Entrepreneurship activity of TEI Kavala's graduates

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Abstract
This research was conducted in 2009 and reflects the business activity of the graduates from the TEI of Kavala. Aim of this research was to impress the particular characteristics of entrepreneurship activity of the graduates of Faculties of Business and Economics and Engineering, as well as to research the factors that are associated with the type of enterprise and the objectives that they pose.
The participants in this research were those graduates who established their own business or administer their family business. In order to gather our sample we addressed to about 1200 graduates from the departments of Electrical Engineering, Mechanical Engineering, Petroleum Technology and Industrial Informatics of Faculty of Engineering, as well as the departments of Accountancy, Business Administration and Information Management of the faculty of Economics of Kavala Institute of Technology, during the years 1997-2004. The questionnaire included questions reporting mainly the demographic characteristics of the graduates, the general characteristics of the enterprises they direct, their economic sizes, as well as questions that concern objectives for the future progress of the company.
The data processing was conducted with the statistical software SPSS 17 and was applied descriptive statistics and the method of the Pearson chi-square independency test.
The crosstabs of answers of the graduated - entrepreneurs assisted to the discovery of correlative factors that influence the enterprising activity. The cross-correlations of profitability of the enterprise with the gender, the strategic planning of enterprise with the gender, the sector of activity with the faculty of graduation, the carrying out postgraduate studies with information whether they continued an already existing familiar enterprise are some remarkable findings of the research.

Keywords: Graduates, Entrepreneurship, Chi-square.

JEL Classification: L26, M13, Y10

1. Introduction

The word entrepreneurship has a multidimensional meaning. It constitutes mainly of an activity that presupposes the competence of individuals of being capable to identify opportunities and exploit them with an original and effective way, in order to acquire an economic profit.
The creativity, the potentiality, the innovative spirit, the consistency, the reliability, the feeling of the responsibility, the courage of undertaking risks, the ability of management of unexpected situations but mainly and primarily the knowledge, constitute indisputably the main elements that compose the meaning

entrepreneurship. The enterprising activity is variform and it can lead to results very important for the economic growth and the improvement of social prosperity (Deakins and Freel, 2007).
As it has been observed by the experience, the significance of entrepreneurship dexterity is not determined with one and unique way. Once it concerns in the creation of a new enterprising entity (American version of entrepreneurship dexterity), and previously in the total of activities that aims in the growth of an existing enterprise (European version of entrepreneurship dexterity). As also, the meaning and the content of entrepreneurship dexterity, is differentiated by that of entrepreneur, as, the Entrepreneur (Entrepreneur) is the individual that undertakes to bear to an end the mission of entrepreneurship dexterity (Terzidis, 2008).
In other words, he/she is the individual who with risk of loss of his/her personal property undertakes the risk that involves the undertaking of running a new enterprise (Siepe, 1999; Hassid and Karayannis, 1999). With fact, that a wide spectrum of actions exists that composes the meanings entrepreneur and entrepreneurship dexterity, the formulation of composite theory of entrepreneurship dexterity would be the most advisable solution for the interpretation of this phenomenon. However, such an undertaking would exceed the limits that the needs of the present empirical research pose.
For this reason no concrete characterization or definition of the meaning of the entrepreneurship is adopted, as the entrepreneur constitutes vehicle interwoven and mainly identical with that of entrepreneurship dexterity, that is to say, constitutes the motive lever that foresees the existence of profit, undertakes the productive activity and shoulders entirely the risk of failure.
Following the introductive note that was preceded, the second section of the present work contains the theoretical documentation, the third section describes the research methodology that was used, while the fourth section deals with the results of the research. Finally, the fifth section presents discussion about the methodology and the results; we draw some conclusions as well as proposals for further research of the problem.

2. Theoretical background

2.1 Factors that encourage entrepreneurship

The factors that are necessary for the undertaking of an enterprising initiative and at the same time consist of motives that lead somebody to become an entrepreneur are many and in some cases they even compete each other. Often, many of them occur simultaneously. Most frequent commonly reported, according to Griffin (2002) and Terzidis (2004) are the following:

1. Obtaining high salaries and creative achievement.
2. Objective of independence and self-realisation.
3. Implementation of an idea and the realisation of a vision.
4. Taking over the family business.
5. Objective of acquisition of social prestige.
6. Solution of problem of professional re-establishment.
7. Objective to improve the quality of life.
8. Absence of barriers to entry to a market (geographically or sector-based determined).
9. Essential consent of family environment.
10. Existence of opportunities that the economic environment offers.

11. Self-employment as a result of cultural and social roots. The desire to become "the boss of him/herself" within his/her own enterprise.

2.2 Characteristics of a successful entrepreneur

Multiple researches from universities around the world and from public institutions confirm that for a future entrepreneur it is necessary to allocate the following characteristics and abilities (Terzidis, 2008; Deakins and Freel, 2007):

- Excellent physical fitness, vitality and resistance to labour stress.
- Communication skills to collaborate with new people with often different characters.
- The ability to distinguish the important from the insignificant and to complete one's reasoning. This means having the ability to see far and to foresee the consequences of one's actions.
- Ability to be imposed to those around one without making anybody feeling affected.
- Ability of synthetic thought, i.e. examination of the relationship and mutual dependence of various factors. This requires of course the existence of general education on economic issues as well as special knowledge in the object.
- Representation, the appearance of an entrepreneur and the culture that he/she imposes in his/her enterprise should be persuasive.
- Ability to balance readiness to take risks with the required attention to maintain the existence of his/her business.
- Ability to inspire confidence in the customers with the adoption of moral models and to satisfy their needs with the better way. Also, to have the ability to grow the confidence for constructive collaboration, as well as being capable of achieving complicities and a common vision.
- Powerful initiative, high sense of responsibility, spirit, perseverance.
- Ability to understand the problems of one's collaborators (the needs and the feelings) and show active interest in solving them.
- Ability to formulate consensus solutions to prevent and / or settle differences.
- Ability to motivate and coach groups and individuals as circumstances require.
- Ability to act in a manner supportive and encouraging for improvement of collaboration of individuals and their performance.
- Ability of self-assessment: Be aware of the strengths and weaknesses of oneself.
- Self-Confidence: Self-esteem and self-appreciation of one's values and skills.
- Self-motivation: Ability to envisage, inspire and guide one's actions towards achieving the targets one sets and having the ability to inspire under difficult circumstances.

2.3 The first effects of a the candidate entrepreneur

The first prerequisites to be followed by the candidate entrepreneur to determine clearly basic parameters of the proposed business activity are (Gillespie-Brown, 2008):

- personal vision and goals,
- personal values and one's individual needs,
- commitment to consistent dedication to work,

- the object of work of one's enterprise and the requirements of operational environment in which one intends to be occupied,
- identify the strengths and weaknesses,
- possibilities of networking,
- choice of suitable time (timing),
- economic situation,
- growth of the entrepreneur idea,
- feedback by third parties, and the commitment to the target.
- the design and development of comprehensive and coherent plan which will provide a valuable tool in order to realise progressively one's objectives. As it was mentioned before, the drafting of business plan constitutes fundamental condition for the undertaking of business venture (Coulter, 2003). However it is important to precede the answer in two fundamental questions: (1) Will I set up a new business or buy an existing? (2) Which state structures can support me with my first steps as an entrepreneur?

3. Methodology

Aim of research was to impress the particular characteristics of entrepreneurship activity of the graduates of the Faculties of Economics and Engineering, as well as to research the factors that are associated with the type of enterprise and the objectives that they pose.

3.1 Sample

This research was conducted in 2009 and reflects the business activity of the graduates from the TEI of Kavala. The participants in this research were those graduates who established their own business or administered their family business. In order to gather our sample we addressed to about 1200 graduates from the departments of Electrical Engineering, Mechanical Engineering, Petroleum Technology and Industrial Informatics of the Faculty of Engineering, as well as the departments of Accountancy, Business Administration and Information Management of the faculty of Economics of Kavala Institute of Technology, during the years 2001-2004. We had available and valid contact information for 868 of them (Career Services Office). Structured questionnaires were forwarded to those 107 graduates who stated that they had developed business activity and accepted to participate in this research. Finally, only 78 of them completed the structured questionnaire. Some questionnaires were collected via e-mail and fax, while some others after a telephone interview with the graduates franchising managers.

3.2 Statistical Methods

The data processing was conducted with the statistical software SPSS 17 and was applied descriptive statistics and the method of chi-square independency test (Field, 2005).

3.3 Hypotheses establishment

We made some hypotheses that we tried to confirm with our research. These hypotheses are:
H1: The number of employees is associated to the Faculty graduation.
H2a: Company’s profitability is associated to the Faculty graduation.
H2b: Company’s profitability is associated to the Gender.

H3: Business target existence is associated to the Faculty graduation.
H4: The annual income is associated to the Faculty graduation.
H5: Strategic business planning existence is associated to gender.
H6a: The kind of strategic business planning that entrepreneur set for the next five years is associated with the gender of the graduated.
H6b: The kind of strategic business planning that entrepreneur set for the next five years is associated with the Faculty of the graduated.
H7a: The business sector of the companies is associated to the Faculty of graduation.
H7b: The legal form of the enterprise is associated with the Faculty of the graduated.
H8a: There is difference in proportion of postgraduate studies between the graduates that ran a family company and them that established their own one.
H8b: Number of employees is associated to the fact that graduates manage their family company or established their own company.

4. Results

4.1 Study population and context data

The sample consists of 80 graduate students who have established a company or run their family company. Table 1 depicts their allocation by Department. From the 80 people who completed the questionnaire, 31 graduated Faculty of Management and Economics (SDO) 46 graduated Faculty of Engineering (STEF) and only 2 graduated from the Faculty of Agriculture. When the sample was split by Faculty, the 2 graduates from the Faculty of Agriculture (STEG) were excluded from the analysis.

Table 1: Sample allocation by Faculty and Department

Faculty	Departments	Frequency	Percent
Economics	Business Administration	7	8,8
	Accountancy	24	30,0
Engineering	Electrical Engineering	16	20,0
	Mechanical Engineering	25	31,3
	Petroleum Technology	3	3,8
	Industrial Informatics	3	3,8
Agriculture	Forestry	2	2,5
	Total	80	100,0

At the next table it is observed the allocation of the graduates by Faculty and Gender. About two thirds of them (52) were men and only one third (25) women.

Table 2: Split of entrepreneurs by Faculty and Gender

		Gender		
		Male	Female	Total
Faculty	Economics	11	20	31
	Engineering	41	5	46
	Total	52	25	77

10 graduates continued their studies either to a Master's degree or to another Bachelor program. 53 of the participants had working experience before the undertaking of their business activity, 32 of whom, in the same field as their own company.
Table 3 shows their allocation by Faculty and region of activity.

Table 3: Split of entrepreneurs by Faculty and region of activity

		Region of activity				
		Drama/Kavala /Xanthi	Thessa-loniki	Attica	Remaining Greece	Total
Faculty	Economics	10	6	1	14	31
	Engineering	7	18	7	15	47
	Total	17	24	8	29	78

4.2 Analysis (Hypotheses' results)

The legal form of the company that participants run is mainly sole proprietorship (79%). The number of employees is up to two at the 71% of the companies and up to 10 persons at the 24% of them.

Table 4: Association of the legal form of each company and the number of employees

		Number of employees			
		1-2	3-10	11+	Total
Legal form	Sole proprietorship	49	12	2	63
		86,0%	63,2%	50,0%	78,8%
	Other forms company	8	7	2	17
		14,0%	36,8%	50,0%	21,3%
	Total	57	19	4	80
		100,0%	100,0%	100,0%	100,0%

In table 4 is shown that the legal form of the company that participants run is mainly sole proprietorship (79%). The number of employees is up to two at the 71% of the companies and up to 10 persons at the 24% of them.

Table 5: Association of the faculty and the number of employees

		Number of employees		
		1-2	3+	Total
Faculty	Economics	26	5	31
		84%	16%	100%
	Engineering	29	18	47
		62%	38%	100%
	Total	55	23	78

The enterprises were split in two categories; one with only one or two employees and the other one with more than two employees. It was found that (table 5) the graduates of the Faculty of Economics established enterprises mainly with two or less employees (84%) in contradistinction to graduates of the Faculty of Engineering who

established enterprises with only 62% with two or less employees. This difference is significant in 5% significant level (Pearson chi-square (1) = 4.415, p-value=0.036).

Table 6: Association between faculty and company's profitability

		Company's profitability			
		Decrement	Stable	Increment	Total
Faculty	Economics	12	16	3	31
		38,7%	51,6%	9,7%	100,0%
	Engineering	15	21	11	47
		31,9%	44,7%	23,4%	100,0%
	Total	27	37	14	78
		34,6%	47,4%	17,9%	100,0%

Table 6 shows that the profitability of the enterprises the past few years varies in about the same manner for both graduate categories (Pearson chi-square (2) = 2.4, p-value=0.301). For about half of the graduates the profitability was stationary. About one third of the entrepreneurs indicate less profit and only 10-20% indicates improvement to their finances for the last years.

Table 7: Association between gender and company's profitability

		Company's profitability			
		Decrease	Stable	Increase	Total
Gender	Male	16	24	13	53
		30,2%	45,3%	24,5%	100,0%
	Female	12	13	1	26
		46,2%	50,0%	3,8%	100,0%
	Total	28	37	14	79
		35,4%	46,8%	17,7%	100,0%

Table 7 demonstrates that the profitability of the enterprises the past few years differs between males and females at 1% significant level (Pearson chi-square (2) = 5.55, p-value=0.062). It is noticed that about one fourth of the males denote improvement to their finances the last years, as opposed to just 4% of the females. On the other hand, the females' percent that denotes profitability decrease is about 50% higher than the males'.

Table 8: Association between faculty and business target existence

		Target existence		
		Yes	No	Total
Faculty	Economics	26	5	31
		83,9%	16,1%	100,0%
	Engineering	31	16	47
		66,0%	34,0%	100,0%
	Total	57	21	78
		73,1%	26,9%	100,0%

The table above shows if the entrepreneurs who graduated from the Faculty of Economics have targets in different frequency than those from the Faculty of Economics. Only 16% of the Faculty of Economics graduates did not put business targets, but the corresponding percent for the graduates of the Faculty of Engineering is more than double. This difference is significant in 10% significant level (Pearson chi-square (1) = 3.05, p-value=0.081).

Table 9: Association between faculty and the annual income

		Annual income		
		≤50000	>50000	Total
Faculty	Economics	26	5	31
		84%	16%	100%
	Engineering	29	18	47
		62%	38%	100%
	Total	55	23	78

In table 9 it is presented that the majority of the Faculty of Economics graduates (84%) has an annual income up to 50,000€, but an efficient mass of the Faculty of Engineering graduates earns annually above 50,000€. This difference is significant in 5% significant level (Pearson chi-square (1) = 4.415, p-value=0.036).

Table 10: Association between gender and strategic business planning existence

		Business planning		
		Yes	No	Total
Gender	Male	34	19	53
		64,2%	35,8%	100,0%
	Female	23	3	26
		88,5%	11,5%	100,0%
	Total	57	22	79
		72,2%	27,8%	100,0%

After that, in table 10, it is examined whether the gender factor affects the probability of the entrepreneurs to have strategic business planning. It's obvious that females have targets more often than males. This difference is significant in 5% significant level (Pearson chi-square (1) = 5.13, p-value=0.024). Observing the tables above and below it can be assumed that both these comparisons are significant because, as it was shown in Table 1, two thirds of the Faculty of Economics graduates who established a company are females but the majority of the corresponding graduates of the Faculty of Economics are males.

Table 11: Association between gender and the kind of strategic business planning that entrepreneur set for the next five years

		Kind of strategic business planning				
		Infrastructure	Finance improvement	Upgrading quality	None	Total
Gender	Male	11	20	3	19	53
		20,8%	37,7%	5,7%	35,8%	100,0%
	Female	3	17	3	3	26
		11,5%	65,4%	11,5%	11,5%	100,0%
	Total	14	37	6	22	79
		17,7%	46,8%	7,6%	27,8%	100,0%

In the table 10 it is concluded that 57 entrepreneurs have strategic business planning for their business activity. Table 11 shows that the main planning for the next five years is infrastructure upgrade for about 18% of the entrepreneurs, finance improvement for about the half of them (47%) and quality of products or services upgrade for only 8%. As it is already mentioned, 28% of the entrepreneurs do not have any targets at all. The difference in targets between males and females is significant at 5% significant level (Pearson chi-square (3) = 8.18, p-value=0.042).

Table 12: Association between faculty and kind of strategic business planning that entrepreneur set for the next five years

		Kind of strategic business planning				
		Infrastructure	Finance improvement	Improvement/ Upgrading quality	None	Total
Faculty	Economics	6	16	4	5	31
		19,4%	51,6%	12,9%	16,1%	100,0%
	Engineering	8	21	2	16	47
		17,0%	44,7%	4,3%	34,0%	100,0%
	Total	14	37	6	21	78
		17,9%	47,4%	7,7%	26,9%	100,0%

Similarly, Table 12 presents the graduate's kind of strategic business plans according to their faculty (Pearson chi-square (3) = 4.29, p-value=0.232).

In table 13, the business sector of each company was split into three main categories, which are production, trade and service provision. Afterwards, it was examined whether this was related to the faculty each entrepreneur had graduated from.

Table 13: Association between faculty and business sector of each enterprise

		Company's business sector			
		Production	Trade	Service provision	Total
Faculty	Economics	2	6	23	31
		6,5%	19,4%	74,2%	100,0%
	Engineering	17	9	21	47
		36,2%	19,1%	44,7%	100,0%
	Total	19	15	44	78
		24,4%	19,2%	56,4%	100,0%

Companies relevant to the production sector belong almost exclusively to graduates of the Faculty of Engineering, while enterprises of trade and service provision sector are managed by graduates from both faculties. The difference between the graduates of the Faculties of Economics and Engineering in the business sector is significant at 1% significant level (Pearson chi-square (2)= 9.66, p-value=0.008).

Table 14: Association between faculty and company's legal form

		Faculty		
		Economics	Engineering	Total
Legal form	Sole proprietorship	27	34	61
		87%	72%	
	Other forms company	4	13	17
		13%	28%	
	Total	31	47	78
		100%	100%	

In table 14, the enterprises are split in two categories according to their legal form. The first category is the sole proprietorships and the second one consists of any other form. As it is expected, it is observed that most companies are sole proprietorships. Graduates of the Faculty of Economics run almost exclusively (87%) sole proprietorships, while the corresponding percentage for graduates of the Faculty of Engineering is 72%. This difference is not significant.

Table 15: Association between postgraduate studies and if graduates manage family company or establish their own one

		Family company		
		Yes	No	Total
Postgraduate studies	Yes	4	6	10
		40,0%	8,6%	12,5%
	No	6	64	70
		60,0%	91,4%	87,5%
	Total	10	70	80
		100,0%	100,0%	100,0%

From the 80 graduate students, 70 have established their own company and 10 managed their family company. 40% of the entrepreneurs that managed a family company have also done postgraduate studies. On the other hand, only 8.6% of the entrepreneurs that established their own company have done postgraduate studies. This difference is significant at 5% significant level (Fisher's exact test p-value=0.019).

Table 16: Association between number of employees and if graduates ran the family company or establish their own one.

		Family company		
		Yes	No	Total
Number of employees	1-2	3	54	57
		30,0%	77,1%	71,3%
	3+	7	16	23
		70,0%	22,9%	28,8%
	Total	10	70	80
		100,0%	100,0%	100,0%

From all the graduate students who manage their family company, only 30% occupy less than three employees. On the other hand, the corresponding percent for the self-created entrepreneurs is 77%. This difference is significant at 1% significant level (Fisher's exact test p-value=0.005).

5. Discussion/conclusion

This research is an attempt to impress the basic characteristics of the companies that has been established or run by graduates of the TEI of Kavala. The main conclusions are:

- About 12% of the graduates established or ran a company.
- Companies that belong to graduates of the Faculty of Economics are almost exclusively sole proprietorships or at most have two employees. On the other hand, about half of the graduate's companies of the Faculty of Engineering employ two or more workpeople. That is prospective because the business sector of Faculty of Economics graduates mainly consists of small personal companies. After that it is expected to find that almost all graduates from Faculty of Economics have annual income lower than 50000€, when the corresponding for almost half of the Faculty of Economics graduates is higher than 50000€.
- At first sight it is uncommon that even those entrepreneurs who are graduates of the Faculty of Engineering denote a higher number of employees, so we would expect a higher percentage of entrepreneurs with strategic business planning. On the contrary, they have strategic business plans in a significant lower percentage than the graduates of the Faculty of Economics. This can be explained, partly, since it was found that women put targets in a higher frequency than men and the most of the Faculty of Engineering graduates are men.
- Another interesting conclusion is that three out of four graduates of the Faculty of Economics run companies of service provision sector and almost none of production.
- Entrepreneurs that ran a family company had a higher proportion of postgraduate studies. That may happen because they don't feel stressed about vocational rehabilitation. Another eventuality is that they know what the failings of their company are and believe that postgraduate studies may help them in the future.
- A fate is that family companies usually employ more workpeople. These companies were established many years ago so there is a highest possibility of having more staff.
- We found out that men denote more increase in profitability comparatively to women. Therefore, men may be more capable managers.
- Although Faculty of Engineering graduates had companies with higher number of employees, they had strategic business targets in a lower proportion than graduates of the Faculty of Economics. This may have happened because they didn't study courses about management.

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