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Making students sensitive to entrepreneurship

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June 2011 - WP 2011-03

Working Paper

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June 2011

Abstract: The aim of this paper is to present a *proposal to make students sensitive to entrepreneurship* aiming at familiarizing students to the setting up of new firms and stimulating such a course of action. This **awareness campaign** would take place during the student's curriculum and rest on a simulation exercise. This campaign is based on the results of a survey conducted at the Technical University of Cartagena (Spain). This study has identified some students' aspirations to salaried employment and entrepreneurship. This survey also recognized some specific features that the campaign must integrate, in particular the need to make entrepreneurship compatible with the preparation for salaried employment. The results of this study are completed comparing them with the opinion from entrepreneurs of the same region. This comparison highlights some barriers to entrepreneurship among the students population, making it possible to complete the content of the proposed simulation exercise. This paper also highlights the absence of barriers of a psychological nature usually put forward by the literature, such as a low level of the *need for achievement* or the *propensity for risk-taking*.

Keywords: making sensitive, company, career, entrepreneurship, students

JEL code: L26

1. Introduction

A significant number of papers in the entrepreneurship field is focused on detecting and stimulating the setting-up of new firms among students (Rodrigues et al, 2010). These works are also associated with the development of education in entrepreneurship (Fayolle, 2011, Toutain, 2010). The perception of students about the setting-up of firms is not at all set but conversely « evolutive », more particularly through the learning experiences students may get regarding this professional orientation during their course (Toutain, 2010).

The first and main aim of this paper is to draw up a proposal for an *awareness campaign* which would constitute for students a preparation and a stimulation for setting-up a firm while remaining compatible with a preparation for a salaried career. Indeed, these two professional orientations are not contradictory. Students do admittedly display a preference for a salaried career in a big firm, nevertheless this orientation is close to an orientation towards setting-up a firm. Thus a combined familiarization work to facilitate the passage from the preferred direction of a salaried career to the decision to set up a firm if the first choice is not possible (saturated job market, undesired mobility, etc.) is appropriate. For the young unsalaried students getting this familiarization would allow them to switch more easily to setting-up a firm when a break-up (for instance a dismissal) occurs or if the job turns out to be disappointing.

The proposed action draws on the results of a study conducted at the Technical University of Cartagena (Spain, Murcia Region). This study consisted of administering a questionnaire aiming among other things at evaluating « the desired profile of the salaried job » and « the desired profile of the firm set up » and the motivations for setting up a firm. Through a series of statistical treatments (levels of the variables, examination of correlations and multiple linear regressions) the similar nature of the two professional orientations is established and draws up the general features of the familiarization to entrepreneurship which will be proposed.

The second aim of this paper is to analyze the perceived barriers to entrepreneurship by comparing results from students to those from entrepreneurs. The existence of personal barriers to setting up a firm among students is highlighted. These results finalize the description of the *proposal to make students sensitive to entrepreneurship* by integrating some features enabling to raise or reduce these barriers.

This work taking place at university is useful for the valorization of research at university laboratories. From this perspective the firms in question are rather geared towards new technologies and innovation, and for this reason the proposal takes an interest in the innovative impact of the firms students might set up, in particular through the study and stimulation of the creativity field, and also through the altruism one which constitutes a significant dimension of the innovative firm (Sweeney, 1982). This interest for the innovative firm is then in line with the goal to meet the noticed deficit of the setting up of innovative firms in Europe in comparison with the United-States which produces what Audretsch (2007) terms the *European Paradox*

that is to say a high level of investment in knowledge and learning for a low result in terms of growth and reduction of unemployment. The transition from an economy of knowledge to an economy of innovation is thus critical at the national level (Bonnet et Cussy, 2010) but also at the regional one, and especially so for the region where these studies took place. In this respect the Economic and Social Council of the Murcia region conducted an in-depth study of the ways the administration might improve the valorization of new technologies within universities (Sierra Rodriguez, 2010). Among other prescriptions, developing the entrepreneurial spirit and education within universities was advocated.

This paper is organized as follows. Section two and three present the model to characterize the student expectations towards the salaried or entrepreneurial choices and their future behavior, explaining the sample and variables relations and a multivariate analysis on the determinants of need for achievement. Section four justifies and describes the proposal of the awareness campaign. Section five reports the main barriers to set up a firm for students with a comparison of their results to those of entrepreneurs. Section six synthesizes the results, and section seven concludes the paper.

2. Bringing to light the proximity between the will to have a salaried career and the will to set up a firm for students

2. 1 The model

2.1.1 Structure of the model

The prime aim of this paper is to characterize the expectations towards the professional salaried and entrepreneurial environments and their future behaviors within them. So students are asked to project themselves in this professional future ; variables are thus all evaluated as antecedent to their professional projects and this approach may be likened to the intention models of Ajzen (1991) and Shapero and al (1982).

The study consists of assessing four groups of variables: (1) desired profile of the salaried job, (2) desired profile of the firm set up, (3) deadlines for setting up the firm and (4) *motivations for setting up a firm*. We show that « concordances » may get spotted between these groups of variables characterizing *a priori* contradictory professional orientations.

The first of these concordances (« A » in Figure 1) is demonstrated by the links between the desired profile of the salaried job and the desired profile of the firm set up and its deadlines for setting up.

The second concordance (« B » in Figure 1) is brought into light by connections (correlations) between the desired profile of the salaried job and the motivations for the setting up.

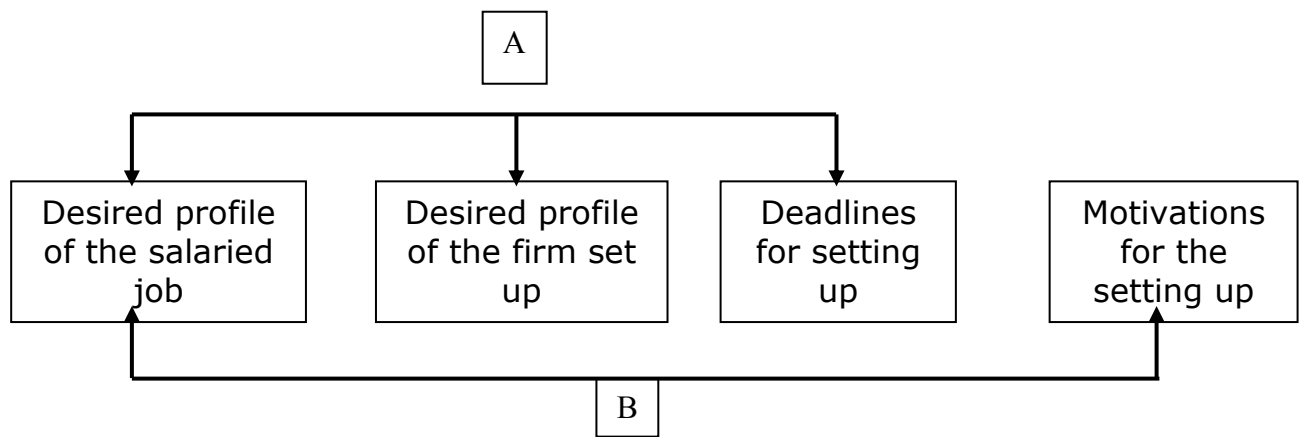


Figure n°1 : Concordances « A » and « B » of the model

2.1.2. Variables of the Model

	Variables	Definitions
Desired profile of the salaried job	Public administration	Degree of wish to «make a career » in a public administration
	Abroad	Degree of wish to «make a career» abroad
	Big firm	Degree of wish to « make a career» in a big firm
	Commercial	Degree of wish to « make a career » in the commercial field
	Management	Degree of wish to « make a career » in the management field
Desired profile of the firm set up	Family	Degree of wish that the firm is set up with family members
	Friends (Family excluded)	Degree of wish that the firm is set up with friends or acquaintances
	Murcia Region	Degree of wish that the firm set up is located in the Murcia region
	Services	Degree of wish that the firm set up is a services firm
	Innovative	Degree of wish that the firm set up be of an innovative nature
	Knowledge	Degree of wish that the firm set up uses knowledge acquired at university
Deadlines for setting up	Under five years	Degree of wish to set up a firm within the next five years after the end of education
	Between 5 and 10 years	Degree of wish to set up a firm in the next five to ten years after the end of education
	Over 10 years	Degree of wish to set up a firm after a ten years time after the end of education
Motivations for setting up the firm	Motivation creativity ¹	Degree of motivation to set up one's firm for creativity
	Motivation intellectual stimulation	Degree of motivation to set up one's firm for intellectual stimulation
	Motivation variety	Degree of motivation to set up one's firm for having varied activities
	Motivation management	Degree of motivation to set up one's firm for management
	Motivation independence	Degree of motivation to set up one's firm for independence
	Motivation prestige	Degree of motivation to set up one's firm for prestige
	Motivation altruism	Degree of motivation to set up one's firm for altruism
	Motivation tangible work	Degree of motivation to set up one's firm to see in concrete terms the fruits of one's labour
	Motivation self expression	Degree of motivation to set up one's firm to be able to "express oneself"
	Motivation senior position	Degree of motivation to set up one's firm to access more quickly senior positions

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Table 1: Definitions of variables (one item for each variable) operating on the characteristics of both types of professional directions

Table 1 shows the definition of the different variables and items used to measure them. The profile of the desired salaried job is evaluated by 5 items relating to status (public job/ private job), mobility, size of the firm, and to the type of job occupied (commercial, management).

¹ Variety and intellectual stimulation are traditionally acknowledged to be two under-components of the creativity field (Borst and al, 2006)

The desired profile of the firm set up is evaluated in relation to a context of associations (family firm, firm with friends), mobility, business sector, innovation and valorization of knowledge acquired at university. Finally a question expresses the desired deadline for setting up after the end of education.

Motivations for setting up a firm represent ten fields among which the three first ones (creativity, intellectual stimulation and variety) relate to the expression of *intellectual capacities*. Three other motivations (management, independence, prestige) constitute for their part a family of variables characterizing *attachment to a supervisory position*. The two other motivations (altruism and tangible work) relate to the *purpose of work* (helping others and getting concrete results of one's labor). Finally two more global motivations are close to the first two categories of motivations (self-expression and the motivation for quick access to senior positions).

Other variables have been evaluated (8 professional values, original thinking and propensity to risk-taking). They will be mainly used as control variables in the multiple linear regression, they will also be used for bringing into light barriers to setting up a firm.

2. 2 Sample

Students who answered the questionnaire are under and post-graduate business students at Technical University of Cartagena (Spain); they answered the questioner during their tutorial class.

Out of 113 questionnaires collected, 72 were retained (answers for all the items). The sample is made up of 40 men and 32 women, the average age is 22,8 years and the standard deviation is 2,6.

Age (years)	20	21	22	23	24	25 to 30	Over 30
Men	5	9	10	4	5	6	1
Women	2	11	7	3	4	5	0

Table 2: Distribution by age and by gender of the students' sample

For each item students are asked to give their degree of agreement by making a mark on a continuum of answers measuring 10 cm and graduated from « Does not agree at all » to « totally agree with ». The measure in millimeters between this first point and the mark makes it possible to obtain a score out of 100 for each item.

2. 3 Concordance « A »

2.3.1 The levels of the variables

For each of the variables the answers for the whole sample are classified in four classes of scores: « low » for the group of students getting scores between 0 and 40, « average » for scores between 41 and 60, « significant » for scores between 61 and 80 and « high » for scores between 81 and 100.

Regarding the wish to occupy a salaried position, students very clearly want to occupy a position in a big firm (64 students get « significant » or

« high » scores). Their desire to enter public administration is present but not in a very strong manner since almost 45 % of the sample gets low or average scores. Regarding the wish to occupy a position abroad it is weakly represented in the absolute but given that this characteristic holds important consequences for life compared with other characteristics of wished for jobs, it may be considered that getting 28 students with significant or high scores is a relatively high number. Students do not particularly wish to occupy a job of a commercial nature (40 students get « low » or « average » scores), on the other hand their desire for a management position are more clearly asserted (44 students get « significant » or « high » scores)

Regarding the desired profile of the firm set up, students do not desire to set up a firm with friends (47 students get « low » or « average » scores) and even less so with members of their family (62 students get « low » or « average » scores). Regarding the location of the new firm the Murcia region does not appear to be a priority (only 31 students get « significant » or « high » scores). So the wish for students to set up a firm is not or is weakly linked to the belonging for a familiar context as might have been the case if students had displayed a desire to start their business with friends, family or in the Murcia region.

The profile of the firm students would like to set up is both innovative and capitalizing on knowledge acquired at university (scores are « high » for respectively 44 and 40 students and « significant » for respectively 20 and 18 students). The fact that the firm belongs to the services sector is not on the other hand brought to light (only 27 students get « significant » or « high » scores).

These results show the interest attached to the awareness campaign taking place during the course of education since students within this frame appear receptive to the innovative character and at the same time study the discipline which might enable them to implement this innovative character.

The desire to set up a firm within the five years after the end of education is low (only 7 students get « significant » or « high » scores), results getting higher as soon as the deadline for a possible start is further away in time ; they are maximal for a deadline over ten years (nevertheless only 31 students get « significant » or « high » scores for this last time frame), so whatever the deadline students are always predominantly not or not very strongly keen on setting up a firm.

2.3.2 Arbitrating between a salaried position and the setting up of a firm

The strong will to enter a big firm may imply a will to seek professional safety; nevertheless the average scores of the wish to enter public administration tend to put into perspective the importance of this desire for safety.

The hypothesis that the desire to make a career in a big firm competes in a straight manner, for a student, with the desire to start one's own business may be put forward. The first element supporting this hypothesis is the fact that a student's career in a big firm usually starts within the ten years following the end of education. Conversely the setting up of a firm may be

postponed in time, which is what students seem to be wishing ; they are very few wanting to set up the firm within the five years following their education and very significantly much more numerous to want to start their business ten years after their education.

The other element supporting the hypothesis of the previous paragraph and which will be presented while bringing into light the barriers to starting a business is the fact that students overestimate the opportunity cost of setting up a firm over a promising salaried career.

At the same time that this last negative consequence of setting up a business is overestimated it is positively correlated ($r=0.30$, $p<.01$) with the 5 to 10 years after education deadline for setting up. This result may be interpreted as the students who declare the wish to set up a firm within that period of time they identify in a symmetric manner that this decision will negatively impact the possibility to make a career within the salaried world.

In conclusion, the wish for a professional career within the salaried world takes priority over the wish to set up a firm. The preference for a salaried job does not annihilate the wish to set up a firm but postpones it. Nevertheless the future commitment into entrepreneurship regarding the absence of present desire will be improbable if the wage career goes well. In other terms within this frame the choice to go for a salaried professional career directly competes with the setting up of a firm. The intuitively conceivable interpretation of this phenomenon leads to consider that the choice of a salaried career is the first choice and if the student fails the choice of setting up a firm may constitute another resort.

It would appear through this form of arbitration that the subject of firm setting up is not only a question of wish but it pertains to strategic choices which may be made years after the end of education. Within this context the *work to make* the students *sensitive to entrepreneurship* must help them to project themselves in the setting up of a firm. For this reason it is important that the *proposal for the awareness campaign* be compatible with both the choice of a career in a big firm and the choice of setting up a firm. One of the advantages of this characteristic lies in the fact that, if the *proposal for the awareness campaign* focuses on setting up firms, it will only draw those, not many, wishing to set up a firm in the short term. On the other hand, the proposal by making itself compatible with both the choice of a career in a big firm and the setting up of a firm would allow drawing in addition students who may set up a firm after a salaried professional insertion.

The *proposal for the awareness campaign* may also prove apt to train students in *corporate venturing* (intrapreneurship) (Bonnet & Cussy, 2010). Nevertheless intrapreneurship creates specific risks which thus have to be assessed with specific tools of the type developed by Basso (2004).

2. 4 Concordance « B »

In this section we consider whether characteristics wished for the salaried job may be correlated with some of the ten motivations fields for setting up a firm.

The examination of the correlations between the characteristics of salaried job and the motivations for setting up a firm (Table 3) shows that seven of the ten motivations fields for setting up a firm are significantly linked to the wish to enter a big firm. These motivations belong to both dimensions relating to *supervisory position* (management, independence and prestige) and to creativity through the two components often associated with it: intellectual stimulation and variety. The connections between these motivations for setting up a firm and the wish to make a career in a big firm show that this last desire does not constitute a rejection of the attractiveness the setting up of a firm.

Desired profile of the salaried job	Motivations for setting up a firm									
	Creativity	Intellectual stimulation	Variety	Management	Indépendence	Prestige	Altruism	Achievement	Self-expression	Senior position
Public administration	-0,11	-0,19	-0,21	0,03	-0,16	-0,01	-0,13	-0,18	-0,22	0,09
Abroad	0,12	0,25*	0,08	0,11	-0,1	0,15	0,08	0,21	0,05	0,08
Big firm	0,18	0,34**	0,34**	0,36**	0,27*	0,24*	0,06	0,2	0,25*	0,32**
Commercial	0,18	0,12	-0,06	0,26*	0,2	0,08	0,01	0,04	0,07	0,22*
Management	0,31**	0,18	0,30**	0,42**	0,33**	0,22*	0,15	0,31**	0,36**	0,32**

Table 3: Correlations of the characteristics of the desired salaried job with the motivations for setting up a firm

These results confirm that the proposal of an *awareness campaign* by taking an interest at the same time in the professional career in a big firm and the setting up of a firm enables to answer the ambivalence which seems to exist in the choice between these two orientations.

The management component might constitute the part of the proposal allowing uniting these two professional orientations (management field thus qualified as « pivotal » field). Since on the one hand the motivation for setting up a firm in the management field is linked to the wish to enter a big firm ($r=0.36$, $p<.01$) and, on the other hand the management field corresponds with the profile of the job desired by the student (cf 2. 3. 1). Finally, as Table 3 shows, the management field in the desired salaried job is linked to almost all the motivations for setting up a firm notably with motivations relating to the expression of intellectual capacities (creativity and variety fields).

3. Linear regression of the need for achievement

3. 1 Proposal for making aware and need for achievement

The previous section presented some relevant characteristics for making students sensitive to entrepreneurship. In particular the management component, the innovative field of setting up the firm, and the necessity for students to use knowledge acquired at University. Nevertheless this first approach does not allow us to conclude in a definitive manner that these relevant characteristics will be conducive to entrepreneurship. If the linear regression of the need for achievement integrates with a good statistical quality the relevant characteristics of the proposal we can then conclude that the latter enables to draw the students most psychologically inclined to want to set up a firm.

The choice to retain the need for achievement to explain the psychological inclination to set up a firm is based on the fact that this variable is traditionally acknowledged by literature to fulfill this role (Jonhson 1990, Hansemark, 2003). Even if it cannot on its own fully account for the entrepreneurial disposition of a person it is commonly acknowledged as representing a strong sign for this orientation.

3. 2 Control variables of the multiple linear regression

The statistical treatment by multiple linear regressions requires to integrate some control variables of a psychological nature so as to account for the general reach of the *need for achievement*² (Belley, 1994). So we decided to include control variables to characterize the population of entrepreneurs and in particular those relate to innovative firms. These variables are *original thinking*, the propensity to risk-taking through its two under-components (*professional quickness* and *professional caution*)³, as well as a family of variables: *professional values*⁴.

We chose to retain the professional values relating to the near totality of the fields of motivations for setting up a firm because we consider that motivations can be influenced by the professional values of the same fields. Indeed it is intuitively conceivable that a person will be more motivated to set up one own's firm for a field which takes on importance for her/him.

2 The *need for achievement* is evaluated from items stemming from the Questionnaire of Motivation for Action (QMA), publisher: EAP.

3 Items of *original thinking* (or creativity) and the *propensity to risk-taking* are close to the ones of the personality questionnaire of Gordon (GPPI), publisher: ECPA.

4 A professional value in a given field is defined as the degree of importance attributed by the person to this field in her/his professional activity ; items are drawn from the questionnaire of professional values of Super, publisher: ECPA.

		Variables	Definitions
Dependent Variable		Need for achievement (12)♦	Degree of seeking competition situations and taste for success
Control variables	Professional values	Value creativity (3)	Degree of importance of creativity in a professional activity
		Value variety (3)	Degree of importance of "doing varied things" in a professional activity
		Value intellectual stimulation (3)	Degree of importance of the intellectual stimulation in a professional activity
		Value altruism (3)	Degree of importance of altruism in a professional activity
		Value tangible work (3)	Degree of importance of doing concrete things in a professional activity
		Value prestige (3)	Degree of importance of prestige in a professional activity
		Value management (3)	Degree of importance of management in a professional activity
		Value independence (3)	Degree of importance of independence in a professional activity
		Original thinking (6)	Capacity to get new ideas
		Professional caution (3)	Degree of caution in professional decision-taking
		Professional quickness (2)	Degree of quickness in professional decision-taking

Table 4: Definitions of the need for achievement and the control variables.

♦In brackets the number of items which measure the variable.

3.3 Method for selecting the multiple linear regression and tests carried out

In order to reduce the number of variables in the regression analysis (28 variables) because of the sample size, we used the optimal linear regression method to select the variables. 11 variables were retained with this method⁵.

This selection method of the linear regression has the advantage of not holding any a priori about the relevant variables to integrate. It also allows us not to have any influence over the choice of the linear regression since only the criterion of the best R^2 is retained and the linear regression is directly provided by the statistical software (SPAD). The linear regression which will get carried out will entitle to determine whether this famous psychological variable that the need for achievement is may get explained by the relevant characteristics we retained for the *proposal for awareness campaign*.

The regression of the *need for achievement* presented in table 5 sums up the results of the optimal regression (that is to say the best linear regression – the one in which the R^2 is maximal). Out of concern for simplification of the presentation, we only present the results for the eleven variables which integrated the optimal multiple linear regression.

⁵ Since it is the best assessed ratio between the necessity to get a good R^2 also to remain within a measured number of explanatory variables due to the small size of the sample. « *** » means that the probability for the coefficient to equal 0 of less than 1%, « ** » of less than 5%, « * » of less than 10%.

The White test concludes with the absence of heteroscedasticity just as the Klein test did not detect any evidence for multicollinearity which constitutes a criterion for quality of the regression being presented.

Dependent Variable: Need for achievement		Coeff.	Proba.
Desired profile of the salaried job	Management	0,08**	0,05
Desired profile of the firm set up	Innovative	0,17**	0,02
Deadlines for the setting up	within the next five years after the end of education	0,13***	0,00
	in the next five to ten years after the end of education	-0,07*	0,06
Motivations for the setting up	Motivation variety	-0,10***	0,00
	Motivation altruism	0,10**	0,03
	Motivation management	0,15***	0,00
Professional values	Value creativity	-0,07	0,31
	Value intellectual stimulation	0,14**	0,02
	Original thinking	0,19**	0,05
	Professional caution	-0,08	0,24
	R²	0,629	

Table

5: Optimal regression of the need for achievement

The multiple coefficient regression ($R^2 = 0.629$) is a criterion which signals a good representativity of the model. This regression explains the *need for achievement* by the main part of dimensions relating to setting up a firm and in particular innovative ones (positive coefficients of the wish for the firm to be innovative, of the professional value, *intellectual stimulation*, of the personality variable *original thinking* and of altruistic motivation (Sweeney, 1982). Dimensions relating to management, which must constitute the pivotal dimension of the *proposal*, are also present (« management motivation » and « wish to *make a career* in the management field in a salaried job»). Besides the desired deadline for setting up is short (within the next five years).

It follows from these observations that a selection of the participants may be made from the need for achievement since this variable integrates the basic dimensions bringing the student at once to integrate the *proposal of awareness campaign* and to set up a firm in a relatively short period of time.

4. The proposal for the awareness campaign: interest and description

4. 1 Interest

The analysis of the results has up to now made it possible to know and to confirm some relevant components to integrate in the *proposal*. The latter thanks to its presence naturally breeds an entrepreneurial culture over the long run and thus a favorable context for the setting up of innovative firms by students (Packham et al 2010, et Stam, 2008). The incentive to start a business may present several advantages such as being a way to deal with youth unemployment and/or to stimulate the valorization of higher education through the setting up of innovative firms, valorization which may sometimes be lacking (Fayolle, 2001, for the students in “Grandes Ecoles”⁶). Nevertheless the more global advantage in stimulating the setting up of firms by students is the one of taking part in the economic growth of the country. Verheul and al (2010) have thus put forward on the one hand that the setting up of firms contributes to the growth of developed countries (France and Spain are included in this study) and on the other hand that young people (18-24 years old) take part in a positive way to this phenomenon in developed countries, the authors therefore calling the authorities of these countries to lead specific actions to stimulate the setting up of firms for this category of people.

The integration at once in the *awareness campaign* of a management component and of a learning process of the life of an entrepreneur enriches the perspectives to make a career within the salaried world by allowing to become more autonomous at work, to manage problems and to quickly react facing adversity and opportunities. This profile which may come close to the one of a pro-active behavior may be of interest for the student’s employer. More generally Bonnet & Le Pape (2010) showed that the firms which adopt a pro-active behavior survive better and have a more efficient development strategy. In this sense the integration in a firm of a student having this profile may constitute a component of the pro-active behavior of this firm.

⁶“Grandes Ecoles” train engineers, managers and executives, researchers-teachers, high civil servants. If the *Conference of Grandes Ecoles* numbers 236 members (among them 12 foreign schools), the higher education ministry estimates there are 431 “Grandes Ecoles” (engineering schools, business schools, les école normales supérieures, but also veterinary schools ...). Among them are found the “très Grandes Ecoles”, the ones which train the future senior executives of the State and the big firms. They come in particular from “Ecole nationale d’administration (Ena), Hautes études commerciales (HEC), Ecole normale supérieure de la rue d’Ulm (ENS Ulm), Ecole polytechnique (X)”...

4. 2 Description of the *innovation* and *management* component of the proposal for an awareness campaign

Regarding the concrete content of the *awareness campaign proposal* for its innovation related component, Baumol (2004) provides some characteristics which may be taken up. The first one lies in setting up exercises for imagination for which directions have to be original allowing to set a context favorable to the emergence of breakthrough ideas. The second characteristic linked to this first one is the necessary control of the influence of teachers over this exercise since they may naturally be inclined to draw the student to their own ideas.

Starting from these characteristics the *awareness campaign* which would integrate this dimension of training for innovation might be a very specific exercise in which the student would have a great autonomy for choosing her/his orientation but for the fact that it will have to be practiced outside any institutional frame (including firms) and any familiar context so as to be taking place in an environment as remote as possible from any habits. This exercise would consist in asking the student to carry out by herself/himself an action over a period of time (6 to 8 months) which will have to bring in an original way some well-being to a certain category of persons by using in the way she/he chooses the knowledge acquired during education. This exercise will have to take place with an associate who might be a fellow student. The student will inform her/his teachers of her/his work only when it will be finished by submitting a paper which, while describing the development of what was carried out, will analyze the difficulties encountered and how they were managed.

The first purpose of this exercise is to enable the student to self-assess her/his own entrepreneurial disposition (Graevenitz and al, 2010) by developing her/his capacity for autonomy of action (Gelderen, 2010). The second purpose of this exercise is to constitute at a symbolic level an integration and an harmonization of some under-dimensions of what setting up firms is about and particularly innovative ones which amounts here to bring well-being to society from acquired knowledge (Sweeney, 1982) in a personal, original, way and without society having called for the contribution the student proposes to make. This projection of the setting up of an innovative firm allows on one hand to lend credibility to this professional orientation since she/he will have experimented these under-dimensions and will have approached some failure factors by learning in particular to harmonize these under-dimensions and to strike a balance between them.

This exercise also allows to partly minimize some natural reserves which are to be found in every person such as fearing ridicule or tending to resort to well trodden paths. The setting up of innovative firms and to a lesser extent the setting up of classical firms are a form of self-expression when fear of ridicule or resorting to well trodden paths may tend to inhibit this exacerbated form of self-expression.

Regarding the management dimension of the exercise, it is quite comprehensive since it covers all dimensions of project management, from its design to carrying it out and daily taking care of it. Regarding the human dimension of management it relates more specifically to the relationship between the student and her/his partner. This experiment will make it possible to get some learning of the knowledge and handling of difficulties classically observed in firms. Among these difficulties distributing tasks and rewards, the intrusion of professional life with private life and open conflicts with the co-entrepreneur may be noticed. This learning process will make it possible to integrate the importance of the criteria for choosing the ideal partner for the success of the firm. It is possible that relational affinities are not conducive to an optimal choice since it is rather complementarities in tasks which contributes most to the firm.

It may be expected that the student will opt for a friend to be her/his partner to carry out the simulation exercise. Participants will then be in a position to realize that this choice based on affinities may not have been the most efficient one. Students will learn all the more a great deal from this realization if they compare their experience during a discussion meeting. They will come to realize that people they did not conceive of as potential partners might have been the most appropriate ones to carry out the exercise.

5. Barriers to setting up firms and the way to go about them

5.1 Method for bringing the evidence into light

The method for bringing into light these barriers consists of comparing the average of the levels of the variables which are found in the study conducted on students with the average of the same variables evaluated within another similar study conducted on entrepreneurs in the same region. The aim is to bring into light the significant differences between what students may anticipate about starting a business and the reality perceived by entrepreneurs (difference of averages' tests (student t) at 10%).

The underlying idea is that if students do not set up many firms it is among other things due to the fact that there is a distortion between what they anticipate from this professional orientation and reality. They may for instance overestimate some negative consequences of the setting up and/or underestimate the positive consequences the setting up may bring to them on the personal level. In this case, the barriers to setting up a firm for students are a biased anticipation of reality which leads them to underestimate the personal profit they may obtain from it and at the same time to overestimate the difficulties attached.

The comparison between the scores linked to students and entrepreneurs establishes that possible biased anticipations exist and it may constitute barriers to setting up a firm. They relate to some personality features classically characterizing the entrepreneur psychology in literature (here the

need for achievement and the propensity to take risks). Our approach consists in determining whether the entrepreneurial orientation relating to these psychological variables is weaker for students than for entrepreneurs. The positive relation between the level of these variables and the entrepreneurial orientation has been in particular highlighted for the propensity to risk-taking by Stewart et al (2001) and for the need for achievement by Collins et al (2004). Nevertheless as we will signal during the analysis of the results other works have highlighted different observations

Regarding the *original thinking* (or creativity), literature has shown that entrepreneurs had more it than others (Kuratko and al (1995), Timmons (1989)).

5.2 The sample of entrepreneurs

The sample of entrepreneurs is from the same region than the students (Murcia Region in Spain). These entrepreneurs answered a questionnaire during a study independent from the one conducted on students, this questionnaire in its form and with the variables evaluated is very close to the one conducted on students. The main differences are the two following ones. The first one lies in the context for answering the questionnaire: entrepreneurs did so during individual interviews. The second difference concerns the fact that entrepreneurs give an assessment of the variables based on their professional experience and not on an anticipation of it as is the case for students.

5.3 Results' analysis

Out of a concern for concision in the results' analysis the methodology and the presentation of all the results will not be tackled here; so as to consult them, see Brau's PhD (2009). Only the main lessons drawn from this comparison between the two studies will be presented here.

First students appear to display a marked resemblance to entrepreneurs regarding their scores for the personality variables accounting for the propensity to entrepreneurial commitment (*need for achievement*, and *propensity to risk-taking* through its two under components *professional quickness* and *professional caution*). This result is not especially surprising since the differences of levels of psychological features to discriminate entrepreneurs and non-entrepreneurs have in several works been shown to be relatively not very relevant (Gartner 1988) and in particular for the propensity to risk-taking (Miner and al, 2004, Macko and al, 2009).

Second students get lower scores regarding what may characterize the « innovator » with the *original thinking (or creativity)* personality variable. One may observe that barriers may lie in an underestimation for students of what

the setting up of a firm may really bring them and this through an evaluation of the positive consequences inferior for students compared to entrepreneurs in the fields of *creativity, management, variety* and *altruism*. There exist also an overestimation of the negative consequence attached to « missing on a promising salaried career when setting up a firm », a salaried career the importance of which for students has been noticed in 2.3.1. Another barrier relating to the negative consequences of the setting up of a firm consists in an overestimation for students of the sacrifices for their standard of living and their patrimony with concomitantly a low anticipation of the means allowing to partly compensate for this latter type of sacrifice (inferior level for students of the item concerning resorting to mortgage to finance the firm).

Handling the barriers stemming from the negative consequences of setting up a firm may consist in showing in a direct way and without attempting to underestimate reality that the setting up of a firm does not hold in the fields of financial sacrifices and renouncing a career such great negative consequences as students may anticipate.

In an analogous way, the positive consequences underestimated by students may be handled by promoting the positive contribution of the setting up of a firm.

5. 4 Additional specifications

Handling the barriers whether they relate to the negative or the positive consequences of the setting up of a firm may be carried out by having entrepreneurs talk about their experiences, in particular about matters relating to barriers to setting up a firm so that students may be entitled to revise their biased perception of reality.

The intervention of entrepreneurs may take place at the end of the simulation exercise. Students would then, already having some experience and learning of what the setting up of a firm may cover, have a better understanding of the entrepreneurs' contribution.

The beneficial nature of these contacts between students and entrepreneurs has been highlighted by Miller and al (2011) and Gates and al (2011). They may include managers of big firms, who might intervene at the same time to allow students to formalize the problems they encountered during their simulation exercise. And these managers may also share their experiences in handling these difficulties. They may also make the valorization of this experiment for people in position of recruiting easier, stressing a very wide range of things (which often constitute shortcomings for students entering the work market), in particular having learnt to manage on one's own, to separate professional and personal life, and the concrete use of knowledge acquired at University.

6. Synthetizing results

The main results may be outlined as follows.

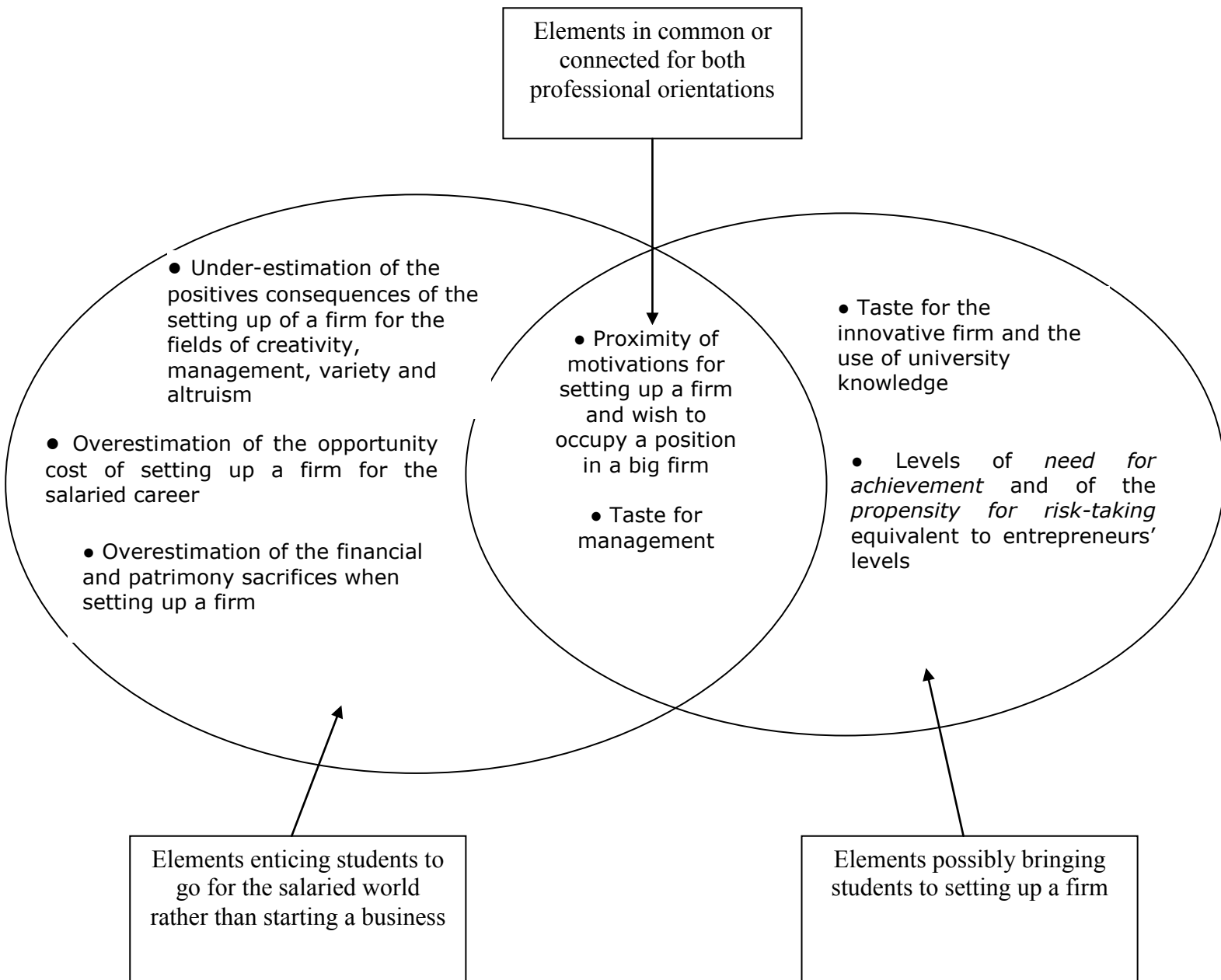


Figure 2: synthesis of results: recovering aspirations relating to occupational choice

7. Conclusion

Making students *sensitive to the setting up of a firm*, as proposed in this paper, by opening up the perspective of a quicker integration on the work market for students, be it through a salaried position or the setting up of a firm, may be of interest for a wide range of university departments. Among these are the departments which are traditionally not or not very much connected to entrepreneurship, such as social studies ones. The strong development of social networks, of Internet sites and more globally of media dedicated to self-fulfillment open up increasing opportunities for the setting up of firms and for salaried jobs. Nevertheless the results relating to these populations of students and their personal and professional aspirations may differ according to the university departments they are in and turn out to be different from the ones found for the population of economists. This phenomenon then makes it necessary to carry out some inquiry work specific to these populations.

This *proposal for an awareness campaign* is not intended for the sole benefit of students but also for the academics supervising the process. Students may indeed obtain from this experiment some knowledge and some professional, intellectual and life orientations which were not anticipated. The characterization by academics of the processes which led them to find direction in this original way will then make it possible to characterize more fully students' expectations towards University.

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