6. THE EFFECT OF ACADEMIC SPECIALIZATION ON UNEMPLOYMENT SPELLS AND (RE) EMPLOYMENT HAZARD OF HIGHLY EDUCATED INDIVIDUALS IN ROMANIA

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Abstract

The aim of this empirical study is to estimate the effect of academic specialization on unemployment spells and (re)employment hazard of highly educated individuals from Romania. A new insight into the problem of unemployment duration and exit destinations of Romanian highly educated individuals is depicted in this paper. A large and complex dataset is analyzed using specific econometric techniques. The obtained results can be useful for labor policy-makers.

Keywords: unemployment; spells; econometric modelling; events; survival; hazard

JEL Classification: J64

Appendix

Table A1. Variables of the study

Unemployment duration	computed as the difference between the exit date and the registration date of individual in the NAE records (days)
Gender	1- Male, 2-Female
Age	Values in between [21-65] years, with the following intervals [less than 25], [25-29], [30-39], [40-49], [50-55], [over 55]
Education[2]	Qualitative variable, transformed as follows: 1-university education without BA diploma, 2- university education, 3- university education – master level, 4- university education- Phd level.
Academic specialization	Created from the occupation and ROC variable, with the following categories: 1-individuals with ROC and occupation specific to higher economic studies; 2-individuals with ROC and occupation specific to higher engineering studies, architecture and urbanism; 3- individuals with ROC and occupation specific to higher medical studies; 4 – individuals with ROC and occupation specific to law studies; 5 - individuals with ROC and occupation specific to higher education

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2 *We emphasize that in the dataset there are 23 years old or 24 years old individuals who wrote PhD education in their registration. Since it is not possible to have a PhD completed at this age, we deduced that these individuals are PhD students. Thus, in this educational group we have individual who already finished their PhD studies and PhD students.*

	in psychology, sociology, social assistance, pedagogy; 6 - individuals with ROC and occupation specific to higher education in the field of acting, directing, scenography; 7 - individuals with ROC and occupation specific to higher education in geography, history, archeology; 8 - individuals with ROC and occupation specific to higher education in humanities and journalism, 9 - individuals with ROC and occupation specific to higher studies of mathematics, physics, chemistry and biology; 10 - all other individuals belonging to other academic specializations and occupations, 11- unspecified occupation.
Status at the registration date	Qualitative variable, with the following categories: became unemployed; has refugee status; foreign national or stateless person; no job after graduation; no job after detention; no job after repatriation; looking for a job; unemployed without entitlement to compensation; unemployed Government Emergency Ordinance (GEO) 36/2013; wants to change jobs. This variable is useful in descriptive analysis of the dataset.
UI status	0- without UI, 1-with UI
UI value	1- 50% from SRI, 2- 75% from SRI, 3- without UI
Previous work experience[3]	0- without previous work experience, 1- with previous work experience
Disability	Presented as a qualitative variable, with the following categories: without disabilities, other disabilities, associated, auditory, physically- locomotor, psychic, somatic, deafblind and visual. Since the number of disabled individuals is small, we will use this information only in the descriptive part of analysis.
Ethnicity	Qualitative variable, transformed as follows: 1- romanian, 2- hungarian, 3- Roma, 4- other EU ethnicity, 5-other non- EU ethnicity and 6- unknown
Area of living	0-rural area, 1- urban area
Region	Created from county variable, with the following categories: 1-North-East region, 2- West region, 3- North-West region, 4- Center region, 5-South-Est region, 6-South-Muntenia region, 7-Bucharest-Ilfov and 8-South-Oltenia region.
Locality type	Qualitative variable, computed as follows: 1-commune, 2-municipality, 3-city, 4-village, 5- Bucharest sector.
NAE trainning for unemployed	0- unemployed did not participate, 1- unemployed did participate
Newly graduates first-time job seekers or not	, 0- others, 1- first time job seekers graduates
Reason of deactivation from NAE registration	Qualitative variable with 30 different deactivation reasons, computed as follows: 1- (re)employment or obtaining monthly income higher than SRI[4]; 2- deactivation due to expiry of legal period for UI, 3- deactivation due to unemployed own negligence, 4- deactivation due to inactivity (non-

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[3] *Unfortunately, we do not have more information about the previous job, whether it is in accordance with the educational specialization of the individual or not.*

[4] *This category includes: the spells deactivated due to long or short term employment/re-employment; the spells deactivated due to the fact that the unemployed earns a monthly income higher than the SRI; the spells deactivated due to fact that the unemployed earns income from copyright or related rights; the spells deactivated due to fact that the unemployed promotes the national residency competition for doctors, thus becoming employed as a resident doctor; the spells deactivated due to fact that the unemployed begins to carry out activities in elective or named positions; the spells deactivated due to fact that the unemployed receives a functioning authorization for income-producing activities on his own.*

	participation) and 5-unclear reason of deactivation or without a specified reason for leaving unemployment.

Source: author processing, based on data provided by NAE

Table A2. Preliminary descriptive statistics for the analyzed unemployment spells

Central tendency indicators	Mean (days)	95% Confidence interval for mean	Median (days)	Mode (days)
	196.65	(195,88;197,42)	182	184
Variance	Standard deviation	Range(days)		
	140.619	1366		
Skewness and kurtosis	Skewness	Kurtosis		
	0.984	3.987		

Source: author processing using SPSS 25.0, based on data provided by NAE

Table A3. Cox regression results, event 1

Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
Men	Reference category							
Women	0.003	0.014	0.062	1	0.803	1.003	0.977	1.031
Age			1060.891	5	0.000			
Less than 25	Reference category							
25-29	0.339	0.023	212.572	1	0.000	1.403	1.341	1.469
30-39	0.230	0.025	87.264	1	0.000	1.259	1.199	1.321
40-49	-0.031	0.027	1.289	1	0.256	0.970	0.920	1.023
50-55	-0.230	0.033	48.114	1	0.000	0.794	0.744	0.848
Over 55	-0.490	0.037	170.783	1	0.000	0.613	0.569	0.659
Education			627.126	3	0.000			
Higher education without BA diploma	Reference category							
Higher education	0.144	0.041	12.591	1	0.000	1.155	1.067	1.251
Master	-0.242	0.040	37.054	1	0.000	0.785	0.726	0.848
PhD	0.088	0.119	0.557	1	0.456	1.093	0.866	1.378
Academic specialization			204.521	10	0.000			
Economics	Reference category							
Engineering architecture and urbanism	0.039	0.020	3.909	1	0.048	1.040	1.000	1.081
Medical	0.130	0.030	18.825	1	0.000	1.139	1.074	1.208
Law	-0.251	0.034	55.443	1	0.000	0.778	0.728	0.831
Psychology. sociology. Anthropology. social assistance	-0.247	0.038	41.541	1	0.000	0.782	0.725	0.842
Acting. Directing. scenography	-0.588	0.214	7.546	1	0.006	0.556	0.365	0.845
Geography. history. archeology	-0.311	0.078	15.816	1	0.000	0.733	0.628	0.854
Humanities and journalism	-0.234	0.056	17.378	1	0.000	0.792	0.709	0.884
Mathematics. physics. chemistry. biology	-0.115	0.067	2.968	1	0.085	0.891	0.782	1.016

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Other specializations/ occupations	0.032	0.018	3.080	1	0.079	1.032	0.996	1.069
Unknown	-0.330	0.409	0.653	1	0.419	0.719	0.323	1.601
Region			677.437	7	0.000			
North-East	Reference category							
West	-0.081	0.022	13.394	1	0.000	0.923	0.884	0.963
North-West	-0.407	0.024	289.690	1	0.000	0.666	0.635	0.697
Center	-0.476	0.027	308.945	1	0.000	0.621	0.589	0.655
South-East	-0.292	0.024	142.219	1	0.000	0.747	0.712	0.784
South-Muntenia	-0.369	0.024	238.831	1	0.000	0.692	0.660	0.725
Bucharest-Ilfov	-0.455	0.084	29.117	1	0.000	0.635	0.538	0.749
South-Oltenia	-0.384	0.024	264.559	1	0.000	0.681	0.651	0.714
Rural	Reference category							
Urban	-0.512	0.086	35.498	1	0.000	0.600	.507	0.709
Without experience	Reference category							
With experience	-0.144	0.016	82.576	1	0.000	0.865	0.839	0.893
Without UI								
With UI	-0.145	0.016	82.553	1	0.000	.865	.838	0.892
UI value			1841.663	1ª	0.000			
50%	Reference category							
75%	-1.483	0.035	1841.663	1	0.000	0.227	0.212	0.243
Without UI	-	-	-	-	-	-	-	-
Ethnicity			9.189	5	0.102			
Romanian	Reference category							
Hungarian	0.086	0.049	3.062	1	0.080	1.089	0.990	1.199
Rrom	-0.274	0.186	2.167	1	0.141	0.761	0.528	1.095
Another EU ethnic group	-0.379	0.378	1.003	1	0.317	0.685	0.326	1.437
Another non-EU ethnic group	-0.141	0.354	0.159	1	0.690	0.868	0.434	1.738
Unknown	0.626	0.378	2.735	1	0.098	1.870	0.891	3.924
Locality type			49.497	3ª	0.000			
Commune	Reference category							
Municipality	0.593	0.086	47.313	1	0.000	1.809	1.528	2.142
City	0.560	0.086	42.447	1	0.000	1.751	1.479	2.072
Village	0.072	0.045	2.593	1	0.107	1.075	0.984	1.173
Bucharest sector	-	-	-	-	-	-	-	-
Without trainning	Reference category							
With trainning	-0.664	0.063	109.555	1	0.000	0.515	0.455	0.583
Others	Reference category							
First time job seekers	-0.231	0.031	56.926	1	0.000	0.794	0.747	0.843
a. Reduced degrees of freedom due to constant or linearly dependent covariates								

Source: author processing using SPSS 25.0, based on data provided by NAE

Table A4. Cox regression results, event 2

Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
Men	Reference category							
Women	.006	.021	.079	1	.778	1.006	.966	1.048
Age			2214.682	5	0.000			
Less than 25	Reference category							
25-29	-.015	.040	.131	1	.717	.986	.911	1.066
30-39	-.787	.045	303.953	1	.000	.455	.417	.497
40-49	-1.384	.048	830.720	1	.000	.251	.228	.275
50-55	-1.417	.054	678.320	1	.000	.242	.218	.270
Over 55	-1.370	.057	570.829	1	.000	.254	.227	.284
Education			6.971	3	.073			
Higher education without BA diploma	Reference category							
Higher education	-.120	.064	3.513	1	.061	.887	.783	1.006
Master	-.053	.061	.775	1	.379	.948	.842	1.068
PhD	-.096	.237	.162	1	.687	.909	.571	1.447
Academic specialization			71.699	10	0.000			
Economics	Reference category							
Engineering architecture and urbanism	-.008	.029	.074	1	.785	.992	.936	1.051
Medical	.079	.051	2.412	1	.120	1.082	.980	1.196
Law	.288	.041	49.665	1	.000	1.334	1.231	1.445
Psychology. sociology. Anthropology. social assistance	.009	.048	.035	1	.852	1.009	.918	1.109
Acting. Directing. scenography	.370	.260	2.033	1	.154	1.448	.871	2.407
Geography. history. archeology	.242	.107	5.103	1	.024	1.274	1.033	1.572
Humanities and journalism	.128	.071	3.306	1	.069	1.137	.990	1.306
Mathematics. physics. chemistry. biology	-.012	.097	.017	1	.898	.988	.817	1.193
Other specializations/ occupations	.086	.026	11.158	1	.001	1.090	1.036	1.147
Unknown	-6.243	12.605	.245	1	.620	.002	.000	104283586.6
Region			70.565	7	0.000			
North-East	Reference category							
West	-.051	.038	1.844	1	.174	.950	.882	1.023
North-West	-.151	.036	17.318	1	.000	.860	.801	.923
Center	-.238	.039	36.932	1	.000	.788	.730	.851
South-East	-.084	.038	4.752	1	.029	.920	.853	.992
South-Muntenia	-.025	.036	.463	1	.496	.976	.909	1.047
Bucharest-Ilfov	-.150	.098	2.367	1	.124	.860	.710	1.042

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Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
South-Oltenia	.025	.035	.502	1	.478	1.025	.957	1.097
Rural	Reference category							
Urban	-.193	.099	3.780	1	.052	.824	.678	1.002
Without experience	Reference category							
With experience	.058	.030	3.916	1	.048	1.060	1.001	1.123
Without UI	Reference category							
With UI	4.072	.076	2901.690	1	.000	58.671	50.592	68.041
UI value			464.898	1ᵃ	0.000			
50%	Reference category							
75%	-1.030	.048	464.898	1	.000	.357	.325	.392
Without UI	-	-	-	-	-	-	-	-
Ethnicity			33.128	5	0.000			
Romanian	Reference category							
Hungarian	-.278	.068	16.604	1	.000	.757	.662	.865
Rrom	-.517	.408	1.604	1	.205	.596	.268	1.327
Another EU ethnic group	1.540	.409	14.175	1	.000	4.666	2.093	10.403
Another non-EU ethnic group	.041	.578	.005	1	.943	1.042	.336	3.233
Unknown	-.724	1.001	.523	1	.469	.485	.068	3.446
Locality type			33.584	3ᵃ	0.000			
Commune	Reference category							
Municipality	.092	.100	.847	1	.358	1.096	.901	1.333
City	.257	.099	6.715	1	.010	1.293	1.065	1.570
Village	.106	.062	2.882	1	.090	1.111	.984	1.256
Bucharest sector	-	-	-	-	-	-	-	-
Without trainning	Reference category							
With trainning	.201	.056	12.946	1	.000	1.223	1.096	1.365
Others								
First time job seekers	.001	.061	.000	1	.987	1.001	.888	1.129
a. Reduced degrees of freedom due to constant or linearly dependent covariates								

Source: author processing using SPSS 25.0, based on data provided by NAE

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Table A5. Cox regression results, event 3

Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
Men	Categoria de referință							
Women	-.132	.020	42.384	1	.000	.877	.843	.912
Age			901.514	5	0.000			
Less than 25	Categoria de referință							
25-29	-.496	.029	296.489	1	.000	.609	.575	.644
30-39	-.852	.032	725.930	1	.000	.427	.401	.454
40-49	-.868	.035	616.204	1	.000	.420	.392	.450
50-55	-.795	.042	350.660	1	.000	.451	.415	.491
Over 55	-.930	.047	394.415	1	.000	.395	.360	.433
Education			47.941	3	.000			
Higher education without BA diploma	Categoria de referință							
Higher education	-.238	.066	13.138	1	.000	.788	.693	.896
Master	-.065	.063	1.055	1	.304	.937	.828	1.061
PhD	-.331	.251	1.740	1	.187	.718	.440	1.174
Academic specialization			169.752	10	.000			
Economics	Categoria de referință							
Engineering architecture and urbanism	.076	.030	6.608	1	.010	1.079	1.018	1.144
Medical	.357	.042	72.776	1	.000	1.429	1.316	1.551
Law	-.104	.048	4.685	1	.030	.902	.821	.990
Psychology. sociology. Anthropology. social assistance	-.088	.054	2.668	1	.102	.915	.823	1.018
Acting. Directing. scenography	-.286	.268	1.133	1	.287	.751	.444	1.272
Geography. history. archeology	-.312	.113	7.614	1	.006	.732	.587	.914
Humanities and journalism	-.308	.087	12.608	1	.000	.735	.620	.871
Mathematics. physics. chemistry. biology	-.103	.102	1.011	1	.315	.902	.739	1.102
Other specializations/ occupations	-.059	.028	4.521	1	.033	.942	.892	.995
Unknown	-1.771	1.000	3.135	1	.077	.170	.024	1.209
Region			105.693	7	0.000			
North-East	Categoria de referință							
West	-.025	.034	.529	1	.467	.975	.912	1.043
North-West	.184	.033	30.889	1	.000	1.202	1.127	1.283
Center	.137	.037	13.894	1	.000	1.147	1.067	1.232

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Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
South-East	-.044	.037	1.465	1	.226	.957	.890	1.028
South-Muntenia	-.015	.035	.182	1	.670	.985	.920	1.055
Bucharest-Ilfov	-.390	.138	8.004	1	.005	.677	.517	.887
South-Oltenia	-.133	.035	14.109	1	.000	.876	.817	.938
Rural								
Urban	-1.082	.142	58.347	1	.000	.339	.257	.447
Without experience	Categoria de referință							
With experience	.216	.024	81.502	1	.000	1.241	1.184	1.300
Without UI								
With UI	-1.841	.062	893.106	1	.000	.159	.141	.179
UI value			300.325	1ª	0.000			
50%	Categoria de referință							
75%	-1.213	.070	300.325	1	.000	.297	.259	.341
Without UI	-	-	-	-	-	-	-	-
Ethnicity			12.472	5	.029			
Romanian	Categoria de referință							
Hungarian	.158	.059	7.129	1	.008	1.171	1.043	1.316
Rrom	-.125	.236	.280	1	.597	.883	.556	1.402
Another EU ethnic group	.678	.334	4.120	1	.042	1.971	1.024	3.794
Another non-EU ethnic group	-.544	.578	.885	1	.347	.581	.187	1.802
Unknown	-.258	1.000	.066	1	.797	.773	.109	5.490
Locality type			68.359	3ª	0.000			
Commune	Categoria de referință							
Municipality	1.167	.142	67.452	1	.000	3.213	2.432	4.244
City	1.117	.142	62.209	1	.000	3.057	2.316	4.035
Village	-.048	.071	.465	1	.495	.953	.830	1.094
Bucharest sector	1.167	.142	67.452	1	.000	3.213	2.432	4.244
Without trainning	Categoria de referință							
With trainning	-.287	.097	8.681	1	.003	.750	.620	.908
Others	Categoria de referință							
First time job seekers	-1.195	.058	431.565	1	.000	.303	.270	.339
a. Reduced degrees of freedom due to constant or linearly dependent covariates								

Source: author processing using SPSS 25.0, based on data provided by NAE

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Table A6. Cox regression results, event 4

Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
Men	Categoria de referință							
Women	.557	.065	73.489	1	.000	1.746	1.537	1.984
Age			696.856	5	0.000			
Less than 25	Categoria de referință							
25-29	-.111	.101	1.222	1	.269	.895	.735	1.090
30-39	-1.202	.120	100.641	1	.000	.301	.238	.380
40-49	-2.525	.154	269.576	1	.000	.080	.059	.108
50-55	-1.486	.147	101.574	1	.000	.226	.169	.302
Over 55	.075	.129	.340	1	.560	1.078	.838	1.388
Education			16.974	3	.001			
Higher education without BA diploma	Categoria de referință							
Higher education	-.002	.175	.000	1	.991	.998	.708	1.408
Master	-.286	.170	2.838	1	.092	.751	.539	1.048
PhD	.276	.602	.211	1	.646	1.318	.405	4.285
Academic specialization			56.268	10	0.000			
Economics	Categoria de referință							
Engineering architecture and urbanism	-.009	.085	.010	1	.920	.992	.840	1.171
Medical	.643	.116	30.889	1	.000	1.902	1.516	2.386
Law	-.157	.145	1.177	1	.278	.855	.643	1.135
Psychology. sociology. Anthropology. social assistance	.141	.129	1.205	1	.272	1.152	.895	1.482
Acting. Directing. scenography	-.654	1.004	.425	1	.515	.520	.073	3.717
Geography. history. archeology	-.164	.360	.208	1	.648	.848	.419	1.720
Humanities and journalism	.094	.200	.223	1	.637	1.099	.742	1.627
Mathematics. physics. chemistry. biology	.058	.246	.055	1	.814	1.059	.654	1.715
Other specializations/ occupations	-.061	.079	.591	1	.442	.941	.806	1.099
Unknown	2.041	.711	8.238	1	.004	7.697	1.910	31.013
Region			17.160	7	0.016			
North-East	Categoria de referință							
West	.274	.104	6.916	1	.009	1.315	1.072	1.612
North-West	-.049	.103	.229	1	.632	.952	.778	1.165
Center	-.118	.113	1.086	1	.297	.889	.712	1.109
South-East	.013	.110	.013	1	.910	1.013	.815	1.257
South-Muntenia	-.030	.110	.072	1	.788	.971	.782	1.205
Bucharest-Ilfov	-.315	.389	.656	1	.418	.730	.341	1.564
South-Oltenia	.047	.102	.211	1	.646	1.048	.858	1.281

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Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
Rural	Categoria de referință							
Urban	.128	.391	.107	1	.743	1.137	.528	2.448
Without experience								
With experience	-.067	.079	.702	1	.402	.936	.801	1.093
Without UI	Categoria de referință							
With UI	2.847	.128	492.389	1	.000	17.237	13.404	22.165
UI value			71.221	1ª	0.000			
50%	Categoria de referință							
75%	-1.048	.124	71.221	1	.000	.351	.275	.447
Without UI	-	-	-	-	-	-	-	-
Ethnicity			22.497	5	0.000			
Romanian	Categoria de referință							
Hungarian	.362	.149	5.907	1	.015	1.437	1.073	1.924
Rrom	1.014	.506	4.014	1	.045	2.757	1.022	7.434
Another EU ethnic group	-6.858	61.984	.012	1	.912	.001	.000	6.063 E+49
Another non-EU ethnic group	2.065	.580	12.692	1	.000	7.883	2.532	24.547
Unknown	-8.405	124.131	.005	1	.946	.000	.000	1.024 E+102
Locality type			1.082	3ª	0.781			
Commune	Categoria de referință							
Municipality	-.175	.392	.200	1	.655	.839	.389	1.810
City	-.199	.391	.260	1	.610	.819	.381	1.763
Village	.148	.168	.767	1	.381	1.159	.833	1.612
Bucharest sector	-	-	-	-	-	-	-	-
Without trainning	Categoria de referință							
With trainning	-.522	.239	4.770	1	.029	.593	.372	.948
Others	Categoria de referință							
First time job seekers	.685	.130	27.878	1	.000	1.984	1.539	2.559
a. Reduced degrees of freedom due to constant or linearly dependent covariates								

Source: author processing using SPSS 25.0, based on data provided by NAE

Table A7. Cox regression results, event 5

Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
Men	Categorie de referință							
Women	-.009	.008	1.300	1	.254	.991	.976	1.006
Age			4970.661	5	4970.66			
Less than 25	Categorie de referință							
25-29	.001	.012	.005	1	.943	1.001	.978	1.025
30-39	-.319	.013	600.927	1	.000	.727	.709	.746
40-49	-.684	.015	2170.902	1	.000	.504	.490	.519
50-55	-.806	.019	1889.313	1	.000	.447	.431	.463
Over 55	-.838	.020	1780.416	1	.000	.432	.416	.450
Education			2008.329	3	0.000			
Higher education without BA diploma	Categorie de referință							
Higher education	-.070	.030	5.401	1	.020	.933	.879	.989
Master	.435	.029	231.760	1	.000	1.545	1.461	1.634
PhD	-.039	.104	.139	1	.709	.962	.785	1.179
Academic specialization			219.866	10	0.000			
Economics	Categorie de referință							
Engineering architecture and urbanism	.057	.011	24.988	1	.000	1.059	1.035	1.083
Medical	.132	.017	58.194	1	.000	1.141	1.103	1.181
Law	-.003	.017	.036	1	.849	.997	.963	1.031
Psychology. sociology. Anthropology. social assistance	-.058	.020	8.459	1	.004	.943	.907	.981
Acting. Directing. scenography	-.035	.094	.139	1	.709	.966	.804	1.160
Geography. history. archeology	-.124	.043	8.538	1	.003	.883	.812	.960
Humanities and journalism	-.070	.029	5.781	1	.016	.932	.880	.987
Mathematics. physics. chemistry. biology	.043	.036	1.389	1	.239	1.044	.972	1.121
Other specializations/ occupations	.098	.010	91.530	1	.000	1.103	1.081	1.125
Unknown	.408	.140	8.437	1	.004	1.503	1.142	1.979
Region			546.218	7	0.000			
North-East	Categorie de referință							
West	.290	.014	459.196	1	.000	1.337	1.302	1.373
North-West	.082	.014	32.829	1	.000	1.086	1.056	1.117
Center	.131	.015	73.272	1	.000	1.139	1.106	1.174
South-East	.170	.015	135.610	1	.000	1.185	1.152	1.219
South-Muntenia	.102	.015	49.208	1	.000	1.107	1.076	1.139

Appendix. The Effect of Academic Specialization on Unemployment Spells and (Re) Employment Hazard

Explanatory	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
Bucharest-Ilfov	-.057	.045	1.602	1	.206	.944	.864	1.032
South-Oltenia	.177	.014	170.287	1	.000	1.194	1.163	1.226
Rural	Categorie de referință							
Urban	-.391	.046	72.629	1	.000	.677	.619	.740
Without experience	Categorie de referință							
With experience	-.306	.009	1053.792	1	.000	.737	.723	.750
Without UI	Categorie de referință							
With UI	-.254	.015	283.816	1	.000	.776	.753	.799
UI value			793.139	1[a]	0.000			
50%	Categorie de referință							
75%	-.491	.017	793.139	1	.000	.612	.591	.633
Without UI	-	-	-	-	-	-	-	
Ethnicity			8.210	5	.145			
Romanian	Categorie de referință							
Hungarian	-.060	.026	5.525	1	.019	.942	.895	.990
Rrom	-.046	.095	.234	1	.628	.955	.793	1.150
Another EU ethnic group	.035	.200	.031	1	.859	1.036	.700	1.534
Another non-EU ethnic group	.221	.158	1.949	1	.163	1.247	.915	1.701
Unknown	-.229	.333	.474	1	.491	.795	.414	1.528
Locality type			115.272	3[a]	0.000			
Commune	Categorie de referință							
Municipality	.411	.046	79.767	1	.000	1.508	1.378	1.650
City	.424	.046	85.882	1	.000	1.529	1.397	1.672
Village	-.156	.030	27.123	1	.000	.855	.806	.907
Bucharest sector	-	-	-	--	-	-	-	
Without trainning	Categorie de referință							
With trainning	-.173	.031	31.591	1	.000	.841	.792	.894
Others	Categorie de referință							
First time job seekers	-.253	.021	152.558	1	.000	.776	.746	.808
a. Reduced degrees of freedom due to constant or linearly dependent covariates								

Source: author processing using SPSS 25.0, based on data provided by NAE

Table A8. Median survival time until event 1 occurs by different covariates

Explanatory variables	Median survival time (days)	Significance		
		Log-Rank	Breslow	Tarone-Ware
Women	547.000	0.004	0.000	0.001
Men	488.000			
Less than 25	452.000	0.000	0.000	0.000
25-29	365.000			
30-39	439.000			
40-49	547.000			
50-55	650.000			
Over 55	919.000			
Higher education without BA exam	366.000	0.000	0.000	0.000
Higher education	365.000			
Master	551.000			
PhD	361.000			
Economics	547.000	0.000	0.000	0.000
Engineering architecture and urbanism	544.000			
Medical	360.000			
Law	567.000			
Psychology. sociology. anthropology. social assistance	562.000			
Acting. directing. scenography	732.000			
Geography. history. archeology	731.000			
Humanities and journalism	726.000			
Mathematicsphysics. chemistry. biology	547.000			
Other specialization/ occupations	488.000			
North-East	360.000	0.000	0.000	0.000
West	378.000			
North-West	476.000			
Center	548.000			
South-East	484.000			
South-Muntenia	512.000			
Bucharest-Ilfov	731.000			
South-West	582.000			
Rural	500.000	0.000	0.000	0.000
Urban	547.000			
Without experience	365.000	0.000	0.000	0.000
With experience	588.000			
Without UI	184.000	0.000	0.000	0.000
With UI	589.000			
Without UI	184.000	0.000	0.000	0.000
50%	843.000			
75%	609.000			
ABS	365.000	0.000	0.000	0.000
Others	547.000			
Romanian	537.000	0.150	0.101	0.129

Appendix. The Effect of Academic Specialization on Unemployment Spells and (Re) Employment Hazard

Explanatory variables	Median survival time (days)	Significance		
		Log-Rank	Breslow	Tarone-Ware
Hungarian	613.000			
Roma	551.000			
Other EU ethnicity	-			
Other non-EU ethnicity	-			
Unknown	365.000			
Commune	514.000	0.000	0.000	0.000
Municipality	445.000			
Town	464.000			
Village	366.000			
Bucharest - sector	731.000			
Without NAE trainning	537.000	0.000	0.000	0.000
With NAE trainning	554.000			

Source: author processing. using SPSS 25.0

Table A9. Cox regression results. *event=1*. for gender variable

Variabilele în ecuație								
Gender	B	SE	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)	
							Lower	Upper
Men	Reference category							
Women	-0.035	0.013	7.469	1	0.006	0.965	0.941	0.990

Source: author processing using SPSS 25.0. based on data provided by NAE

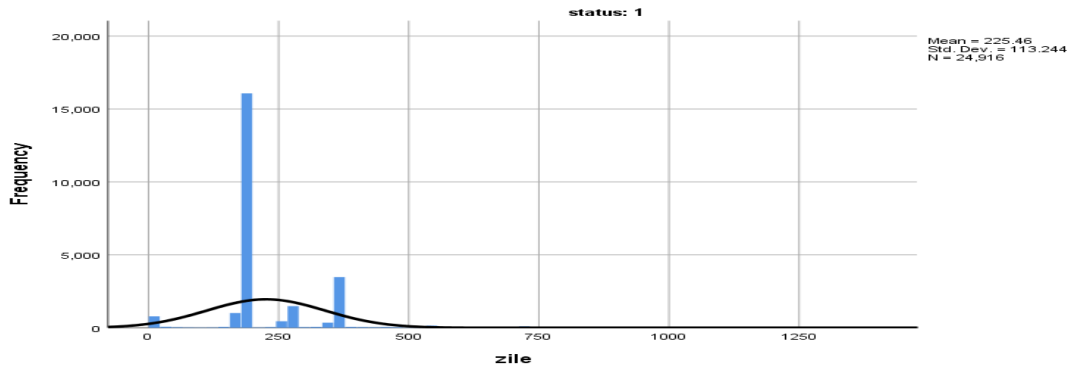**Figure A1. Distribution of unemployment spells (days)**
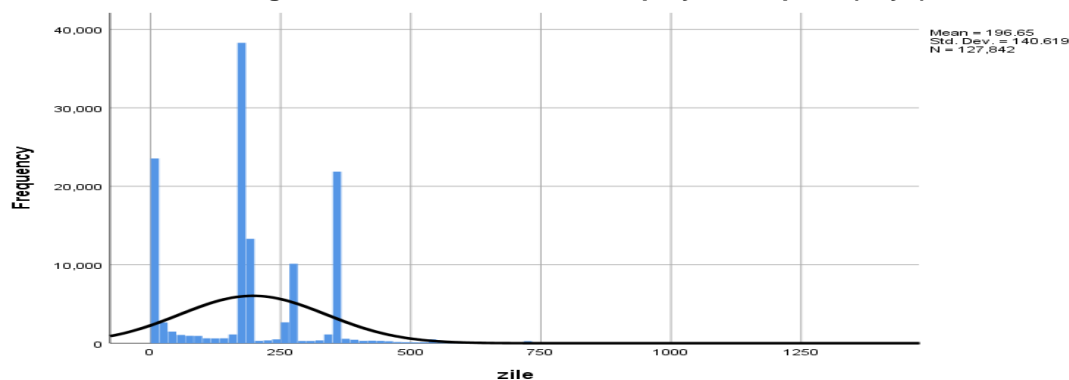
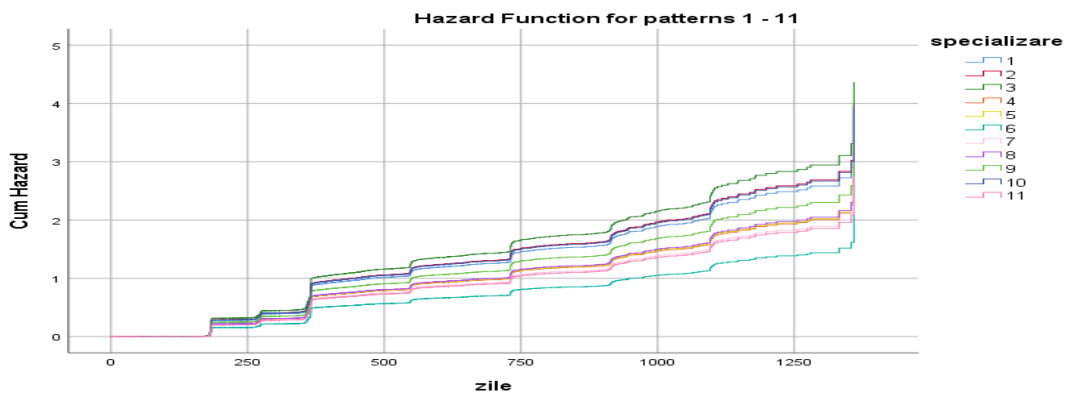*Source: author processing using SPSS 25.0 based on data provided by NAE*

Figure A2. Histogram of unemployment spells ended due to (re)employment or because the subject obtain a monthly income higher than SRI

Source: author processing using SPSS 25.0 based on data provided by NAE

Figure A3. Hazard function for academic specialization variable

Source: author processing using SPSS 25.0 based on data provided by NAE