,016	

Source: Own processing using primary data from the VEGA Project no. 1/0621/17

Based on the test results, we can state that within the Slovak Republic there are significant differences in selected demographic and economic determinants that may theoretically affect labor mobility of the respondents. Based on this we confirmed the importance of further examination of selected determinants and formulated the research assumption 2:

We assume that there are significant differences in the determinants of labor mobility between the areas of the Slovak Republic at NUTS 2 level.

By analyzing the primary data from the questionnaire survey, using the method of ordinal logistic regression, we have verified whether the selected determinants affect or do not affect the average time spent on commuting to and from work, depending on their belonging to the areas in the Slovak Republic. We are aware of the fact that we do not have comprehensive results in terms of labor mobility determinants by the test. However, we believe that the originality of our results provides an aggregated view of the issue, which can then be further assessed.

Table 4 – Results of ordinal logistic regression

Selected Determinants of Labour Mobility / Areas	Bratislava Region	Western Slovakia	Middle Slovakia	Eastern Slovakia	Total SR
Age	no	no	no	no	no
Net monthly income	no	no	no	no	yes
Time pattern of the main job	yes	yes	yes	yes	yes
The number of children under 5 years of age	yes	no	no	no	no
The number of children between 5 and 14 years of age	no	no	no	no	no
Type of housing	no	no	no	no	no
Type of a working contract	no	no	no	no	no
Economic sector	no	no	no	no	no
Gender	no	no	no	no	no
Education level	no	yes	no	no	no
Place of work	no	yes	yes	yes	yes

Source: Own processing using primary data from the VEGA Project no. 1/0621/17

We can interpret multiple results from Table 4, which we processed and made clear from the statistical output of SPSS 25 for the need of the article. We have several surprising conclusions.

There is an interesting fact that from the labor mobility determinants that were examined by us showed only four determinants as significant in at least one of the surveyed areas. Other determinants of commuting to and from work of respondents do not affect.

The time pattern of the main job influences the time spent on commuting to and from work in each of the surveyed areas as well as in Slovakia as a whole. This is the only one of selected labor mobility determinants, which significance we have confirmed in each of the surveyed areas. We believe that the length of time spent by respondents in the paid work is linked to a number of contexts, which also take into account when deciding on the time they spend on commuting to and from work. Generalizing the conclusions within this would not be right because the judgments would not be relevant.

Another finding was the fact that the number of children under 5 years proved to be significant only in the Bratislava region. This finding is surprising. We expected that this determinant would be significant for respondents living in households with children under the age of 5 and will also influence the time of travel-to-work.

Based on the analysis of our findings, we further state that education as a determinant influences the mobility of respondents only in Western Slovakia. In other areas, its significance has not been confirmed. However, from our previous surveys, we have proven from the primary data obtained in the questionnaire survey conducted in Slovakia in 2015 that there is a relationship between the level of achieved education and the average weekly time spent on commuting to and from work. With a higher level of education employed individuals have more time allocated in favor of labor mobility in the average per week. This fact is most likely linked to the fact that higher education should also provide for a higher monthly income, which can be decisive when deciding on the division of work and family life (Uramová, Orviská et al., 2016). However, the assumption of higher income as a determinant of labor mobility has not been confirmed.

Logically, we could assume that the place of work will affect the commuting. We have confirmed the importance of this determinant in all areas (and Slovakia as a whole) except the Bratislava region. Therefore, the labor mobility of the respondent is influenced by the place of work and it depends whether he or she works in a city (municipality) where he or she lives, within the country or abroad. The place of work of an individual is likely to be affected by not only objective but also subjective

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factors. In Slovakia, there is a tendency for young people to leave for work abroad, where they find not only better employment but above all a higher financial rating. This is related to the brain drain and also the obsolescence of the population in Slovakia, which we consider to be a threat to society.

On the basis of an analysis of our findings, we note that all the other factors that we are considering do not affect the labor mobility of respondents. We were surprised that the time spent on commuting to and from work is not affected by the age and gender of respondents, but also the number of children, whether 5 or over 5 years of age. Finally, we can conclude that there are no significant differences in the determinants of labor mobility between the areas of the Slovak Republic at NUTS 2 level. Based on this, we shall reject the formulated assumption 2.

III. Conclusion

Labor mobility is one of the key factors influencing labor supply flexibility. At present, the unemployment rate in Slovakia is reaching its historical minimum. Whereas in Western Slovakia the job offer fails to reflect to a sufficient extent the growing labor demand in certain sectors, some districts in Central and Eastern Slovakia still have problems with long-term and structural unemployment. As one solution, the Government of the Slovak Republic sees support for labor mobility within the country. The article originated as a response to the change in legislation in the context of active labor market measures in Slovakia, which makes the conditions for entitlement to a work-related allowance and a contribution to promoting work mobility conditional in the context of promoting labor mobility and reducing inter-regional disparities.

Our intention was to quantify the average weekly time spent on commuting to and from work in the Slovak Republic at NUTS 2 level and to identify the differences in the determinants affecting the labor mobility in the surveyed areas. Based on the results of the primary data analysis that we have obtained in the questionnaire survey, we have reached a number of conclusions. These indicate which demographic and economic determinants affect the amount of time spent on commuting to and from work by economically active (employed) respondents.

We found out that there is a significant difference in the average time spent on commuting to and from work between the areas of the Slovak Republic at NUTS 2 level. Most of the time spent by travel-to-work is spent by the respondents in the Bratislava region, on average 4 hours a week, which may be related with a traffic situation in the capital. The relatively lowest average time spent on commuting was found in Central Slovakia, approximately 3.6 hours per week.

We tested the influence of selected demographic and economic determinants on labor mobility of respondents in individual areas of the Slovak Republic at NUTS 2 level. We found out that there are no significant differences in the determinants of labor mobility between the surveyed areas. Thus, we can generalize that the time spent on commuting to and from work depends only on the time pattern of the main job and the place of work. The net monthly income was significant only in the analysis for the whole of Slovakia, and its significance was not confirmed in individual areas. Other examined determinants have not been substantiated as significant.

If, therefore, we are based on the general assumption that higher labor mobility within the Slovak regions hinders high travel and accommodation costs and age, gender, education, income, number of children, work organization and the economy sector does not matter, then the above mentioned change of legislation appears to be appropriate. However, it is necessary to bear in mind that while in the framework of our survey we have studied the behavior of already employed individuals, the aim of the labor market policy makers is to activate and motivate especially disadvantaged job-seekers, whose decision-making may be affected by the examined determinants differently. Nevertheless, we believe that supporting labor mobility is one of the active labor market policy measures that can stimulate a part of the available workforce and contribute to reducing regional disparities in Slovakia. However, this effect will only be visible in the long time period.

We believe that overcoming stereotypes in the implementation of Slovakia's labor market policy and introducing new types of policies and instruments that have proved successful abroad can lead to desirable results, which should be the ambition of every modern society. Ultimately, the unused potential of the labor force in the country should be a challenge for the competent people in order to make the most of it possible so that human capital, which cannot be replaced in any way, is used not only for growth but also for the development of the Slovak economy.

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