ANALYSIS OF UNEMPLOYMENT RATES BY EDUCATION LEVEL OF UNEMPLOYED

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ABSTRACT

The study, which analyzes the rate of unemployment by education level of unemployed persons, divided into three parts. The first part deals with the theoretical explanatory variables used in the paper in order to analyze the structure of unemployment by education level. The second part presents the research methodology and data used in the work of the selected sample of 40 countries of the world. The variables used in the paper to explore are: the percentage of unemployment of people with low education (primary school), the percentage of unemployment of people with secondary education (secondary school), the percentage of unemployment of people with higher education (university degree) and the unemployment rate. Data relating to the 2011th year and are part of the official statistics (Education at a Glance 2011th – OECD indicators), Organisation for Economic Co-operation and Development (OECD) in 2011th year. In the third part of this paper is an analysis of the research results that show the structure of unemployment by level of education and the impact of educational level on the unemployment rate.

The study is to test the hypothesis that individuals with higher levels of education have a significant negative impact on the unemployment rate of a country of the world. Also, the study aims to test the hypothesis that unemployed people with higher education in a much shorter time finding jobs and significantly shorter period of time are part of the unemployed population.

JEL Classification: E24, J64

Keywords: human capital, unemployment rate, education, placement, economic benefit

1. Introductory considerations

The research, which analyzes the rate of unemployment by education level of unemployed persons, divided into three parts. The first part deals with the theoretical explanatory variables used in the paper in order to analyze the structure of unemployment by education level. The second part presents the research methodology and data used in the work of the selected sample of 32 countries of the world. In the third part of this paper is an analysis of the research results that show the structure of unemployment by level of education and the impact of educational level on the unemployment rate.

2. Theoretical review of the indicators of unemployment by education level of unemployed persons

Indicators used in research examines the relationships between educational attainment and labour force status, for both males and females, and considers changes over time. It also focuses on employment rates among those nearing retirement age to shed some light on the employment of an ageing population and the links with educational attainment.

Employment rates rise with educational attainment. With few exceptions, the employment rate for graduates of tertiary education is markedly higher than the rate for upper secondary graduates. For males, the gap is particularly wide between upper secondary graduates and those without an upper secondary qualification.

Those with low educational attainment are both less likely to be labour force participants and more likely to be unemployed. Differences in employment rates between males and females are also wider among less educated groups. The chance of being employed is 23 percentage points higher for males than for females among those without upper secondary qualifications but falls to 10 points for the most highly qualified.

Education is an important factor for employment at an older age. On average, 40.2% of 55-to-64-year-olds with below upper secondary education are employed, 52.4% of those with upper secondary and post-secondary non-tertiary education, and 65.9% of those with a tertiary qualification.

As employment rises with education, increasing educational attainments will likely alleviate some of the concerns about the costs associated with an ageing population. Countries that seem to be well positioned to benefit from this employment-attainment effect are Finland, Greece, Ireland, Japan, and Spain, where tertiary attainment levels have risen sharply between 45-to-54-year-olds and 55-to-64-year-olds and where employment levels for those with tertiary education are particularly favourable.

To further their economic development, OECD countries' economies and labour markets depend upon a stable supply of well-educated workers. As skills levels tend to rise with educational attainment, the costs incurred when those with higher levels of education do not work also rise. As populations in OECD countries age, higher levels of education and longer participation in employment can lower dependency ratios and help to alleviate the burden of financing public pension schemes.

Employment rates normally rise with educational attainment. This is principally due to the larger investment in human capital made by more educated individuals and the need to recoup their investment. However, between country variations in employment rates often reflect cultural differences and, most notably, differences in the labour participation rates among female workers.

Similarly, unemployment rates are generally lower for higher-educated individuals, but this is typically because higher educational attainment makes an individual more attractive in the labour market. Unemployment rates therefore include information both on the individual's desire to work and on the individual's attractiveness to potential employers.

In a sense, employment rates are more closely tied to supply while unemployment rates are more closely tied to demand. Time series on both measures thus carry important information for policy makers about the supply, and potential supply, of skills for the labour market and about employers' demand for these skills. Information about supply of and demand for skills is particularly important among the age group approaching retirement age as it can help to indicate potential remedies and policies for prolonging the working life of the adult population.

Variations among countries in the female employment rate are a primary factor in differences in overall employment rates. The countries with the highest overall rate of employment for 25-to-64-year-olds – Denmark, Iceland, New Zealand, Norway, Sweden, Switzerland and the United Kingdom – also have among the highest female employment rates. The overall employment rate for males aged 25 to 64 ranges from 77% or less in Belgium, Finland, France, Hungary, Poland, the Slovak Republic and Turkey to over 85% in Iceland, Japan, Korea, New Zealand, Mexico and Switzerland. In contrast, employment rates among females range from 55% or less in Greece, Italy, Mexico, Poland, Spain and Turkey to above 77% in Iceland and Sweden, an indication of different cultural and social patterns.

Employment rates for graduates of tertiary education are markedly higher – around 9 percentage points on average for OECD countries – than for upper secondary graduates. For 2006, the difference ranges from a few percentage points to 12 percentage points or more in Greece, Poland, the Slovak Republic, Turkey, and the partner countries Israel and Slovenia. While there have been some large changes over time in employment rates of educational groups within countries, the OECD averages for lower secondary, upper secondary and tertiary educated adults have been rather stable over the last decade.

The gap in employment rates of males aged 25 to 64 is particularly wide between upper secondary graduates and those who are not. The extreme cases are the Czech Republic, Hungary and the Slovak Republic, where employment rates for males who have achieved an upper secondary education are at least 30 percentage points higher than for males who have not. The gap in employment rates between males with and without an upper secondary education is 7 percentage points or less in Greece, Iceland, Korea, Luxembourg, Mexico and Portugal.

In 2011, employment rates for females aged 25 to 64 show substantial differences, not only between those with and without an upper secondary education (15 percentage points or more in 24 out of the 29 OECD countries for which data were available), but also between those with upper secondary and those with tertiary attainment (10 percentage points or more in 18 countries).

Employment rates for females with a lower secondary education are particularly low, averaging 50% for OECD countries overall and less than 30% in Poland, the Slovak Republic, Turkey and the partner countries Chile and Israel. Employment rates for females with tertiary-type A attainment equal or exceed 75% everywhere except Japan, Korea, Mexico and Turkey, but remain below those of males in all countries.

On average among OECD countries, the difference between the employment rates of males and females decreases significantly at successively higher levels of educational attainment from 23 percentage points at the below upper secondary level to 10 percentage points at the tertiary level. The employment prospects of individuals with different levels of educational attainment depend largely on the requirements of labour markets and on the supply of workers with different skills. Unemployment rates therefore provide a signal of the match between what the education system produces and the demand for skills in the labour market. Those with lower educational qualifications are at particular risk of economic marginalisation since they are both less likely to be labour force participants and more likely to be without a job even if they actively seek one. Under the auspices of the International Labour Organisation (ILO) and their conferences of labour statisticians, concepts and definitions for measuring labour force participation were established and are now used as a common reference.

The employment rate refers to the number of persons in employment as a percentage of the population of working age. Unemployment rates refer to unemployed persons as a percentage of the civil labour force. The unemployed are defined as individuals who are, during the survey reference week, without work, actively seeking employment and currently available to start work. The employed are defined as those who during the survey reference work for pay (employees) or profit (selfemployed and unpaid family workers) for at least one hour or have a job but are temporarily not at work (through injury, illness, holiday, strike or lock-out, educational or training leave, maternity or parental leave, etc.).

3. Data collection and research methodology

Gathered data relate on a 40 world countries and their statistical data for variables: the percentage of unemployment of people with low education (primary school), the percentage of unemployment of people with secondary education (secondary school), the percentage of unemployment of people with higher education (university degree) and the unemployment rate. Data relating to the 2011th year and are part of the official statistics (Education at a Glance 2011th – OECD indicators), Organisation for Economic Co-operation and Development (OECD) in 2011th year. These are official statistical data of OECD for world countries for years 2011. openly published in 2012.¹

¹ Data refer to the year 2011 and are based on the UOE data collection on education statistics administered by the OECD in 2012 (for details see: Appendix and www.oecd.org/edu/eag2010).

3.1. Analysis of research results

The collected data were processed and analyzed using the statistical package of SPSS program and with the analysis of linear correlation matrix and multiple linear correlation matrix, and obtained research results are presented and interpreted by creating tables.

3.2. Analysis of matrix of linear correlation and multiple linear correlation matrix

The study looked at the interaction of variables: the percentage of unemployment of people with low education (primary school), the percentage of unemployment of people with secondary education (secondary school), the percentage of unemployment of people with higher education (university degree) and the unemployment rate.

Matrix of linear correlation						
the percentage of	people with	people with	people with	unemployment		
unemployment:	low education	secondary	higher education	rate		
	(primary	education	(university			
	school)	(secondary school)	degree)			
people with low education	1,00	0,62	0,32	0,95		
(primary school)						
people with secondary	0,62	1,00	0,65	0,89		
education (secondary school)						
people with higher education	0,32	0,65	1,00	0,35		
(university degree)						
unemployment rate	0,95	0,89	0,35	1,00		

Table 1. Matrix of linear correlation (made by authors).

As can be seen in Table 1, the linear correlation matrix analysis shows that a variable percentage of unemployed people with low education (elementary school) has a very significant positive impact on the unemployment rate variable with very high efficiency and the highest of all observed variables, then a variable rate unemployed with secondary education (high school) also has a very significant positive impact on the unemployment rate is variable, with a slightly lower coefficient, and, finally, a variable percentage of unemployed people with higher education (university degree) is also positive, but not significant effect on variable rate of unemployment.

Multiple linear correlation matrix				
constant:	2,16			
square of coefficient:	0,84			
standard error of regression:	1,7			
number of observations:	40			
degrees of freedom:	100			
dependent variable:	unemployment rate			
the percentage of unemployment:	coefficient:			
people with low education (primary school)	0,93			
people with secondary education (secondary school)	0,81			
people with higher education (university degree)	0,24			

Table 2. Multiple linear correlation matrix (made by authors).

As can be seen in Table 2, the analysis of multiple linear correlation matrix shows that the squared coefficient of 0.84, all three variables have a positive impact on the dependent variable, the unemployment rate, with a variable percentage of unemployed people with low education (primary school) and the percentage of unemployed persons with secondary education (high school) have a very significant impact, while a variable percentage of unemployed people with higher education (university degree) has a negligible effect or no significant effect on the dependent variable, the rate of unemployment. A variable percentage of unemployed people with low education (elementary school) has the highest ratio when observing the impact on the dependent variable, the rate of unemployment.

4. Synthesis of research results

The study is to test the hypothesis that individuals with higher levels of education have a significant negative impact on the unemployment rate of a country of the world. Also, the study aims to test the hypothesis that unemployed people with higher education in a much shorter time finding jobs and significantly shorter period of time are part of the unemployed population.

Research has shown that the hypothesis, which suggests that people with higher education have a significant negative impact on the unemployment rate of a country of the world, is negative. Also, research has shown that the hypothesis, which says that unemployed people with higher education in a much shorter amount of time finding jobs, and significantly shorter period of time are part of the unemployed population, positive.

Research has shown that a variable percentage of unemployed people with low education (elementary school) has a very significant positive impact on the unemployment rate variable with very high efficiency and the highest of all observed variables, then a variable rate unemployed with secondary education (high school) also has a very significant positive impact on the unemployment rate is variable, with a slightly lower coefficient, and, finally, a variable percentage of unemployed people with higher education (university degree) is also positive, but not significant effect on variable rate of unemployment. Research also has shown that all three variables have a positive impact on the dependent variable, the unemployment rate, with a variable percentage of unemployed people with low education (primary school) and the percentage of unemployed persons with secondary education (high school) have a very significant impact, while a variable percentage of unemployed people with higher education (university degree) has a negligible effect, or no significant effect on the dependent variable, the rate of unemployment.

5. Literature

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6. Appendix

List of countries involved in the research					
Australia	France	Libia	Russia		
Argentina	Greece	Luxemburg	USA		
Austria	Ireland	Hungary	Slovakia		
Belgium	Island	Mexico	Slovenia		
Brazil	Italy	Netherlands	Spain		
Czech Republic	Israel	Norway	South Korea		
Chile	Japan	New Zealand	Sweden		
Denmark	Jemen	Germany	Switzerland		
Estonia	Canada	Poland	Turkey		
Finland	Latvia	Portugal	United Kingdom		

Table 3. List of countries involved in the research (made by authors).