



WHAT HIDES BEHIND UNEMPLOYMENT SPELLS OF HIGHER EDUCATED
WOMEN IN ROMANIA?

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Abstract

The objective of this study is to investigate the effect of factors which cause some higher educated women from Romania to have longer unemployment spells and different outcomes than others. The econometric model is performed on a large sample of 92410 unemployment spells, obtained from the Agency of Employment Romania. As a methodological framework, we used the Cox regression in a competing-risks approach, and we estimated the impact of specific covariates for the unemployment spells and exit destinations of this particular social group. The results show that age, education, area of living, unemployment benefits and entry year in unemployment affect unemployment spells and (re)employment probabilities.

Index Terms – unemployment, probability, higher-education, job

I. INTRODUCTION

Unemployment an important challenge for our societies. Unemployment duration, exit states and re-employment probability are an interest subject for economists, sociologists and especially for policy makers.

The literature underline the fact that problems induced by unemployment are manifested at economic, social and individual levels. A first negative effect is the wastage of a part of labor force, a deeply negative consequence of large-scale chronic unemployment. These is a huge loss for any economy. As a direct consequence, second negative effect comes, the decrease of growth and economic development of that society. Dobrotă (1997) emphasize that the money used for unemployment benefits system represent aproximately 3.5 or 4% from the gross national product and up to 17-19% from the budget of a country. A high cost on the shoulders of the employed population.

Another negative consequence of unemployment, with a strong effect on the life quality of people, is the decrease of household income with an unemployed member. People affected by



unemployment and their families have material difficulties, with a negative outcome on their personality and health. There are numerous papers highlighting an obvious association between unemployment and the depressive symptoms. Constantinescu (2015) pointed out that long-term chronic unemployment generate the poverty and profound social conflicts. Unemployed individuals face serious financial difficulties and poverty, family animosity, exclusion, loss of self-confidence and of professional skills. White (1991) underline is his study that unemployed individuals perceive the experience of being jobless as the worst thing occurred in their lives. Even short periods of unemployment are described as extremely unpleasant by them. McClelland and MacDonald (1998) argue that there is a strong social gap between households with children and fully employed parents and households with children and jobless parents. Moreover, Burdett et al. (2004) and Huang et al. (2004) proved a link between long-term unemployment, poor education, poverty criminality. Another paper of Andrienko (2001) emphasizes that a high unemployment rate and a prolonged duration significantly affect the criminality rate of a society. These negative outcomes of unemployment led to serious concerns of governments and researchers.

The objective of this article is to investigate what hides behind unemployment spells of higher educated women in Romania. In a previous research we already proved a gender gap regarding unemployment length and exit to a job chance. Romanian unemployed women registered a 14% lower re-employment probability than men, and a slightly longer unemployment duration. For this time we focus only on registered unemployment spells of higher educated women.

II. LITERATURE REVIEW

According to Wadsworth (1991) and Rubery et al. (1996), unemployment has a different effect on men and women, because they have different labor market behavior and social status. We can find in the literature studies that proved a gender gap regarding unemployment duration and exit to a job chance in different societies (e.g. Kulik, 2000, D'Agostino and Mealli, 2000, Borsic et al., 2009, Dănașică, 2013). In most cases, unemployed women have longer spells and lower re-employment probability than men. Though, Dănașică (2012) proved that a higher education generates a decrease of the gender gap between Romanian unemployed individuals. Women with a higher education have a 11.6% lower exit to a job probability than higher educated men, a slightly lower than the gap between individuals from all education categories, in the period 2008-2010. Higher educated women are most prone to finish their unemployment spell in inactivity or being deactivated due to expiry of the legal period for getting unemployment benefits (Dănașică (2012)).

Bashir et al. (2015) show that age, education, family education background, technical education of mother are reducing unemployment of educated women, while joint family system, the number of kids within households and the size of it are increasing unemployment for this group, in one region of Pakistan. Mincer (1991) emphasizes that the more education for women we provide, the less unemployment we have. Same result is obtained by Psacharopoulos and Tzannatos (1991) and Durand (1965), economic growth and level of education have a clear positive effect on women labor force participation.

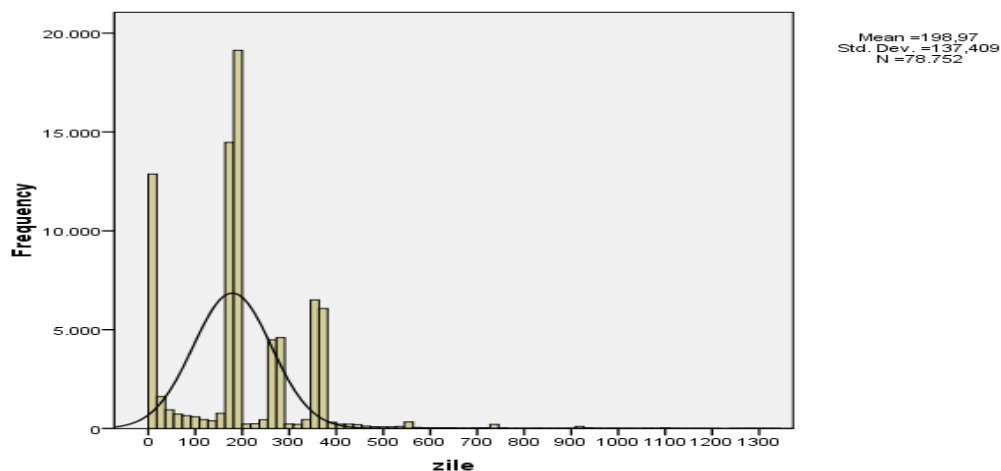


Papers focused only on unemployment spells, exit states and reemployment probability of higher educated women are few. To our knowledge there is no such type of study for Romania. Using new data about unemployment spells of higher educated women, we try to improve the literature focused on unemployment from our country.

III. DATA ANALYSIS

The aim this article is to study the effect of factors influencing unemployment spells, exit states and reemployment probability of Romanian higher educated women. Methodological framework is based on survival analysis and Cox regression with a competing-risks framework. The analyzed dataset has 92410 unemployment spells of higher educated women registered at the Agency for Employment Romania during 1 January 2014 until 31 October 2017, when got the data. We have information about the age of subject, the type of higher education, urban or rural area of living, if the subject received benefits during their current spell, history on the labor market and entry year in registered unemployment for every registered spell. These are the explanatory variables of our study. The endogenous variable is the unemployment duration. We calculated the unemployment duration as a difference between last and first day of unemployment. The unemployment duration is measured in days. Out of all 92410 spells, 13658 spells, representing 14.8%, do not have a final date. From the initial dataset we deleted all the spells with a negative or 0 duration of unemployment and individuals aged over 65 years and individuals. The shortest unemployment duration in our dataset is of 1 day, and the longest is of 1332 days, with an average of 198.97 days, a median of 183 days and a mode of 184 days. Our spells are asymmetrical distributed, with a kurtosis of 5.065 and skewness of 1.145 (Figure 1).

Fig 1. Histogram for unemployment spells (days)



Age distribution of our dataset is the following: 19.8% less than 25 years, 23.1% for the age group 25-29, 30.2% for women aged in between 30 and 39 years, 18,1% for 40-49 years group, 6.2% for 50-55 group and 2.5% for higher educated women over 55 years. As we can notice, 73,1% of the registered spells are for young women aged less than 40.



The distribution of analyzed spells by the type of education is presented in table 1.

Table 1. Distribution of the analyzed spells by education

Education	Frequency	Percent	Cumulative Percent
University education without bachelor exam	2035	2,2	2,2
University education	20048	21,7	23,9
Master level	70160	75,9	99,8
PhD level	167	,2	100,0
Total	92410	100,0	

20.7% of the total spells are rural, and 79.3% are from urban area of Romania. Indeed, unemployment in Romania is predominantly urban. 51.4% of the analyzed spells belong to higher educated women with a previous work experience, and 48,6% to women who are first time job seekers. 49.8% of the spells belong to women who do not received benefits during their current spell and 50.2% to women who received benefits during their spell. The distribution of the spells by the entry year in unemployment is the following: 31, 5% for 2014, 28, 2% for 2015, 21,8% for 2016 and 18,5% for 2017. The distribution of unemployment spells by reason of deactivation is presented in table 2.

Table 2. Distribution of spells by reason of deactivation

Exit destinations	Higher Educated Women			
	N	%	Mean (days)	Median (days)
(Re)Employment	19160	20.7	222.59	183.00
Expiry of legal period for UI	7756	8.4	268.20	267.00
Removal from registration due to individuals fault	6679	7.2	157.45	182.00
Non-participation	957	1.0	284.00	255.00
Retirement/death	192	.2	421.94	363.00
Unknown reason	57666	62.4	207.03	182.00
Total	92410	100	213.05	183.00

We estimated the effect of the explanatory variables on the analyzed spells. The obtained results are presented in table 3, 4, 5 and 6 from Appendix. All the variables were simultaneously analyzed in the model. The reference category is the last for age, and the first category for education, area of living, unemployment allowance, previous work experience and entry year in unemployment. Data processing was performed with SPSS 17.0.

Competing-risks analysis emphasizes that age has a significant impact on unemployment spells, exit destinations and (re)employment hazard of Romanian higher educated women. From table



3 from the Appendix we can notice that higher educated women aged in between 25 and 29 years have the highest (re)employment hazard. There is a negative association between age and exit to a job probability. As we expected, with the age increase, the exit to a job chance decrease. Women over 55 years are the worst case in terms of reinsertion on labor market. Young higher educated women aged less than 25 years have the highest exit due to expiry of legal period for benefits probability from all the age groups. Also, this group is most prone to exit from unemployment because of deactivation from registration due to individuals fault and the most prone to transit from unemployment to inactivity.

Women with a master degree have a 41,8% higher exit to a job hazard than women with a higher education but who do not have yet the license, and the result is highly significant. This group have a lower risk of being deactivated from reactivation due to their own fault than the reference category. For the other education group we do not have statistical significance when comparing with the reference category.

University graduated women from urban area have a 3.6% higher exit to a job chance than higher educated women from rural area, but the result is significant at 10%. Also, higher educated women from urban area have a lower risk for deactivation due to individual's fault, a lower exit in inactivity hazard and a lower risks for exit from unemployment due to end of legal period for unemployment benefits.

As we expected, unemployed women who received benefits during their current spell have a 60,2% lower exit to a job chance. All the spells deactivated due end of legal period for receiving benefits are of women who received benefits during their spell. The result prove that unemployment benefits delay the (re)employment and prolong the duration of unemployment.

Entry year in unemployment have a significant effect on exit to a job chance of analyzed subjects. Higher educated women registered in unemployment in 2015, 2016 and 2017 have a higher exit to a job chance than the reference group. The results show a correlation between economical background, legislative framework and exit to a job probability.

IV. CONCLUSION

The study analyzed the unemployment spells, exit destination and (re)employment hazard of higher educated women in Romania, during 2014-2017. Cox proportional hazard model in a competing-risks approach was our choice to analyze the effect of explanatory variables on registered spells. The results show that with the age increase, the exit to a job probability decrease. The efforts of policy makers have to be oriented toward women aged over 40 years and especially to the women over 55 years. Education has a significant impact on analyzed spells and (re) employment chance. Unfortunately, we lack the information about the content of higher education for our subjects. This is an interesting topic to investigate in a future research. Rural area requires attention, because the presence of a gap between the development of rural and urban area is obvious. And the unemployment benefits system must be re-analyzed, because the period of time for unemployment allowance support and its quantum has a significant impact on the length of unemployment and searching for a job behavior of individuals.



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Table 3. Cox regression results, event (re) employment

Explanatory variables	B	SE	Wald	df	Sig.	Exp(B)	95,0% CI for Exp(B)	
							Lower	Upper
Age								
25-29 years	,054	,028	3,846	1	,050	1,056	1,000	1,115
30-39 years	-,247	,029	74,279	1	,000	,781	,739	,826
40-49 years	-,506	,032	249,007	1	,000	,603	,566	,642
50-55 years	-,669	,043	247,894	1	,000	,512	,471	,556
Over 55 years	-1,047	,065	256,780	1	,000	,351	,309	,399
Less than 25 years	Reference category							
Education								
University education without bachelor exam taken	Reference category							
University education	,080	,051	2,525	1	,112	1,084	,981	1,197
Master level	,349	,050	49,114	1	,000	1,418	1,286	1,563
PhD level	,152	,155	,966	1	,326	1,165	,859	1,578
Area of living								
Rural	Reference category							
Urban	,035	,021	2,711	1	,100	1,036	,993	1,080
UI								
Without UI	Reference category							
With UI	-,922	,020	2043,149	1	,000	,398	,382	,414
Previous work experience								
Without experience	Reference category							
With experience	-,088	,020	18,702	1	,000	,916	,880	,953
Entry year in registered unemployment								
2014	Reference category							
2015	,433	,029	231,094	1	,000	1,542	1,459	1,631
2016	1,458	,027	2892,638	1	,000	4,299	4,076	4,533
2017	2,094	,032	4169,688	1	,000	8,119	7,619	8,652

Table 4. Cox regression results, event expiry of the legal period for UI

Explanatory variables	B	SE	Wald	df	Sig.	Exp(B)	95,0% CI for Exp(B)	
							Lower	Upper
Age								
25-29 years	-,528	,042	158,897	1	,000	,590	,543	,640
30-39 years	-1,324	,043	956,724	1	,000	,266	,245	,289
40-49 years	-1,951	,048	1653,050	1	,000	,142	,129	,156
50-55 years	-1,920	,058	1091,973	1	,000	,147	,131	,164
Over 55 years	-1,925	,081	569,243	1	,000	,146	,125	,171



Less than 25 years	Reference category							
Education								
University education without bachelor exam taken	Reference category							
University education	-,089	,080	1,229	1	,268	,915	,782	1,071
Master level	-,076	,079	,923	1	,337	,927	,794	1,082
PhD level	-,011	,287	,001	1	,970	,989	,564	1,736
Area of living								
Rural	Reference category							
Urban	-,120	,028	17,866	1	,000	,887	,839	,938
UI								
Without UI	Reference category							
With UI								
Previous work experience								
Without experience	Reference category							
With experience	-,304	,030	101,184	1	,000	,738	,696	,783
Entry year in registered unemployment								
2014	Reference category							
2015	,381	,027	201,930	1	,000	1,463	1,388	1,542
2016	,036	,042	,744	1	,388	1,037	,955	1,125
2017	,337	,089	14,474	1	,000	1,401	1,178	1,667

Table 5. Cox regression results, event removal from registration due to individuals fault

Explanatory variables	B	SE	Wald	df	Sig.	Exp(B)	95,0% CI for Exp(B)	
							Lower	Upper
Age								
25-29 years	-,366	,036	101,152	1	,000	,694	,646	,745
30-39 years	-,685	,040	287,528	1	,000	,504	,466	,545
40-49 years	-,642	,044	209,024	1	,000	,526	,482	,574
50-55 years	-,484	,057	71,045	1	,000	,616	,551	,690
Over 55 years	-,900	,091	98,788	1	,000	,407	,340	,485
Less than 25 years	Reference category							
Education								
University education without bachelor exam taken	Reference category							
University education	-,076	,085	,797	1	,372	,927	,786	1,094
Master level	-,274	,082	11,192	1	,001	,760	,647	,893
PhD level	-,103	,326	,100	1	,752	,902	,476	1,709
Area of living								
Rural	Reference category							
Urban	-,139	,031	20,705	1	,000	,870	,820	,924
UI								



Without UI	Reference category							
With UI	-2,566	,037	4806,847	1	,000	,077	,071	,083
Previous work experience								
Without experience	Reference category							
With experience	,041	,032	1,612	1	,204	1,042	,978	1,110
Entry year in registered unemployment								
2014	Reference category							
2015	-,144	,030	23,466	1	,000	,866	,817	,918
2016	-,684	,036	356,506	1	,000	,505	,470	,542
2017	-2,136	,097	482,119	1	,000	,118	,098	,143

Table 6. Cox regression results, event inactivity

Explanatory variables	B	SE	Wald	df	Sig.	Exp(B)	95,0% CI for Exp(B)	
							Lower	Upper
Age								
25-29 years	-,630	,101	39,257	1	,000	,532	,437	,649
30-39 years	-2,163	,117	342,065	1	,000	,115	,091	,145
40-49 years	-3,933	,186	447,147	1	,000	,020	,014	,028
50-55 years	-3,740	,243	236,319	1	,000	,024	,015	,038
Over 55 years	-4,036	,422	91,331	1	,000	,018	,008	,040
Less than 25 years	Reference category							
Education								
University education without bachelor exam taken	Reference category							
University education	-,090	,194	,217	1	,642	,914	,625	1,337
Master level	-,035	,195	,033	1	,857	,965	,659	1,415
PhD level	,179	,605	,087	1	,768	1,196	,365	3,913
Area of living								
Rural	Reference category							
Urban	-,089	,080	1,247	1	,264	,915	,783	1,070
UI								
Without UI	Reference category							
With UI	3,526	,207	289,275	1	,000	33,999	22,645	51,044
Previous work experience								
Without experience	Reference category							
With experience	-,446	,083	28,738	1	,000	,640	,544	,754
Entry year in registered unemployment								
2014	Reference category							
2015	,974	,095	105,952	1	,000	2,648	2,200	3,188
2016	1,424	,117	147,894	1	,000	4,154	3,302	5,226
2017	1,440	,208	47,764	1	,000	4,219	2,805	6,347