CHAPTER I

INTRODUCTION AND RESEARCH PROBLEM

Purpose of the study

It is the aim of this study to predict the extent to which the Brazilian Entrepreneurship Education Training Program (EETP) participants, mostly micro and small business owners, will be successful in accomplishing the original intent of the program. Furthermore, it also aims to provide empirical evidence of the value of selecting future participants in similar EETPs in Brazil so as to maximize the effectiveness and efficiency of future programs.

Many studies employed quantitative analysis of EETP program output and its effectiveness in terms of payback (Gibb, 1993). However, universally accepted criteria (Wan, 1989) do not exist, so the orientation toward statistics such as number of jobs created and sales volume is not necessarily an appropriate one. The analysis of the behavioral or attitudinal changes of the participants could lead to the conclusion that the program developed entrepreneurial propensity among them. Despite some criticism from several authors about the results of such a procedure (Sandberg and Hofer, 1987, Gartner, 1989; Faris, 1999; Lumpkin and Erdogan, 1999), the behavioral/ psychological approach seems to be the most traditional in the literature of the field (Virtanen, 1997; Julien, 1998; Lasonen, 1999; Henry, 2000).

Research Problem

The research problem is the determination of the extent to which micro and small business owners, the participants in a Brazilian training program possessed the personality traits (entrepreneurial characteristics) to succeed as entrepreneurs as measured by the Jackson Personality Inventory (JPI) scales. Also included in this study was a) a comparison of selected personality traits of practicing entrepreneurs who completed the program and the would-be entrepreneurs who did not; b) comparison of the same selected personality traits across gender, age, education, and profession of participants in the program.

Several authors mention the need for more assessment of the outcomes of entrepreneurship education and training programs (Robinson and Haynes, 1991; Cox, 1997; Henry, 2000; Luthje and Franke, 2002). Among several methodologies, studies on entrepreneurial personality (by presenting a variety of social, psychological, and behavioral approaches) seem to be among the most commonly utilized by researchers. However, these types of academic studies are uncommon regarding Brazilian subjects, and few results have been published in the country or abroad.

Furthermore, the quantitative analysis of the two populations (micro and small business owners, and would-be entrepreneurs—participants and future participants of the program) involved in the study would enable the mentors of the program to further its techniques and improve its results, thus creating propitious conditions for the fulfillment of the community's aspirations of creating more jobs thus helping generate additional income.

Finally, a scholarly study in small business and entrepreneurship might entice the local university to become more interested in developing entrepreneurial training

techniques thus improving entrepreneurship education.

Research Question

This study aims to answer the following research questions:

To what extent did the participants in the Brazilian training program have the potential to be successful entrepreneurs as measured by the Jackson Personality Inventory (JPI) scales?

Taking into consideration that they are mostly micro and small business owners and aspiring entrepreneurs, what proportions of the participants are most likely to succeed and, thus, fulfill the original intent of the program, as predicted by the JPI?

Socio-economic Overview

It is a cliché to mention that the 1980s were a “lost decade” for many of the developing countries; however, this is an undeniable reality. Many countries started adjusting their economic policies in response to the increased costs of energy following the events of the first oil shock of the 1970s. The additional burden of

external debt brought higher inflationary internal costs and several new internal policies aimed at stabilizing the economy and high rates of unemployment.[1]

The following table gives a picture of what the situation was in Brazil during the 1980s, a time marked by attempts to solve the economic puzzle with unorthodox plans that culminated in hyperinflation in the beginning of the 1990s. Finally, a stabilization plan was implemented during 1994 that reduced the inflation to single-digit level and put the country back on an acceptable economic course.

Table 1.1

Brazil: Selected Macro Economic Figures

Years (selected)	Inflation (1)	GDP growth (2)	Unemployment (3)
1980	110,2%	9,30%	6,55%
1990	1.476,7%	-5%	5,25%
1995	14,7%	4,22%	4,60%
1998	1,7%	-0,10%	7,60%
2000	9,8%	4,50%	7,10%
2001	10,4%	1,50%	6,20%
2003 (**)	8,8%	0,50%	(*) 12,00%

(*) DIEESE (Departamento Intersindical de Estatistica) reached 17.6% of unemployment rate for 2001 in the city of São Paulo, the largest of the country.
(**) Official estimative for this year.
(1) Annual General Index Price, and (3) figures published by Getulio Vargas Foundation
(2) Annual rate published by IBGE -Instituto Brasileiro de Geografia e Estatística (Brazilian Government).

[1] International Monetary Fund (Washington, DC) Managing Director Eduardo Aninat's speech on May 26, 2000 (hypertext available at: http://www.imf.org/external/np/speeches/2000/052600.htm). Business Week "Down in the Dumps in Latin America," July 29, 2002 (hypertext available at: http://www.businessweek.com/magazine/content/02_30/b3793094.htm).

However, one problem remained untouched by the new economic measures: the unemployment rate. A different way to calculate the rate was generally accepted after 1999 and now it includes the so-called "hidden unemployment"; the percentage found in 2000 by DIEESE is more realistic (among other reasons, it considers individuals that gave up on finding a job—elderly and young ones, most especially—and reached more than 17% of the workforce).

This was not the most critical of the country's socio-economic problems but it challenged its ability to rebound. There was no cash surplus in the federal budget or availability of foreign loans to finance large projects, similar to those of the 1960s that provided hundreds of thousands of new employment opportunities.

In Lages, in the interior of the State of Santa Catarina, in the southern part of the country, there was an old belief that the solution for local problems was on the shoulders of the state and federal government, a passive attitude that was in part due to the lack of social capital.[2]

Furthermore, the region's last cycle of economical development occurred in the 1950s, with an extensive exploitation of forest reserves that brought the economy to the verge of exhaustion by the end of the 1960s. Consequently, the region experienced a decline in economic and political power that resulted in cultural and economic stagnation that remained until the beginning of the past decade.

Among many, one of the ideas brought to the community as a solution for the

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[2] Portes and Sensenbrenner (1993) defines social capital as the expectations for actions within a collectivity; and Putnam (1993a, p. 35) says that social capital refers "to features of social organization, such as networks, norms, and trusts, that facilitate coordination and cooperation for mutual benefit", part of the idea that financial capital, manufactured and environment capital, and human capital, as well, are enhanced by the social capital (Flora, Sharp, and Flora, 1997).

lack of economic vitality and unemployment was the capitalization of small companies through a system that would enable individuals to participate in projects as a minor shareholder. A communal project was developed with the help of consultants and political and financial involvement of the local government. It was speculated that this idea would prosper if the social capital of the community were enough to keep all interests—sometimes conflicting—together. Unfortunately, it was not the case, and the whole plan was then cancelled.

At that time, unemployment was running rampant, ranging from 8 to 15% of the workforce, the highest since World War II, and therefore, many communities in several states and municipalities, private and non-profit organizations, and universities felt compelled to find their own solution for the income generation problem. The envisaged solution was an entrepreneurship education and training program (EETP) aimed at developing:

- Managerial knowledge that could result in better management of the micro and small companies, which comprised the largest and by far the most important group of companies. Better management techniques could lead to more profits and growth, and thus, to the creation of new jobs.
- Entrepreneurial knowledge that could result in the creation of new business and new companies, thus improving the generation of income and creating additional jobs.

In several parts of the world EETPs have been successfully developed. Just to name a few, in 1975, the Indonesian government launched an EETP with positive results; a similar program was successfully developed in Malaysia in 1979 (Chico, 1984). Satisfactory results were also obtained in Philippines and Singapore (Chico, 1984) and Latin America (Ripsas, 1998). [3] Other EETPs developed in the United

States during the late sixties, including formal courses in the universities; similar programs flourished in countries like Nigeria, Tunisia, Uganda, Ecuador, Mexico, Bolivia, Poland, India, Iran, "with encouraging results, among which are the emergence of new entrepreneurs and firms" (Chico, 1984, p. 25).

Further, figures given by the Municipality indicate that more than three thousand micro and small businesses do operate in Lages, State of Santa Catarina, Brazil. A few large companies do operate in the region and are of great importance for the local economy; however; self-employment, micro, and small businesses are the solution for the living needs of the major part of the population. The possibility of including managers, owners, and entrepreneurs in a university-based educational program, together with an active federal training agency, with funds provided by the federal government, was seen as a potential "one-fits-all" solution. At the end of 1998, representatives from all wards of the city, the municipality's officials, and several other public and private organizations approved the project, and transformed it into a coordinated, cohesive municipal action plan. It consisted of a series of courses and lectures aimed at improving managerial skills for actual small business owners and managers, entrepreneurship skills for would-be entrepreneurs and students, and an extensive practical training program for the available workforce.

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[3] The Global Entrepreneurship Monitor (GEM), an organization created by Babson College and London Business School, considered the United States as the world's leader in the awareness and desirability of entrepreneurship. The new measurement index created by GEM reports a) the start-up rate, and b) the new firm rate. Brazil and Korea rank first, second, with 16, and 13.7 percent, respectively; the United States come in third place, with 12.7 per cent. The explanation is that Brazil is highly dependent upon agriculture, where more than 28 per cent of males are engaged. It is common belief—and a very controversial idea, indeed—that agricultural dependent economies create large underground entrepreneurial sectors, which explains the Brazilian position as the most entrepreneurial country, although not the most innovative one. See more on Global Entrepreneurship Monitor, 2000 Executive Report.

Program Description

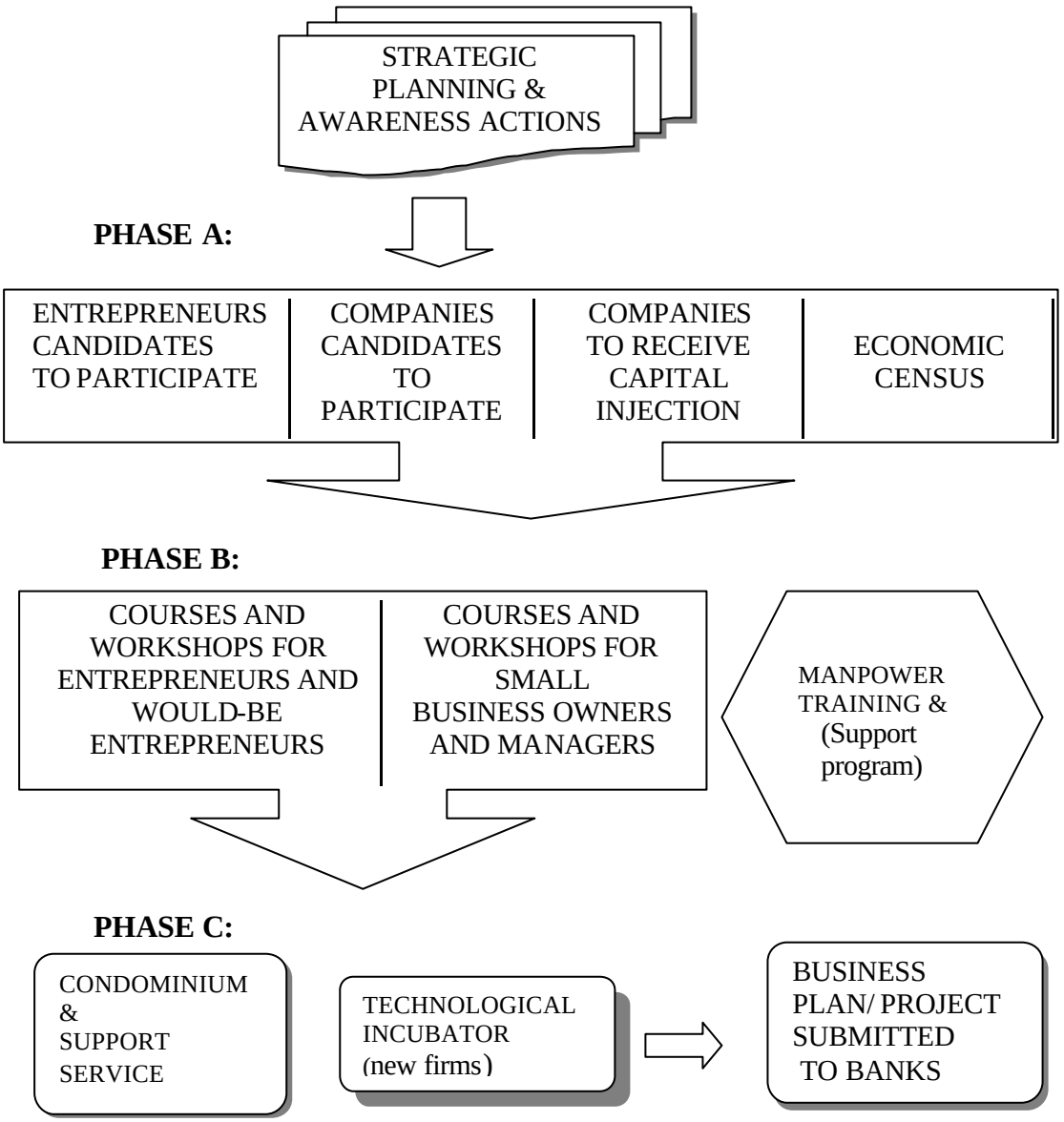
The entrepreneurship education and training program (EETP) organized by the Municipality of Lages, State of Santa Catarina in the south of Brazil, was offered in response to the high unemployment rate not only in the region but across the nation. Therefore, the desire to improve the level of income and employability in the city was the stimulus to create new micro and small companies and improve the management of existent ones. The city of Lages comprises 12 regions divided in 67 wards or districts. The Municipality, together with several other public and private organizations, launched the entrepreneurship education and training program (EETP) after a series of diagnostic seminars and public meetings in order to check opinions and receptiveness to the program, which was open to the public at no cost.

The participants came with diverse backgrounds and level of experience: small business owners and managers, self-employed people, unemployed, senior and retired citizens, students, and would-be entrepreneurs. There were no requirements in terms of age, gender, education, ethnic origin, and economical status. The differences among participants, ranging from poorly educated, almost illiterate individuals, to college educated ones, were seen as a result of free-admission, government-sponsored educational program.

The structure of the program is outlined in the figure 1.2. Participants in the Phase A were selected in two ways: those few with some training or theoretical knowledge were sent to the Phase C of the program (the condominium or the technological incubator); the vast majority of participants, however, started their participation with courses and workshops (the Phase B).

Figure 1.2

The structure of the program



Source: Explanatory brochure published by the Municipality of Lages, "Suburbs that Work Project", July 1998

The program was scheduled to run for a period of 17 months (from the first semester of 1999 to the second semester of 2000), and, after that, participants were entitled to fiscal incentives from the Municipality (basically exemption of local taxes).

Program completion also allowed selected participants with potential for growth to submit a credit application for their financial needs and investments to two official banks which administered federal funds set aside specifically for the development of micro and small companies throughout the country. Alternatively, some already established companies and/or entrepreneurs could receive some temporary help (as in the C Phase above) sharing some costs (rent, fax, telephone, electric energy, etc at the condominium) with other participants, or being included in a special facility for the development of new ideas and projects (the incubator).

The curriculum's objectives were to improve managerial and entrepreneurial skills for actual small business owners and managers, and provide some tools for those who wanted to develop new ventures or become self-employed. It included typical management disciplines and techniques such as banking negotiation, managing people and relationship with customers and, finally yet importantly, simplified but efficient business plan. Teachers and instructors were provided by Sebrae [4], a federal agency in charge of training and consulting for small businesses in Brazil. The average number of participants per class, held in many schools of the city suburbs, was 18. They participated in classes and lectures about subjects related to the following disciplines with each course providing 20 classes/hours:

Courses and lectures for small business owners/managers:

Courses: Managerial Development, Financial Management, Costs and Sale Price, Human Relations, Marketing for Small Business, and Strategic Planning.

[4] The structure of the federal agency Sebrae resembles its American counterpart Small Business Administration (US-SBA). It is maintained with federal funds and has a nationwide presence in terms of training, consulting, and providing funds to small businesses across the country.

Lectures: Global Economic Conjuncture, How to Register your Trademark, Managing Time, Environment and The Company, Managing Purchases and Inventory, Alcohol in The Company, Succession and Professionalization, Fiscal Management, Consumer Code, Computer and Technology, and on-site Training.

Courses and lectures for entrepreneurs:

Courses: Small Business Management, Human Relations, Managerial Development, Relationship with Customers, Banking Negotiation, and Business Planning.

Lectures: Global Economic Conjuncture, Entrepreneurship, How to Register Your Company, Managing Time, Fiscal Management, Managing Purchases and Inventory, Consumer Code, Sales & Marketing, Franchising.

Despite some controversy [5] about the definition of a micro and small company this study relies on the following categorization, which fits the Brazilian economic realities:

a) Micro and very small company: less than 19 employees, and
b) Small company: 20 to 100 employees.

At the end of 2000, 250 micro and small companies' owners and managers, 1,210 students, senior and retired citizens, and would-be entrepreneurs were trained, totaling 1,460 people who attended 1,152 hours of classes. In order to receive federal grants and financial support for its execution, the program was submitted to the Ministry of Labor. Two of the most important financial institutions of the country (the federally owned Banco do Brasil and Caixa Economica Federal) agreed to participate in the program and provide financing for expansion and purchase of fixed assets to selected participants. After its completion, in the end of 1998, the program

[5] The definition of size by number of employees differs by country and even within countries, depending on government programs. However, there is a consensus in the United States, Japan, Germany, France and Britain, that small business has less than 500 employees (Julien, 1998). In several countries, there are different perceptions about size: in Spain and Sweden, businesses are "small" if they have less than 200 or 250 employees; in Greece, Portugal and Ireland, less than 50; in Brazil, less than 100 (OECD, Summary Report, 1995). See Table 2.4 at page 23.

received the Paulo Freire Award, given by the Ministry of Labor, as one of six best educational programs for income and job creation in the country.

The participant's knowledge was not formally assessed at the end of the program; those who attended more than 75% of classes were entitled to receive a formal certificate of completion. However, the ability of the program to reach its objectives was not evaluated for the following reasons: lack of evaluation expertise and political circumstances that prevented technical evaluation (since a failure could be an embarrassment to the Municipality's administration).

Significance of the Study

The significance of this study is the potential contribution in the development of the entrepreneurial culture and education in the community of Lages, State of Santa Catarina, Brazil, and, by extension, to the discipline of entrepreneurship studies, through:

a. An analysis of the entrepreneurial characteristics of the participants of this entrepreneurship education and training program (EETP),
b. An assessment on the possible changes in a future EETP format that could possibly be implemented in order to improve its effectiveness,
c. Demonstrate the need to use theory-based entrepreneurial knowledge to replace the commonly accepted concept that entrepreneurial behavior and attitudes can only be developed through practical training.

Limitations

This study has some limitations:

a. Random distribution of the questionnaires was not possible due to the characteristics of the population involved.
b. Pretests could not be administered because the EETP had already finished when this study began.
c. There were no admission criteria in terms of age, professional experience, and education since this EETP was sponsored by a public organization and offered free of charge to participants
d. No formal evaluation on the participants' newly acquired knowledge was available.
e. Fifteen scales grouped into five personality clusters compose the Jackson Personality Inventory (JPI) scales. In this study three scales were administered to the participants, and although the author asserts that they can be used separately (Jackson, 1999, p. 3) this limited use could reduce validity.

CHAPTER II

LITERATURE REVIEW

The review of the literature focuses on entrepreneurship relevance in both social and economical aspects, the state of the art of entrepreneurship education, and the need for the evaluation of the expected outcomes of the entrepreneurship and education training programs (EETPs). The final part of this chapter is dedicated to the most commonly adopted features of the analysis on the behavioral and attitudinal characteristics of the EETPs participants.

The Economic Relevance of Entrepreneurship

Some economists still consider that entrepreneurship is not part of the discipline of economics, because it cannot fit with the mathematical rigor of the General Equilibrium Theory (Marshal (1886, 1961) and neoclassical economics, a situation that led to a form of conflict among scholars. [6] In sum, the axioms necessary to build-up a logical model (e.g., the *homo economicus* rationality) cannot include the uncertainties created by the entrepreneur through new products and markets (McFadden, 1999). Nevertheless, the field is striving to create a theoretical link

[6] Lewin (2001, p. 242) argued, "The impeding death of neo classical economics has proverbially and consistently exaggerated"; some authors (Kirchhoff, 1991) have written about "the death of the entrepreneur".

between the neoclassic theory and entrepreneurship, and also to set up the foundations for small business economics (Brock and Evans, 1988; Acs, 1992; Tommaso and Dubbini, 2000).

Generally speaking, there are two main lines of research related to entrepreneurship: within economics (which has a vision focused in the broad socio-economic environment and policies targeted toward more entrepreneurship generation), and within management (which sees entrepreneurship connected to the performance of the firm). [7]

Schumpeter (1934), a German-born economist, first established the most well known relationship between the economics of innovation and the entrepreneur, and the impact made by entrepreneurial innovation on business or economic cycles.[8] His works and the concept of "creative destruction" are fundamental for the understanding of the economic change provoked by the entrepreneur. Schumpeter (1947, p. 251) explains that for an entrepreneur, "the world is full of uninsurable risks" (or uncertainty), and especially what Knight (1921) formerly called betting on the use and allocation of the factors of the production.

Other authors link risk to innovation and assert that innovativeness requires some degree of tolerance to risks or acceptance of failure in risk-bearing initiatives (Wennekers and Thurik, 1999). At this respect it is interesting to review the model created by Lussier, Sonfield, Corman, and McKinney (2000) with its four independent variables that connect risk (the probability of financial loss) and innovation (creating a

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[7] See more about this in the writings of David Audretsch and Roy Thurik's (Erasmus Universiteit Rotterdam and Indiana University); hypertext available at: http://www.few.eur.nl/few/people/thurik/edu/bridge#top

[8] See more about Schumpeter's business cycles and related waves of entrepreneurial innovation in the economy in "Catch the Wave," *The Economist*, February 20, 1999.

unique product). Although the figure presented below summarizes the original model, it is clearly possible to identify different levels of innovation and risk in each cell. The model also provides "a wide variety of strategies that may be used by small business managers and entrepreneurs" (Lussier et al, 2000, p. 31) beginning with the recognition on how they survived under the marketplace conditions. Non-entrepreneurial small businesses have the tendency to be in the low / low position (low levels of innovativeness, and low levels of propensity to risk). Highly entrepreneurial companies, by the contrary, will be much more exposed to risk and innovativeness.

Figure 2.1

The Entrepreneurial Strategy Matrix for Small Businesses

INNOVATION		
High	**HIGH INNOVATION / LOW RISK:** • Move quickly • Protect innovation • Lock in investment and operating costs via control systems, contracts, etc	**HIGH INNOVATION / HIGH RISK:** • Reduce risks by lowering investment and operating costs • Maintain innovation • Outsource high investment operations • Joint venture options
Low	**LOW INNOVATION / LOW RISK:** • Defend present position • Accept limited payback • Accept limited growth potential	**LOW INNOVATION / HIGH RISK:** • Increase innovation • Reduce risk • Use business plan & objective analysis • Minimize investment • Reduce financing costs • Franchise option • Abandon venture?
	Low	**RISK** **High**

Source: Lussier et al (2000).

Myrdal (1957) and others worked extensively in the field of development economics, and noted the crucial role entrepreneurship plays in developing countries as a part of a social process that could lead to social change and to sustainable growth. He performed extensive studies on some poor countries (mostly in Africa) where the idea was to stimulate the economy through strong governmental participation. This was based on the assumption that poor economies were not able to work on developmental issues like the rich countries because economic theories (for example, the free market concept) would not work for the poor ones.

Although this sub field of economics has lost its importance and has experienced some decline in the 1960s and 1970s, many politicians still think of it as a tool to promote social and economic development in their communities, in the spirit of the old *dirigisme,* which lost its power after the rising of the modern market economies. [9] However, waves of entrepreneurial innovation promoted by and stimulated by the government could produce results. The Asian countries experienced significant progress after a well-planned program for the creation and development of new ventures. See more about this in Wade (1990) and Porter (1990).

Carree and Thurik (2002) published the following table based on a study originally made by Wennekers and Thurik (1999) about the linkages between entrepreneurship and economic growth. Although it does not show the job generation process, what Kirchhoff (1999, p. 101) calls "the best known junction of economics and entrepreneurship", it does graphically explain the connections between

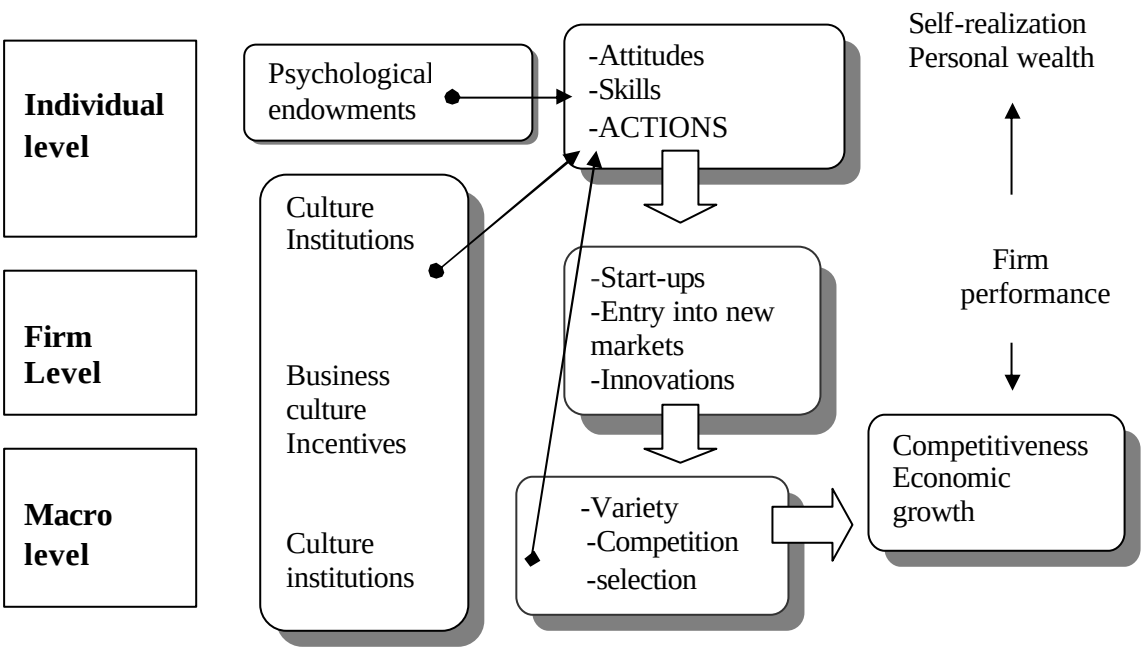
[9] See more about the relationship between Entrepreneurship and Development Economics on Leff, N. (1979). Entrepreneurship and Economic Development: The Problem Revisited. *Journal of Economic Literature*, Vol. 17, pp. 46-64; and also Hirschman, A. (1981). Rose and Decline of Development Economics, In *Essays in Trespassing* (New Haven). The Latin American economists with leftist orientation, identified with the Cepal school (see Celso Furtado and Raul Prebisch, among others) also deal abundantly with this discipline.

psychological endowments at the individual level. Some forms of interventions could then be planed (i.e., educational programs) that could bring changes in the elements of entrepreneurship mentioned by the authors.

Table 2.2

Framework for Linking Entrepreneurship to Economic Growth

Level of Analysis	conditions for entrepreneurship	crucial elements of entrepreneurship	impact of entrepreneurship



Source: Wennekers and Thurik (1999)

The entrepreneurial process, as Audretsch (1995) and Henry (2000) point out, usually starts with very small, backyard-style business, [10] which was considered by orthodox, neoclassical economists just as a part of an unformed aggregate of the economy (Machlupp, 1967). The perception that small and medium-sized enterprises (SMEs) were something not to be taken into serious consideration (Julien, 1998) and less efficient than large ones in many aspects (Kirchhoff, 1991; Acs, 1992) continued until the middle of the 1970s.

After the 1973 oil shock, the market saw spectacular cases of big companies running into financial troubles, and making the persistent problem of unemployment even larger. Small and medium sized enterprises (SMEs), by their turn, seemed to cross these hard times with no apparent trouble, a phenomenon that occurred in the United States and elsewhere in the developing and industrialized world. In the late 1970s, an article published by Birch (1979) claimed that SMEs created the majority of new jobs in the United States and, despite the data analysis was not accurate (the author later refined it) the study provoked "…an enormous controversy… Birch's findings violated a widely-held set of prior beliefs" (Piore, 1990, reviewing the section about the United States, Part 7). The research was a fundamental step towards a new understanding of the SME's role in the economy.

The debates regarding firm size have triggered unexpected re-evaluation of the role and importance of entrepreneurial, small manufacturing firms (Acs, 1992). Finally, the Organization for Economic Cooperation and Development (OECD) published a study in 1985 concluding that in several European countries a tendency towards the concentration of workers in small businesses could be verified.

Many economists and politicians (Brock and Evans, 1989; Julien, 1998)

[10] About this point, Wenneker and Thurik (1999, p. 47) asserts that although entrepreneurship is not synonymous with small business", SMEs are "outstanding vehicle to entrepreneurial ambitions".

embraced this idea enthusiastically. It appeared that a new paradigm was replacing the old one. Where big companies, the big state-owned company, multinationals, and private firms once played the role of chief of the economy, now small business entrepreneurs, who seemed to be synonymous with flexibility and innovation (Brock and Evans, 1989; Scherer, 1980, among others), have replaced them. The Economist reports: "Now it is the big firms that are shrinking and small ones that are on the rise. The trend is unmistakable—and businessmen and policy-makers will ignore it at their peril."[11]

Therefore, a new paradigm showed SMEs as better for the competitive markets, their performance being superior to the large firms in terms of job generation, thus deserving less regulation and incentives (Loveman and Sensenberger, 1990). With some humor, Scherer (1980) cited by Brock and Evans (1989, p. 13) concluded, "a little bit of bigness is good for invention and innovation. But beyond the threshold further bigness adds little or nothing, and it carries the danger of diminishing the effectiveness of inventive and innovative performance." The dynamism showed by SMEs is also undoubtedly evident in regions where specific habits and general mentality attributed to the primary sector often constitute an obstacle to further investments and entrepreneurship. Duche and Savey (1986) showed that regions with the highest rate of growth and job creation in France were those where the contribution of small manufacturing business was the highest (Julien, 1998). This phenomenon can also be seen in some parts of Canada, England, and Italy (Cross, 1987; Sforzi, 1989).

In Brazil, the same can be said, as in small communities largely based on rural and agricultural activities, small businesses are also dominant. Additionally, with the

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[11] "The Rise of America's Small Firms," in The Economist, January 21, 1989, pp. 173-174.

stabilization programs in the past two decades aimed at curbing inflation and some immoderate sectorial growth, young people had to find jobs out of the traditional areas of government and big business, thus becoming self-employed as small and micro business owners, and entrepreneurs (Sebrae, 1994).

The few numbers on small business show large results: in the United States [12] more than 23.2 million business tax returns were filed in 1996 and from this amount more than 99 percent related to small businesses; 64 percent of the 2.5 million new jobs created; 53 percent of the general employment, and about 47 percent of the GDP. Small business generated 53 percent of Brazil's GDP, as reported by Sebrae (1994) and its share of jobs is about 59 percent of the Country's workforce and 42 percent of all salaries paid. This does not take into consideration the impact of the so-called informal sector in the economy. [13] Gorton (1999) mentions that, by the beginning of the 1990s, over 50 percent of the population in Bolivia, Colombia, Ecuador, and Peru worked in informal micro enterprises. Small and medium sized companies are a major source of new jobs in several underdeveloped countries (Botswana, Kenya, Malawi, Zimbabwe) as they absorb over 40 percent of new workers joining the labor force (Liedholm, 1999) and have special significance in terms of socio-economic aspects of the local societies.

In Germany, the share of small business in the economy, as shown by the 1970 census, accounted for 98.9 percent of all enterprises, where small is defined to be less than 100 employees (Weimer, 1990). Small businesses' share in the employment was not so significant, but it still accounts for 44.2 percent of all employees. Weimer

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[12] See more on the U.S. Small Business Administration's Report to the President (1997).

[13] Some economists believe the weight of the informal or underground sector (which is highly entrepreneurial) in the Brazilian economy is significant, something between 1/4 and 1/3 of the taxable universe of companies. The socio-economical importance, as a reduction of the effects of unemployment, is still much greater.

(1990) shows in more recent data (1984) that 71.2 percent of all enterprises in the manufacturing sector were small.

Amadieu (1990) shows that in France the relative SMEs importance is becoming more attractive, as in 1985 enterprises with less than 500 employees composed 64.5 percent of the labor force, and 50.9 percent of the value added in the economy. Becattini (1990) states that large companies (those with more than 500 employees) had their share in the Italian economy reduced from 25.6 percent in 1971 to 18.5 percent in 1981, and in the United Kingdom, Marsden (1990) reported that 64.9 percent of workers were employed by SMEs in 1986.

The following table shows a uniform participation of the small business segment in some selected countries:

Table 2.3

SMEs share in the economy (selected countries)

Country	Year	% Workforce	% Enterprises	% GDP
U.S.	1996	53	99.7	50-52
Australia	1999	45	96.9	-
Germany	1984	44	98.9	50-52
England	1986	56	99.8	50-53
Brazil	1994	59	99.5	53
Japan	1994	78	99.1	52-55
México	1995	50	98.0	-

Source: Loveman and Sensenberger, op.cit; OECD, Paris: Summary Report (1995); Liedholm, C., and Mead, D.C. (1999); Sebrae, Brazil: Estudos Sebrae (1994).

There are more than 50 definitions of SMEs in 75 different countries (Potobsky, 1992), and some minimum distinctions between sectors, notably within the primary and service sectors, and some distinctions in the manufacturing sector, where one can find different rules and norms for the so-called micro-companies. Several authors are trying to define typologies by the type of management objectives, strategy, and firm's potential (Carland et al, 1984; Marchesnay, 1988; Marchini, 1988, and others); and some authors define typologies by organization and growth (Vargas, 1984; Webster, 1976; Hosmer, 1977, and others). Finally, typologies by sector or type of market found advocates in Preston, 1977; Vesper, 1979; Candau, 1981; and Potier, 1986. The simpler classification is by size (number of employees, sales volume, or the level of capital). This criterion is adopted, combined with others, in almost all countries, as "quantitative typologies are the most easily available" (Julien, 1998, p.7).

In general, the following categorization is universally adopted, with some variations regarding micro, very small, and small:

Table 2.4

Firm size by number of employees: a general categorization

	Micro	Very small	Small	Medium	Large
No. of Employees	1 to 4	5 to 19	20 to 99	100 to 499	500+

Source: OECD (Paris) Summary Report (1995). "Globalization of Economic Activities and the Development of SMEs."

Entrepreneurship does promote job creation and is responsible for most of the jobs created in many countries of the developed world (Kirchhoff, 1991; Ripsas, 1998; and Thomas and Miller [1998] citing a previous work of Harper, 1991). The I mportance of small and entrepreneurial businesses in the economy justifies several f orms of support and intervention, and many authors identified a number of benefits derived from new ventures of all sizes; the related advantages appear clearly in the global or national, societal, organizational, and individual levels (Drucker, 1985; Brock and Evans, 1989; Acs, 1992; Julien, 1998; Henry, 2000).

The Entrepreneurship Education: the State of the Art

Although there is scanty literature on entrepreneurship education, with most of the research [14] produced only in the past two decades (Garavan and O'Çinneide, 1994; Fleichman and Williams, 1996), there is no doubt that entrepreneurship education is relevant. There is, however, some criticism, and some authors argue that the unique abilities and skills of an entrepreneur cannot be taught, as they are innate (Schumpeter, 1934; Ripsas, 1998). Cohen (1980), cited by Faris (1999) also concludes that entrepreneurs are born, not made.

However, many other researchers have reached conclusions that are just about the opposite: entrepreneurship is a discipline that can be taught and learned (Arzeni, 1998). Many scholars have decidedly been performing studies in the area in the belief

[14] It is worth to mention that the methodology for program evaluation is robust and has expanded considerably over the past 30 years, in great part as a result of a legal measure adopted in 1965 that required evaluation of general educational programs in the United States.

that entrepreneurship requires some psychological skills, and that they are teachable (McClelland, 1961; McClelland and Winter, 1971; Brockaus, 1982).

Even though the discipline appeared to be getting some visibility only in the 1960s, Kobe University (Japan) pioneered in 1938 the first educational effort in entrepreneurship, as reported by Solomon, Duffy, and Tarabishy (2002) citing a work made by McMullan and Long (1987). In the United States there were less than ten universities teaching in this field during the 1960s, and this number increased to 400 in the past decade. Today more than 700 universities are involved with entrepreneurship education (Luthje and Franke, 2002). Although the United States still has the leadership in the field, there are centers for research and teaching entrepreneurship in Europe that have grown in importance and sophistication in the past ten years (Luthje and Franke, 2002).

Several Asian countries, stimulated by coordinated governmental policies, started their own entrepreneurship programs in the 1970s (Chico, 1984), which were judged as an important part of the so-called "Asian miracle" (Mankiw, 1995). Other countries, like Brazil, followed this kind of universal fever and especially in the past decade, many programs for practical, short-term training were developed throughout the country with strong support from the government (Sebrae, 1994). Gibb (1993) cited by Henry, Hill and De Faoite (2001) mentions that increase in entrepreneurship education has been significant in the United Kingdom, Canada, India, Malaysia, Philippines, and mainland Europe. Even in the command economies of the ex-Soviet bloc, there is a market with enormous potential, which is conducive to entrepreneurship (Stewart, Carland, Carland, and Watson, 1999) and a growing number of scholars teaching and researching in the field. Overall, there are more than

1500 colleges and universities around the world with programs in entrepreneurship (Charney and Libecap, 2000).

Given the economic presence of small and entrepreneurial businesses in the economy and their indisputable importance in terms of job creation and economic innovation (Audretsch, 1995), the education of the entrepreneur is a lifelong activity, and Drucker (1985, p.264) asserts that:

> In an entrepreneurial society, individuals face a tremendous challenge, a challenge they need to exploit as an opportunity: the need for continuous learning and relearning. In traditional society it could be assumed—and was assumed—that learning came to an end with adolescence or, at the latest, with adulthood. What one had not learned by age twenty-one or so, one would never learn. But also what one had learned by age twenty-one or so would apply, unchanged, the rest of one's life. On these assumptions traditional apprenticeship was based…crafts, professions, systems of education and schools are still, by and large, based on these assumptions. The correct assumption in an entrepreneurial society is that individuals will have to learn new things well after they have become adults—and maybe more than once. The correct assumption is that what individuals have learned by age twenty-one will begin to become obsolete five to ten years later and will have to be replaced—or at least refurbished—by new learning, new skills, new knowledge.

In a recent survey covering entrepreneurship education in the United States, Solomon et al. (2002, p. 1) mentions, "the past decade (1990-1999) witnessed enormous growth in the number of small business management and entrepreneurship courses at both the two and four-year college and university level." The report continues: "there is also evidence that institutions are receiving major endowments for entrepreneurship education in the form of chairs, professorships, and centers. A surprising (positive) trend emerged from the data regarding entrepreneurship education and the use of technology."

However, a survey made by the experts from Global Entrepreneurship Monitor in 2000, was negative on how schools teach basic market principals and entrepreneurship, and said that higher education can do a better job in entrepreneurship education. The bright side of the report is about business and

general management education in the United States, which is considered outstanding and world-class.

Solomon et al. (2002) cites several authors which advocate an entrepreneurship education with ideas on how to explore business opportunities (Vesper and MacMullen, 1988); how to understand the challenges of business entry (Gartner and Vesper, 1994) which requires the development of abilities in such areas as negotiation, leadership, product development, creative thinking and exposure to technological innovations (Vesper and MacMullen, 1988); sources of new venture capital and idea protection (Vesper and MacMullen, 1988); characteristics that define the entrepreneurial personality (Hills, 1988; Hood and Young, 1993); and all the challenges associated with the venture development (McMullan and Long, 1987; Plaschka and Welsch, 1990).

Solomon et al. (2002, p. 4) also contend that education for entrepreneurs and small business owners are not the same, and the first one should be concerned with "originating and developing new ventures, and the second with how to achieve good balance in sales and costs within a normal, existing business." Henry, Hill and De Faoite (2001) confirm this idea and assert that most researchers differentiate entrepreneurship education and training program (EETP) targeted at the entrepreneur or at the small business owners and / or managers.[15]

Other authors advocate that EETPs help improve the management of actual companies (managerial skills), enable the development of ideas that lead to the creation of new ones (entrepreneurial skills) and, consequently, improve the general

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[15] The role of the manager can be similar to the entrepreneur (see more in Pinchot, 1985; Hisrich, 1990) and in general the manager acts as a representative of the owner. Both, however, have distinctive (managerial, not related to the creation and innovation) functions. Julien (1998, p. 117) says "we cannot talk about small business owner/manager without also talking about entrepreneurs", a point previously raised by Kirchhoff (1994)

income and reduce unemployment in the community. Some authors consider these objectives as valid and assert that management training and the development of management expertise are relevant and required for success and survival (Reid, 1987; Ball and Shank, 1995; Marshall, Alderman, Wong, and Thwaites, 1995; among others).

Entrepreneurship education has been popularized for several reasons (Charney and Libecapp, 2000), among them the development of business plans, an educational tool that enable students to practice and integrate their knowledge on a varied set of disciplines, such as accounting, finance, marketing, economics, etc. EETPs enable the transference of knowledge-based technology from universities to the market, and forge connections between the academe and the "real" business world. Lasonen (1999, p. 14) claims that entrepreneurship education should be adjusted so as "to enable teaching and learning, fostering creative and innovative citizens who are able to employ themselves." An idea that Jamieson (1984, p. 9) cited by Henry and Hill (1999) explains as "a curriculum which fosters skills, attitudes and values appropriate to starting, owning, managing or working in a successful business enterprise".

Courses in entrepreneurship should be concentrated in the early cycles of the business life (Vesper and MacMullan, 1987) and should leave the traditional management education approach that offers a format that fits ventures in all of its stages (MacMullan and Long, 1987), a common educational procedure adopted by many business schools. Luthje and Franke (2002) points out that general business management education has no significant impact on entrepreneurial propensity, a point confirmed by Hostager and Decker (1999).

Entrepreneurship education and training programs (EETPs) are frequently of very short duration compared with other educational programs in the business area,

some lasting just few days and some are extended over longer periods (Gibb, 1993). American universities are taking the lead in the field by providing a curriculum. On one side it is based on practical activities and case-studies; and on the other side, it is based on the theories and concepts that are brought by the extensive and important network of scientific publications, periodicals, and journals. Approaches to entrepreneurship education range from simple preparation of business plans or business development analysis to an integrated group of disciplines that include strategy, marketing, finance, and technology, among others (Charney and Libecap, 2000).

Neumann and Klandt (1992), based on a U.S. Small Business Administration's report from 1992, reported that entrepreneurship courses in the United States were split this way: a) graduation 31.9%, b) non-graduation 17.6%, and c) without certificate of completion 50.5%. The same authors point out that the most common teaching methods were seminars and lectures, followed by case study on paper, role models, private study through literature, preparing a paper, management and business games, presentation, computer support, real world case study, working in small groups, role games, practical training, private study with computer, project studying, excursion, multi media teaching systems, video training, and experience groups.

Garavan and O'Cinneide (1994), analyzing entrepreneurship education in Canada, the United States and European countries, points out the existence of four main types of EETPs:

- Those based on the idea of education and training for small business owners;
- Entrepreneurial education, focusing on the creation of new enterprises centered in a new product or service;
- Continuing small business education, a program designed to enhance and update skills;
- Small business awareness education, a program aimed at increasing the number of people who are already knowledgeable about small business and making them increasingly aware of small firms as a career alternative.

In the United Kingdom, Levie (1999) reports 86% of the courses had project work, 75% had guest speakers, 66% used student plans, 55% used oral presentations and 69% required written exams. Other teaching and learning methods include group projects, group business plans, individual essays, and case studies. He notes that there is a difference in choice of teaching and learning methods between two types of courses: those concerned with real entrepreneurial activity (courses for entrepreneurship) and those that transfer some level of knowledge about entrepreneurship (courses about entrepreneurship).

Henry et al (2000) in an analysis made on eight EETPs in five different European countries, which also included case studies and a longitudinal study over a three-year period, reached these conclusions: the duration of the programs range from 9 to 15 months; workshops / training from 3 to 12 days; success rate of new business creation (from 12% in Spain to 58% in Ireland), and number of jobs created ranging from 8 in one program in Ireland to 96 in Netherlands, and 100 in Finland. Additional benefits of the program, in terms of overall perception, were: contacts with other aspiring entrepreneurs; business training; knowledge of marketing and business legal issues; better understanding of business operations; personal development, etc. New skills or knowledge gained, also in terms of overall perception, were marketing, finance, business planning, and human resource management.

These results helped to develop the idea of a best practice model for EETPs, summarized as follows as a three-part program:

- Stage 1 (the Pre-Program) requires a pre-program workshop, application and evaluation of the applicants and some testing;
- Stage 2 (the program), training and workshop sessions, real entrepreneurs as speakers, business counseling and mentoring, office-incubation facilities, financial help available;
- Stage 3 (the post program), posttests, summative program evaluation, support

and networking opportunities, and participants tracking.

The authors intended to test this model in practice. It offers a well-researched framework to both first time and experienced providers, and has potential to ensure a broader entrepreneurial education to entrepreneurs and would-be entrepreneurs.

Luthje and Franke (2002, p. 10), in a review about EETPs in Germany, using the American Massachusetts Institute of Technology (MIT) as a benchmark, recommends that they match the following objectives:

- Improve the usage by students of the theory-based knowledge;
- Involvement with experiential learning and real-world experiences teach the application of theoretical concepts to the reality of the day-to-day business life;
- Improve the knowledge of innovative opportunities, through access to the vanguard of technological development.

In an extensive research on entrepreneurship curricula, Rey (2001, p. 81) [16] goes further and recommends that EETPs provide the following knowledge:

- Awareness of entrepreneurial spirit and culture
- Learning of specific entrepreneurial skills and know-how
- Researching of entrepreneurship issues
- Creation of enterprises (for employment of any kind)
- Creation of university spin-off companies
- Creation of spin-off companies in public research centers
- Creation of spin-off companies in large firms (intrapreneurship)

Additionally, the same author recommends that an EETP "must plan different kinds of courses for different target groups and objectives" and, secondly, it has "to be aimed at creating companies and consolidating existing ones" (p. 40). He also furnishes fresh ideas about how EETPs should integrate two different kinds of skills or competencies:

[16] Rey (2001) partnering with University of Edinburgh, performed an extensive research to develop and implement a new entrepreneurship training curricula covering 14 countries: UK, Germany, France, Italy, Sweden, Belgium, Netherlands, Spain, Ireland, Finland, Switzerland, Denmark, Portugal, and Austria.

- Managerial and entrepreneurial skills, which are taught in "generic" entrepreneurship courses,
- Interface management skills, taught by specialized instructors and oriented toward technology entrepreneurs.

Rey's work details extensively the skills necessary for an entrepreneur located in the technological area; however, most of his recommendations can be used in any entrepreneurship educational process.

There is no standard curriculum adopted in the universities, and many of them have developed their own concept of entrepreneurship. In several American universities, the Entrepreneurship program is heavily concentrated in a few disciplines. The disciplines that appear to be the most important ones together with Entrepreneurship are Business Planning and Management techniques followed by Marketing and Technology. In many cases, some disciplines can be identified as belonging to two or more fields, and the ideal of interdisciplinarity leads to a somewhat confused or too similar categorization that could be included in one branch of knowledge or another. This gives the idea of a scattered discipline that lacks coordination and cohesiveness. See more about this in the Appendix B, which presents a review of several American and foreign universities and their entrepreneurship curricula.

Despite the resistance from conservatives entrenched in many departments in universities around the world, the discipline is growing in terms of academic respectability (Singh and Magee, 2001; Streeter, Jaquette, and Hovis, 2002; Luthje and Franke, 2002), although still playing secondary roles in some countries, as in Germany (Minks, 1998, cited by Luthje and Franke, 2002) and in many others where the traditions of the academe is still prevalent.

Solomon, Weaver, and Fernald (1994) say that small business and entrepreneurship have the potential of being the most important business disciplines

of the 21st century. Ronstadt (1985), cited by Brown (1999) claims that entrepreneurship is an important educational innovation and, as such, an important field for research and teaching. There is an on-going discussion on what constitutes the education of an entrepreneur and a consensus that the field is far from maturity (Robinson and Hayes, 1991, cited by Solomon et al, 2002). What was done with the study of management more than thirty years ago is needed to be done now for entrepreneurship: develop "principles and practices, and the discipline itself" (Drucker, 1985, p. 17).

Entrepreneurship Education and Training Programs (EETPs):

Expected Outcomes

The entrepreneurial process comprehends the creation of new and usually small companies, and this sector is going through a long cycle of growing importance since the discovery that small businesses in general are responsible for most of the job generation process in the late 1970s (Birch, 1979). The sector accounts for about 50% of the domestic production of goods and services in all industrialized and developing countries (Brock and Evans, 1988; Ripsas, 1998; Julien, 1993, 1998; Liedholm and Mead, 1999; Henry, 2000; many others).

For this reason, it is generally accepted that, due to its socio-economic importance, entrepreneurship is a process that clearly needs some form of intervention, as the benefits derived from supporting the entrepreneurial process reach

not only individuals, but also the society as a whole, locally and globally. The entrepreneurship education, among several forms of intervention, is one way to achieve the goal of generating employment and wealth, increase the creation of new companies, and reduce the failures of existing businesses, ideas that were embraced by politicians and decision-makers in many countries (Brock and Evans, 1998; Hisrich and Peters, 1989; Julien, 1998; Wennekers and Thurik, 1999; Kayne, 1999; Rasheed, 2000; Henry, 2000; Henry et al, 2001).

Plaschka and Welsh (1990), cited by Henry (2000) concludes that there is a parallel between an increase in the number of entrepreneurship courses and a growth in the level of new business in the United States.

Robinson and Haynes (1991); Bechard and Toulose (1998); Henry (2000), among others, mention that there are many researchers that have advocated the need to evaluate EETPs. However, most of entrepreneurship education programs suffer from lack of reality-based and systematic evaluation (Ames, Rumco, and Segrest, 2002) and some authors skeptically commented about the need to examine if there are any lasting effect of EETPs (Garavan and O'Cinneide, 1994).

Gibb (1993) mentions that some difficulties arise when evaluating entrepreneurship interventions, such as identifying appropriate output and the effectiveness in terms of payback, while other authors argue that their effectiveness tends to be more qualitative than quantitative (Henry, 2000, p. 273).

Qualitative outputs [17] are considered as highly desirable, and these are generally considered among the most important ones:

- Reduce poverty and crime
- Improve management skills
- Contribute to risk-taking
- Open the ways for social ascension

[17] See more on Charney et al (2000), and Henry (2000).

- Help develop flexibility and innovativeness in the workplace
- Help new generations of business founders
- Improve habits, attitudes, and behaviors
- Help improve job satisfaction

While some of these outputs are the ground for official and private providers and funders, economic outputs are regarded by communities as the most relevant. This is in part due to short-term expectations and also due to its impact on personal income:

- Creation of new firms
- Increase in the number of jobs
- Survival rate of new and existing firms
- Volume of investments (expansion, new fixed assets)
- Technology-based new ventures and products

Kirschbaum (1990), cited by Ripsas (1998) stated that poorly developed entrepreneurial idea is an impediment for achieving success; the opportunity recognition process is part of the new venture creation, and needs some especial training (Timmons, 1994). The technology transfer from the universities to the market also needs some training, and this kind of training has the special merit to forge a connection between the businesses segments and the academic communities (Charney et al, 2000), thus helping to foster an entrepreneurial culture necessary for the formation of specialized industries (Acs, 1992) and networking (Audretsch, 1995; Liedholm and Mead, 1999).

The so-called “social capital”, a concept being developed by economists and social researchers, is also part of the entrepreneurial culture (Arzeni, 1998), a crucial element of the socio-economic development.

Several authors who developed studies on the topic of entrepreneurial success (Shaver, Gartner, Gatewood, and Vos, 1996), successful programs on entrepreneurship (Rey, 2001), and predictors of success (Miner, 1996) although Henry (2000, p. 269) warns that the range of requirements for entrepreneurial success

"is so vast that one is left with the impression that an entrepreneur is a super human being".

Without an evaluation, an educational program is unlikely to produce the expected results; too often, "administrators are surprised to see that programs have outcomes quite different from those the program developers intended" (Shaffer et al, 1997, p. 3).

The University of Arizona (Charney and Libecap, 2000) has found that entrepreneurship and education training programs (EETPs) "attract substantial private-sector contributions; produce self-sufficient, enterprising individuals, successful business and industry leaders; enhance a graduate's ability to create wealth; produce champions of innovation, and lead to greater opportunities with advancing technologies." [18] The Global Entrepreneurship Monitor Executive Report (2000, p. 24) praises the results of this research as "stunning" and "impressive" and concludes that entrepreneurship education in business schools throughout the United States is rewarding graduates, colleges, and the society.

Taking into consideration the above and the growth of entrepreneurial education all over the world (more than 1500 universities and colleges teaching entrepreneurship [Charney and Libecap, 2000], from less than a dozen in the 1960s), one should conclude that entrepreneurial education is definitely a part of today 's educational realities, and that communities all over the world have a definite sum of expectations from EETPs, and that these expectations can be measured and evaluated.

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[18] See more at: http://www.bpa.arizona.edu/programs/berger/publications/impact_measuring.html

The Psychological and Behavioral Approach

Many authors argue that entrepreneur's psychological traits and behavior are important and deserve to be evaluated, as they define entrepreneurial propensity. Ripsas (1998, p. 112) points out that "the main idea is to distinguish between the dynamic entrepreneur and the more static small business manager", however he sees an obstacle for this behavioral approach, as "it seems very difficult to observe an entrepreneur in all steps of the creating process." Ripsas (1998, p. 112) is also critical on the psychological approach, which tends to assume that the entrepreneur is a particular type of person, "a fixed state of existence," a point also critiqued by Gartner (1989). Some authors (Gasse, 1982; Brockaus and Horwitz, 1986; Cohen, 1980; and also Ripsas, 1998) reported some disappointing results.

However, Ripsas (1998) concedes that the psychoanalytic perspective could overcome some deficits on the trait approach. Other authors call for more studies to compare characteristics and behaviors of individual entrepreneurs (Cox, 1997; Wagner and Sternberg, 2002, citing a previous work of Sternberg [2000] in Germany) in the international arena. Lasonen (1999, p. 4) asserts that that EETPs have to encourage "certain ways of thinking and action and certain attitudes, which represent internal entrepreneurship", a point similar to Virtanen's (1997). Among the conditions for entrepreneurship, psychological endowments (which translate for attitudes, skills, and actions) occupy a prominent position and are considered as a fundamental element for entrepreneurship (Carre and Thurik, 2002, citing a previous work by Wennekers and Thurik, 1999). See more about this point in the table 2.2.

In the 1960s, a group of psychologists at Harvard University started a series of programs, under the direction of David McClelland, to increase awareness about the need for achievement, a concept that comes from Murray (1938), Atkinson (1958) and McClelland (1961). Since then, many researchers have explored this sub field, in the hope of identifying how successful entrepreneurs differ from others on some factors (Ames, Runco, and Segrest, 2002). Other authors have used the same exploratory way to reach similar conclusions (Lynn, 1969; Aronoff and Litwin, 1971; Durand, 1975, 1983; King, 1985; Scherer, Adams, Carley, and Wiebe, 1989; Hostager and Decker, 1999; Stewart, Carland, Carland and Watson, 1999; many others).

Reviews of the literature in the field have been critical of this trait-oriented approach (Brockaus and Horwitz, 1986) and "its failure to address why some are more likely than others to pursue and maintain an entrepreneurial career" (Scherer et al, 1989, p. 53). Some authors argue that there is no single measure method that could provide a fully and reliable assessment of entrepreneurial personality traits (Hostager and Decker, 1999), and others work on the assumption that entrepreneurial dispositions are "a fundamental element in the development of a theory of the entrepreneur" (Stewart and Roth, 1999, p. 3, citing a previous work of Carland et al, 1984) and that these streams of research "are most commonly evident in descriptions of the entrepreneur" (Stewart et al, 1999. p. 2). See more about this in Long (1983), and Carland et al (1984). Despite this controversial situation, research studies using these personality traits as a basis to evaluate and understand entrepreneurs and their behavior as well as the results of educational and training programs are becoming frequent. See more on this in the works of McClelland, 1961; Aronoff and Litwin, 1971; Durand, 1975; Scherer et al, 1989; Hostager and Decker, 1999, among others.

The psychological field of entrepreneurial traits was intensively researched, especially in the 1980s and it is considered as one of the main themes of entrepreneurship research (Julien, 1998). The most common characteristics attributed to entrepreneurs (Lumpkin and Erdogan, 1999) are the need for achievement, locus of control, and risk-taking propensity (Gartner, 1985), followed by preference for innovation, tolerance for ambiguity and uncertainty, and self-awareness. Bonnet and Furnham (1991) and Ahmed (1985), both cited by Lumpkin and Erdogan, 1999) found some correlation between these qualities and entrepreneurial ability.

The psychological approach—some authors prefer the expression "behavioral approach", some use the expressions interchangeably, and others make a clear distinction among them [19] —seems to be the most traditional and well researched (Henry, 2000). Three sets of psychological traits are generally considered more relevant in the descriptions of the entrepreneur as an individual: the need for achievement, risk-taking propensity, and preference for innovation (Aronoff and Litwin, 1971; Timmons, 1978; Long, 1983; Carland, Hoy, Boulton and Carland, 1984; Julien, 1993; Stewart et al, 1999; Hostager and Decker, 1999; Rasheed, 2000, among others). The most researched of all has been the need for achievement, followed by risk-taking propensity, perhaps the most controversial of all. Risk-taking propensity has been also identified as a characteristic of small business owners, as the tasks roles for both small business owner / managers and entrepreneurs entail taking risks (Stewart and Roth, 1999). The final characteristic that has been research at length is preference for innovation (which comes as a direct consequence of Schumpeter's [1934] thinking).

[19] See more about this distinction in Ripsas (1998), p. 112.

Thomas and Mueller (1998, p. 2) argue that there is a configuration of "psychological traits, attributes, attitudes, and values representing the entrepreneurial archetype." Hatten and Ruhland (1994) in a study about entrepreneurship education, suggests that there can be improvement in entrepreneurial attitude through participation in training program. Many authors have insisted that the entrepreneur is an innovator (Schumpeter [1934] is the most distinguished of all), prone to accept challenges and risks (Hebert and Link, 1989; Ripsas, 1998), an idea that comes from a thinking lineage from the classic economists (Cantillon, Mill, Knight, Mises, etc).

Miner (1996) studied one hundred established entrepreneurs over a period of seven years. Based on previous studies conducted by Bellu and co-workers (Bellu, 1993; Bellu and Sherman, 1995) as well as Miner (1990, 1993) and Smith, Bracker and Miner (1987), the author concluded that four personality patterns (personal achievers, real managers, empathic supersalespeople, and expert idea generators) are associated with success levels far more often than the entrepreneurs without any strong pattern are. Miner utilized 43 different test measures from 17 different types of structured questionnaires and psychological tests, and explained that most of them are not merely relevant to entrepreneurship, but also, they are short, easily scored and "thus useful for teaching people to understand a characteristic" (p. 4). [20] The descriptions of each of these types include some common personality traits: the personal achiever has a strong need to achieve, a desire to plan and set goals, etc. The emphatic supersalespeople have a need for affiliation, a common trait found in

[20] Miner (1996) used, among others, the Lynn Achievement Motivation Questionnaire (Lynn, 1969) which was entirely based on McClelland's (1961) TAT- Thematic Apperception Test; the Individual Behavior Activity Profile (Matteson and Ivancevich, 1982); Rose Tension Discharge Rate Scale (Rose, Jenkins and Hurst, 1978); Matteson and Ivancevich Internal-External Scale (Matteson and Ivancevich, 1982); Shure and Meeker Risk Avoidance Scale (Shure and Meeker, 1967) plus 12 other different scales covering subjects like "sentence completion scale", problem-solving questionnaires, decision style inventory, etc. The data was obtained through the above questionnaires, formal presentations, feedback discussions, and follow-up interviews.

the literature. The real manager possesses a desire to be a corporate leader, a desire for power and competition, etc, which leads to the concept of need for power; and expert idea generators, leads to the concept of innovation. Miner (1996) also gives in his study a table on the intercorrelations of the personality scores and reaches the conclusion that all individuals strongly related to the four personality patterns are also related with corporate success levels; their scores as successful entrepreneurs exceed by far those for entrepreneurs without any strong pattern as described above.

Driessen and Zwart (1999) conducted a literature research on the psychological characteristics of entrepreneurs and concluded that there are three main characteristics and five secondary ones. The main ones are Need for Achievement (nAch), Internal Locus of control (ILOC), and Risk Taking Propensity (RTP); the five secondary characteristics are Need for Autonomy (nAut), Need for Power (nPow), Tolerance of Ambiguity (ToA), Need for Affiliation (nAff), and Endurance (End).

The authors explain that successful entrepreneurs show consistently higher scores on the characteristic mentioned above, in comparison with less successful entrepreneurs, small business owners and managers, and non-entrepreneurs. They define the successful entrepreneur as the individual who starts a new venture with some degree of innovation and keeps it working profitably for a period of at least five years, according to the definition given by Hornaday and Bunker (1970). Thus continuity in business is a strong factor for success; other authors link success to financial terms (Perry, 1988; Gatewood, 1995). Part of the different criteria found in the literature can be seen in the following table, together with its author's conclusions about the relation with the psychological trait and the definition of success.

Table 2.5

Entrepreneurial Characteristics and Relation with Success

Author	Definition of success	Trait	Relation
Ahmed (1985)	Start of a business	n Ach	Positive
		ILOC	Positive
		RTP	Positive
Begley (1987)	Financial growth in: a. sales b. return on assets c. liquidity ratio	n Ach	None
		ILOC	low liquid.
		RTP	High ROA
		ToA	None
		Type A	None
Komives (1972)	Survival in first few years	N Ach	Positive
Hull (1980)	Start of a business	N Ach	None
Brockhaus (1980a)	Survival in first few years	ILOC	Positive
Warner (1969) in Brockhaus (1982)	High company performance	N Ach	Positive
		N Pow	Half posit.
Gatewood (1995)	Payment of products first year	ILOC	Positive
		Endurance	Positive
Hood (1993)	100 fastest growing companies in America (not specified)	N Ach	Positive
		ILOC	Half Posit.
		RTP	Positive
		Endurance	Half posit.
Hornaday (1970)	Survival after five years and conducting business where there was none before	n Ach	Positive
		n Aut	Positive
		n Pow	Half posit.
		n Aff	Str. Neg.
		ILOC	Positive
		RTP	Positive
Hornaday (1971)	Survival after five years with more than eight employees	n Ach	Positive
		n Aut	Positive
		n Aggress.	None
		n Aff	Str. Neg.
Perry (1988)	Financial growth in personal income and return on investment	n Ach	Half posit.
		ILOC	None

Source: Driessen, M.P., and Zwart, P.S. (1999). The Role of the Entrepreneur in Small Business Success: The Entrepreneurship Scan. Proceedings of ICSB Singapore Conference.

Shaver, Gartner, Gatewood and Vos (1996, p. 33) in their conclusions regarding the assessment and measures of achievement motivation, locus of control, risk perception, and creativity with 116 adults with multi-racial backgrounds, and dealing with the issue of success after entrepreneurship courses, asserts that it is

"clearly possible to get reliable data on psychological characteristics of entrepreneurs."

There are several methodologies to evaluate these psychological and behavioral constructs, from the Thematic Apperception Test used by McClelland (1961); Durand (1983); and Hostager and Decker (1999); structured interviews (Fayolle and Servais, 1999) to more refined instruments like questionnaires (Lynn, 1969; King, 1985; Miner, 1996), which were developed into structured and tested scales, forming a set of measures of personality which reflect a variety of interpersonal, cognitive and value orientations "likely to have important implications for a person's functioning" (Jackson, 1994, p.1).

Taking into consideration the reasons mentioned above; the number of scholarly works published in the area; the fact that Organizational Behavior links with Behavioral Economics—a new field awarded two Nobel Prizes in the recent past—and both are making important contributions to entrepreneurship as a discipline, this study focused on the possible socio economic impact of a entrepreneurship training program, and utilized scales measuring need for achievement, innovativeness, and risk-taking propensity as a basis to evaluate possible psychological and attitudinal changes in the participants.

Conclusion

The review of the literature on entrepreneurship and its related educational programs has led to the conclusion that entrepreneurship is relevant both in

economic and educational terms. Entrepreneurship as a discipline is growing and occupying more space in academic circle and in the minds of public planners, despite some perception of lack of academic rigor and discipline categorization. The evaluation of EETPs is a priority and many authors have produced relevant works in the field and their conclusions and methodologies are relevant to discern how EETPs are reaching their goals and how their outputs benefit the community and the economy, the ultimate objective of any entrepreneurship educational program. Finally, the instruments currently being used for the evaluation of psychological and / or behavioral characteristics of entrepreneurs—a sub field that has made relevant contributions to the science of entrepreneurship—were evaluated and the conclusion reached enabled this researcher to determine that they could be applicable as a means to assess the EETPs possible behavioral outcomes.

The contribution of this work to the entrepreneurship literature is two-fold: first, it provides a partial measure of the results of an entrepreneurship-training program developed in the State of Santa Catarina, Brazil, which has a great deal of socio-economic relevance to that region. Secondly, through the utilization of psychological and behavioral measurements on managerial and entrepreneurial characteristics, it provides a quantitative analysis of the potential behavior change of the participants of the program, an aspect that has been deemed as necessary to the entrepreneurship discipline, and to the evaluation of entrepreneurship education in general.

CHAPTER III

METHODOLOGY

Introduction

In order to answer the research question of whether a group of participants in an entrepreneurship and education training program (EETP) have the potential to succeed as entrepreneurs as measured by the Jackson Personality Inventory (JPI) scales, this chapter focuses on the quantitative methodology used to provide an assessment of this potential outcome. The research problem is to determine whether the participants possessed the personality traits (entrepreneurial characteristics) to succeed as entrepreneurs, and also furnish a comparison of selected personality traits of practicing entrepreneurs and would-be entrepreneurs across gender, age, education, and profession.

The EETP aimed to disseminate management and entrepreneurial techniques to reach the community's goals for job and income generation. It analyzed three self-reported behaviors: need for achievement, innovativeness, and risk-taking propensity.

The chapter explains the characteristics of the population that composed the two groups (comparison and treatment), the study design utilized for the evaluation of the chosen entrepreneurial characteristics, the nature and source of the data, the data collection process, and procedures and instruments employed to analyze data.

Research Design

This is an applied research, which provides contributions to theories that can be utilized to formulate "problem-solving programs and interventions focusing on economic questions deemed important by society "(Patton, 1990, p.160 and 190); a field study, which used the posttest-only design (Fitz-Gibbon and Morris, 1987) to investigate whether a professional, educational program based on managerial and entrepreneurial techniques had improved participants' behavior thus helping them to succeed as entrepreneurs. Non-cognitive instruments such as pre-formatted scales were employed to survey attitudinal differences between the groups of participants (treatment) and non-participants (comparison).

The following diagram explains the design used in this research, which is "The True Control Group, Posttest Only Design" (Fitz-Gibbon and Morris, 1987, p. 57; Shaffer, Hall, and Bilt, 1997):

	→ Time →			
	1	2	3	4
	R	1 (pre)		2 (post)
Treatment Group	.	.	X	O
Comparison Group	.	.	.	O

Where:
R = the process of randomly assigning respondents to groups
X = exposure of a group to the program or experimental condition
O = the process of observation or measurement (pretest, posttest)

Participants of the program had already finished all training and seminars by the time the research had begun, thus not allowing for pretests. Kirkpatrick (1994) does not recommend the before-and-after approach when the learner has no previous skills and the subject being taught is new, which is the case of this population, as

training on managerial and entrepreneurial techniques were not available to participants before the program. The few individuals already trained were moved to the condominium or the incubator mentioned in the Chapter 1, page 9; they did not participate in the program (Phase B) and therefore they were excluded from this research. Randomization was not fully achieved due to the special characteristics of the population involved, as explained in the next section. The study used two groups of individuals; the participants (treatment group) received the intervention (the program) and a posttest; non-participants (comparison group) did not receive the intervention and have received the posttest only.

Selection of Participants

The selection of participants was made through the convenience sampling method, a way to select some "politically sensitive site or unit of analysis"(Patton, 1990, p. 180), and a form of stratified sampling (Gliner and Morgan, 2000).

Participants and non-participants were listed and contacted (by phone or in person) by the Municipality's program coordinator together with the researcher. After explaining the reasons of the call and the purpose of the survey, a meeting was scheduled with small groups organized into regions or groups (such as artisans) to present and explain the scales. In many cases, such groups had a leader or a monitor able to call and organize these meetings who was contacted by the program coordinator and, later, by the researcher.

Two factors prevented random assignment of the JPI scales: low educational levels of most of participants and non-participants (which prevented them from getting an adequate understanding of the three scales), and the fear that giving information to an individual (the researcher) indicated by the program administrator (the Municipality) could lead to future tax increase. This is understandable since as many of these micro and small business owners and entrepreneurs work in the underground, informal side of the economy.

The group of 250 micro and small business owners/managers—already trained by the program—was the focus of the program, and the most important one in terms of program's objectives. This group furnished the names that composed the treatment group for the purpose of this study and it also included a small number of individuals who were working as self-employed (and also a small number of employees), but were willing to move and organize their own businesses.

Those listed as non-participants—to be trained by the program—were those who manifested their desire to develop small businesses in the near future, acquire some entrepreneurial and managerial tools through the training facilities and opportunities provided by the program, and to change their professional status from clerical workers to self-employed individuals. They composed the comparison group for this study.

All participants and non-participants belong to these three categories, i.e., micro and small business owners or managers, self-employed, and would-be entrepreneurs. The most visible difference between the two groups consisted in the larger number of would-be entrepreneurs in the Comparison group, which included a small number of individuals working as employees and preparing themselves for a

new venture or self-employment; and the large number of individuals in the treatment group already possessing their own businesses.

Participant's Profile

Table 3.1 shows the population reached by the program, which totaled 1,460 individuals. The target population comprised of 250 individuals who were micro and small business owners exposed to the program. They were the immediate focus of attention from the program coordinator, as most of the results of the program were expected from them. From this group of 250 micro and small business owners / managers, 57 individuals (23% of the population) filled out the scales thus composing the treatment group. The comparison group came from the group not exposed to the program (the c-Group with 54 individuals) thus totaling 111 participants:

Table 3.1

The Population

Micro and small business owners and managers, self-employed individuals, and entrepreneurs:	Population 250	t-Group: 57 *	23%
Students, senior and retired citizens, employees, and unemployed individuals:	1,210	-	-
		-	-
Individuals trained (exposed to the program):	1,460		
		c-Group:	
Individuals to be trained (not exposed to program):	N/a	54 **	-
Total Sample:	-	111	-

* Exposed to the program (treatment group)
** To be exposed to the program (comparison group)

The following table shows a much more accurate detail about the composition of both groups of participants and non-participants, and shows their professional origins or present professional occupations.

Table 3.2

Professional categories (both groups)

Categories	Comparison	Treatment
A- Would-be entrepreneurs		
Unemployed	12	-
Employees	23	2
Managers/ executives	1	2
Subtotal	36	4
B- Small businesses		
Owners	5	22
Self-employed	13	31 *
Subtotal	18	53
TOTAL	54	57

* Including 14 artisans

Table 3.3 gives details about the relative composition of participant's demographics, and establishes distinctions in terms of five divisions: gender, age (3 categories), work experience (5 categories), education (3 categories), and profession (2 main categories).

Table 3.3

Participants' demographics

Comparison Group	c-Group			t-Group			Treatment Group
	Male	Female	Total	Total	Female	Male	
1. Gender	26	28	54	57	29	28	1. Gender
2. Age							2. Age
From 15 to 24	14	10	24	7	-	7	From 15 to 24
From 25 to 44	11	17	28	36	18	18	From 25 to 44
45 and up	1	1	2	14	11	3	45 and up
3. Work experience							3. Work experience
Up to 2	4	5	9	4	3	1	up to 2
3 to 5	4	6	10	8	2	6	3 to 5
6 to 7	2	6	8	1	-	1	6 to 7
8 to 10	4	1	5	3	1	2	8 to 10
+10 years	12	10	22	41	23	18	+10 years
4. Education							4. Education
Elem. School	-	2	2	21	15	6	Elem. School
2nd Degree	11	12	23	22	10	12	2nd Degree
College	15	14	29	14	4	10	College
5. Professional category							5. Professional category
Would-be entrepreneur *	19	17	36	4	-	4	Would-be entrepreneur *
Small businesses	7	11	18	53	28	25	Small businesses

* Including part-time teachers, military, farmers, and clerical workers

Additional information about demographics can be found in Appendices C and D.

Nature, Source of Data, and Instrumentation

The primary data were questionnaires (or scales) filled out by both participants and non-participants of the program. They are part of the personality tests developed into structured and tested scales, forming a set of measures of personality; they reflect a variety of interpersonal, cognitive and value orientations derived from contemporary research in personality and social psychology (Jackson, 1994).

The Jackson Personality Inventory (JPI) scales (Jackson, 1976, 1990, 1999) are generally considered for its broad use, and their availability, applicability, and readiness for analysis are important for the extensive use made of them in this study. JPI scales are generally reputed as outstanding among personality tests (Sexton and Bowman, 1983 and 1984; Goldsmith, 1987; Martin and Morris, 1982; Milburn, Marin, and Sabogal, 1980; Robbins, 1986; Winchie and Carment, 1988; mong others). They do represent specific, theoretically conceived personality dimensions, and they provide clear trait definitions, excluding psychopathology (Jackson, 1990). They were exhaustively tested to show construct validity as well as internal consistency reliability, which were obtained from sample of students from several American universities, entrepreneurs, nurses, military, executives, and several categories of professionals (Jackson, 1977). Its applications range from general research in personality, sociometric choices, vocational interests, consumer behavior, and personnel selection, as well as susceptibility to special instructions and formats, and last but not least, studies in the academic environment.

This study did not employ the full set of measures, which consists of 15 scales grouped into five personality clusters. It employed only three of them (need for achievement, innovativeness, and risk-taking propensity), as allowed by the author of the scales (Jackson, 1999, p. 3). Its pre-formatted questions are easy to administer and enabled the researcher to use them as an instrument for a quantitative analysis. The rationale for evaluating these three personality traits or characteristics are outlined in the Chapter 2, page 39.

The three scales contain fifty-six bi-polar (true / false) statements, which investigate the need for achievement (sixteen questions), risk-taking propensity (twenty questions), and preference for innovation (twenty questions). Respondents answered combinations of positive questions (which the correct answer is "true") and negative ones (which the correct answer is "false").

The translation from English to Portuguese was carefully made and reviewed by the researcher and, after that, it was submitted to different groups of undergraduate students in the local university in Lages to prevent any difficulty with the translation, and to ensure equivalency. The students discussed and answered the scales, and after this process, the scales were submitted to participants and non-participants of the program. This methodology was employed by Stewart et al (1999) when researching need for achievement, innovativeness, and risk-taking propensity of Russian entrepreneurs, with the exception of back-translation into English, which was not made in this study.

The researcher provided the administration of the scales to the respondents, in order to assure the full understanding of the meaning of each scale, and provide the participants with full explanation about the purpose of each question. From the total

number of scales collected (117) 6 were excluded from this research, as they were non-readable, or incomplete, or presented some of the reasons to be excluded (nonpurposeful responding, faking or motivated distortion, etc) as outlined by Jackson (1994, p. 19).

Data Analysis and Interpretation

The data presented mean, grand mean, and standard deviation for each group of respondents and its divisions by gender, age, education, and profession, together with cross-tabulations charts based on percentage-based interrelations for each one entrepreneurial behavior or psychological trait being measured, and graphs of the four categories of respondents.

It included a standard t-test to check whether the difference between two group means was statistically significant. As in all statistical tests, the basic criterion for statistical significance is a "2-tailed significance" less than .05.

The data also provided a summary of the cases giving details of some participant's characteristics together with their answers to the three scales; descriptive statistics informed frequency of individual response in each category, as well as tables showing major variances presented. The author employed the software SPSS 11.0 [21]

[21] The software SPSS 11.00 was available for undergraduate and graduate students at the Johns Hopkins University's computer laboratories in Washington, DC during the fall of 2002.

for statistical calculations, which enabled an analysis of the fundamental quantitative items.

The scales were designated to give high and low scores on each one, and the higher the persons' score the greater the probability that he or she will show behavior reflecting the personality trait measured by the scales. In summary, high scores show high propensity to innovation, achievement and risk-taking; low scores show the opposite. Each answer was considered, for statistical purposes, as equivalent to 1 when correct / true; and 0 when incorrect / false. The analysis also presented several peculiarities of the demographics, such as the gender neutrality of the program, and the wide range of age and education, which are typical features in these programs in Brazil.

Ethical Aspects

Participants of this research received and signed the "Informed Consent Form" (which is reproduced in the Appendix A) as an agreement to participate in this study. The study observed ethical standards/code of conduct for its completion, as established by the American Psychological Association and assured anonymity and confidentiality to all participants and non-participants of the program to enable them provide honest and accurate answers to the scales. They were free to participate or decline to participate or even to withdraw from the research, and they were told the name and address of the researcher and the related educational institution in case of need for additional information. To protect human subjects' privacy (Patton, 1990, p.

197) a separate confidential identification sheet identified only nicknames or first names together with basic demographics; the sheet was only available to the researcher.

The researcher followed administration guidelines from the author of the scales, detailed in Jackson (1994, p. 7) and Jackson (1999, p. 4). Sigma Assessment Systems, Inc (Port Huron, MI 48061-0984) granted the researcher their permission to use (but not reproduce) copyright material, numbered PTR627, dated March 19, 2001; this company represented the author Douglas N. Jackson, Ph.D.

CHAPTER IV

FINDINGS

This chapter addresses the research question and presents results of the quantitative evaluation of the entrepreneurial characteristics of the participants compared to non-participants, of the entrepreneurship education and training program developed by the Municipality of Lages, State of Santa Catarina, Brazil. The program was offered to the community as a way to raise income levels and reduce unemployment by improving managerial and entrepreneurial characteristics of micro and small business owners and would-be entrepreneurs.

Demographics

The comparison groups is composed of younger persons compared to the other group, and a substantial portion of these participants are just entering into the job market and planning to organize their own business. The treatment group, on the other hand, is composed of more experienced individuals; 93% were already self-employed, or making their living as micro and small business owners or managers, and actual entrepreneurs.

Female participation was strong, with ages concentrated between 24 and 45 years (41.5% women, a number close to the men's average) although with less

education (29.8% with elementary school level) than men (11.1%). Women with college education comprised 31.6% of the total (compared with 46.3% of men). This educational difference does exist in Brazil because business education attracted much more males than females in the recent past, a situation that is changing.

See more about gender aspects in the Appendices C and D, and also some details about the composition of both groups, and cross-tabulation charts, which explain in detail some of their main characteristics.

Statistical Analysis: Need for Achievement

Participants of both groups were provided with a scale containing 16 questions, in the Jackson Personality Inventory (JPI) scales bipolar format of true / false answers. The correct / true answer weights 1; incorrect / false answers, 0.

Table 4.1 shows the following results, based on the total number of responses of both groups, as follows:

Table 4.1

Cross-tabulation with both groups and answers on need for achievement

		GROUP		
	Count	Comparis	Treatment	
	Row pct			Row
	Col pct		Total	
	Tab pct	1	2	
ACHIEVEMENT				
False 0		371	360	731
		50.8	49.2	41.2
		42.9	39.5	
		20.9	20.3	
True 1		493	552	1045
		47.2	52.8	58.8
		57.1	60.5	
		27.8	31.1	
Column Total		864 48.6	912 51.4	1776 100.0

111 valid cases; 0 missing cases

The level of correct/ true answers of the comparison group reached 57.1% (column 1, 2nd number at True 1 above); treatment group presented 60.5% (column 2, 2nd number at True 1 above). In summary, the correct / true answers presented by the treatment group outperformed the other group by 31.1% (3rd number at True 1, column 2) to 27.8% (column 1). With small variations, this pattern is demonstrated in the next table, which provides a percentage-wise comparison between the correct answers of the two groups, split by four categories, as follows:

Table 4.2

Number of correct answers per participant: percentage of correct / true answers (reflecting higher propensity for achievement) by categories:

ACHIEVEMENT Category		Comparison Group No. Particip	Treatment Group % (correct answers)		No. Particip
Gender	Female	28	58.7	60.1	29
	Male	26	55.3	60.9	28
Age	From 15 to 24 years	24	53.9	60.7	7
	From 25 to 44 years	28	60.3	59.1	37
	45 and up	2	50.0	64.4	13
Education	Elem School	2	56.3	61.0	21
	High school	23	57.1	61.1	22
	College	29	57.1	58.9	14
Profession	Would-be Entrepren	36	55.9	56.3	4
	Small bus/ self-empl	18	60.0	60.8	53

In order to have a different perspective in terms of their performance, both groups were separated into low respondents (less than eight questions correctly answered out of 16) and high respondents (more than ten questions correctly answered out of 16). The result followed the same pattern (as seen in the table 4.2 above): the comparison group presented 19 individuals as low respondents (35% of the group); the treatment group presented 15 individuals (26% of the group). On the other hand, the comparison group presented 35 individuals as high respondents (65% of the group); the treatment group presented 42 individuals (74% of the group).

The table 4.3 demonstrates results with significant mean differences between the two groups in five questions (out of 16), as follows:

Table 4.3

Most significant results on Achievement questions

Questions	Mean		Variance (%)
	Comp Group	Treat Group	
ACHT90	.648	.859	+32.5
ACHF134	.796	.894	+12.3
ACHT222	.333	.403	+21.0
ACHT266	.462	.649	+40.4
ACHF332	.722	.859	+18.9
Grand Mean	.570	.605	+ 6.1

The above descriptive statistics show the treatment group with higher mean in five questions (out of sixteen) and a positive, significant variance in relation to the other group (as shown in the table 4.3 above).

Another four questions showed positive variance of less than 10%, and in six questions, the treatment group showed lower mean in relation to the comparison group (not shown in the table above).

The Grand Mean was based on the mean of all answers to the scale, and its variation is positive, although less than 10%, which can be considered technically as non-significant.

The following table demonstrates t-test results derived from the sum of correct answers presented by individuals of both groups. The variation for both groups (9.129 versus 9.701) reveals a positive difference, however less than 10%.

Table 4.4

T-test results on achievement questions

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
ACHIEV	Comparison	54	9.129630	1.990982466	********
	Treatment	57	9.701754	1.772457054	********

Independent Samples Test

		Levene's Test for quality of Variance		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed	Mean Difference	Std. Error Difference	Lower	Upper
ACHIE\	Equal varianc assumed	.360	.550	-1.601	109	.112	7212476	5737173	********	********
	Equal varianc not assumed			-1.596	105.942	.113	7212476	5850171	********	********

Another t-test conducted with males-only from both groups revealed a statistical significance (Sig. [2-tailed]) of 0.047; the t-test conducted with both groups showed no significant gender differences. The t-test conducted with all participants (Table 4.4 above) presented a result that reflects that these differences are not relevant. The treatment group (M=9.702754, SD=1.77245) did not score significantly higher than the comparison group (M=9.129630, SD=1.990982).

Therefore, at p=0.05, the difference between treatment and comparison groups does not present statistical significance.

Statistical Analysis: Innovativeness

Participants of both groups were provided with a scale containing 20 questions, in the Jackson Personality Inventory (JPI) scales bipolar format of true / false answers. The correct / true answer weights 1; incorrect / false answers, 0.

Table 4.5 demonstrates the following results, based on the total number of responses of both groups, as follows:

Table 4.5

Cross-tabulation with both groups and answers on Innovativeness

		GROUP		
	Count	Comparis	Treatment	
	Row pct			Row
	Col pct			Total
	Tab pct	1	2	
INNOVATION				
	False 0	323	265	588
		54.9	45.1	26.5
		29.9	23.2	
		14.5	11.9	
	True 1	757	875	1632
		46.4	53.6	73.5
		70.1	76.8	
		34.1	39.4	
	Column Total	1080	1140	2220
		48.6	51.4	100.0

111 valid cases; 0 missing cases

The level of correct / true answers of the comparison group reached 70.1% (column 1, 2nd number at True 1 above); the treatment group presented 76.8% (column 2, 2nd number at True 1 above). In summary, the correct/ true answers

presented by the treatment group outperformed the other group by 39.4% (3rd number at True 1, column 2) to 34.1% (column 1). With small variations, this pattern is demonstrated in the next table, which provides a percentage-wise comparison between the correct answers of the two groups, split by four categories, as follows:

Table 4.6

Number of correct answers per participant: percentage of correct / true answers (reflecting higher propensity for Innovation) by categories:

INNOVATION Category		Comparison Group No. Particip	Treatment Group % correct answers		No. Particip
Gender	Female	28	67.7	76.4	29
	Male	26	72.7	77.1	28
Age	From 15 to 24 years	24	70.4	87.9	7
	From 25 to 44 years	28	69.5	74.7	37
	45 and up	2	75.0	76.5	13
Education	Elem school	2	77.5	73.1	21
	High school	23	72.4	78.4	22
	College	29	67.8	79.6	14
Profession	Would-be Entrepren	36	68.3	65.0	4
	Small businesses	18	74.7	77.4	53

The table 4.7 demonstrates results with significant mean differences between the two groups in ten questions (out of 20), as follows:

Table 4.7

Significant results on Innovation questions

Questions	Mean		Variance (%)
	Comp Group	Treat Group	
INNOT63	.648	.824	+27.1
INNOT123	.666	.771	+15.7
INNOT153	.592	.824	+39.1
INNOT183	.574	.771	+34.3
INNOT273	.851	.947	+11.2
INNOF78	.611	.719	+22.2
INNOF108	.425	.473	+11.2
INNOF138	.574	.754	+31.3
INNOF168	.722	.842	+16.6
INNOF198	.444	.526	+18.4
Grand Mean	.700	.767	+9.6

The descriptive statistics show the treatment group with higher mean in ten questions (out of twenty) and a positive, significant variance in relation to the other group (as shown in the table 4.7 above).

Another five questions showed positive variance of less than 10%, and in five questions, the treatment group showed lower mean in relation to the comparison group (not shown in the table above).

The Grand Mean took into account all questions, and its variation is positive by 9.6%.

The following table demonstrates t-test results derived from the sum of correct answers presented by individuals of both groups. The variation for both groups (14.01852 versus 15.35088) reveals a positive difference 10,95%.

Table 4.8

T-test results on Innovation questions

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
INNOV	comparison	54	14.01852	3.264969824	********
	treatment	57	15.35088	3.456315276	********

Independent Samples Test

		Levene's Test for quality of Variance		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
INNOV	Equal variance assumed	.216	.643	-2.085	109	.039	1.332359	3894749	********	********
	Equal variance not assumed			-2.088	108.999	.039	1.332359	3795681	********	********

The treatment group, across four categories, presented higher percentages when decomposing correct / true answers by gender, age, education, and profession, as seen in the Table 4.6. The number of correct answers that reflects higher propensity for innovation was also higher than the comparison group's results, a situation that the Grand Mean (Table 4.7), calculated for both groups, confirms with .767 versus .700. The Mean calculated for the t-test (Table 4.8) shows that the difference between the two groups (14.018 versus 15.350) reaches 10.95%.

The t-test shows significance (Sig. [2-tailed]) of 0.039 and, at p=0.05, it confirms that the treatment group (M=15.350, SD=3.456) presented a statistically significant difference in comparison with the group that did not receive the program (M=14.018, SD=3.264).

Statistical Analysis: Risk-taking Propensity

Participants of both groups were provided with a scale containing twenty questions, in the Jackson Personality Inventory (JPI) scales bipolar format of true / false answers. The correct / true answer weights 1; incorrect / false answers, 0.

Table 4.9

Cross-tabulation with both groups and answers on risk-taking propensity:

		GROUP		
	Count	Comparis	Treatment	
	Row pct			Row
	Col pct		Total	
	Tab pct	1	2	
RISK TAKING				
	False 0	673	759	1432
		47.0	53.0	65.7
		63.5	67.8	
		30.9	34.8	
	True 1	387	361	748
		51.7	48.3	34.3
		36.5	32.2	
		17.8	16.6	
	Column Total	1060	1120	2180
		48.6	51.4	100.0

109 valid cases; 2 missing cases

The level of correct/ true answers of the comparison group reached 36.5% (column 1, 2nd number at True 1 above); treatment group presented 32.2% (column 2, 2nd number at True 1 above). In summary, the correct/ true answers presented by the comparison group outperformed the other group by 17.8% (3rd number at True 1, column 2) to 16.6% (column 1). With small variations, this pattern is demonstrated in the next table, which provides a percentage-wise comparison between the correct answers of the two groups, split by four categories, as follows:

Table 4.10

Number of correct answers per participant: percentage of correct / true answers (reflecting higher propensity for risk-taking) by categories:

RISK-TAKING Category		Comparison Group No. Particip	% correct answers	Treatment Group % correct answers	No.Particip
Gender	Female	28	33.7	30.0	29
	Male	26	39.4	34.6	28
Age	From 15 to 24 years	24	35.2	37.1	7
	From 25 to 44 years	28	38.3	30.7	37
	45 and up	2	27.5	34.2	13
Education	Elem school	2	25.0	29.3	21
	High school	23	33.0	33.4	22
	College	29	39.7	34.6	14
Profession	Would-be Entrepren	36	35.4	38.3	4
	Small businesses	18	39.3	31.9	53

The comparison group exhibited some percentage points of positive difference in comparison with the other group, considering the absolute number of correct answers. However, in both groups, the level of incorrect / false answers was superior to the correct / true ones, in a proportion close to 2/3 (or 63.5%) for the comparison Group as a whole, and more than 2/3 (or 67.8%) for the treatment group.

The following table demonstrates those questions with significant mean differences between the two groups of participants:

Table 4.11

Mean and variance for Risk-taking questions

	Mean			
Question	Comparison	Treatment	Variance	Note
RKTT117	0.566	0.678	19.7	Positive
RKTT207	0.358	0.517	44.4	Positive
RKTT27	0.660	0.696	5.4	Positive; low
RKTF12	0.264	0.267	1.1	Low
RKTT87	0.339	0.232	-46.1	Negative
RKTT177	0.603	0.500	-20.6	Negative
RKTF102	0.566	0.482	-17.4	Negative
RKTF62	0.396	0.339	-16.8	Negative
RKTF132	0.377	0.196	-92.3	Negative; low mean
RKTF222	0.245	0.107	-28.9	Negative; low mean
RKTF192	0.075	0.071	-5.6	Negative; low mean
RKTF252	0.113	0.107	-5.6	Negative; low mean
RKTF282	0.528	0.517	-2.1	Potential cultural rejection
RKTF72	0.698	0.642	-8.7	Same
RKTT57	0.113	0.142	25.6	Same; low mean
RKTT297	0.169	0.125	-35.2	Same; low mean
RKTT267	0.226	0.125	-80.8	Same; low mean
RKTF12	0.264	0.267	1.1	Same; low mean
RKTF42	0.188	0.107	-75.7	Same; low mean
RKTT147	0.433	0.285	-51.9	Same; low mean
Grand Mean	0.365	0.322	-13.3	Negative

The result of the Grand Mean for both groups was abnormally low when examining the mean of the other scales, and negative considering that the treatment group should have presented a higher mean.

The following table shows t-test results derived from the sum of correct answers presented by individuals of both groups. The variation for both groups (7.301887 versus 6.446429) reveals a negative difference (the treatment group should present higher mean) of 13.2%.

Table 4.12

T-test results on Risk-taking questions

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
RISKTAK	comparison	53	7.301887	3.677294708	********
	treatment	56	6.446429	2.802074834	********

Independent Samples Test

	Levene's Test for Equality of Variance		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
RISKTA Equal variances assumed	3.325	.071	1.371	107	.173	.5545822	.2415016	********	********
Equal variances not assumed			1.361	97.124	.177	.5545822	.2876784	********	********

The t-test presented in the table above shows a significance (Sig. [2-tailed]) of .173, with the comparison group presenting a higher result (Mean=7.30188, SD 3.67729) than the treatment group (Mean=6.4464, SD 2.8020). Therefore the existence of a positive difference between the two groups was not confirmed.

DISCUSSION

Need for Achievement

The treatment group showed no significant difference in terms of need for achievement when compared to the other group. The majority of the treatment group members (31 individuals or 54%) were self-employed individuals; 22 individuals

(39%) were small business owners. The literature states that these individuals consider their professional activities as an extension of their private lives and the need for achievement is not their dominant psychological characteristic. They are concerned with furthering personal goals (Carland, Hoy, Boulton and Carland, 1984). Their micro-businesses (or self-employment) proportionate some financial stability to them (Julien, 1998; Wennekers and Thurik, 1999), which is an important value. This value is perhaps more important than growth and change, which are frequently associated with the risks of destabilization and failure. The results make clear that they do not display the profile of an entrepreneur.

The comparison group members do aspire to make real the dream of owning a business, and working for themselves. This desire is typical and several authors mention it as usually found when researching the reasons, personal, or professional, to become an entrepreneur or just small business owner (King, 1985; Hebert and Link, 1989; Virtanen, 1997; Julien, 1998; Wennekers and Thurik, 1999). The result of the group, although close to the group that received the training, is not enough to consider them as motivated, challenged by their personal and professional goals. Instead, they are looking for the same professional position of their counterparts of the other group.

Innovativeness

The treatment group showed a consistent, statistically relevant difference when comparing with the other group in terms of innovativeness. One would argue, then, that their results on innovativeness levels prove that they are real entrepreneurs. Instead, it is the opinion of this researcher that the creativity revealed by most of the

self-employed—like artisans—refers to the creativity for handcrafting new objects for sale, representative of the local culture and traditions. These objects require the creativity of an artist, a true artisanship above the average skills for painting and carving, and the sensibility to understand the ramifications of folklore and popular art, which does not necessarily relate to economic innovation in the technological and marketing-oriented approach. Audretsch (1995, p. 104) says that the self-employed "are not engaged in anything resembling innovative activity" (or entrepreneurial activity), a point also confirmed by Carree and Thurik (2000). Innovation is important for the group as a part of their personal strategies to survive in economic terms: they struggle with many difficulties, one of the most important being the lack of financial support as well as management techniques. Therefore, creativity is essential to them and a tool for survival more than to improve business; it is not as the same Schumpeterian type, prone to the "creative destruction" and "make things happen" attitude that change markets and promotes waves of innovation in the economy.

Audretsch (1995, p. 11), in an extensive report on innovation, says that the majority of new firms are very small and, by consequence, sub optimal, "in many, if not most of industries", and that the solution for survival, in this case, is finding ways for growth and changing scale. However, the individuals from both groups were not interested in growing because it implies risk; growing translates for a true entrepreneurial attitude; looking for change and innovation means taking market share. Furthermore, the entrepreneurs, those individuals running creative businesses for the principal purpose of profit and growth, and having a profile of aggressiveness and a desire to excel and exceed others (Carland et al, 1988; Stewart et al, 1999), were not found in either group.

Risk-taking propensity

The treatment group showed inferior grades compared with the responses of the other group. It would be understandable if, at the end of the training, the participants had developed a sense of "conservativeness" after being exposed, and taught the risks and difficulties of being an entrepreneur. Their answers could be, then, more cautious or prudent than their counterparts of the comparison group, and this could be a partial explanation for the differences presented between the two groups. Secondly, Stewart and Roth (1999) suggests that entrepreneurs and small business managers differ in terms of propensity to risk. Even though both roles entail risks, the authors believe that the entrepreneur works in a less structured environment and deals much more directly with uncertainty than the small business owner, a point also confirmed by Gasse (1982) and Begley and Boyd (1987b). It is understandable that the comparison group composed of would-be entrepreneurs (employees and unemployed), showed higher grades in the evaluation of their scales on risk. Their counterparts at the treatment group were more "conservative" as they had already learned their lessons in the hard world of business. Moreover, the comparison group showed a higher mean, which implies that the program produced a different perception of risk; possibly, the perception that risk is undesirable. This leads to the risk aversion concept (Julien, 1993, 1998; Stewart and Roth, 1999; Wagner and Sternberg, 2002), which explains part of the behavior of managers and executives, in both small and large companies. Their behavioral attitudes toward increased risks or uncertainties are clearly defensive. In large companies, managers react to them by

increasing size (new physical facilities, merging, investing heavily on inventory and new machinery, and also by creating cartels); small companies, on the other hand, react by networking (as opposed to competing), an efficient way to compensate for diseconomies of scale and transaction costs (Julien, 1998), and also to benefit from the "collective efficiency" mentioned by Tommaso and Dubbini (2000, p.24).

Some additional explanations about other possible reasons that lead to these findings and would partially explain the above results are presented below:

Measurement aspects

As stated by Stewart et al (1999) in an exploratory work in the same field of psychological traits of American and Russian entrepreneurs, cross-cultural research has been frequently inconclusive and the authors mention that it is probably due to variation in samples, construct validity issues, and measurement problems, conclusions also reached by Johnson (1990) and Julien (1998).

Two of the questions presented by the risk-taking scale read as follows: RKTT57: "I would enjoy bluffing my way into an exclusive club or private party"; RKTT27: "When in school, I rarely took the chance of bluffing my way through an assignment." The positive answer to the first question (a correct/true answer, as per the JPI's manual of instructions) reveals propensity to risk; the second denies it. However, both are strange to the local culture and when transplanted to the Brazilian sociological environment, where structures and social values are different from the American context, these questions sound disrespectful or wrong.

Secondly, the questions RKTT267, RKTT297, and RKTF12 mention explicitly "game" and most forms of games are considered illegal in Brazil. The questions RKTF42 and RKTT147 mention desire to invest in the stock market, [22] which is considered as high risk. At last, borrowing money from a bank for a business deal, a possibility raised by the question RKTF292, is unconceivable to most entrepreneurs, even perhaps, suicidal, considering the level of interest rates in Brazil and the pro-short term attitude presented by financial institutions. In the table 4.11, these questions are marked with "potential cultural rejection."

To investigate whether this result would produce a different conclusion, a separate calculation excluded the questions judged under potential rejection. However, the conclusion is that the result is still negative since the comparison group outperformed the treatment group in a proportion of three versus one regarding risk-taking propensity.

Cultural aspects

The scales reflect in part the American way-of-life, and derive from research done with students and professors in several American universities, executives, military, entrepreneurs, nurses, etc. Some of the questions in the achievement scale suggest a competitiveness that is foreign to the Brazilian culture, especially regarding

[22] The stock market in Brazil attracts educated, rich investors from the upper class of income; the vast majority of the population keeps savings in the "Savings Card" insured by the Federal Government, which is approximately 50% of the volume of all investments/ savings in the economy.

people in the medium-to-low educational level who typically believe that small businesses have to show more cooperation than competitiveness (Julien, 1993, 1998).

Cooperation is more useful and important for them, and the training program offered this concept as an adequate approach to business. The very idea of cooperation opposed to competition is therefore suggested as an important characteristic of small businesses in general, which helps them to survive in a market populated by multinationals and large corporations (Kirchhoff, 1991) and overcome problems related to economies of scale (Loveman and Sengenberger, 1990). Therefore, these types of questions present conflicting results from different populations, and misconceptions regarding cultural perceptions on attitudes, personal aspirations, social pressures, etc (Hostager and Decker, 1999) could emerge.

There are important psychological differences between the United States and Brazil regarding the cultural values described by Hofstede (1980) and mentioned by Stewart et al (1999). These values appear in four basic dimensions: individualism, power distance, uncertainty avoidance, and value orientation (masculinity / femininity). The American culture is much more oriented toward individualism than Brazilian; while Americans have a greater dose of masculinity (defined by the verb "doing"), Brazilians, even though not emphasizing the past like other traditional cultures, have more femininity in the sense of "being" (see more on this in Hofstede, 1993).

For the purpose of giving a practical example of this controversial situation, it is worthwhile to mention an individual who took the program and established a small plastic-recycling industry in the same year the program was launched. Praised by the local press and the program administrator as an example of the success of the program, he did participate in this research as member of the treatment group. His

demographics are typical: male, 33 years old, elementary school education, very hard working and professional, ambitious and energetic, with some of the psychological characteristics that would make him a successful entrepreneur (see Miner [1996]; Driessen and Zwart [1999] regarding the connection of entrepreneurship and success). He should be reflective of the group of higher achievers, and he certainly is a high achiever. However, his psychological profile does not appear as such in this research. His performance as a respondent in this research is just average, with only 10 (63%) correct answers out of 16 in the Achievement scale. His company was in the process of additional expansion and improvement, clearly another entrepreneurial characteristic that is the opposite of small business owners who are more interested in exercising control than experiencing the uncertainties of growth and change (Hornaday, Timmons, and Vesper, 1983).

Curriculum of the Program

The list of the disciplines taught in the courses shows that there is some concentration on management issues and that only one discipline directly refers to entrepreneurship. The duration of the program (Henry, 2000; Rey, 2001) together with the lack of other typical entrepreneurship disciplines—or the discipline of

entrepreneurship itself—could be a factor for the low levels of positive responses to the scales. The other factor relates to the need of combining skills and psychological training, a possibility raised by several authors (McClelland, 1961; Durand, 1975, 1983; Rasheed, 2000). Garavan and O'Cinneide (1994) suggests that formal education on entrepreneurship should address knowledge, skills, and attitudes. Lasonen (1999) argues that narrow vocational education may jeopardize entrepreneurship education, which should include students launching and managing their own projects as a learning methodology, an idea that came from Cotton (1991), and also reflects Garavan and O'Cinneide's (1994) entrepreneurial 'primary preference for action'.

Some authors maintain that EETPs should teach general managerial skills together with entrepreneurial skills (Rey, 2001), while others advocate that they should include selecting students and staffing of faculty together with theory-based knowledge and real-world experiences (Luthje and Franke, 2002). Henry et al (2000) suggests a best-model practice that includes monitoring the process since its inception to the final results it produced, whether or not using the highly centrally or decentralized model advocated by Streeter, Jaquette, and Hovis (2002).

These programs were reviewed in Chapter II, and they contrast with the scant volume of classes and lectures brought by the EETP, which clearly concentrated in the knowledge side and somewhat neglected a positive attitude toward entrepreneurship and behavior in general. The only one entrepreneurship typical discipline, as shown in Chapter I (Program Description) is a simplified form of business planning, which was the object of only 22 hours of classes, clearly not enough for the purpose of improving entrepreneurial skills.

Conclusion

Different results would appear if only entrepreneurs composed the group, entrepreneurs in the Schumpeterian (1934) sense, or in the sense advocated by Carree and Thurik (2002, p. 5), citing a previous work of Kirchhoff (1994).[23] It is understandable, then, that they exchange positions. For example, a would-be or aspiring entrepreneur could change to established entrepreneur, and later become just a small business owner; or a self-employed individual can move to the position of entrepreneur or small business owner. It seems that their positions are overlapping during their professional lives, a point confirmed by Audretsch (1995). However, as Schumpeter (1947, p. 258) points out, entrepreneurs are on one side, and on the other, are ordinary administrators or managers, and about this theoretically uncomfortable situation he explains:

> The essential thing is the recognition of the distinct agent we envisage and not the word… In the case of the entrepreneur, it is even difficult to imagine a case where a man does nothing but set up new combinations and where he does this all his life… an industrialist who creates an entirely new set-up will, in a typical case, then settle down to a merely administrating activity to which he confines himself more and more as he gets older… The difficulty of making our function is of course greatly increased by the fact that such words as "management" or "administration" from which we are trying to distinguish our function have with many authors also caught some of the meanings that we wish to reserve for the term "entrepreneur"… the distinction between adaptive and creative response… conveys an essential difference."

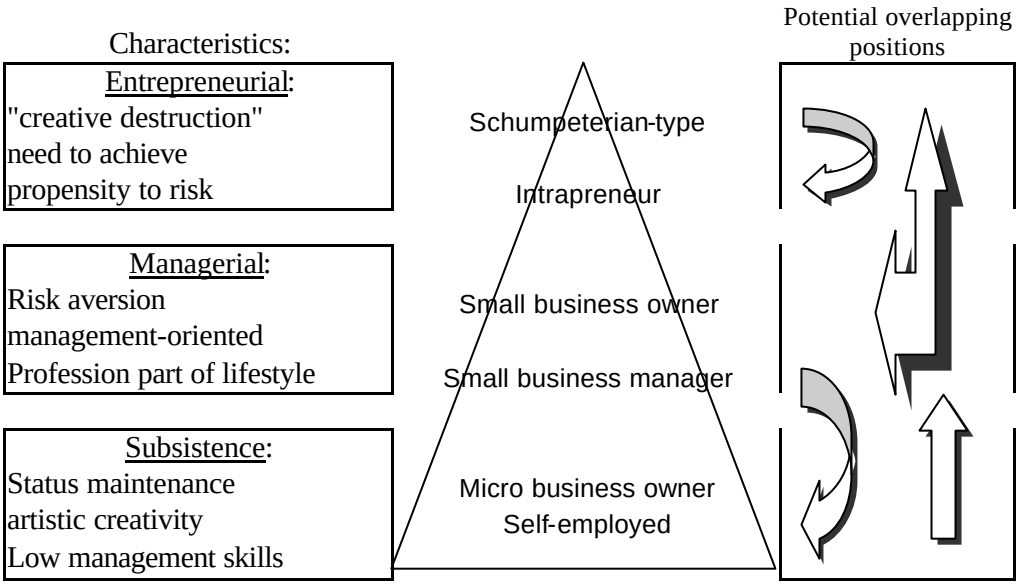
The following figure is presented as a summarization of the conclusions of this study that was based on the ideas of the authors cited in the literature review, most

[23] They mention three types of entrepreneurs: the classic Schumpeterian type, the managerial business owner, and the self-employed individual.

especially Audretsch (1995), Julien (1993, 1998), Wennekers and Thurik (1999), Kirchhoff (1994), Henry (2000) and the seminal works of McClelland (1961) and Schumpeter (1934, 1947).

Figure 4.13

The Entrepreneur profile: a summary



This figure provides a more precise idea about the entrepreneurial attitudes and interchangeable positions from the several actors mentioned above, and help to clarify the explanations of the results presented by both groups.

This EETP concentrated on the lower levels of this pyramid, and most specially, in the micro business owner and self-employed individuals, and inadvertently excluded those ones in top of it, with the conclusions and consequences demonstrated above.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

Introduction

The primary focus of this paper is to provide an answer for the research question; it has attempted to demonstrate that there is more potential to be successful entrepreneurs in a group of micro and small business owners and self-employed individuals that participated in an entrepreneurial and managerial training program, than another group of untrained would-be entrepreneurs. This study was also undertaken to provide a quantitative evaluation on three selected entrepreneurial characteristics potentially developed by participants of the program.

The findings will help the program coordinator (the Municipality of the city of Lages, southern of Brazil) to further improve the techniques taught and the program results. The main purpose of the program—an answer to the community's desire for more jobs and therefore improvement in the regional income—was to provide tools for creation of new companies, expansion of the existing ones, and utilization of better managerial techniques. Additionally, a scholarly work produced in this field will represent an additional stimulus for the adoption and development of entrepreneurship as a discipline in the local university.

The pioneering work of Murray (1938) and McClelland (1961) and subsequent studies by many others (Kirchhoff, 1991; Miner, 1996; Stewart et al, 1999; Carree and Thurik, 2002), found that need for achievement, innovativeness, and risk-taking propensity are among the most prominent psychological characteristics of entrepreneurs. The author reviewed these three entrepreneurial characteristics using a standard, pre-formatted group of scales, which provided clear and specific personality dimensions (Jackson, 1990), and conclusions are summarized as follows:

Finding # 1:

The results of the scores (Mean= 9.70; t= -1.601 with P= 0.112, p= < 0.05) presented

by the treatment group were not as high as had been anticipated in terms of achievement. Some possible reasons were outlined in the discussions of the Chapter 4, which call the attention to the fact that self-employed individuals and most micro and small business owners are not prone to change and growth; their defensive behavior is mostly characterized as subsistence or maintenance of their lifestyle, a point raised by Garavan and O'Cinneide (1994), and Liedholm and Mead (1999). They are concerned with furthering personal goals (Carland et al, 1984), as their professional activities are an extension of their private lives. Unless they cross the division line that keeps apart small business owners, self-employed, and entrepreneurs, adopting a creative response instead of adaptive one (Schumpeter, 1947), they will not be inclined to exceed others, to excel in a function and to accept challenges, as mentioned by several authors (McClelland, 1961; Durand, 1975; Julien, 1998; Stewart et al. 1999).

Finding # 2:

The results of the scores (Mean= 15.35; t= -2.085 with P= 0.039, p= <0.05) of the treatment group were higher than the comparison group when analyzing their propensity to innovation. This author's conclusion is that this situation is mostly due to their artistic creativity, and it is not business oriented, a point confirmed by Robinson et al (1991). They can create new artifacts or artisanship as a consequence of their abilities as artisans, or even their "instinctive" ability to overcome the difficulties of their professional activities, and survive in a Darwinist market (Kirchhoff, 1991), which in general is hostile to small firms. Most of them are absent from big events where they can find products better developed and competitors

operating at a bigger scale. Therefore, although the statistical positive difference between the two groups, one cannot conclude that this result confirms their propensity to innovation in the Schumpeterian sense (the inclination to dislodge competitors in the market with a new product), or in the sense advocated by Audretsch (1995), i.e., inclined to growth and changing scale.

Finding # 3:

The scores (Mean= 6.44; t= 1.371 with P= 0.173, p= < 0.05) presented by experienced small business owners and self-employed individuals were lower than their junior counterparts in the comparison group in terms of their risk-taking propensity. Considering their general profile, as displayed in the figure 4.13, it is understandable that they react toward risk in a more prudent fashion. Stewart and Roth (1999) points out that small business owners deal with uncertainty in a lesser degree and work in a more structured environment than entrepreneurs (Gasse, 1982; Begley and Boyd, 1987b) thus their attitude toward risk could be characterized as conservative. This situation leads to the risk aversion mentioned by several authors (Julien, 1993, 1998; Stewart and Roth, 1999; Wagner and Sternberg, 2002).

Finding # 4:

The research also presented evidence that it dealt with some measurement problems (some questions from the scales are not adequate to the Brazilian environment); cultural aspects (like the cooperation versus competition alternative mentioned by Kirchhoff [1991], and Julien [1993, 1998]) and some features of the curriculum presented by the program to participants (which showed concentration on

management subjects, with only one discipline related to entrepreneurship, and no behavioral or psychological preparation). Robinson et al (1991, p. 14) suggests, "Scales developed to measure and predict entrepreneurship should incorporate…a situational specificity…a specific dimension of the considered concept". Sarasvathy, Venkataraman, Dew and Delamuri (2002) at their conclusion, asserts, "Entrepreneurship and personal characteristics cannot be evaluated apart from the features of the environment".

Implications of the Research

Henry (2000, p. 273 and 274) reviewed evidence reported in the literature field and aptly concluded that entrepreneurship training programs "may not always be effective in terms of cause and effect." However, they do have the positive effect of improving participant's vision of the business, making them more prone to create and innovate, and more conscious about the risks and rewards of the entrepreneurial activity, conclusions drawn by the consulting company Price Waterhouse (1995 Report) with extensive operational experience in several parts of the world, which fit in the case of entrepreneurship-training program brought into focus by this work. Henry (2000) also reported the development of a best practice model for entrepreneurship training programs, a structure that is far different from the program presented in this study.

Some authors have been critical on the psychological approach (Drucker, 1985; Ripsas, 1998). Gartner (1989) recommends that the approach focus on

what the entrepreneur actually does instead of what entrepreneur is, while Robinson et al (1991), citing a previous work by Rosenberg (1960), recommends that the approach should be one of exerting influence in thoughts, feelings, and behavioral intentions. Durand (1975, 1983) suggests combining psychological training design with skill-development training for better results.

Several authors have suggested that to measure effectiveness of entrepreneurship training programs both quantitative and qualitative analysis should be conducted (Rey, 2001; Luthje and Franke, 2002). Furthermore, when grouping individuals from these different categories in an entrepreneurship-training program, the potential outcomes are entrepreneurs improving their entrepreneurial characteristics while the small business owners and managers (and / or self-employed individuals) will improve their management capabilities (Garavan and O'Cinneide, 1994). It seems that investigating one's abilities (or even economical results) are not enough to draw conclusions about the quality of the results of a given EETP program, unless that participants of the program belong to the same category of professionals. There is a growing concern over selecting participants, developing an adequate curricula, reviewing *ex ante* and *ex post* results and providing some kind of support in the before-and- after the venture creation process.

Some efforts were developed toward categorization, and Birch (1987) coined the famous expression "gazelles" to identify fast-running small businesses that start small and grow extremely rapidly through innovation. None of the firms in this study could be considered as "gazelle", as all firms but one belong to the micro category. The small company presented as a success case on page 78 of this study is the sole exception as it has more than 25 employees and was passing through, at

that time, an expansion program to increase production and the number of employees, and therefore it can be considered as small.

Although previously proposed by Carland and Carland (1997) the categorization of macroentrepreneurs (those focused on high growth) and microentrepreneurs (stability-based ones) does not suffice to explain the needs, behavior and different strategies adopted by micro business owners and self-employed individuals toward entrepreneurship. In fact, the concept of entrepreneurship oriented toward stability and to further personal objectives, as mentioned by Stewart et al (1999) is a contradiction by itself.

Table 2.1 in Chapter II shows another categorization by the levels of risk and innovation. Lussier et al (2000) tries to demonstrate strategic positions within the market. It is clear, by the size of the firms which participated in this EETP (micro firms, only one in the category of small) and by their risk-taking propensity and innovativeness levels (not business oriented), that they fit in the category of low risk / low innovation (left, low corner of the chart), which means that they have a conservative and defensive position toward the market and competitors. This helps with understanding the scores in this study.

In the field of small business economics and entrepreneurship it is clearly shown that most of the examples and situations studied belong to SMEs, with little attention given to the category of micro businesses (see Table 2.4 in the Chapter II). In general, new and micro business starts with self-employment *stricto sensu*, with no employees, as pointed out by Carree and Thurik (2002, p. 18) [24] or they do have 1 to 4 employees (micro companies), or 5 to 19 employees (very small ones). A substantial

[24] In the region were this research was conducted the micro business sector is responsible for more than one third of the regional GDP. Countrywide, micro businesses represent 93% of total firms, and 26% of total workforce during 2002 (Source: Sebrae; see footnote no. 4, p. 10).

part of the economist's theoretical efforts concentrate in the development of a new theory of the firm, or at least a refinement of the neoclassical one, that could adapt to small businesses (for instance, see Tommaso and Dubbini, 2002) and entrepreneurship (see Julien [1998] and Acs, Z.J., Carlsson, B. and Karlsson, C. [1998]).

Scholars are running the risk of considering as equals companies with less than 499 employees (small and medium-sized) with those with 19 employees (very small) or even less than 4 employees (micro firms). It is the opinion of this author that they are reproducing the same mistake made in the 1970s (see Machlup, 1967) when SMEs were underestimated in favor of the prevalent paradigms of size and scale, i.e., large corporations (see adequate descriptions and criticism on this situation in Brocks and Evans [1989]; Acs, Z.J. [1992]; Julien [1993, 1998]), and others. Even when overlapping positions, as demonstrated in the Figure 4.13, micro firms, SMEs, and entrepreneurs keep a distinctive profile. The results of this study encourage further research to find practical and theoretical differences among large companies, SMEs and companies at the micro level, which are to be considered when new policies toward entrepreneurship and any form of intervention in this process are planned.

Conclusion

This investigation process has helped this researcher to assess, in quantitative terms, potential changes of some entrepreneurial behaviors considered as typical for entrepreneurs. The results of the analyses did not provide confirmation that the program changed their propensity to display entrepreneurial behaviors, as the s

tatistical results were not significant. This study questions the effectiveness of entrepreneurship education and training programs when their participants are mostly micro business owners and self-employed individuals.

However, the results did provide some information about the way the program could work to reach the same objectives in the future, using some disciplines that should be, generally speaking, included in the curriculum. The result also established the need to select different types of entrepreneurs for future research in order to obtain a more homogeneous sample, thus increasing the probability of significant statistical variation. At the same time, a selection processes will strengthen the possible outcomes while avoiding the onus of inconsistencies and contradictory results.

The results, to be presented to the community that generated the program, will mean an opportunity for the improvement of future similar programs, which are of the utmost socio-economic importance. Finally, this study will be an opportunity for scholarly advancements and curriculum improvement in the Brazilian university where the author works, and it will serve the purpose of making entrepreneurship recognizable as a distinct and important discipline.

Recommendations for further research

The first recommendation is to measure effectiveness on entrepreneurship education and training programs through longitudinal analysis, a need consistently mentioned in the literature of the field. This recommendation originates from the

relatively low number of such studies; most of published ones concentrate on short-term based research on attitudes and behavior, and on hard data.

The second recommendation is that studies be completed looking at the characteristics of entrepreneurs across cultural and national frontiers. Entrepreneurial research using behavioral and psychological approaches should take into consideration the cultural characteristics of the population involved, and tailor scales, questionnaires, and other instruments adequate to their profile, and that ponder the legal and economic framework that they live in.

The third recommendation is to research into the various degree of success and failure of an entrepreneurial business, in the belief that both results—negative or positive—will contribute to the development of entrepreneurial behaviors and skills and, by consequence, the general conditions for economic development.

The fourth recommendation, considering that entrepreneurial micro and small businesses represent about 50% of the GDP in Brazil, is that future entrepreneurship education and training programs concentrate in these fields, and develop proper educational tools and adequate, pertinent literature.

The fifth recommendation is to investigate the specific contribution to the regional and national economies made by micro firms, self-employed individuals, and entrepreneurs in the Schumpeterian sense.

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