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Entrepreneurship among higher education graduates in 13 European countries

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Abstract. *Our paper investigates the school-to-work transition of higher education graduates from European countries. Exploring REFLEX data set which includes information on first jobs held by the ISCED 5 graduates, we study the incidence and characteristics of youth entrepreneurship. Also, we find the educational, institutional and personal factors influencing entrepreneurship along the 13 European countries. Our results are important for designing future policies and programs for encouraging youth entrepreneurship, especially among those with higher education.*

Keywords: entrepreneurship; youth; higher education.

JEL Classification: J24.
REL Classification: 14D.

Introduction

The study of youth entrepreneurship improves the knowledge about creation of youth employment opportunities. Starting his/her own micro or small enterprise or becoming self-employed could represent one important way of negotiating school-to-work transition. However, there is a gap of knowledge on youth entrepreneurship and its barriers and incentives. Our paper aims to investigate the choice of this career pattern by higher education graduates from 13 European countries.

It is well known that the reduction of youth unemployment is a key objective for policy makers from both developed and least developed countries. Analysis of labour market indicators by age shows that there is a strong need for employment creation focussed on young people (Schoof, 2006). Also, youth unemployment represents an important loss of human capital that could contribute to the economic growth. Therefore, increasing youth employment would be beneficial for the entire society on long term.

While economies face an increasing need of employment opportunities for youth, entrepreneurship represents a valuable path of insertion on the labour market. That is why, entrepreneurship could contribute to a better usage of the economic potential of young people and to overcoming poverty. Youth entrepreneurship is important from many economic and social points of view: unemployment reduction, increasing social inclusion, enhancing self confidence among youth, reduction of the risk of youth delinquency, improving youth skills and knowledge, promoting innovation and new economic niches. Therefore, we must sustain youth entrepreneurship as a valuable source of job creation and economic dynamism. However, scholars warn us that youth entrepreneurship shouldn't be considered a wide-ranging solution for all sorts of economic and social problems, but a valuable career alternative to be promoted.

Entrepreneurship represents "the process whereby individuals become aware of business ownership as an option or viable alternative, develop ideas for business, learn the process of becoming an entrepreneur and undertake the initiation and development of a business" (Stevenson, 1989 apud. Chigunta, 2002). On the other hand, entrepreneurship is understood in close connection with qualities such as initiative, innovation, creativity and risk-taking and knowledge to obtain success in specific economic and cultural environments.

On the other hand, growth of youth entrepreneurship is sensible to a number of factors, among which the most important are awareness and public attitude on youth entrepreneurship, entrepreneurship education, business support, institutional framework and access to financing mechanisms (Schoof, 2006).

Data and methodology

Objective of our paper is to investigate the incidence of entrepreneurship among higher education graduates and factors shaping it. Information on career of school leavers come from a large scale survey conducted in 13 European countries (Portugal, Spain, Italy, France, Austria, Germany, Netherlands, Belgium, United Kingdom, Norway, Finland, Estonia and Czech Republic) on a representative sample drawn of graduates from ISCED 5 who got their diploma in the academic year 1999/2000. The survey was part of the REFLEX Project ("The Flexible Professional in the Knowledge Society New Demands on Higher Education in Europe"). Data were collected in 2005 via mail questionnaire and graduates offered information on their jobs after leaving education. Total number of respondents is 31,846.

Table 1. *Distribution of graduates included in the sample, by country*

Country	Frequency	%
Portugal	645	2.0
Spain	3916	12.3
Italy	3139	9.9
France	1700	5.3
Austria	1821	5.7
Germany	1700	5.3
Netherlands	3425	10.8
Belgium	1291	4.1
United Kingdom	1578	5.0
Norway	2201	6.9
Finland	2676	8.4
Estonia	960	3.0
Czech Republic	6794	21.3
Total	31846	100

Results

In total, 10.3% of graduates had no job 5 years after leaving education. France, Italy, Finland and Spain display highest share of graduates who don't work. While 81.9% of graduates have one job, 7.8% of them have more than one job. Higher incidence of respondents with two or more jobs is registered in Estonia, Austria and Portugal. One should notice the case of Norway which performs best in this respect. It registers the lowest share of graduates with no job and the highest share of school leavers with more than one job.

Table 2. *Distribution of graduates, by current employment (%)*

	One job	More than one job	No job	Total
Portugal	78.6	12.5	8.9	100
Spain	81.3	6.4	12.2	100
Italy	83.0	4.0	13.0	100
France	82.9	3.7	13.4	100
Austria	75.7	12.1	12.2	100
Germany	85.0	5.5	9.5	100
Netherlands	86.5	6.8	6.7	100
Belgium	89.6	6.3	4.1	100
United Kingdom	82.8	5.4	11.8	100
Norway	84.4	10.4	5.2	100
Finland	80.3	7.0	12.7	100
Estonia	76.6	15.4	8.1	100
Czech Republic	79.2	10.3	10.5	100
Total	81.9	7.8	10.3	100

11.4% of the investigated graduates have become entrepreneurs five years after leaving education. The incidence of entrepreneurship is higher in Italy where we find that almost one quarter of the respondents are in this category. Also, Portugal, Austria and Czech Republic register higher shares of entrepreneurs, while United Kingdom has the poorest share of entrepreneurs among graduates with higher education.

Table 3. *Distribution of employed graduates, by type of employment (%)*

	Entrepreneurs	Non-entrepreneurs	Total
Portugal	15.8	84.2	100
Spain	9.3	90.7	100
Italy	22.7	77.3	100
France	6.4	93.6	100
Austria	14.4	85.6	100
Germany	12.7	87.3	100
Netherlands	6.7	93.3	100
Belgium	12.7	87.3	100
United Kingdom	5.2	94.8	100
Norway	6.2	93.8	100
Finland	6.9	93.1	100
Estonia	9.9	90.1	100
Czech Republic	14.5	85.5	100
Total	11.4	88.6	100

For understanding the entrepreneurial behavior, we estimate a logistic binomial regression for the dependent variable ”being an entrepreneur” which takes the value 1 for those becoming entrepreneurs and 0 otherwise. Model 1 finds the numerous significant predictors, including contextual and personal variables. From the country point of view, graduates from Italy have larger odds to be entrepreneurs as compared to those from Czech Republic (reference category), while most of the other countries display smaller probabilities. Also, field of education influences the youth career as those graduating humanities and arts and agriculture and veterinary became entrepreneurs in the highest extend (reference category being education). In accordance with results of other studies, male graduates have higher propensity towards entrepreneurship as against women. Moreover, age has a positive effect on entrepreneurship as older school leavers register higher odds to be entrepreneurs. On the other hand, values and attitudes to work represent significant predictors for entrepreneurship. Graduates valuing work autonomy, having new challenges, enjoying social status and good career prospects are more present among entrepreneurs, while those valuing job security, opportunity to learn, chance to combine work with family, chance to help the society are less present. Regarding the economic sector, young entrepreneurs activate more in agriculture, construction, hotels and restaurants, real estates, health and other services. From the point of view of the features of the economic environment, school leavers have more odds to be entrepreneurs in environments characterized by unstable demand, with strong competition and in businesses operating at local and regional level.

Model 2 kept all the above stated variables, while replacing the country variable with the Economic Complexity Index (ECI). The Economic Complexity Index was introduced by R. Hausmann and C. Hidalgo as a holistic measure of a country´s economy and it attempts to synthesize the collective knowledge of the society. It is based on the product space concept and it measures the diversity of capabilities existing in a specific country (Hausmann, Hidalgo, 2009). The authors recommend using it not only as a descriptive measure of a specific country, but also as a predictive tool of the country´s future economic development, because the creation of new products is positive correlated with the existing capabilities. Using the international trade data, the authors create a bipartite network that links the countries to the products they export (4-digit level according to The Standard International Trade Classification) and on it estimate a series of variables with the Method of Reflections (Hausmann, Hidalgo, 2009). These variables are the inputs on which they calculate the economic complexity index. We use the computed Economic Complexity Index at national level for 2005. Results of Model 2 show that higher ECI at national level is associated with higher odds to become entrepreneur.

Model 3 kept variables from Model 1, while replacing the field of education with other predictors characterizing the educational systems. Our results show that use of problem-based learning and oral presentations by students as teaching methods is associated with higher propensity towards entrepreneurship, while the use of traditional teaching methods reduce the chance to entrepreneurship. On the other hand, participation in student and other voluntary organizations increases the odds of becoming an entrepreneur. Also, self-assessed abilities influence careers of school leavers. Ability to negotiate, to perform well under pressure, to be alert to new opportunities, to come up with new ideas and solutions, to present products, ideas or reports to an audience and to write and speak in a foreign language increase the propensity toward entrepreneurship. Finally, higher number of years of education currently attained determines higher chances to become entrepreneur for graduates of higher education studies.

Table 4. *Results of the logistic regression for being an entrepreneur (1 = entrepreneur, 0 = non-entrepreneur) – method: Enter*

Variables	Model 1 Exp (B)	Model 2 Exp (B)	Model 3 Exp (B)
Country (ref. = Czech Republic)			
Portugal	0.774		0.710**
Spain	0.638***		0.567***
Italy	1.280***		0.961
France	0.469***		0.335***
Austria	0.697***		0.594***
Germany	0.568***		0.489***
Netherlands	0.376***		0.356***
Belgium	1.135		1.076
United Kingdom	0.373***		0.465***
Norway	0.319***		0.265***
Finland	0.417***		0.396***
Estonia	0.840		0.776
Economic Complexity Index		1.191***	
Field of education (ref. = Education)			
Humanities and Arts	1.593***	1.608***	
Social sciences, Business and Law	0.986	1.069	
Science, Mathematics and Computing	0.651***	0.667***	
Engineering, Manufacturing and Construction	0.958	1.056	
Agriculture and Veterinary	1.562***	1.630***	
Health and Welfare	0.891	0.908	
Services	1.058	0.994	
Use of lectures as a method of teaching and learning (ref. = no high extend)			
High extend			0.832***
Use of group assignments as a method of teaching and learning (ref. = no high extend)			

Variables	Model 1 Exp (B)	Model 2 Exp (B)	Model 3 Exp (B)
High extend			0.763***
Use of internships, workplacement as a method of teaching and learning (ref. = no high extend)			
High extend			0.878**
Use of theories and paradigms as a method of teaching and learning (ref. = no high extend)			
High extend			0.863***
Use of project and/or problem-based learning as a method of teaching and learning (ref. = no high extend)			
High extend			1.239***
Use of oral presentations by students as a method of teaching and learning (ref. = no high extend)			
High extend			1.193***
Number of hours spent for study per week			1.004**
Participation in student or other voluntary organizations (ref. = no)			
Yes			1.134*
The degree in which the study programme was a good basis for development entrepreneurial skills (ref. = no high extend)			
High extend			0.656***
Self assessed ability to negotiate effectively (ref. = no high extend)			
High extend			1.132**
Self assessed ability to perform well under pressure (ref. = no high extend)			
High extend			1.220***
Self assessed ability to be alert to new opportunities (ref. = no high extend)			
High extend			1.319***
Self assessed ability to work productively with others (ref. = no high extend)			
High extend			0.683***
Self assessed ability to use computers and the internet (ref. = no high extend)			
High extend			0.833**
Self assessed ability to come up with new ideas and solutions (ref. = no high extend)			
High extend			1.276***
Self assessed ability to present products, ideas or reports to an audience (ref. = no high extend)			
High extend			1.146**
Self assessed ability to write reports, memos or documents (ref. = no high extend)			
High extend			0.870**
Self assessed ability to write and speak in a foreign language (ref. = no high extend)			

Variables	Model 1 Exp (B)	Model 2 Exp (B)	Model 3 Exp (B)
High extend			1.120*
Years of higher education currently attained			1.122***
Gender (ref. = female)			
Male	1.515***	1.539***	1.313***
Age	1.046***	1.035***	1.045***
Values: work autonomy (ref. = no high importance)			
High importance	1.626***	1.654***	1.567***
Values: job security (ref. = no high importance)			
High importance	0.500***	0.509***	0.526***
Values: opportunity to learn new things (ref. = no high importance)			
High importance	0.786***	0.764***	0.781***
Values: high earnings (ref. = no high importance)			
High importance	0.919	0.827***	0.878*
Values: new challenges (ref. = no high importance)			
High importance	1.227***	1.068	1.066
Values: good chance to combine work with family tasks (ref. = no high importance)			
High importance	0.807***	0.936	0.733***
Values: chance of doing something useful for society (ref. = no high importance)			
High importance	0.777***	0.706***	0.838***
Values: social status (ref. = no high importance)			
High importance	1.159***	1.251***	1.131**
Values: enough time for leisure activities (ref. = no high importance)			
High importance	1.087	1.164***	1.015
Values: good career prospects (ref. = no high importance)			
High importance	1.188***	1.269***	1.174**
Work related training in the last 12 months (ref. = no)			
Yes	0.850***	0.843***	0.829***
International Standard Industrial Classification (ref. = education)			
Agriculture, hunting, forestry and fishing	1.534**	1.532**	1.925***
Mining and quarrying	0.234**	0.221***	0.259**
Manufacturing	0.693***	0.723***	0.668***
Electricity, gas and water supply	0.620	0.663	0.765
Construction	1.591***	1.572***	1.518***
Wholesale and retail trade; repair of motor vehicles	1.008	1.021	0.956
Hotels and restaurants	1.549*	1.553*	1.752**
Transport, storage and communications	0.700**	0.710**	0.682**
Financial intermediation	0.680***	0.706**	0.615***
Real estate, renting and business activities	2.242***	2.290**	2.109***
Public administration and defence; compulsory social security	0.712*	0.691**	0.710*
Health and social work	1.380***	1.269**	1.378***
Other services	2.211***	2.180***	2.282***

Variables	Model 1 Exp (B)	Model 2 Exp (B)	Model 3 Exp (B)
How strong is the competition in the market in which your organization operates (ref. = week)			
Medium	1.346***	1.413***	1.428***
Strong	1.632***	1.760***	1.613***
How stable is demand in the market in which your organization operates? (ref. = stable)			
Medium	1.175***	1.213***	1.135***
Unstable	1.362***	1.344***	1.343***
What is the scope of operations of your organization? (ref. = international)			
Local	4.565***	5.083***	4.615***
Regional	2.776***	2.769***	2.922***
National	1.743***	1.809***	1.744***
Constant	0.015	0.010	0.019
Chi-square	2149.67***	1833.28***	2047.93***
Nagelkerke R Square	0.2014	0.1732	0.2195
Overall % Correct	87.08	86.89	87.71

*p<0.1; **p<0.05; ***p<0.01.

Conclusions

Our study investigated the incidence of entrepreneurship among higher education graduates five years after leaving education. Analysing survey data, we find most important factors for youth entrepreneurship. So, most important conclusions are as follows:

- Our study finds that 11.4% of higher education graduates became entrepreneurs five years after leaving education;
- Italy, Portugal, Czech Republic and Austria display the highest propensity to entrepreneurship among higher education graduates;
- Level and complexity of economic development is very important for youth entrepreneurship;
- Personal factors such as gender, age and values and attitudes towards work shape significantly model the entrepreneurship behavior;
- Educational profile of graduates influences the chance of becoming entrepreneur, especially the use of specific teaching methods in faculties, number of years of education and the acquired abilities.

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