DIFFERENTIAL MORTALITY IN VOJVODINA ACCORDING TO THE ECONOMIC ACTIVITY AND OCCUPATION

BILJANA RADIVOJEVIĆ

University of Belgrade, The Faculty of Economics, Kamenička 6, 11000 Belgrade, Republic of Serbia E-mail: biljana@ekof.bg.ac.rs

IVAN MARINKOVIĆ

Institute of Social Sciences, Demographic Research Centre Kraljice Natalije 45, 11000 Belgrade, Republic of Serbia E-mail: imarinkovic@orion.rs

ABSTRACT: This paper analyses the differential mortality in Vojvodina according to the economic activity and occupations of the population. The analysis covers the period from 1971 to 2011. The aim of the research is to determine the influence of socio-economic factors on differences in the level of mortality among different population groups. In particular, the aim is to detect the impact of working conditions and manner of performing the job to the differences in the mortality of the population with different occupations. Also, the goal is to detect changes in differential mortality according to economic activity and occupations of the population during the analysed period.

KEYWORDS: differential mortality, Vojvodina, economic activity, occupation

INTRODUCTION

Researching differential mortality implies being familiar with the basic characteristics of population mortality, in which possible differences in mortality of certain socio-economic groups of population are revealed. For these reasons, the present mortality level of the population in Vojvodina will be presented and the basic indicators outlined.

According to the data for 2013, there were a little over 27 thousand deaths in Vojvodina. The maximum number of deaths was recorded in 2005 with over 30 thousand deaths. The highest crude death rate of 15‰ was also recorded that year, after which it mildly decreased to the level of 14.1‰ in 2013. The crude death rate level in Vojvodina is determined primarily by the population

age structure. Population ageing in Vojvodina caused the crude death rate to be constantly rising since the 1970s.

Positive changes in population death rate in Vojvodina developed continuously throughout a longer time period, with an exception of a few stagnation periods and even an increase of age-specific rates. This is confirmed by the life expectancy trends. The life expectancy increased continually, except during the 1980s, when a certain decrease was noted (half a year for women, and one year for men). According to the data for 2012, life expectancy in Vojvodina was 71.2 years for men and 76.6 years for women. Nevertheless, it is lower than the republic average and lower in relation to average life expectancy of the population in Central Serbia.

The causes of death of the population in Vojvodina have traits of a contemporary model which is characteristic of developed countries of the world. The basic causes of death are concentrated around a few leading ones. The population in Vojvodina dies from circulatory system diseases (54.3% of total deaths in 2012) and tumors (22.5%). The third ranking cause, depending on the calendar year, is either respiratory system diseases (4.7% of total deaths in 2012) or external causes (3.8% in 2012).

DIFFERENTIAL MORTALITY

Differential mortality analysis implies examining mortality for groups of population which belong to different socio-economic categories or have different regional residence. The aim is to determine whether, and to what extent, certain socio-economic characteristics of the population, or residence in a certain geographical area (relief, climate) or type of settlement (rural, urban), together with as similar as possible population characteristics (age and sex structure), lead to differences in the level of mortality among them.

The most frequently examined differences in mortality refer to the region of residence, whether to a geographical region or a type of settlement. Differences in the mortality levels in relation to social and economic factors were also researched, such as: economic activities and occupations, incomes, achieved education levels, ethnic affiliation and marital state.

Nevertheless, it could be stated that there are no systematic analyses of differential mortality, even in countries which have an ample and reliable statistical data. This is because this kind of analysis is faced with numerous methodological limitations and difficulties to provide reliable indicators.

First of all, this analysis is limited to a census period. Namely, in order to define differential mortality rates for various groups of population, it is necessary to have data on deceased persons from those groups by age and gender, as well as on total population also classified according to same characteristics. Vital statistics provides such data for each calendar year, but the data for total population are available only in census years. Furthermore, the difficulties in this kind of analysis are associated with the socio-professional mobility of population, taking into consideration that population, in a lifetime, changes social groups, economic characteristics, places of residence and similar. Additionally, the

667

influences of certain factors of socio-economic character change over time. Their intensity, and often interdependence among some of them, does not make it possible to distinguish the impact of each individually on the differences in mortality levels. It is particularly impossible to determine the causative connection with mortality. It is well known that the type of occupation depends on achieved level of education, and on the other hand, income level depends on type of occupation. At the same time, income and education have an impact on the standard and lifestyle, living conditions and population habits, on the formation and satisfaction of various necessities of people which could be significant for their health.

It was long believed that the differences in mortality among different socio-economic groups within a population would completely be lost simultaneously with general economic and social development and especially corresponding medical advancements. It can generally be said that these differences were not completely lost and that socio-economic factors affect the differences in mortality levels of certain population groups. Furthermore, their influence is insomuch less if lower mortality rates are achieved. In such conditions, the differences in mortality among various groups of population are narrowed and the influence of biological factors on mortality becomes dominant.

POPULATION MORTALITY ACCORDING TO ECONOMIC ACTIVITY

The analysis of population mortality in Vojvodina according to economic activity covers the years around the 1971, 1991 and 2011¹ censuses. A relatively long period makes it possible to determine whether the differences in mortality according to economic activity have been maintained or they have been narrowed. However, since there was a different classification of activity traits in the stated census years, the analysis for 2011 will be given separately. Namely, in the censuses up to 2002, population had been classified according to economic activity as: economically active persons, persons with personal income and dependants. In the 2011 census, the total population was categorized as economically active and economically inactive persons.

Table 1 shows the mortality rates by economic activity, sex and age in 1971 and 1991. The difference in the mortality rate among the three groups of population in both observed years is obvious. The lowest mortality is among the active persons, where the crude death rate decreased in 1991 in relation to 1971. The low crude death rate of active persons has to do with their age structure (they are mainly persons aged 15 to 59 with women and 64 with men). In other words, age groups which generally have low specific mortality rates are in question, especially with the female population, with a tendency of further decrease after 1971. Apart from the more favourable age structure, the lower crude death rate of active persons in relation to the other two categories of

¹ Data on deceased persons for the two-year period 1971–1972 were used for the year 1971, and the data on deceased persons for the three-year periods 1990–1992 and 2010–2012 were used for 1991 and 2011.

population (persons with personal income and dependants) derives from the fact that the other two categories include persons with disabilities or serious health impairments, inborn defects and similar, which influences their crude death rate. The highest mortality is among persons with personal income, and there was an increase in 1991 in relation to 1971, which was a consequence of demographic ageing and the increase of persons with personal income in total population. The share more than doubled (from 8% to 16.4%) in that period, and especially with the female population [Statistical Office of Serbia, 1995: 256].

The male population has higher mortality rates among economically active persons and among persons with personal income, which is in conformity with differential mortality by sex. Women have higher crude death rate only among dependants. The reason lies in more unfavourable age structure of the dependant female population compared to the dependant male population. For example, in 1991, one fourth (24.3%) of the dependant women were older than 55, while only 3.8% of dependant men were that age.

Tab. 1. Death rates by activity, sex and age in Vojvodina, in 1971 and in 1991

Activity	Sex	Total	Under 15	15–24	25–34	35–44	45–54	55-64	65+ and unknown	
1971										
	All	8.3	1.1	1.3	1.6	2.8	6.3	15.9	73.8	
Economically active	Males	11.0	1.3	1.7	2.2	3.5	8.2	19.4	87.8	
detive	Females	2.6	0.9	0.7	0.6	1.1	2.1	5.3	28.2	
_	All	30.1	14.1	4.5	5.0	8.0	10.7	17.8	49.4	
Income recipients	Males	40.9	22.6	5.8	7.1	11.3	15.1	25.3	69.4	
recipients	Females	18.0	5.2	2.8	2.7	3.7	5.3	8.1	30.1	
Dependants	All	9.2	2.7	0.6	1.2	2.3	5.8	14.7	78.3	
	Males	4.2	3.0	0.8	2.7	4.7	7.7	16.3	51.3	
	Females	11.5	2.3	0.6	1.1	2.3	5.8	14.6	82.7	
				1991						
. 11	All	4.3	_	1.1	1.3	2.5	6.0	11.1	25.2	
Economically active	Males	6.0	_	1.7	2.0	3.5	7.8	13.4	32.3	
uctive .	Females	1.5	_	0.3	0.5	1.2	2.6	3.8	10.7	
T	All	51.0	_	3.9	10.6	21.5	21.1	25.8	86.2	
Income recipients	Males	63.3	_	6.3	15.6	30.5	40.3	35.5	104.2	
recipients	Females	40.0	_	1.6	5.4	12.6	9.7	14.9	71.6	
	All	8.2	1.2	0.9	2.1	3.6	6.5	12.3	67.8	
Dependants	Males	4.4	1.3	1.4	7.6	22.3	37.7	31.1	83.8	
	Females	10.3	1.0	0.6	1.3	2.8	5.6	11.5	65.7	

Crude death rate of active population in 2011 remained at the same level as in 1991 (Table 1a). A slight increase was noted among inactive population in relation to 1991, even though the process of demographic ageing continued. The reason for the small increase of crude death rate is that a reduction of age specific rates continued at the same time, especially with the younger population. Nevertheless, according to the 2011 Census, there has been a decrease of economically active population in Vojvodina by almost 127 thousand in relation to 2002, as well as their share in total population (from 44.9% to 40.7%). At the same time, the number of inactive persons rose by almost 30 thousand, as well as their share

Activity	Sex	Total	Under 15	15–24	25–34	35–44	45–54	55-64
	All	4.3	_	0.7	0.9	1.6	4.8	12.1
Economically active	Males	5.9	_	1.0	1.2	2.1	6.7	14.5
detive	Females	2.1	_	0.3	0.5	0.9	2.4	6.0
Active persons	All	2.6	_	0.3	0.5	0.9	3.0	7.2
performing an occupation	Males	3.7	_	0.4	0.7	1.2	4.1	8.8
	Females	1.1	_	0.0	0.2	0.6	1.6	3.2
	All	1.,2	_	1.3	2.3	4.4	12.2	28.3
Unemployed	Males	13.6	_	1.7	3.2	6.6	17.8	32.9
	Females	5.7	_	0.6	1.2	2.1	5.4	15.8
,	All	21.4	0.5	0.4	0.9	3.0	9.0	15.8
Economically inactive	Males	23.5	0.5	0.5	1.4	4.6	14.2	25.9
1114001110	Females	19.9	0.5	0.2	0.6	2.2	6.3	10.1

Tab. 1a. Death rates by activity, sex and age in Vojvodina, in 2011²

Within the category of active population, mortality differs among the employed (or active persons performing an occupation) and unemployed persons. According to the data for the three-year period 2010–2012, the death rate of the unemployed was almost four times greater than that of the employed people. The difference in the death rate between the employed and unemployed is more pronounced with the female population.

Unemployment is a grave economic and social problem in Serbia today. According to the 2011 data, the unemployment rate in Vojvodina amounted to 23.9% (22.5% with men and 23.4% with women) [Statistical Office of Serbia, 2014]. Unemployment creates negative consequences on both national and individual level. Direct losses and unrealized production losses, as well as loss

² Table does not show rates for age group 65+. The reason lies in the lack of logic of the data necessary for calculating rates. This is probably the consequence of the different manner of treating economic activity of population in vital statistics and in the 2011 Census. In connection with this, the data on deceased persons by age and occupation refer to the period 2010–2012, and for population according to same characteristics for the year 2011.

of personal income which leads to people becoming poor, are not the only consequences. Among others, they are connected with disturbed statuses in the social sphere leading to social exclusion, problems in personal and family relations, which reflects the health of the individual.

Certain research on death rates showed that premature deaths occur more frequently among the unemployed than the employed persons. It is interesting, though, that the connection between unemployment and greater death rates of the unemployed is viewed in two different ways. Firstly as cause related, which means that a job loss or long-term unemployment, negatively affect the health (physical and mental) of the individual and increase the risk of premature death. Secondly, the connection is viewed through the selection while getting employed. Namely, persons who lose their job or have difficulty finding a new one have a higher death rate due to their personal (physical) or socio-economic characteristics. Persons with poor health are in question, with physical or other defects, which bear a higher risk of unemployment as well as risk of increased morbidity and mortality. A selection of such kind is especially distinguished when long term unemployment is in question [Valkonen and Martikainen 1995].

POPULATION MORTALITY ACCORDING TO OCCUPATION

The occupation of employed persons is one of their basic characteristics. It is greatly determined by the level of acquired education, and at the same time reflects the social status of the employed. The research on the connection between occupation and population death rates was mainly focused on the differences in the level of death rates between manual and non-manual occupations. Whether or not the difference in mortality between them was determined, it is clear that it could not have been explained only by type of work. Namely, non-manual occupations as a rule require a higher level of education which might also positively affect mortality, by greater health care and timely health protection. Furthermore, such occupations are more often carried out in healthier work surroundings, with an absence of the risk of accidents. They are also most frequently better paid jobs which provide higher standards for the employees as well as better life conditions and similar.

In order to get a better insight into the connection of certain occupations and population death rates, it is necessary to have data on the occupations for all deceased persons. This means that there should be data on the occupations pensioners performed before retiring, and not only for the deceased persons who were employed at the time of death. Lack of this data decreases the scope of the actual analysis as it does not permit a complete insight into the influence of an occupation on population death rate. For example, when pensioners are in question, it cannot be concluded whether they died because of the occupation they had been performing or out of other reasons. Additionally, even if the occupation of the deceased pensioner were known, it would remain unclear if that was the only occupation he or she performed. Similar applies to the data for deceased persons from the employed group. People change their occupation in their lifetime, but only the last occupation is noted at the time of death.

Tables 2 and 2a show death rates by occupation of active persons in 1971 and 1991 and employed persons in 2011.

According to data for 1971, the highest death rates by age were for agricultural and similar workers, service workers, especially with male population (traffic and transport workers), as well as with miners, industrial and related workers. Working conditions as well as the manner of performing the job certainly have a great impact on death rates of population of various occupations, but it is certain that the high death rate of agricultural workers was primarily a consequence of the social status, especially in health and social insurance. The high death rate in the oldest age has to do with the fact that agricultural workers, if their health allows them, keep working till the end of their lives. In 1971, there were 94% male agricultural workers per 100 economically active men, and 93.6% female agricultural workers per 100 active women, for ages above the 65.

The death rates of agricultural workers decreased after 1971 for all age groups, as a result of improving work conditions, developing and improving health protection and similar. Nevertheless, death rates of agricultural and related workers were also the highest in 1991. Death rates changed for other occupations as well, but a slight increase of death rates was noted only for some. The rates mainly increased for experts and artists, miners, industrial and related workers, male service workers, as well as protection workers. Such changes in death rates lead to smaller differences in death rates among certain professions. The lowest death rates by age both in 1971 and 1991 were for managers.

Death rates according to occupation of employed persons in 2011 are shown in Table 2a. It should be noted that this analysis refers to a relatively small number of deceased persons. Namely, the number of deceased employed persons accounts for 5.6% of total number of deceased persons in Vojvodina and less than half of the deceased active persons (46.4%).

		T	.,			<i>J</i>	,			
Occupation	Sex	Total	Under 15	15–24	25–34	35–44	45-54	55-64	65+ and unknown	
1971										
Agricultural and	Males	21.2	1.4	1.5	2.6	4.0	8.9	20.4	87.2	
related workers	Females	4.2	0.9	0.6	0.3	0.6	1.6	5.1	28.9	
Miners, industrial and related workers	Males	4.3	0.0	1.4	1.9	3.2	6.8	17.4	124.2	
	Females	1.0	0.0	0.3	0.3	1.0	2.0	10.6	36.1	
Workers in trade	Males	3.5	0.0	1.3	1.3	2.4	6.6	8.7	78.9	
	Females	0.8	0.0	0.8	0.0	0.5	3.0	7.1	0.0	
Workers in services	Males	6.1	0.0	1.4	1.7	3.3	7.3	10.6	99.1	
workers in services	Females	1.2	0.0	1.1	1.0	0.9	1.7	1.7	7.7	

Tab. 2. Death rates by occupation, sex and age in Voivodina, in 1971 and in 1991

Protection	Males	3.4	0.0	3.8	1.4	1.9	4.8	6.1	12.6
employees	Females	1.7	0.0	0.0	0.0	0.0	6.3	0.0	0.0
Administrative and	Males	3.3	0.0	1.2	1.0	2.1	6.6	7.5	29.4
related workers	Females	0.9	0.0	0.7	0.4	1.4	1.3	2.7	20.8
Managarial staff	Males	1.2	0.0	0.0	0.7	0.8	2.4	1.9	0.0
Managerial staff	Females	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports and artists	Males	3.9	0.0	1.1	2.1	2.9	7.1	17.9	44.8
Experts and artists	Females	1.0	0.0	0.5	0.7	1.1	2.6	6.1	14.9
Other ecounations	Males	7.1	0.0	0.0	0.0	3.2	4.3	13.8	50.0
Other occupations	Females	5.3	0.0	0.0	0.0	0.0	0.0	0.0	31.3
			1	991					
Agricultural and	Males	12.9	-	1,8	1.8	4.0	7.3	14.5	33.2
related workers	Females	3.8	-	0.6	0.2	0.8	1.4	2.8	11.1
Miners, industrial	Males	4.9	-	2.7	2.1	3.8	9.2	14.4	16.5
and related workers	Females	1.4	-	0.3	0.6	1.4	3.6	7.9	8.6
XX7 1 : . 1	Males	2.8	-	2.0	1.1	2.1	4.8	7.5	13.8
Workers in trade	Females	0.9	-	0.1	03	1.1	2.6	7.0	9.3
Workers in services	Males	4.7	-	2.7	2.6	4.2	7.7	8.0	14.8
Workers in services	Females	1.4	-	0.7	0.7	1.1	2.3	4.8	0.0
Social protection	Males	3.8	-	2.0	2.1	3.3	5.4	8.1	9.1
employees	Females	0.9	-	0.0	0.0	1.0	2.8	0.0	0.0
Administrative and	Males	3.5	-	1.2	1.7	2.4	4.8	10.1	0.0
related workers	Females	1.1	-	0.6	0.3	1.1	2.6	1.4	0.0
Managarial staff	Males	0.9	-	0.0	0.5	0.6	1.0	2.5	0.0
Managerial staff	Females	0.0	-	0.0	0.0	0.0	0.0	0.0	0,0
E-manta and anti-t-	Males	5.2	-	5.2	2.6	3.4	7.9	11.9	17.7
Experts and artists	Females	1.4	-	1.2	0.7	1.2	2.8	4.7	2.2
Other accounties	Males	2.8	-	0.0	1.3	3.0	3.9	6.7	0.0
Other occupations	Females	4.2	-	0.0	0.0	0.0	0.0	0.0	21.5

Even though the data are not completely comparable with the data from the previously analyzed years, and if death rates for other and unknown occupations are excluded, it is obvious that workers in agriculture, fishing and forestry still had the highest crude death rates. The reason lies in their unfavourable age structure in relation to other occupations. Nevertheless, if death rates are compared according to age groups, workers in agriculture have the highest death rates only for those older than 55. Between the age of 25 and 55, the highest death rates are for legislation, administrative officials and managers. The death rates are relatively high for these occupations in the age groups 55–64 and 65+ as well, especially for women. The observed differences in death rates among certain occupations confirm their continued decrease, which is expected when the death rate of employed persons is expressively low, to the level of 2.6% in 2011 (3.7% and 1.1% for male, namely female population).

This is because the differences in mortality decline with age, reflecting the fact that the influences of socio-economic factors are lost in older years of life and the significance of biological factors increase.

Furthermore, the specific greater protection of "white collar" workers is lost in view of morbidity and mortality in conditions of population ageing and with significant presence of risk factors connected with contemporary way and style of life. This is especially true if the dominance of chronic non-contagious diseases both in population morbidity and mortality is taken into consideration. Including the basic illnesses and death causes in the analysis as well, it may indicate to lesser or greater imperiled health which is brought about by doing certain occupations.

Tab. 2a. Death rates by occupation, sex and age in Vojvodina, in 2011

Occupation	Sex	Total	15–24	25–34	35–44	45–54	55-64	65+ and unknown
Legislation, administrative officials and	Males	3.7	0.0	1.5	1.6	4.3	7.7	9.8
managers	Females	1.4	0.0	0.3	0.8	2.0	2.4	41.7
Professionals	Males	2.7	0.0	0.2	0.6	3.5	7.2	7.7
Fiolessionals	Females	0.7	0.0	0.2	0.4	1.2	2.2	0.0
Technicians and	Males	2.0	0.7	0.4	0.8	3.0	5.5	8.2
associate professionals	Females	0.9	0.0	0.2	0.7	1.4	2.7	22.2
Clerical support	Males	1.3	0.0	0.3	0.7	2.3	3.3	0.0
workers	Females	0.7	0.0	0.1	0.4	1.4	2.1	0.0
Service and sales	Males	1.5	0.7	0.5	0.9	2.4	4.4	17.3
workers	Females	0.6	0.0	0.2	0.4	1.0	3.3	0.0
Skilled agricultural,	Males	10.0	0.3	0.6	1.5	3.3	9.2	94.3
forestry and fishery workers	Females	3.5	0.0	0.0	0.2	1.5	1.9	35.4
Craftsmen and related	Males	2.0	0.2	0.6	0.7	3.0	6.2	16.8
trades workers	Females	0.8	0.0	0.2	0.5	1.7	1.6	12.3
Plant and machine op-	Males	1.8	0.3	0.5	0.7	2.5	6.4	35.1
erators and assemblers	Females	0.4	0.0	0.1	0.2	0.8	1.4	0.0
Elementary	Males	1.5	0.1	0.3	0.8	2.1	5.0	12.2
occupations	Females	0.4	0.0	0.1	0.2	0.4	1.1	3.9
Other and unknown	Males	56.4	5.4	8.9	19.9	146.5	482.2	588.2
Other and ullknown	Females	65.3	4.3	9.9	44.4	132.8	207.5	393.9

CAUSES OF DEATH

The population of Vojvodina is dying according to contemporary model of death causes. They concern the causes which are characteristic for older populations, as well as those connected with the contemporary way of life and work and greater personal responsibility for health maintenance. These general observations apply to the employed population as well. According to the 2010 data (Table 3), the highest rates among the male population are for circulatory system diseases, followed by tumors, injuries and poisoning. The most frequent causes of death for employed women are the same, except that tumors are in first place followed by circulatory system diseases, injuries and poisoning.

Tab. 3. Death rates by occupation and sex for leading causes of death in Vojvodina, in 2011 (per 100,000)

	Diseases of the circulatory system		Neoplasms		Diseases of the respiratory system		Injury, poisoning and conse- quences of external factors	
Total	Male	Female	Male	Female	Male	Female	Male	Female
Total	170.4	38.1	112.4	57.5	13.0	1.2	54.6	11.1
Legislation, administrative officials and managers	221.5	20.3	86.7	81.3	9.6	0.0	96.3	40.7
Professionals	90.4	12.4	130.9	39.3	3.1	2.1	18.7	6.2
Technicians and associate professionals	66.9	33.3	69.2	58.7	9.2	3.9	34.6	9.8
Clerical support workers	49.2	37.5	39.4	52.4	0.0	0.0	14.8	3.7
Service and sales workers	55.9	15.7	55.9	33.1	2.2	0.0	36.6	7.0
Skilled agricultural, for- estry and fishery workers	663.9	310.3	245.9	95.5	56.6	0.0	71.3	11.9
Craftsmen and related trades workers	96.2	24.7	53.5	43.3	2.7	0.0	44.1	0.0
Plant and machine operators and assemblers	72.5	21.6	50.9	21.6	3.9	0.0	39.2	10.8
Elementary occupations	55.6	10.4	45.8	13.8	16.4	0.0	19.6	10.4
Other and unknown	1,740.8	1,547.7	1,967.8	3,267.4	132.5	0.0	1,040.7	687.9

Circulatory system diseases are the leading cause of death for most occupations. However, the outstanding highest rate is for workers in agriculture, fishing and forestry. Out of the total number of deceased from circulatory system diseases in 2010, 42.2% were agricultural, forestry and fishing workers. The same applies for tumors. Out of all persons who died from tumors, 19.9% were workers in agriculture, forestry and fishing. Both men and women with these occupations have the highest rates in comparison with other occupations. In addition, almost half of the persons who died from respiratory system diseases were agricultural, forestry and fishing workers. Male agricultural workers have the highest death rates due to respiratory system diseases in relation to other occupations. They also have the highest death rates when injuries and poisoning are in question.

Even though data for only one calendar year are in question and cannot enable more precise conclusions, the following may be observed: the employed female population for all occupations has lower death rates in relation to men for all stated causes of death. Furthermore, the death rate due to circulatory system diseases is considerably greater for legislators, officials and managers than for other employed persons. For other occupations, a greater uniformity is noted in the death rates for analyzed causes of death.

CONCLUSION

In conditions of modified age structure, with pronounced demographic ageing characteristics, as well as low death rates of population younger than 65, the influence of socio-economic factors on the differences in death rates of economically active persons is quite small-scale. Even though the analysis showed there are certain differences in the death rates among the employed persons with different occupations, a direct causative connection cannot be determined. This is because the differences in the occupational structure of the population are tied with their different educational structure, living standards and thus different positions in the system of health care.

REFERENCES:

- Маринковић, И. (2010). Разлика у смртности становништва Централне Србије и Војводине, *Зборник Машице сриске за друшивене науке*, 131: 359–368.
- Радивојевић, Б. (1995). Економске структуре, Сийановницийво и домаћинсива Рейублике Србије йрема йойису 1991. године, Београд: Републички завод за статистику Србије.
- Радивојевић, Б. (2014). Економске структуре становништва. *Сшановнишшво и дома- ћинсшва у Србији*, Београд: Републички завод за статистику и Друштво демографа Србије.
- Републички завод за статистику (РЗС) (2010–2012). Демографска статистика у Рейублици Србији. Београд: Републички завод за статистику.
- Савезни завод за статистику (1971–2001). Демографска сшашисшика. Београд.
- Valkonen, T. and P. Martikainen (1995). The association between Unemployment and Mortality: Causation or Selection? In: A. D. Lopez, G. Caselli, T. Valkonen (eds.). Adult mortality in developed countries: From Description to Explanation, Clarendon press-Oxford.

INTERNET SOURCES

Statistical Office of the Republic of Serbia (2012). 2011 Census of Population, Households and Dwellings in the Republic of Serbia – Economic activity.

http://popis2011.stat.rs/?page id=2134> OpenDocument.

ДИФЕРЕНЦИЈАЛНИ МОРТАЛИТЕТ У ВОЈВОДИНИ НА ОСНОВУ ЕКОНОМСКЕ АКТИВНОСТИ И ЗАНИМАЊА

БИЉАНА РАДИВОЈЕВИЋ

Универзитет у Београду, Економски факултет Каменичка 6, 11000 Београд, Република Србија E-aдреса: biljana@ekof.bg.ac.rs

ИВАН МАРИНКОВИЋ

Институт друштвених наука, Центар за демографска истраживања Краљице Наталије 45, 11000 Београд, Република Србија Е-адреса: imarinkovic@orion.rs

РЕЗИМЕ: Овај рад се бави диференцијалним морталитетом у Војводини на основу економске активности и занимања војвођанског становништва. Анализа покрива период од 1971 до 2011. Циљ истраживања је да се утврди утицај друштвено-економских фактора на разлике у нивоу морталитета између различитих група становништва. Особито је циљ да се утврди утицај услова за рад, као и начина на који се рад врши, на разлике у морталитету код становништва које се бави различитим занимањима. Такође, циљ је да се региструју промене у морталитету у вези са економским кретањима и занимањима становништва у одређеном периоду који се анализира.

КЉУЧНЕ РЕЧИ: диференцијални морталитет, Војводина, економска активност, занимање