

**A RECENT EXPLORATORY INSIGHT ON THE
PROFILE OF THE INNOVATIVE ENTREPRENEUR:
CONCLUSIONS FROM A CROSS-TABS ANALYSIS**

Isidre March and Rosa M^a Yagüe

WP-EC 97-01

Correspondencia a: Isidre March
UNIVERSITAT DE VALÈNCIA
Dpto. Direcció d'Empreses (Marketing i Admon.)
Edificio Departamental Oriental
Campus dels Tarongers
46022 VALENCIA
e-mail: Isidre.March@uv.es

Editor: Instituto Valenciano de Investigaciones Económicas, S.A.
First Edition April 1997
ISBN: 84-482-1488-9
Depósito Legal: V-1433-1997

IVIE working-papers offer in advance the results of economic research under way in order to encourage a discussion process before sending them to scientific journals for their final publication.

**A RECENT EXPLORATORY INSIGHT ON THE PROFILE
OF THE INNOVATIVE ENTREPRENEUR:
CONCLUSIONS FROM A CROSS-TABS ANALYSIS**

Isidre March and Rosa María Yagüe

ABSTRACT

Despite growing concern towards entrepreneurship, the number of studies directly targeting the profile of the entrepreneur involved in innovative and high-tech new ventures are still scarce. This study, based on the empirical analysis of 18 highly innovative new ventures is focused on this category of entrepreneurs. Through the application of the statistical method known as the Cross-Tabs over a list of 31 variables defining the entrepreneur's behavior and the new venture prospects we come up with a final profile of the innovative entrepreneur more likely to succeed in high-tech and highly innovative fields.

Key words: Entrepreneur, innovation, high-tech, profile

RESUMEN

A pesar del creciente interés de los analistas hacia la figura del emprendedor, el número de estudios orientados a estudiar el perfil del emprendedor innovador o emprendedor "high-tech" es todavía escaso. El presente estudio, basado en un análisis empírico sobre 18 compañías altamente innovadoras y de reciente constitución ubicadas en la zona conocida como la Bahía de San Francisco, apunta directamente sobre la mencionada categoría de emprendedor. A través de la aplicación del método estadístico Cros-Tab sobre una lista de 31 variables definitorias del comportamiento del emprendedor y las perspectivas de las compañías innovadoras nacientes, obtenemos finalmente un perfil del emprendedor innovador óptimo, capaz de gestionar adecuadamente nuevas empresas innovadoras.

Palabras clave: Emprendedor, innovación, perfil

1. CONCEPTUAL FRAMEWORK

1.1. Introduction

A look at the literature available on the field confirms the emergence of entrepreneurship in the 80s as an important focus of attention. Systematic research on factors related to entrepreneur's profile and new venture success starts by that time¹, revealing we are in the midst of a wave of studies devoted to the analysis of the entrepreneur, in line with the growing social concern towards new ways to generate wealth in the society and the widespread belief about the need for further research in entrepreneurship (KASARDA 1992, BLOCK & STUMPF 1992).

The small firms, whose proven capacity to generate new jobs contrasts with the evident shrink in employment experienced by a vast majority of large corporations, are gaining weight. Therefore, assertions like "the present world needs what entrepreneurs can provide: new products, creative work environment and new ways of doing business" (KAO, 1989: 3) should no longer surprise.

Defining the entrepreneur is the usual starting point in most studies undertaken so far, to the extent that a large number of entrepreneur definitions can be found in the recent literature².

Adventurism, risk-taking, wish to run a business and overcome unexpected thrills, are traits commonly shared by entrepreneurs. However, entrepreneurship is not an universally admitted concept whose profile can be isolated from the environment, including factors such as: capital availability, supply of skilled human resources, universities and other idea generating institutions (KAO 1989).

This environment highly impinges on the expectations, intentions and prospects of success attached to the new ventures and their corresponding entrepreneurs.

¹ COOPER & GIMENO (1992) remark the most outstanding problems in the existing literature and empirical studies undertaken so far.

² We can firstly take the definition provided by KAO (1989), focused on the creation of value through recognition of business opportunity, risk-taking and accumulation of managerial skills. In this line, to SLEVIN & COVIN (1990), entrepreneurship includes risk taking, proactivity and innovation in the new venture. In the recent book by TIMMONS (1994) we can find a definition of entrepreneurship and its practical, intellectual and policy implications. Finally, and as the most recent definition in this review, HISRIC (1995) describes it as the dynamic process of creating incremental wealth. The decision to start a new company occurs when an individual perceives forming a new enterprise is both desirable and possible.

1.2. Central Research Question

As the best way to state what this paper is about, let us pose the central research question to be tested in this study:

Is there a list of features mostly present in the individuals founding innovative new ventures, to the extent a profile of the innovative entrepreneur can be drawn?

In order to give a reasoned answer to this question we have analysed under an empirical perspective a specific category of entrepreneurs, what we call the innovative entrepreneur, in search of specific features and behaviors characterizing the profile of the entrepreneur founding and running new ventures positioned in innovative and high technology related fields.

The category of entrepreneurs to which this study refers to is represented by individuals either holding competencies in at the edge technologies or enjoying a major strategic vision in business, we call innovative capacity, that enables them to continuously launch new products or services able to succeed in the markets. We agree to call this category of founder as "High-tech entrepreneur" in the first case, and "Top innovator entrepreneur" in the second. We gather both categories within the label of "Innovative entrepreneur".

In short, the purpose of this study is to gain new evidence about the profile of the innovative entrepreneur, responsible for the emergence and growth of the new ventures the most innovative, through an exploratory study on a small sample entrepreneurs meeting the conditions we deem essential to be judged as innovative ones³.

1.3. The Entrepreneurs Profile in the Literature

The profile of the entrepreneurs is an issue thoroughly examined during the last two decades. CARLAND et al (1984) compile a large list of studies where the characteristics of entrepreneurs have been treated. Starting with a study by MILL in 1848 the list ends with recent studies dated in 1992 (CHANDLER & JANSEN (1992), MCGRATH et al. (1992)). Most

³ We are aware some experts use to qualify any entrepreneur as innovative. For them, innovation is a necessary condition to become a real entrepreneur. Despite understanding that reasoning we do not agree with it. For us, entrepreneur is any individual setting up a new venture, not necessarily an innovative one. Therefore, we wish to remark the meaning underlying our concept of "Innovative entrepreneur" as a specific kind of entrepreneur.

characterizing the entrepreneur profile since the last decade have an empirical nature.

Heterogeneity in the entrepreneur profile is a feature constantly remarked by a wide range of studies⁴. This inevitable variety gives rise to accept several taxonomies of entrepreneurs, more or less dominant in any region depending on the prevailing environmental conditions.

The recent literature provides a wide array of categories of entrepreneurs:

- Opportunistic entrepreneur, as a success path seeker.
- Creative or charismatic entrepreneur, driven by an innovative idea⁵
- Conventional entrepreneur, keen on founding new ventures
- The Scientist/Research led or inventor-entrepreneur in front of the Manager-entrepreneur or surrogate entrepreneur (RADOSEVICH, 1995).

The perfect or ideal entrepreneur is yet to be found. However, most empirical studies undertaken so far are in quest of finding a set of individual features closely leading to a standardized profile, valid worldwide. Common attitudes and behaviors presumably shared by successful entrepreneurs are: responsibility, tenacity and ability to handle ambiguity (HISRICH & PETERS, 1995)⁶.

All these studies carried out in the last years prove the growing concern surrounding the entrepreneurship. Notwithstanding, we deem most of them deal with the category of entrepreneur in general and very few studies directly target a very specific kind of entrepreneur, the high-tech and the top innovative entrepreneur, comprised within our category of "Innovative entrepreneur".

Finally and regarding to our intended contribution, through the insight into the entrepreneurship phenomenon contained in this paper, our primary intention is to raise up some

⁴ One of the first typologies of entrepreneurs was provided by SMITH (1967). An empirical study by DOUTRIAUX (1995) splits up the entrepreneurs into 3 groups: True entrepreneurs, uncomfortable entrepreneurs and entrepreneurs by hobby. Other studies referring to types of entrepreneurs and start-ups are: LAFUENTE & SALAS (1989), SMITH & MINER (1983) and WOO, COOPER & DUNKELBERG (1988)

⁵ Not all creative individuals are entrepreneurs, nor are all entrepreneurs creative, as argued by KAO (1989)

⁶ Several studies focus on the common attitudes and behaviors of entrepreneurs like the ones by VESPER (1984), RONSTADT and STEVENSON (1983), CHANDLER & JANSEN (1992), DAVIDSSON (1988), GENESCA & VECIANA (1984). Most studies suggest the eventual success of a new venture will greatly depend on the talent and behavior of the lead entrepreneur and team. In this line, we find TIMMONS & STEVENSON (1985), CARLAND et al (1984), CLIFFORD & CAVANAGH (1985), HURNADAY & TIEKEN (1983), GRANT (1993), BEGLEY & BOYD (1986) and TIMMONS (1989).

key traits and attitudes shared by the innovative entrepreneur, which might be useful to practitioners and policy makers in entrepreneurship.

2. EMPIRICAL STUDY

The empirical study sustaining our findings was implemented in the region known as the Bay Area of San Francisco, urban agglomeration located nearby the Silicon Valley, from June to September 1994.

It is worth remarking this is an exploratory research or pilot study and the sample size is small. Nevertheless, we consider the methodology used is suitable for case-studies and the findings are consistent with those of other researchers.

The nature of the analysis stays in tune with others recently undertaken and targeting the profile of the new venture founder ⁷. We expect this initial survey will set the framework for future research based on larger samples examining the profile of the innovative entrepreneur in several regions.

Our initial intention to target a very narrow geographical area fulfilling several locational conditions, led us to purposely select the Bay Area due to proximity to the core of the Silicon Valley as well as other conditions such as fluent linkages between University-Firms and availability of venture capital funds, all of them turning the Bay Area into an environment highly conducive to entrepreneurship and innovative activities. From our point of view, features shaping the entrepreneur profile could be better assessed in a region exhibiting a high rate of innovative new ventures generation.

In addition but secondary, most empirical studies about entrepreneurship have been implemented in the USA. Only recently have studies in this line started to appear in the European

⁷Among the very recent empirical studies concerning the entrepreneur profile are worth noting: An empirical study to 24 new technical ventures by STUART & ABETTI (1986), an empirical survey about research-entrepreneurs by DOUTRIAUX (1995), another empirical study to 20 engineers entrepreneurs by FAYOLE (1995), a survey to 21 high-tech new ventures with succes by BLAIS & TOULOUSE (1995), this last one very similar to the study presented here. Also worth noting are the studies by COOPER (1995) and RIPOLLES (1995) and a survey to 100 top executives in entrepreneurial firms by HOOD & YOUNG (1993)

countries.

Although small in a nationwide scale, the whole Bay Area seemed to us too vast and large for our research purposes, to the extent we eventually focused on firms located in the NorthEast side of the Bay Area, comprising the cities from Richmond to Alameda.

A major hypothesis of the study worth remarking here is our belief in the possibility to extrapolate main conclusions regarding the profile of the innovative entrepreneurs to other regions less conducive to entrepreneurship than the Bay Area.

2.1. Sample

On the whole, 18 entrepreneurs running innovative new ventures were selected and visited.

Among these 18 entrepreneurs⁸ several can be qualified as inventor-entrepreneurs in the sense raised by HISRICH and PETERS (1995), MINER, SMITH & BRACKER (1992), SAMSON & GURDON (1993), usually coming from the University environment. Most have a sound technological background and only in a few ones the managerial skills prevail over the technical issues.

The criteria to be met by new ventures were:

- Geographical proximity: All but 2 firms are located within a radius of 10 kilometres embracing the cities of Richmond, Berkeley, Emeryville and Alameda, in the NorthEast of the Bay Area. The remaining two firms were included in the sample due to personal ties linking the founder to the city of Berkeley.
- Recent date of foundation: All the firms were established after 1986, so they can still be defined as new ventures.
- High opportunity sectors: All the ventures are engaged in activities with high potential income generation and widely judged as market opportunity windows:

⁸ In fact, more than 18, while some companies were founded by several individuals.

- . Biotechnological or biomedical field (6 firms)
 - . Microelectronics and software related activities (8 firms)
 - . Specilized consultancy activities in areas with growing market and social concern (4 firms).
- Firms in different stages of development: The sample was designed taking into account the need to cover firms at different stages of development in their life cycle. Hence, a wide range of ventures can be found: start-ups set up only few months ago, firms in the emerging phase and fast growing and consolidated ventures too, but no one having reached the maturity or harvest phase yet.
 - Firms with diverging patterns of growth: The purpose was to cover a wide range of growth possibilities. So, in the sample we can find ventures experiencing an accelerated growth, at annual rates over 100 %, together with others facing stagnation in sales. A few biotechnological companies, still engaged in the research process, had not started to generate incomes yet by the time of the visit.
 - Firms with an outstanding innovative potential. To us, this innovative character could be described by the following features:
 - . High tech mastering
 - . Constant introduction of new products
 - . Continuous search for new markets
 - . Relatively high rate of investment in R&D and other prior-to-launch activities
 - . Involved in what experts call opportunity areas
 - . Highly creative firms

Regarding the question of what was the universe of firms fulfilling these requirements in that geographical area, we can remark there is a large amount of New Technology Based Firms recently founded, all of them meeting our selection criteria ⁹. The final firms integrated in the sample followed the suggestions and advises made by local experts and specially, the venture capital company Hummer and Winblad, well-known in the area.

From an initial sample of 30 firms, 18 finally took part in the study.

⁹ Over one hundred of firms in the same area of the sampled firms and several hundreds in the whole Bay Area.

2.2. Research Method and Variables Chosen to Study

The empirical research contained in this study intends to offer an approximation to the variables and relationships most usually attached to the successful innovative entrepreneur¹⁰.

The research approach used to carry out this study was the personal interview to the entrepreneurs, founders of these 18 new ventures. A structured and homogeneous questionnaire was the basis of these interviews, in order to obtain comparable information.

A wide range of issues were treated in these meetings related to the founder's profile, origin and prospects of the new ventures. Every subject was divided into several options, in order to more accurately identify the position held by each firm¹¹.

The variables chosen for this particular study are summarized in Table 1¹².

All these questions are always referred to the main founder, for firms with several founders.

In our view and accordingly to colleagues contacted, by analyzing the answers made by the entrepreneurs to these issues, we could approximately figure out how the profile of the innovative entrepreneurial community is like, provided an appropriate statistical tool is employed in the analysis.

2.3. Statistical Method

The statistical method employed to analyse and interpret the results obtained through the interviews has been the Cross-tabs.

¹⁰ This sentence relates to the question of what this research is about.

¹¹ For instance, in a subject like the founder's age, we offered 3 options: Under 30 year old, 30 to 40 and over 40 year old. In other subjects like motivations to create the new venture, the entrepreneur had to choose among 5 possible answers.

¹² These issues were selected through examining several empirical studies with similar purposes and after consulting some colleagues. In brackets the name representing the issue in the statistical analysis

Table 1

Founder's age (AGE): . Under 30 year old / 30-40 year old / > 40 year old
Geographical origin (ORIGIN): . Bay Area / USA / Foreign country
Founder's academic background (ACADEM): . Technical studies / Master studies in non technical disciplines / Doctor in scientific disciplines
Professional background (PROFES): . No experience in business / Short experience in business / Broad experience in business
Knowledge of the market before starting business (MARKET): . Low, new starter / . Some knowledge / Broad knowledge of market
Number of founders (NUMBER): . Just one person / 2-3 persons / over 3 persons
Founders backgrounds (BACK): . Very similar or exactly the same / Complementary / Rather different
Maturation of the entrepreneurial idea (MATUR): . < 1 year / 1-5 years / > 5 years
Founders entrepreneurial spirit (SPIRIT) ¹³ : . Low (entrepreneur by chance, accidentally) / Average / Strong (vocational entrepreneur)
Founders self-confidence (CONFIDENCE): . Low, pesimistic / Medium / High, optimistic
Founders previous experience as entrepreneur (PREVIOUS): . Yes, positive / Yes, negative / Not, first start-up
Founders main personal preferences (PREFER): . Managerial tasks / Technical-Research tasks
Immediate previous occupation (OCCUPAT): . Another similar firm / University-Research Institution / Government Agency
Reasons for leaving previous job (REASON): . Boredom, lack of motivation / Lack of freedom / Obstacles to innovate / Unpleasant working environment / Sale or failure of own company
Date of foundation of the firm (DATE): . 1993-94 / 1990-92 / 1985-90
Main reason for starting a new business (STARTBUS): . Search of market opporunity / Search of technical opportunity / Freedom to work / Run your own firm / Risk and challenge / Become richer
Second main reason for starting a new business (STARTBU2): Same options than the previous question
Time spent in arrangements prior to start-up (ARRANGEM): . Few months / > 1 year
Time spent in discussing viability (DISCUSS): . Few weeks / Few months / > 1 year

¹³By entrepreneurial spirit we mean the individual willingness to start-up and run new businesses. A person with a high entrepreneurial spirit is always oriented to the search of new opportunities of business and enjoys with the role of new venture leader

Table 1 (cont.)

Second main issue or document prepared during the pre-start-up period (ISSUES2): The same options than the previous question
Main issue or document prepared during the pre-start-up period (ISSUES): . Brief outline / Brief Business Plan / Complete Business Plan / Market study / Financial study / Partnership strategy
Secondary activities undertaken to sustain the firm's main activity (SECOND): . Yes, very important / Yes, but occasionally / Not at all
Changes in location (LOCATION): . No changes (still in the first location) / 1-2 changes / 3 or more moves out
Number of employees at the outset, apart from the founders (EMPLOY): . No one / 1-3 / 3-6 / > 6
Current number of employees, apart from the founders (CURRENT): . < 5 / 5-10 / 10-25 / 25-100 / > 100
Rate of growth in employees during the first 5 years (GROWTH): Low growth / Medium growth / High, accelerated growth
Ownership pattern. Main stockholders (OWNER): . Founders / Private small investors or small venture capital funds / Big, corporate investors or large venture capital funds
Founders as managers at the outset (MANAG): . Yes, they were skilled enough / Yes, but they lacked skills and experience / No, someone else
Founders reasons for still running the company now (OWNRUN): . Acquisition of experience / Too expensive to recruit a manager / No need to hire any manager / Not found right person
Degree of fulfilment of the founders initial expectations on the company (FULFIL): . Low, deceived / Medium / High, very pleased
Scope of changes from the initial start-up ideal stated at the outset (CHANGES): . No changes, the ideal remains under reach / Some changes but main purpose remain / Broad changes

The Cross-tabs is a statistical method suitable to quantify qualitative variables. It also provides information about the degree of relationship held by pairs of features or variables.

This method suggests that each issue treated in the interviews should be compared with all the others to which it might be positively correlated. If so, we can conclude their behaviour is directly linked ¹⁴.

¹⁴We have preferred to cross all the variables between them, without neglecting any crossing beforehand. Hence, we only use statistical criteria, the contingency coefficient and the significance level, as discriminating factors

The Cross-tabs technique has been employed by several empirical studies with similar purposes to this one. One of the first Cross-tabs in this field was undertaken by HOAD & ROSKO (1964), dealing with the characteristics of entrepreneurs, founding strategy and major policies. Later on, other studies based on the Cross-tabs include the ones by COOPER & BRUNO (1977), SANDBERG & HOFER (1982), ROMANELLI (1987), HAY & ROSS (1989) and KIRCHHOFF & PHILLIPS (1989).

To properly understand and interpret the meaning of each cross-tabs we have to look at two parameters: The significance level and the contingency coefficient.

Regarding the significance level, the criteria stated by experts in statistics suggests to consider only those correlations with a significance level under 0.05, although some authors fix the limit in 0.1. We have followed this last criteria as a significance level of 0.05 would keep out most of our correlations.

The significance level has inference purposes. So, correlations with a level under 0.1 mean we can extrapolate that relationship to the whole population of innovative start-up firms in the Bay Area, with a likelihood of 90 %.

On the other hand, contingency coefficient indicates the real level of correlation existing between a pair of variables. All the coefficients obtained stay over 0,4.

As mentioned before, the Cross-Tabs method has been used by other studies in the past, but in a different way as in this study. As far as what is new in this analysis concerning the research method, we could argue:

- By crossing all the issues between them, all the starting variables act as independent variables, instead of just a few ones, as in the studies before mentioned.
- The search of a quasi-optimal space for innovative entrepreneurship explains the fact all the firms conforming our sample are located within a very focused geographical area, in a radius of 10 km round the city of Berkeley. Usually, most empirical studies cover much larger regions or even, are made at a nationwide scale.
- The entrepreneurship is a field largely studied empirically in the last years. Aware of that, we do not intend to be original in the selection of the initial issues under

analysis¹⁵, but in the research approach used to interpret the relationships arising between them.

- This study attempts to go beyond the simple descriptive analysis by drawing summarizing conclusions from the correlations found between variables.

3. EMPIRICAL FINDINGS

In this central section we will report on the results arising from the Cross-Tabls analysis on the variables under study. Table 2 summarizes all the cross-tabs fulfilling our selection conditions: Significance level under 0.1 and contingency coefficient over 0.4.

Next step in our analysis is to point out the most remarkable findings directly drawing from Table 2.

Table 2

<i>PAIR OF VARIABLES</i>	Contingency Coeff	Significance level
ACADEM-AGE	0.59471	0.04303
ACADEM-MARKET	0.5977	0.04035
ACADEM-OCCUPAT	0.57559	0.06318
ACADEM-OWNER	0.61588	0.08838
AGE-MATUR	0.6	0.03837
AGE-OWNER	0.68599	0.01375
ARRANGEM-DISCUSS	0.60486	0.00556
ARRANGEM-MANAGER	0.4913	0.0167
ARRANGEM-MATUR	0.46987	0.07808
ARRANGEM-PREFER	0.40161	0.06281
ARRANGEM-PROFES	0.53452	0.02732

¹⁵In fact, many published studies use variables largely employed by other authors.

Table 2 (cont.)

ARRANGEM-STARTBUS	0.46625	0.08208
CHANGES-DATE	0.69463	0.01011
CHANGES-LOCATION	0.45004	0.1
CHANGES-OCCUPAT	0.58274	0.05502
CONFIDEN-FULFIL	0.50671	0.1
CONFIDEN-MARKET	0.54984	0.02024
CONFIDEN-MATUR	0.48845	0.05961
CONFIDEN-OWNER	0.61237	0.01286
CONFIDEN-REASON	0.54984	0.09919
CURRENT-GROWTH	0.79831	0.00158
CURRENT-OWNER	0.73932	0.04102
CURRENT-REASON	0.75491	0.09283
CURRENT-LOCATION	0.60776	0.01447
FULFIL-GROWTH	0.71873	0.02327
FULFIL-STARTBUS	0.71941	0.00367
FULFIL-SECOND	0.6624	0.02883
MANAG-PROFES	0.46847	0.07962
MANAG-PREFER	0.61377	0.00097
MANAG-STARTBUS	0.49693	0.05227
MANAG-OWNRUN	0.56228	0.0398
DISCUSS-ISSUES	0.71217	0.00097
DISCUSS-ISSUES2	0.70711	0.04979
MARKET-OCCUPAT	0.6622	0.00711
MARKET-SECOND	0.57042	0.06956
MARKET-STARTBUS	0.56415	0.07787
MARKET-STARTBU2	0.71475	0.03326
MARKET-SPIRIT	0.59252	0.04507
MARKET-REASON	0.72271	0.01161
MARKET-PROFES	0.59621	0.04167
MARKET-PREVIOUS	0.59409	0.0436
MARKET-PREFER	0.44343	0.1
MARKET-OWNER	0.62586	0.07174
MATUR-OWNER	0.71264	0.00494
MATUR-ORIGIN	0.56421	0.0778
OCCUPAT-STARTBUS	0.55588	0.08979
OCCUPAT-SPIRIT	0.79887	0.00000
OCCUPAT-PREVIOUS	0.57068	0.06924
PREFER-STARTBUS	0.52705	0.03138
PREFER-ISSUES	0.49974	0.05
PREFER-ISSUES2	0.70711	0.04979
PREFER-OWNRUN	0.5698	0.0398
PREFER-PROFES	0.5698	0.01321
PROFES-STARTBUS	0.61556	0.02678
PROFES-GROWTH	0.6193	0.08243
PROFES-CURRENT	0.67429	0.059
PROFES-PREVIOUS	0.59164	0.04591
REASON-SPIRIT	0.67297	0.06112

3.1. Correlations with Academic Background and Founders Age

Our first variable under analysis is the Founders academic background. This feature is correlated with the following variables ¹⁶ and the main findings are summarized in Table 3:

Table 3

<p>ACADEM-AGE: <i>- Founders with Doctorate academic level tend to be older than the other categories when founding a new venture.</i></p>
<p>ACADEM-MARKET: <i>- Founders with Technical academic level are the ones with broader knowledge of market, whereas the lowest knowledge of market is held by founders with Doctorate academic level</i></p>
<p>ACADEM-OCCUPAT: <i>- All the founders with Doctorate academic level were previously working at University or Research Institution. - Most of the founders (80%) with Technical academic level were previously working in another similar firm</i></p>
<p>ACADEM-OWNER: <i>- Most of the firms mainly owned by the founders are run by founders with Technical academic background</i></p>

Regarding the main founder’s age, the findings are summarized in Table 4:

Table 4:

<p>AGE-MATUR: <i>- Younger founders tend to spend less time in maturation of the entrepreneurial idea</i></p>
<p>AGE-OWNER: <i>- Most firms (83%) whose founders being main owners are run by 30-40 year old individuals</i></p>

3.2 Correlations with Arrangements

Time spent in arrangement prior to start-up the firm is correlated to several variables. Table 5 summarizes the main findings:

Concerning the maturation of the entrepreneurial idea, we have found out founders from foreign countries tend to take longer in developing their entrepreneurial idea.

¹⁶ The Cross-Tabs results under analysis in this study were obtained by using the SPSS programme. This programme supplies the percentages by colons and rows for each option in each variable. For space reasons, we will not provide the percentages but only the final conclusions arising from the Cross-Tab.

Table 5

ARRANGEM-MANAGER: <i>- The highest the skills of the founder to run the firm at the outset, the shortest the arrangements take</i>
ARRANGEM-PREFER: <i>- The highest the preference for managerial tasks, the shortest the time needed for arrangements prior to start-up</i>
ARRANGEM-PROFES: <i>- The broadest the experience in business, the shortest the time needed for arrangements prior to start-up</i>
ARRANGEM-STARTBUS: <i>- Founding a firm in search of market opportunity takes shorter in arrangements than founding the firm led by a technical opportunity</i>

3.3. Correlations with Scope of Changes and Fulfilment of Initial Expectations

Here, the variable to which correlations are referred to is the scope of changes from the initial start-up ideal stated at the outset. Main findings are summarized in Table 6.

The fulfilment of the initial expectations stated by the founders is a key variable. The results arising from the Cross-Tabs are summarized in Table 7.

Table 6

CHANGES-DATE: <i>- The shortest the time since foundation, the lowest the scope of changes from the initial ideal</i>
CHANGES-LOCATION: <i>- The broadest the scope of changes from initial ideal, the easiest the firm experiences more changes in location</i>
CHANGES-OCCUPAT: <i>- The Research-related firms, basically run by founders previously at University or Research Institution, remain more loyal to their initial principles and goals</i>

Table 7

FULFIL-GROWTH: <i>- Firms with a higher rate of growth hold a high level of fulfilment of expectations</i>
FULFIL-SECOND: <i>- The highest level of fulfilment of initial expectations is found among firms with no secondary activities to sustain the main activity. So, when starting a business most founders prefer not to get involved in secondary activities not even temporarily</i>
FULFIL-STARTBUS: <i>- The fulfilment of initial expectations is independent of searching market or technical opportunity as main reason to start business. There is not enough evidence about the existence of a direct correlation between reasons to start the business and level of fulfilment of expectations</i>

3.4. Correlations with Self-confidence

In this section we analyze the scope of correlation referred to the founders self-confidence. Results are summarized in Table 8.

Table 8

<p>CONFIDEN-FULFIL: <i>- The highest the level of self-confidence, the highest the fulfilment of the founders initial expectations on the firm</i></p>
<p>CONFIDEN-MARKET: <i>- The highest the level of self-confidence, the broadest the knowledge of the market before starting the business</i></p>
<p>CONFIDEN-MATUR: <i>- The shortest the time spent in maturation of the entrepreneurial idea, the highest the level of self-confidence of the founder</i></p>
<p>CONFIDEN-OWNER: <i>- Ownership of the new venture is linked to higher levels of self-confidence on the prospects of the firm</i></p>
<p>CONFIDEN-REASON: <i>- The highest level of self-confidence is found among founders arguing either lack of freedom or sale/failure of previous firm as main reasons to leave previous job.</i> <i>- The lowest level of self-confidence is exhibited by founders arguing obstacles to innovate or boredom as reasons to leave previous job</i></p>

3.5. Correlations with Managerial Capacity

The significative correlations between Founders as Managers at the outset and other variables are summarized in Table 9.

Table 9

<p>MANAG-PROFES: <i>- The broadest the experience in business, the largest the skills and experience to run the firm at the outset.</i></p>
<p>MANAG-PREFER: <i>- Preference for managerial tasks is a quality mostly attached to founders skilled and experienced enough to run the firm at the outset</i></p>
<p>MANAG-STARTBUS: <i>- Founders skilled and experienced enough to run the firm at the outset tend to search market opportunity as the main reason to start business</i> <i>- Founders not skilled enough to run the firm at the outset are usually led by technical opportunities</i></p>
<p>MANAG-OWNRUN: <i>- Most managers still run their company now despite lacking managerial skills and expertise. Financial limitations discourage them to recruit a professional manager</i></p>

3.6. Correlations with Knowledge of Market

The knowledge of market held by founders before starting-up business is the variable with the largest number of correlations meeting our Cross-Tabs requirements. Main findings arising from the ten correlations obtained are summarized in Table 10.

Table 10

<p>MARKET-OCCUPAT: <i>- Founders the least familiar with market were previously working at the University or Research Institution</i> <i>- As expected, the broadest knowledge of market is held by founders previously working in another similar firm</i></p>
<p>MARKET-SECOND: <i>- To carry out secondary activities it seems essential to hold a good knowledge of the market before starting the business.</i></p>
<p>MARKET-STARTBUS: <i>- Most founders with broad knowledge of market search market opportunity as main reason to start business</i></p>
<p>MARKET-STARTBU2: <i>- All founders with low or medium knowledge of market before starting business state to search risk and challenge or freedom to work as the second main reason to start business.</i> <i>- Among the founders with broad knowledge of market no one option prevails clearly over the rest as the second main reason to start business</i></p>
<p>MARKET-SPIRIT: <i>- The broadest the knowledge of market, the highest the founder's entrepreneurial spirit</i></p>
<p>MARKET-REASON: <i>-All the founders (6) having sold a former firm or having failed in another firm had a broad knowledge of market before starting the present firm.</i> <i>- The lowest knowledge of market is held by founders arguing obstacles to innovate as main reason to leave previous job</i></p>
<p>MARKET-PROFES: <i>The highest the knowledge of market, the broadest the experience in business</i></p>
<p>MARKET-PREVIOUS: <i>- Founders having previous experience as entrepreneur are the ones enjoying a broader knowledge of market</i></p>
<p>MARKET-PREFER: <i>- Preference towards managerial tasks is a good indicator of broad knowledge of market</i></p>
<p>MARKET-OWNER: <i>- Founders main owners of their firms had a broader knowledge of market prior to the start-up than the non owners</i></p>

3.7. Correlations with Previous Occupation

We have come up to interesting findings connected to the founder's immediate previous occupation. Table 11 summarizes the Cross-Tabs meeting our statistical requirements.

Table 11

OCCUPAT-STARTBUS: <i>- Most founders (83%) previously working at a University or Research Institution are driven by technical opportunity as main reason to start business</i> <i>- Most founders (72,7%) previously working in another similar firm basically search market opportunity as main reason to start business</i>
OCCUPAT-SPIRIT: <i>- The highest entrepreneurial spirit is held by founders previously working in another similar firm, whereas the lowest corresponds to founders previously working at University or Research Institutions</i>
OCCUPAT-PREVIOUS: <i>- Most founders (3 from 4) with negative records as entrepreneurs were previously working in a similar firm (their previous start-up). In exchange, most founders (63%) with no experience as entrepreneurs were previously working at the University or Research Institution</i>

3.8. Correlations with Preferred Tasks

Regarding their preferred tasks within the firm, the founders under study could choose between two options: Managerial tasks or Technical/Research tasks. The five Cross-Tabs having eventually met the statistical requirements are presented in Table 12.

Table 12

PREFER-STARTBUS: <i>- Preference for managerial tasks is connected to the search of market opportunity while preference for technical/Research tasks is linked to the search of technical opportunity</i>
PREFER-ISSUES: <i>- The highest attention to the Business Plan during the pre-start-up period is paid by founders preferring to undertake managerial tasks within the firm</i>
PREFER-ISSUES2: <i>- The managerial entrepreneur tends to prepare a complete Business Plan and a more detailed financial study prior the launch of the firm</i>
PREFER-OWNRUN: <i>- All founders arguing too expensive to recruit a manager as main reason to still run the company, prefer to undertake technical tasks in the firms, whereas all founders preferring managerial tasks argue no need to hire any manager</i>
PREFER-PROFES: <i>- Founders the most familiar with the market tend to prefer managerial task</i>

3.9. Correlations with Professional Background

The professional background or experience in business is specially correlated to other 4 variables. Main findings arising from such correlations are summarized in Table 13.

Table 13

PROFES-STARTBUS: <i>- Founders searching a market opportunity as main reason to start business are the ones with the broadest experience in business</i> <i>- The lowest the experience in business, the highest the search of technical opportunity as main reason to start business</i>
PROFES-GROWTH: <i>- The broadest the business experience the highest the growth of the firm. Most firms (80%) exhibiting a high growth are run by founders with broad business experience</i>
PROFES-PREVIOUS: <i>- All the founders with no experience in business start the firm for the first time</i> <i>- Most founders (88%) with broad experience in business have a previous experience as entrepreneurs, either positive or negative</i>

4. RESEARCH CONCLUSIONS

In this last section we provide the conclusions drawing from the Cross-Tabs analysis, by selecting the main findings displayed in Tables 3 to 13.

- Founders with a Technical academic level enjoy broader knowledge of market, while the Doctor/Scientist founders hold the lowest. Also remarkable is the direct linkage encountered between academic background and previous occupation in the entrepreneurs:

Doctors (scientists) ⇒ previously working at University or Research Institution

Technical level ⇒ previously working in another similar firm

- Regarding the firm's ownership pattern, founders usually holding main ownership of the new venture are 30-40 year old individuals with a technical academic level.

- As expected, the highest the skills of the founder to run the firm at the outset, the shortest the prior-to-launch arrangements take.

The managerial driven founders, those with a broad experience in business and the ones searching market opportunity as main reason to start business, take shorter in prior-to-launch arrangements.

Specially outstanding is the fact foreign founders take longer in maturation of the entrepreneurial idea.

- The Research-related firms, basically run by founders previously at the University or Research Institution, remain more loyal to their initial principles and goals stated by the time of start-up. This is due to the fact their ventures, usually engaged in the biotechnological field, take longer to develop their main products.

- A high level of self-confidence in the new venture seems to be connected to larger fulfilment of the initial expectations, to founders taking shorter in maturation of the entrepreneurial idea and enjoying a broad knowledge of the market before starting the business. Also, founders being main stockholders of the new venture and those having left their previous job due to lack of freedom or sale/failure of previous firms are more confident on the firm's prospects.

Growth of the new venture is a key variable defining fulfilment of the initial expectations. When starting a business, most founders prefer not to get involved in secondary activities, not even temporarily.

Founders fulfil their initial expectations regardless the reasons stated to start business. Not enough evidence about correlation between both variables has been found.

- Founders with a broad experience in business, a clear preference for managerial tasks and searching market opportunity, are usually individuals skilled and experienced enough to run the new venture at the outset.

In exchange, preference for technical/Research tasks and the search of technical opportunity are features usually linked to founders lacking the necessary skills and experience to run the firm at the outset.

Most founders still run their ventures now despite lacking managerial skills and expertise for a proper management. Financial limitations discourage them from recruiting a professional manager.

- A broad experience in business and a previous job in another similar firm enhance the knowledge of the market, as well as the inclination to undertaking secondary activities. Founders with a broad knowledge of market tend naturally to start business motivated by a market opportunity.

Also, the broadest knowledge of market is held by founders having previous experience as entrepreneurs, either positive or negative.

Preference towards managerial tasks within the firm usually indicates a broad knowledge of market by the founder. Founders holding ownership in the new venture also enjoy a broader knowledge of market.

- Main reason to start business is clearly linked to the previous job held by the founder. Hence, a former job at the University or Research Institution leads the founder to be driven by technical opportunity, whereas the market opportunity is mainly sought by founders previously working in another similar firms, precisely the ones exhibiting a larger entrepreneurial spirit.

- Preference towards managerial tasks is connected to the search of market opportunity while preference for Technical/Research tasks is linked to technically oriented entrepreneurs.

Founders preferring to undertake managerial tasks within the firm tend to prepare a complete Business Plan and a detailed financial study prior to launching the new venture. Also, founders the most familiar with the market are the ones more keen on assuming managerial tasks.

-The broadest the experience in business, the highest the tendency to search market opportunity as main reason to start business. In general, founders with broader experience in business get to grow faster their new ventures.

Main goal of this study was to provide a profile of the innovative entrepreneur holding more chances to succeed in high-tech or innovative new ventures. This profile emerges from summarizing the main findings above stated.

Hence, from this study we can conclude the successful innovative entrepreneur is usually characterized by the features displayed in Table 14:

Table 14

<i>Technical education:</i>
. Technical academic education
<i>Familiarity with business and market:</i>
. Broad knowledge of market
. Large experience in business
. Previous entrepreneurial experience
. Search of market opportunity
. Immediate previous job in another similar firm
<i>Managerially driven:</i>
. Preference for managerial tasks
. Skills and experience to run the firm at the outset
<i>Personal profile:</i>
. 30-40 year old
. High level of self-confidence
<i>Rapid in turning the idea of business into a new venture:</i>
. Short time in arrangements and discussing viability
. Short time in maturation of the entrepreneurial idea
<i>Focused and owner:</i>
. Not involved in secondary activities
. Main owner of the firm

In principle, it could be argued this profile is only applicable for entrepreneurs located in the Bay Area, the region where the empirical study was implemented. Notwithstanding, we believe conditions and features shaping the innovative entrepreneur in a quasi-optimal area like the Bay Area, are supposedly valid to shape the profile of the innovative entrepreneur in other less conducive regions, provided other additional conditions are also present. In this sense, we judge the list of features figured out in Table 14 will have to be enlarged necessarily in most European regions, endowed with poorer starting conditions for entrepreneurship than the Bay Area.

The extension of our findings to other areas stems from the major hypothesis of our study, the possibility to extrapolate a set of features to individuals in other regions with diverging starting conditions than in the geographical area targetted by this study.

However, with this kind of studies a total guarantee can never be assured as in absence of some of these features the innovative new venture can still succeed but more as an exception than a common rule.

In the near future, we hope to contrast these results and further enlarge our knowledge about the innovative entrepreneur through other empirical studies in areas less conducive to entrepreneurship.

REFERENCES

- Begley, T.M. and Boyd, D.P.** (1985): Company and chief executive officer characteristics related to financial performance in smaller businesses. In Kirchoff, B. et al. *Frontiers of entrepreneurship research*. Babson College, Wellesley. pp 146-165.
- Begley, T.M. and Boyd, D.P.** (1986): Psychological characteristics associated with entrepreneurial performance. *Frontiers of Entrepreneurship Research: 1986*. Babson College, Wellesley. pp 146-165.
- Birley, S. and Westhead, P.** (1994): A taxonomy of the business start-up reasons and their impact on firm growth and size. *Journal of Business Venturing*. Vo. 9, no. 1, pp 7-31.
- Blais, R.A. and Toulouse, J.M.** (1995). La stratégie de développement des nouvelles entreprises technologiques. In Bournois, F. et al (eds). *Création, développement d'entreprises technologiques et innovantes*. Programme Rhône-Alpes, Lyon.
- Block, Z. and Stumpf, S.A.** (1992): Entrepreneurship education research: experience and challenge. In Kasarda, J.D. and Sexton, D.L. (eds), *The state of the art of Entrepreneurship*, PWS-Kent Publishing Company, Boston.
- Brockhaus, R.H.** (1980): Psychological and environmental factors which distinguish the successful from the unsuccessful entrepreneur: A longitudinal study. *Proceedings of the Academy of Management, 1980*: 368-372.
- Bruno, A.V. and Tyebjee, T.T.** (1984): The entrepreneur's search for capital. In Hornaday, J. et al. (eds). *Frontiers of entrepreneurship research*. Babson College. Wellesley. pp 612-625.
- Carland, J.W. et al** (1984): Differentiating Entrepreneurs from small business owners: A conceptualization. *Academy of Management Review* 9, no.2: 356-370.
- Chambers, B.R. et al.** (1988): Founding team experience and new firm performance. In Kirchoff, B. et al. (eds). *Frontiers of entrepreneurship research*. Babson College, Wellesley. pp 106-118.
- Chandler, G.N. and Jansen, E.** (1992): The founder's self-assessed competence and venture performance. *Journal of Business Venturing*. No. 7: 233-236.
- Chell, E., Haworth, J. & Brearley, S.** (1991): *The entrepreneurial personality: concepts, cases and categories*. Routledge, London.
- Clifford, D.K. and Cavanagh, R.E.** (1985): *The winning performance*. Bantam Books. New York.
- Cooper, A.C.** (1995): Determinants of performance: a study of 2994 entrepreneurs and their firms. In 5th Congress ACEDE. 17-19 Sept. 1995. Madrid.
- Cooper, A.C. and Bruno, A.V.** (1977): Success among high-technology firms. *Business Horizons*. Vo.20, no. 2, pp. 16-22.
- Cooper, A.C. and Gimeno, F.J.** (1992): Entrepreneurs, processes of founding, and new-firm performance. In Kasarda, J.D. and Sexton, D.L. (eds), *The state of the art of Entrepreneurship*, PWS-Kent Publishing Company, Boston.
- Cooper, A.C., Dunkelberg, W.C. and Woo, C.Y.** (1988): Survival and failure: a longitudinal study. In Kirchoff, B. et al. *Frontiers of entrepreneurship research*. Babson College. Wellesley. pp 225-237.
- Covin, J.G. and Slevin, D.P.** (1991): A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship: Theory and Practice*. vol 16. no. 1: 7-25.
- Cragg, P.B. and King, M.** (1988): Organizational characteristics and small firms' performance revisited. *Entrepreneurship Theory and Practice*, vo 13, no. 2: 49-64.
- Davidsson, P.** (1989): Type of man and type of company revisited: a confirmatory cluster analysis approach. *Frontiers of Entrepreneurship Research: 1989*. Babson College. Wellesley. pp. 88-105.

- Denison, D.R. and Alexander, J.M.** (1986): Patterns and profiles of entrepreneurs: Data from entrepreneurship forums. In Kirchoff, B. et al. *Frontiers of entrepreneurship research*. Babson College, Wellesley. pp 578-593.
- Doutriaux, J.** (1995): L'Université, une pépinière d'entreprises ?. In Bournois, F. et al (1995) (eds). *Création, développement d'entreprises technologiques et innovantes*. Programme Rhône-Alpes. Lyon.
- Dunkelberg, W.C. and Cooper, A.C.** (1982): Patterns of small business growth. *Proceedings of the Academy of Management, 1982*: 409-413.
- Dunkelberg, W.C. et al.** (1987): New firm growth and performance. In Churchill, N. et al.. (eds) *Frontiers of entrepreneurship research*. Babson College. Wellesley. pp 307-321.
- Fayole, A.** (1995): De l'ingénieur à l'entrepreneur: une contribution essentielle et un parcours sous influences multiples. In Bournois, F. et al (eds). *Création, développement d'entreprises technologiques et innovantes*. Programme Rhône-Alpes, Lyon.
- Genesca, E. and Veciana, J.M.** (1984): Actitudes hacia la creación de empresas. *ICE*, July: 147-155.
- Grant, A.** (1992): The development of an entrepreneurial leadership paradigm for enhancing new venture success. *Frontiers of Entrepreneurship Research: 1992*. Babson College, Wellesley.
- Hay, R.K. and Ross, D. L.** (1989): An assessment of success factors of non-urban start-up firms based upon financial characteristics of successful versus failed ventures. In Brockhaus, R. Et al. (Eds). *Frontiers of entrepreneurship research*. Babson College. Wellesley. pp. 148-158.
- Hisrich, R.D. and Peters, M.P.** (1995): *Entrepreneurship. Starting, developing, and managing a new enterprise*. IRWIN, Boston.
- Hoad, W. and Rosko, P.** (1964): *Management factors contributing to the success or failure of new small manufacturers*. Ann Arbor. University of Michigan Press.
- Hornaday, J.A. and Tieken, N.B.** (1983): Capturing twenty-one heffalumps, *Frontiers of Entrepreneurship Research: 1983*. Babson College, Wellesley, pp 23-50.
- Kao, J.J.** (1989): *Entrepreneurship, creativity and organization*, Prentice Hall, New Jersey.
- Kasarda, J.D. and Sexton, D.L.** (eds) (1992): *The state of the art of Entrepreneurship*, PWS-Kent Publishing Company, Boston.
- Keeley, R.H. and Roure, J.B.** (1989): Determinants of new venture success before 1982 and after: A preliminary look at two eras. In Kirchoff, B. et al. *Frontiers of entrepreneurship research*. Babson College, Wellesley. pp 274-287.
- Kirchoff, B.A. and Phillips, B.D.** (1989): Innovation and growth among new firms in the U.S. economy. In Brockhaus, R et al. (Eds). *Frontiers of entrepreneurship research*. Babson College. Wellesley.
- Lafuente, A. and Salas, V.** (1989): Types of entrepreneurs and firms. The case of new spanish firms. *Strategic Management Journal*, vol. 10: 17-30.
- MacMillan, I.C. et al.** (1987): Criteria distinguishing successful from unsuccessful ventures in the venture screening process. *Journal of Business Venturing*, vo 2, no. 2: 123-137.
- McGrath et al.** (1992): Elitists, risktakers, and rugged individualists? An exploratory analysis of cultural differences between entrepreneurs and non-entrepreneurs. *Journal of Business Venturing*, no 7: 115-135.
- Miner, J., Norman R., & Brecker, J.S.** (1992): Defining the inventor-entrepreneur in the context of established typologies. *Journal of Business Venturing*. vol. 7. no.2: 103-113.
- Miner, J.B., Smith, N.R. and Bracker, J.S.** (1992): Defining the inventor-entrepreneur in the context of established typologies. *Journal of Business Venturing*. Vo. 7, no. 2, pp 103-113.
- Neiswander, D.K. and Drollinger, J.M.** (1986): Origins of successful start-up ventures. In Rondstads, R. et al (eds). *Frontiers of entrepreneurship research: 1986*. Babson College. Wellesley, pp 328-343.

- Radosevich, R.** (1995): A model for entrepreneurial spin-offs from public technology sources. *International Journal of Technology Management*, vol. 10, nos 7/8: 879-893.
- Ripollés, M.** (1995): Características personales del empresario-inventor: un estudio empírico. In 5th Congress ACEDE. 17-19 Sept 1995. Madrid.
- Romanelli, E.** (1987): New venture strategies in the minicomputer industry. *California Management Review*. Vol. 30, no. 1, pp. 160-175.
- Ronstadt, R. and Stevenson, H.H.** (1983): In Timmons (1994). *New Venture creation. Entrepreneurship for the 21st century*. Irwin. Boston.
- Roure, J.B. and Maidique, M.A.** (1986): Linking prefounding factors and high-technology venture success: An exploratory study. *Journal of Business Venturing*. Vo 1. no 3: 295-306.
- Sansom, K.J. and Gurdon, M.A.** (1993): University scientists as entrepreneurs: a special case of technology transfer and high-tech venturing. *Technovation*, vo. 13, no. 2: 63-71.
- Sandberg, W.R. and Hofer, C.W.** (1982): A strategic management perspective on the determinants of new venture success. In Vesper, K. (ed). *Frontiers of entrepreneurship research*. Babson College, Wellesley. pp 204-237.
- Sandberg, W.R. and Hofer, C.W.** (1982): A strategic management perspective on the determinants of new venture success. In Vesper, K. (De). *Frontiers of entrepreneurship research*. Babson College. Wellesley, pp 204-237.
- Sexton, D.L. and Bowman-Upton, N.** (1991): *Entrepreneurship: creativity and growth*. MacMillan, New York.
- Slevin, D.P. and Covin, J.G.** (1990): Juggling entrepreneurial style and organizational structure: How to get your act together. *Sloan Management Review* 31 (2, Winter): 43-53.
- Smith, N.R.** (1967): *The entrepreneur and his firm: the relationship between type of man and type of company*, East Lansing: Michigan State University.
- Smith, N.R. and Miner, J.B.** (1983): Type of entrepreneurs, type of firm, and managerial motivation: implications for organizational life cycle theory. *Strategic Management Journal*, vol. 4: 325-340.
- Stevenson, H.H.** (1983): Who are the Harvard self-employed?. In *Frontiers of Entrepreneur Research: 1983*. Babson College, Wellesley, pp 233.
- Stuart, R. and Abetti, P.A.** (1986): Field study of start-up ventures. In Rondstadt. R. et al. (eds). *Frontiers of entrepreneurship research*. Babson College. Wellesley. pp: 21-39.
- Stuart, R. and Abetti, P.A.** (1988): Field study of technical ventures. Part 3: the impact of entrepreneurial and management experience on early performance. In Kirchoff, B. et al. *Frontiers of entrepreneurship research*. Babson College, Wellesley. pp 177-193.
- Timmons, J.A.** (1989): *The entrepreneurial mind*. Brick House, Andover.
- Timmons, J.A.** (1994): *New venture creation. Entrepreneurship for the 21st century*. IRWIN, Boston.
- Timmons, J.A. and Stevenson, H.H.** (1985): Entrepreneurship education in the 80s. What entrepreneurs say. In Kao, J. and Stevenson, H.H. *Entrepreneurship: What it is and how to teach it*. Harvard Business School. Boston. pp 115-134.
- Van de Ven, A.H. et al.** (1984): Designing new business start-ups: entrepreneurial, organizational and ecological considerations. *Journal of Management*. vo. 10, no.1: 87-107.
- Vesper, K.H.** (1984): New venture ideas: Don't overlook the experience factor. In Gumpert, D.E. *Building and managing the smaller business*. John Wiley & Sons. New York.
- Willard, G.E. et al** (1992): In order to grow, must the founder go: A comparison of performance between founder and nonfounder-managed high growth manufacturing firms. *Journal of Business Venturing*. Vol. 7, no. 3: 181-194.

Woo, C.Y. et al. (1989): Determinants of growth for small and large entrepreneurial startups. In Brockhaus, R. et al. (eds). *Frontiers of entrepreneurship research*. Babson College, Wellesley. pp 134-147.

Woo, C.Y., Cooper, A.C. and Dunkelberg, W.C. (1988): Entrepreneurial typologies: definition and implications. *Frontiers of Entrepreneurship Research*, pp 165-176.