

Investigating higher education graduates' entrepreneurship in Greece

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This paper aims to analyse issues and challenges related to university graduates' entrepreneurship and self-employment. An extensive literature review analyzes the relevant situation in European Union and Greece. Additionally, an institutional survey has been carried out concerning the career paths of a large number of higher technological education Greek graduates. A detailed structured questionnaire was designed to collect rigorous data and to obtain deeper understanding of student choices. The randomly selected unbiased sample represented nearly 30% of the total population of recent graduates of five consecutive years. The method of telephone interviews was selected as the most efficient tool of collecting the required information. This paper reports on the analysis of the responses of 197 self-employed graduates regarding the motivation to start a business, the process through which they started their business, and financial issues concerning the start-up.

The detection of significant effects towards graduates' entrepreneurship through multivariate statistical analysis revealed that the most important factors are the gender, the degree grade, the acquisition of a postgraduate degree, as well as the faculty and the specialty of the bachelor studies. The original results of the survey provide important insight into graduates' self-employment. The paper also demonstrates the need for a systematic national strategy that will take advantage of innovative potentials, increase competitiveness and enhance the collaboration between government, educational and research institutions, as well as the industry.

Keywords: *Entrepreneurship, University graduates, Labour market, Self-employment, Greece.*

The creation of new firms is crucial for regional development and the vitality of national economies (Saarenketo et al., 2009, Dahlstrand, 2007). Developing new entrepreneurs is seen as a major strategic task in the policy programmes of many countries and the European Union (Action plan, 2004, COM, 2003). Policy makers and Higher Educational Institutions (HEIs) play a fundamental role in supporting entrepreneurship and new business ventures. In particular HEIs are challenged to actively provide their students with appropriate knowledge, skills and abilities for entrepreneurship, sometimes articulated as the '*third mission of universities*' (Franco et al., 2010, Etzkowitz et al., 2000).

In recent years entrepreneurship is established as an academic discipline. Entrepreneurship study programmes and courses can be found at all educational levels (Franco et al., 2010, Handscombe et al., 2008, Nabi & Holden, 2008, Falkäng & Alberti, 2000). Many HEIs also provide support

programmes manned by coaches and mentors or offer entrepreneurship seminars and forums aiming to complement traditional entrepreneurship study programmes (Birdthistle, et al., 2009; Hynes & Richardson 2008; Kostoglou & Siakas, 2008). This kind of creation of an environment for stimulation of entrepreneurial behaviour in the academic community is called Academic Entrepreneurship (Sijde et. al, 2006). Partnerships that carry out research in Academic Entrepreneurship and promote graduate self-employment are academic coalitions, such as the Global Entrepreneurship Monitor (GEM, 2010) and the National Council for Graduate Entrepreneurship in the United Kingdom (NCGE, 2010). Lacetera (2009) considers that the academic entrepreneurship means the exploitation of scientific work. We adopt the viewpoint of Sijde et. al, (2006) concluding that an environment stimulating entrepreneurship includes promoting entrepreneurial skills and encouraging entrepreneurial mindsets. The

lack of knowledge about the graduates' occupations, in particular about those who began the process of starting a new business, was the main motivation for this study. The research question concerns the graduates' motivation to start a business (an independent start-up, also called a nascent entrepreneurship), the process through which they started their business, as well as financial issues concerning the start-up. The research population includes in total 197 self-employed graduates from the Alexander Technological Educational Institution in Thessaloniki, Greece.

Literature Review

Handscombe et al., (2008) and Hegarty & Jones (2008) describe concrete experiments aiming to create essential life skills and entrepreneurial capacity among students by embedding entrepreneurship education in existing course provision. Such practices require pre-conditions, mindsets of entrepreneurial thinking and a change in the whole educational structure. Very few instructors today possess even the most essential entrepreneurial skills in addition to their specialisation. On the whole there seems to be a lack of a clear shared vision regarding entrepreneurship education in universities and as a result the start-up support is often fragmented. The main problem, however, with the European Union (EU) and governmental funding programmes for entrepreneurship is sustainability. Most such funding programmes start well, but unfortunately stop before the programmes can show the anticipated impact. Research and Development (R&D) stimulate employment, competitiveness and economic growth, in particularly in high-skilled, high-tech and high-value areas of the economy. Even though the engineering, technology and science training programmes provided by the European universities are considered among the best in the world, commercialisation of R&D is still in its infancy in Europe (Wilson, 2008).

Despite the many efforts to educate competent entrepreneurs and to support start-ups it seems that the proportion of students

aiming to commence into self-employment is rather small (Franco et al., 2010). A European wide study Schomburg & Teichler (2006) call attention to the fact that the employment conditions have changed with a propensity toward flexible work schedules, newly emerging job tasks and occupations traditionally held by non-graduates, increased short-terms contracts and part-time jobs, as well as quasi self-employment. This is a trend that also needs to be taken into consideration in HEIs. Part-time self-employment, during the study period, is a valuable experience we need to encourage. We also tend to ignore that entrepreneurial competencies are more psychologically oriented than traditional subject-matter skills and also more holistic. Practical entrepreneurial projects conducted in a real environment and with real customers are argued by Taatila (2010) to be the most effective methods used for learning entrepreneurial behaviour and entrepreneurial competencies. Unfortunately entrepreneurship programmes are often constrained by HEIs structures, rules or regulations. Also very few European universities track extensively their alumni, which makes it even harder to know the levels of graduates' self-employment (Wilson, 2008).

Some research studies has been carried out concerning the factors that stimulate entrepreneurial activity (Greene & Saridakis, 2007, Souitaris et al., 2007, Stephen et al., 2005), as well as regarding the barriers to start-ups (Robertson et al., 2003, Eurobarometer, 2009). Robertson et al., for example describe external factors from the environment that influences entrepreneurship. Such factors are grouped into '*push factors*', which include unemployment, redundancy, recession, blocked promotion and frustration with previous employment, and '*pull factors*', which include independence, being one's own boss, doing enjoyable work and profit motives. Hussain et al. (2008) found that the two most compelling motivations for starting an own business was being one's own boss and profit motives. Similarly Franco et al. (2010) found that independence, autonomy, self-realisation and family tradition had important influence

on self-employment whilst the demographic profile, social background, and participation in entrepreneurship education was not statistically related to self-employment. Regarding family tradition Birdthistle (2008) also articulate that having self-employed parents increase the propensity of self-employment and Harris et al. (2008) that students with family business experience had more developed entrepreneurial attitudes.

Regarding the effect of the gender on entrepreneurship, overall fewer women than men, tend to start their own business. In a study carried out by Hussain et al. (2008) regarding ethnic minorities in the UK 73% of the self-employed population was male. Nevertheless, the number of women is increasing steadily and women who are well-educated, confident about their skills, have higher levels of household income and jobs are more likely to be entrepreneurs than their less affluent counterparts (Allen et al., 2006).

Shane & Venkataraman (2000) argue that the field of entrepreneurship has lacked a conceptual framework that explains and predicts a set of empirical phenomena. Also the definition of the word entrepreneurship has mainly concentrated on who the entrepreneur is and what he or she does, instead of concentrating on sources of opportunities, processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them. In order to avoid this ambiguity we have chosen to use the word self-employment in our investigation.

This paper analyses and describes the results from a large institutional survey regarding graduates' employment. In particular we analyse graduates' self-employment. The remainder of the paper is structured as follows: in the next section, a literature review of self-employment in Greece is revealed. Section four provides the research methodology and section five describes the survey results and discusses the findings. The concluding section highlights theoretical and practical implications, research limitation and future work.

Self-employment in Greece

Despite the fact that Piperopoulos & Piperopoulos (2010) in their appraisal of the innovative performance of Greece from the 1990s to the present argue that the economic strategy up to now has had little if anything to do with entrepreneurship and innovation, Greece has a significantly higher than average entrepreneurship rate, meaning business in start-up phase and currently operational businesses (Eurobarometer Greece, 2007). However, almost two thirds of the entrepreneurs are '*push*' entrepreneurs, thus having created their business due to necessity rather than to existing opportunities and thus considered to have a low risk-tolerance. The Eurobarometer also found that Greece has the highest percentage of second-generation entrepreneurs (at least one parent is or was self-employed).

Greece failed to industrialise and create a national innovation system in line with Western European countries due to wrong decisions made by various governments, the unstable political environment, the lack of a culture toward joint efforts and cooperation, the narrow-mindedness of investors and businessmen only interested in maximising personal profits with minimum effort, and the lack of coherent organised long-term economic growth and strategic policies (Piperopoulos, 2009) This is probably true, but at the same time it indicates that due to the tradition of self-employment and high percentage of family businesses there is a potential of investments in other industries and business sectors than tourism which is presently the largest business sector. There are also potentials for joint efforts and cooperation as well as considerable space for modernisation of existing businesses. For example, in Greece the implementation of electronic government platforms lacks behind compared to other EU countries and entrepreneurship is not encouraged in fields normally gaining advantages from Information and Communication Technologies (ICTs), but instead small or very small traditional enterprises are favoured (Larios, 2006; Siakas & Kotsialos, 2008).

A recent study regarding Greek university graduates' self-employment show that 8,66% of the graduates from HEIs are self-employed, putting Greece on the 4th place in Europe (mean EU value 5,41%) and on the 15th place worldwide (Thomaidou & Politis, 2008).

In total 58% of the Greek respondents in the Eurobarometer 2009 survey reported that they prefer to be self-employed rather than to be an employee (42% in EU27 countries), due to personal independence and self-fulfilment (68%), better income prospects (22%) and freedom to choose place and time of working (18%). In contrary 39% of the respondents had a rather unfavourable attitude towards entrepreneurship, mainly because their conviction that it is difficult to start a business. A fact is that the creation and functional costs of new enterprises are rather high, compared to other European countries. In Greece the creation of a new enterprise takes 45 days and 16 consecutive processes need to be satisfied costing 69.6 % of per capita income compared to 4 days and 4 processes and 0 % cost in Denmark (Siakas & Kotsialos, 2008).

As the very important obstacles for starting a business are the following reasons mentioned: 66% receiving the necessary financial means (compared to 50% in EU27), 59% an appropriate business idea (compared to 51% in EU27), and 45% addressing an unmet social or ecological need (compared to 21% in EU27). The unmet social and ecological need is the highest in all EU countries, 'very important' and 'rather important' count for 75% of the responses.

According to a study of Mihail (2008) including 238 graduates working for firms across all sectors of economy in Northern Greece three statements (you work for other people only until you have enough experience to work for yourself, you do something very entrepreneurial, you start your own business or you work for a start-up company) scored a mean of 3.13 on a Likert type scale 1 (not at all) to 5 (a great deal) related to respondents' entrepreneurial spirit in facing career prospects. The findings indicate a relatively high aspiration for self-employment and thus

an agreement with the results of the Eurobarometer (2007).

According to the last Eurobarometer study (2009) in total 29% of the respondents in Greece consider self-employment to be feasible within the next five years (28.1% in EU27). Compared to the Eurobarometer study of 2007 a decrease from 36% was measured. The most important reasons reported by the respondents are the current economic climate is not good for a start-up (22%), lack of finances for self-employment (29%). Today the situation seems to be different. The financial crisis during 2010 and 2011 has forced many companies to close down. The current regression has a negative impact on graduate entrepreneurship. Due to the fact that the unemployment rates also are very high (18% in November 2011) many graduates leave the country and look for opportunities abroad.

A study regarding Greek graduates' career choices during the years 1998 – 2000, provides many and interesting data about self-employment in Greece (Karamesini, 2008). The study that included 13600 university graduates found that 12.8% of the Greek graduates were self-employed 5-7 years after their graduation. The highest percentages self-employed graduates had graduated from law, pharmacy, architecture, civil engineering, veterinary, topography, medicine-dentistry and geology-physiognomy disciplines. Women were found to a considerable lower degree to be self-employed compared to men (9.1% compared to 17.9%). In total 77% of the self-employed occupied employees (43.8% more than one employee) and in total 89% declared that they had positive prospects for the near future. The respondents stated that the main financial sources to support self-employment were from family and personal savings, followed by bank loans, national and European funding programmes. In this study the reasons for self-employment were reported as independence (74.4%), future career prospects (50.3%) and good income prospects (35.3%). The high value for future career prospect was rather surprising. The main reasons for those who were thinking of starting their own

business, but have not done it yet were reported financial, need to obtain more professional experience first and I do not feel mature enough yet.

Our empirical experiences from the challenges limiting the capability of the HEIs to deliver entrepreneurial graduates are consistent with the challenges reported by the NCGE (2008):

- A complex policy environment focusing on short-term funding of projects and events rather than on long-term capacity building and educator development;
- Lack of strategy - varying levels of engagement from business schools leading to reliance on the enthusiasm of individuals;
- Varying levels of 'embedding' entrepreneurship education across institutions and departments.

Compared to most European countries with a considerable university-business-government cooperation, such as the National Council for Graduate Entrepreneurship (NCGE) in the United Kingdom for example, that promotes future entrepreneurship, the public universities and technological institutes in Greece are regulated by laws and decrees that undermine such relations (Piperopoulos & Piperopoulos, 2010).

Research Methodology

A large institutional survey concerning graduates' employment was carried out at the Alexander Technological Educational Institution of Thessaloniki (ATEI-Th), Greece. A structured questionnaire designed for the survey was used in order to examine the main self-employment issues of an unbiased, randomly selected large sample (representing nearly 30% of the total population) of recent graduates of five consecutive years. As far as the research methodology is concerned the use of telephone interviews was selected as the most efficient method of collecting the required data due to relevant significant experience of the research team, the existence of a trained group of interviewers, and the expected higher response rates. A specific telephone survey

methodology has been adopted and full written guidelines were given to the interviewers (Bishop et al., 1988). This paper reports on the analysis of the responses of 197 self-employed graduates.

The main parameters examined through descriptive and inferential analysis with the use of the statistical package SPSS, are the type of enterprise the self-employed graduates have started, the number of employees occupied in the firm, the sources of initial finance, as well as the satisfaction from self-employment. Finally the impact of factors, such as place of residence, gender, marital status, and type of secondary education, degree grades and postgraduate studies are examined.

Findings

The analysis of 1541 valid questionnaires of the institutional survey regarding the professional status of graduates showed that five to seven years after graduation 84.7% of the graduates are working, 8.4% are unemployed and 6.9% are idle (not seeking for a position in the labour market).

One out of eight graduates (12.8%) is self-employed. The percentage of self-employed men is more than double than that of women (18.8% versus 9.1%). It is therefore obvious that gender plays a very significant role towards the turn to self-employment.

In total 56.7% of the self-employed graduates had started a new firm from scratch after their graduation, 37.1% were self-employed in family businesses and 6.2% in other types of businesses. A further analysis of the self-employed graduates has shown that 61.4% of them work alone, 26.4% employ one to five employees, 5.5% employ six to 20 employees, 3.5% 21 to 50 employees, and 2.5% employ over 50 employees. This distribution shows that the vast majority of graduates' companies are micro or Small and Medium Sized Enterprises (SMEs).

Table 1 presents the self-employment rates of the graduates according to their specialty (department of graduation). The 20 examined specialties can be divided according to corresponding graduates' self-employment

Table 1: Self-employment per specialty

Department/Specialty	Self-employed graduates (%)
Nutrition and dietetics	41.8
Civil infrastructure engineering	35.2
Physiotherapy	26.2
Aesthetics and cosmetology	25.5
Plant production	21.0
Automation	18.2
Accounting	13.8
Food technology	12.0
Tourism management	12.0
Vehicle engineering	11.9
Electronics	9.5
Marketing	9.3
Farm management	5.9
Animal production	5.7
Informatics	5.4
Medical laboratories	5.0
Library science	4.0
Childhood care and education	3.8
Midwifery	2.0
Nursing	1.7
Total	12.8

rate in three distinguished categories: (a) high self-employment (over 20%) – 25% of the examined specialties belong in this category (nutrition and dietetics, civil infrastructure engineering, physiotherapy, and aesthetics and cosmetology); (b) medium self-employment (between 5% and 20%) – including the majority of the specialties (55%); and (c) low self-employment (less than 5%) – 20% of the specialties belong in this category, namely library science, childhood care and education, midwifery and nursing. Thus, there is a strong indication that the department of study plays an important role on turn to self-employment.

Graduates' turn to entrepreneurship is also differentiated according to the faculty they carried out their bachelor studies (Table 2).

The graduates of food and nutrition, as well as (in a lower degree) these of engineering faculties turn significantly more than the others to self-employment.

Table 2: Self-employment per faculty

Faculty	Self-employed graduates (%)
Food and Nutrition	27.6
Engineering	15.0
Agriculture	12.4
Management and Economics	11.2
Health Sciences	9.4

The main sources of financial support of the firm in its initial stage are presented in Table 3. Assistance from family is the most frequent source of finance (over 55%). The remaining sources of financial support have been nearly equally financed through bank loans, programmes supporting entrepreneurial activities, and other sources.

The vast majority of self-employed graduates (86.6%) are adequately or very satisfied about their professional status. The dissatisfaction rate, just over 6%, can be considered as very low.

Table 3: Financial support of enterprise

Source of financial support	%
Assistance from family funds	56.3
Backing from bank loan	16.8
Entrepreneurship support programmes	13.5
Support from other sources	13.4

Further statistical analysis was carried out with the use of Chi-square test, as well as the index V of Cramer. The former has been applied for all possible cases at a 0.05 significance level, and the latter has been used due the small number of cases in some relevance tables, as in these cases the Chi-square test does not allow the reliable extraction of statistically significant conclusions.

The statistics displayed in Table 4 indicated that the following variables affect significantly graduates' self-employment: a) the gender, b) the specialty of bachelor studies, c) the faculty of bachelor studies, d) the acquisition of a postgraduate degree, and e) the bachelor degree grade.

Table 4: Variables affecting higher education graduates' entrepreneurship

Significantly affecting variable	X ² value	p	Cramer's V
Gender	56.617	0.00	0.192
Specialty	226.49	0.00	0.221
Faculty	61.211	0.00	0.115
Postgraduate studies	10.935	0.09	0.060
Degree grade	15.241	0.018	0.071

The effects of the other examined variables (namely; marital status, place of residence, place of origin, type of lyceum, knowledge of foreign languages, and knowledge of Information Technologies) have not found to be statistically significant on graduates' entrepreneurial activation.

Regarding the variables affecting positively entrepreneurial activation, the gender (male), the bachelor degree grade (graduates with lower degree grades), the postgraduate studies (when carried out abroad), and the faculty of studies (Food and Nutrition, and Engineering) are the main factors increasing graduates' self-employment rates. Additionally the specialty of bachelor studies plays a very important relevant role.

Finally, our findings show that the satisfaction of the self-employed graduates from their decision to establish their own enterprise is high; 86% reports an adequate (50%) or high (36%) degree of satisfaction, and only 14% of the self-employed graduates consider themselves as dissatisfied. Their satisfaction is significantly higher compared to that of employed graduates.

Conclusions and further work

The aims of this paper is to add to the discussion regarding the importance of entrepreneurship and the responsibility of educational institutions and policy makers in creating an entrepreneurial mindset and triggering students and graduates to seeing innovation activities and self-employment as an opportunity for their future career choices.

The results from the institutional survey conducted at ATEI-Thessaloniki, Greece, showed that about 13% of the graduates are

self-employed and that they also are very satisfied with their professional career. The identified variables affecting statistically significantly former students' entrepreneurial activation are gender, department and faculty of bachelor studies, postgraduate studies carried out abroad, and bachelor degree mark.

Further work will replicate the survey with an extended questionnaire aiming to capture time trends, more detailed enterprise analysis and inclusion of additional factors, such as influences from personal advice services and from the attendance of university courses on entrepreneurial issues. Additionally, the survey model used having achieved high response rates is a pledge for repeating the survey for higher education former students of more countries and gathering fully comparable results.

The authors believe that entrepreneurship education needs to be embedded in every university discipline or subject. Graduates need more than academic accomplishment; they need to have entrepreneurial skills that enable them to seize and make the most of opportunities, generate and communicate ideas, and make a difference in their communities. In addition more alumni networking are required to stimulate innovation, entrepreneurship and growth.

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