"Brazilian Entrepreneurship Education Training: Risk, Innovativeness, and Achievement"

by

Valdemiro Hildebrando, Ph.D.
Professor of Economics
Applied Social Sciences Department
Universidade do Planalto Catarinense
Avenida Castelo Branco, 170
88509-900 Lages - SC, Brazil
E-mail: vbrando@uniplac.net
Office: (55) 49-3251-1022
Fax: (55) 49-3251-1051

Michael Z. Sincoff, Ph.D, Corresponding Author
Professor of Management
Department of Management
Raj Soin College of Business
Wright State University
3640 Colonel Glenn Highway
Dayton, Ohio, USA 45435-0001
E-mail: michael.sincoff@wright.edu
Office: 937-775-2327
Fax: 937-775-3545

and

John T. Hogan, Ph.D.
Adjunct Faculty
Graduate Management Program
Antioch University McGregor
300 Livermore Street
Yellow Springs, Ohio, USA 45367-1609
E-mail: hoganj@daytonregion.com
Office: 937-222-4422
Fax: 937-222-1323

June 2007

"Brazilian Entrepreneurship Education Training: Risk, Innovativeness, and Achievement"

Abstract

This study assessed propensity toward risk, innovativeness, and need for achievement in two groups (total n = 111) of Brazilian participants in an entrepreneurial and managerial training program. The Treatment Group (n = 57) was composed of practicing entrepreneurs, and micro and small business managers who had undergone entrepreneurial training. The Comparison Group (n = 54) was composed of individuals who had not undergone entrepreneurial training. Attitudes and behavior of both groups were assessed using standardized, pre-formatted bipolar responses scales. Statistical differences between the two groups were not significant and indicated their low propensity toward risk and need for achievement. Further, although the subjects revealed innovative tendencies, innovativeness was not business-oriented.

The authors make three recommendations for future research. The first is to measure effectiveness of entrepreneurship education and training programs through longitudinal analysis, a need regularly mentioned in the literature with respect to any training activity. Second, considering that entrepreneurial micro and small businesses represent about 50% of the GDP in Brazil, future entrepreneurship education and training programs concentrate on these types of businesses, and develop proper educational tools and adequate, pertinent literature. Third, the specific contribution to the regional and national economies made by micro firms, self-employed individuals, and entrepreneurs should be investigated to help find individuals with characteristics inclined to enable them to deal with innovation and risk.

Key words: Brazil, education, entrepreneur, entrepreneurship, small business, training.

"Brazilian Entrepreneurship Education Training: Risk, Innovativeness, and Achievement"

Many people outside of Brazil stereotype it as the land of rain forests, Carnaval, and rampant inflation. Relatively few realize that 80 percent of Brazil's approximately 190 million people live in urban areas, that 63 percent of its population is 29 years of age or younger (82 percent is 44 years of age or younger), or that, geographically, it occupies almost 50 percent of the South American continent (Instituto Brasileiro de Geografia e Estatistics, 2007; Brazilian Embassy, 2006). As in so many developing countries, many Brazilians are entrepreneurs. Brazil follows the trend in emerging countries with an entrepreneurship rate of 12.9 percent, giving it the sixth highest entrepreneurship rate, almost 22 million people, among countries surveyed by the *Global Entrepreneurship Monitor* (2004).

While a variety of social, psychological, and behavioral methodologies have been used to study entrepreneurs in general, scholarly studies of Brazilian entrepreneurs are uncommon, and few have been published in that country or abroad. Further, although several authors have argued the need for evaluation of results of training and education for entrepreneurs (Robinson & Haynes, 1991; Cox, 1997; Henry, 2000; Luthje & Franke, 2002), there are no extant studies evaluating Brazilian entrepreneurial training.

This study was undertaken to determine the extent to which micro and small business owners who participated in a Brazilian training program, possessed entrepreneurial traits necessary to succeed as entrepreneurs as measured by pre-formatted bipolar (true-false) scales. The researchers also compared selected personality traits of practicing entrepreneurs who completed the training program with would-be entrepreneurs who did not.

The Brazilian Entrepreneurship Education Training Program (EETP) was created to enhance income and generate jobs among entrepreneurs. This study examines the extent to which the EETP was successful in accomplishing that original intent, and further seeks

empirical evidence on how improved participant selection methods could maximize the effectiveness and efficiency of future EETP programs.

Context: A Brief Socioeconomic Overview of Brazil

The mid-1970s and 1980s were a "lost decade" for Brazil. Its federal government dramatically adjusted its economic policies in response to the increased costs of energy following the first oil price shock that hit the country in the 1970s. The burden of additional external debt due to increased oil prices brought higher domestic inflation and new internal policies aimed at stabilizing the economy and addressing high rates of unemployment. These were not the most critical of Brazil's socioeconomic problems but they challenged its ability to rebound (Aninat, May 26, 2000; Smith, 2002). Although Brazil's most recent economic policies have succeeded in controlling inflationary price growth, unemployment is still a serious problem and recent official statistics from the IPEA, a source from the Ministry of Planning and Budgeting, show that 11.2 percent of the workforce was unemployed in April 2006 (IPEA, May 25, 2006) and a year later in May 2007, 10.1 percent were unemployed (IBGE, June 25, 2007). In many small communities in the interior of the country, the unemployment rate is much higher than in the urban geographic region covered by this study. In most interior areas, however, current unemployment is estimated to be greater than 12%.

The 1980s was a time marked by attempts to solve Brazil's economic challenges with unorthodox plans that culminated in staggering hyperinflation approaching, and some argue in excess of, 1,500 percent annually by the beginning of the 1990s. A stabilization plan was implemented during 1994 that spectacularly reduced inflation to single-digits and returned the country to an acceptable economic course. In subsequent years, although the country increased restrictions on public finances and inflation was finally controlled at relatively low levels, double-digit unemployment at the highest rates since World War II was the price of the

economic stability. In this environment, the Brazilian Entrepreneurship Education Training Program was born.

The Brazilian Entrepreneurship Education Training Program (EETP)

In Brazil, in addition to programs being implemented by the federal government, communities in several states and municipalities, both private and non-profit organizations, as well as universities felt compelled to find their own solutions for generating jobs and enhancing income. One such solution was the Entrepreneurship Education and Training Program (EETP) organized by the Municipality of Lages, State of Catarina in the south of Brazil. This program was created in response to the high unemployment rate in the region and throughout the nation as well. The desire to improve employability and the level of income in the city was the stimulus for creating new micro and small companies, and for improving the management of existing ones.

EETPs are not unique to Brazil. Forms of EETPs have been created in several parts of the world including the United States; in Latin America; and in countries like Poland, India, and Iran (Chico, 1984; Ripsas, 1998). Several Asian countries, stimulated by official governmental policies, started EETPs in the 1970s, which were considered part of the strategies of the so-called "Asian miracle" (Mankiw, 1995). Significant increases in entrepreneurial education have also occurred through EETPs in Canada, the Philippines, and in several European countries (Gibb, 1993). Government sponsored management education programs for owners of small companies (defined as 50 persons or fewer) has been a policy in the United Kingdom (Taylor, Thorpe & Down, 2002).

Data provided by the Secretary of Finance from the municipality of Lages indicate that more than 8,500 micro and small businesses, about 94 percent of its total businesses, operate there (Guia Múltiplo Edição Regional, 2006). Although a few large companies also operate

in the region and are of great importance for the local economy, self-employment, micro, and small businesses provide for the living needs of the majority 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-size-fits-all" solution. Representatives from all wards of the city, the municipality's officials, and other public and private organizations approved the project, and transformed it into a coordinated, cohesive municipal action plan. The EETP consisted of a series of courses and lectures aimed at improving managerial skills for practicing small business owners and managers, entrepreneurship skills for would-be entrepreneurs and students, and an extensive practical training program for the available workforce.

Although there are many ways to categorize business organizations—e.g., by size, by level of capital, by fixed assets, by line of business—the Brazilian EETP initiative, and hence this study, focused on providing training to two groups: "micro" organizations with between 1-4 employees and very "small" organizations with between 5-19 employees (OECD Summary Report, 1995; Julien, 1998). This EETP aimed at developing entrepreneurs who possessed three characteristics: (1) managerial knowledge that would result in better management of the micro and small companies that comprised the largest group of companies in the region, and in Brazil; (2) better management techniques that would improve profitability, increased growth, and thus, create new jobs; and (3) entrepreneurial knowledge that would result in the creation of new businesses and new companies, thus creating new jobs and improving income levels.

Research Questions

This study sought answers to three general questions:

(1) To what extent did the participants in the Brazilian training program have the potential to be successful entrepreneurs?

(2) What proportions of the participants were most likely to succeed and fulfill the original intent of the program?

(3) Would some of the individuals trained in this EETP reveal propensity to possess the characteristics of entrepreneurs, as proposed by Schumpeter (1934, 1947) and McClelland (1961)?

An Applied Field Research Study

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

The Subjects

EETP training was given to 1,460 persons from various walks of life. The selection of study 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 & Morgan, 2000). Table 1 shows demographic characteristics of the

treatment group (those who participated in the EETP) and the comparison group (those who did not participate in the EETP).

[Insert Table 1 about here]

The Treatment Group. Of the 1,460 total participants in the EETP, the present study targeted the 250 who identified themselves as micro and small business owners and managers, self-employed individuals, and future and actual entrepreneurs. Of the 250, 57 (23 percent) volunteered to participate in the study and completed the preformatted scales (the post-test questionnaires) following the training (the intervention). These 57 were classified as the Treatment group.

The Comparison Group. The Comparison group was composed of 54 subjects who agreed to complete the preformatted scales even though they did not receive the training. 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 for the comparison population, as training on managerial and entrepreneurial techniques was not available to them before the program. Thus, they only received the post-test.

Table 2 shows the professional demographics of participants in the treatment and comparison groups.

[Insert Table 2 about here]

The Post-Test Questionnaires

The post-test questionnaires used in this study were compiled from instruments used by Jackson (1994) to measure and also reproduce a variety of personality characteristics, including interpersonal and value orientations, which derive from the contemporaneous research in the area of psychology (p. 1). These questionnaires are commonly considered for

their broad use, and are generally reputed as outstanding among personality tests (Sexton & Bowman, 1983, 1984; Goldsmith, 1987; Reddon, Pope, Friel & Sinha, 1996; Walters-Kemp, 2001; Harrison, Young, Butow, Salkeld & Solomon, 2003; Erdle, 2003).

The post-test questionnaires assessed personality traits judged fundamental to entrepreneurs: need for achievement, innovativeness, and propensity to risk (McClelland, 1961; Aronoff & Litwin, 1971; Timmons, 1978; Long, 1983; Carland, Hoy, Boulton & Carland, 1984; Julien, 1993; Stewart, Carland, Carland & Watson, 1999; Hostager & Decker, 1999; Rasheed, 2000; Henry, 2000).

Translation of the Questionnaire into Portuguese. The translation of the post-test questionnaires from English to Portuguese was made carefully and reviewed by one of the authors who is bilingual in English and Portuguese. Then, to verify the accuracy of the translation and to assure equivalency between English and Portuguese versions, the translated questionnaire was administered in a series of pilot tests to groups of undergraduate students whose native language was Portuguese and who were enrolled in a Brazilian university. Minor modifications of the Portuguese translations were made as necessary to improve clarity. This translation/equivalency technique has been used by Stewart, Carland, Carland, and Watson (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 post-tests were administered only after the final Portuguese version was agreed upon.

The Training Itself

The training program was conducted over a period of 18 months and, after that, participants were entitled to financial incentives—primarily local tax exemption—from the municipality. Program completion also allowed participants with potential for growth to

submit a credit application for their financial needs and investments to two government banks, which administered federal funds set aside specifically for the development of micro and small companies throughout Brazil. Alternatively, already established companies and/or entrepreneurs could receive temporary cost sharing of rent, fax, telephone, electric power, etc. or be included in a special "business incubator" facility for the development of new ideas and projects.

The training curriculum objectives were to improve managerial and entrepreneurial skills for practicing small business owners and managers, and provide tools for those who wanted to develop new ventures or become self-employed. Classes were held in different schools in the city's suburbs. The average number of participants per class was 18. A typical course met for four hours at a time; each course had a minimum of 20 contact hours. Course content was created for its utility for small business owners/managers and for would-be entrepreneurs and although course titles were similar in some instances for these two groups, course content varied for them.

Courses and Lectures Presented to Small Business Owners/Managers. Five different courses were presented to small business owners/managers: Managerial Development; Financial Management, Costs and Sale Price; Human Relations; Marketing for Small Business; and Strategic Planning.

Individual lectures emphasized the needs of small business owners/managers and included topics like Global Economic Conjuncture; How to Register a Trademark; Managing Time, Environment and the Company; Managing Purchases and Inventory; Alcohol in the Company; Succession and Professionalism; Fiscal Management; Consumer Code; Computers and Technology; and, On-Site Training. The length of individual lectures ranged from 60 to 90 minutes.

Courses and Lectures Presented to would-be Entrepreneurs. Similarly, five different courses were presented to entrepreneurs: Small Business Management, Human Relations and Managerial Development, Relationships with Customers, Banking Negotiation, and Business Planning.

Individual lectures were focused on would-be entrepreneurs and included topics like Global Economic Conjuncture; Entrepreneurship; How to Register Your Company; Managing Time; Fiscal Management; Managing Purchases and Inventory; Consumer Code; Sales and Marketing; and, Franchising. Again, individual lectures ranged from 60 to 90 minutes in length.

Methodology and Results

Participants in the treatment and comparison groups received questionnaires containing scales using true-false questions. For statistical purposes, the "true" or correct answer was considered as equivalent to 1. The "false" or incorrect answer was considered as equivalent to 0 (zero). For example, assume a scale said "I enjoy taking risks." A respondent who agreed with this statement and marked it "T(rue)," revealed a propensity to take risks. A respondent who disagreed with this statement and marked it "F(alse)," signified that he was not prone to risk.

Table 3 shows the percentage of correct answers from both groups based on their total number of "correct" responses. For example, in the Treatment group, 60.9 percent of the answers provided by males were correct with respect to achievement, 77.1 were correct with respect to innovativeness, and only 34.6 percent were correct for risk.

[Insert Table 3 about here]

On a prima facie basis, the raw percentages suggested that there was no difference between the treatment group and the comparison group on any of the three variables; however, there appeared to be higher scores on the Innovativeness scale when compared to the other two scales. Means, standard deviations, and t-tests between means were computed in each of the three categories—achievement, innovativeness, and risk. Statistical significance was not found for *nAch* although it was found for *Innov*, and the results in terms of *Risk* were contradictory as explained below.

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. This may be because 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, Hoy, Boulton & Carland, 1984), as their professional activities are an extension of their private lives. Unless they cross the line that separates them from small business owners and entrepreneurs by adopting a creative response instead of an adaptive one (Schumpeter, 1947), SME owners will not be inclined to exceed others' performance or to excel in a function and to accept challenges, behaviors that characterize need for achievement, as mentioned by several authors (McClelland, 1961; Durand, 1975; Julien, 1998; Stewart, Carland, Carland & Watson, 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 (control) group when analyzing their innovativeness. The authors' believe that this situation is mostly due to the subjects' artistic creativity, and that it is not business-oriented, a perspective suggested by Robinson, Stimpson, Huefner, and Hunt (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 micro/small firms. They are usually absent from big events where they can find products better developed and competitors operating at a bigger scale. Therefore, although there is a positive statistical 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 increasing the scale in terms of production or sales. Audretsch (1995, p. 104) also asserts that self-employed individuals "are not engaged in anything that resembles innovative activity" (or entrepreneurial activity), a characteristic also noted by Carrée and Thurik (2002). See also McAdam, McConvery & Armstrong (2004) for details about cultural barriers to innovation.

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 (from the treatment group) were lower than their counterparts in the comparison group in terms of their risk-taking propensity.

It is understandable that they react toward risk in a more prudent fashion. Stewart and Roth (1999) point out that small business owners deal with uncertainty in a lesser degree and work in less structured environment in comparison to entrepreneurs (Gasse, 1982; Begley & Boyd, 1987b). Their attitude toward risk, therefore, can be characterized as conservative. It is also understandable that the comparison group, composed of future entrepreneurs, would show higher risk-taking propensity than their colleagues in the treatment group who, arguably, had learned the difficult lessons of the world of business through previous risk-taking experience. As the comparison group reached a higher average risk level, it also implies that the program showed a different risk perception in the treatment group, possibly

that risk is undesirable, which leads to the risk aversion concept (Julien, 1993, 1998; Stewart & Roth, 1999; Wagner & Sternberg, 2002). This may explain that part of the behavior of managers and executives in small and big companies being defensive toward uncertainty and risk. In large companies, managers react to increases in size and scale (new physical installations, investing heavily in inventory or new machinery, and also developing cartels); small companies, on the other hand, react by cooperation (as opposed to competition), an efficient manner to compensate for scale diseconomies and transaction costs (Julien, 1998), and also to benefit from "collective efficiency" (Tommaso & Dubbini, 2000, p. 24). Gilmore, Carson & O'Donnel (2004) mention that networking is also a way to manage risks. Audretsch (1995, p. 11) also observes that the majority of new firms are very small and, consequently, suboptimal. The solution for survival, in this case, is to find alternatives for growth and larger scale; however, individuals from both groups were not interested in growth because it implies a larger market share and, consequently, more risks.

Conclusions and Implications

Henry (2000) reviewed evidence reported in the literature and aptly concluded that entrepreneurship training programs "may not always be effective in terms of cause and effect" (p. 273). They do, however, have the positive effect of improving participants' vision of the business, making them more likely to create and innovate, and more aware about the risks and rewards of entrepreneurial activity, conclusions also drawn by the consulting company Price Waterhouse (Henry, 2000), that has extensive operational experience in several parts of the world, which fits with the entrepreneurship-training program brought into focus by this work. See more on Ibfahim and Soufani (2002) and Jones and English (2004). 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. Among the efforts

toward categorization, Birch (1979) coined the famous expression "gazelles" to identify fast-running small businesses that start small and grow extremely rapidly through innovation. None of the individuals and firms of this study could be considered as gazelles, as all firms but one belonged to the micro category.

Lussier, Sonfield, Corman, and McKinney (2000) show another categorization by the levels of risk and innovation. It is clear, by the size of the firms participating 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, which means that they have a conservative and defensive position toward the market and competitors. This helps with understanding the findings presented in this study.

Scholars risk considering companies with 20-499 employees (small and medium-sized) as equals to those having 5-19 employees (very small). An even greater error is comparing them with companies having 4 or fewer employees (micro firms). It is the opinion of the authors that they could be reproducing the same mistake made in the 1970s (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 Brock & Evans [1989]; Acs [1992]; Julien [1993, 1998], and others). When not overlapping positions, micro-, small-, and medium-sized firms, and entrepreneurial ones retain their defining features. Figure 1 highlights their respective profiles. As illustrated, most of the cases in the

[Insert Figure 1 about here]

present study cannot be considered as entrepreneurial firms, and were oriented just toward survival in the market at the "subsistence" level. However, as pointed out by Grillo and

Thurik (2004), this is not a rule for all cases. As subsistence-level companies evolve from micro-sized to larger size, they could take on the characteristics of those larger organizations.

Additionally, it should be noted that entrepreneurial characteristics (i.e., running a company using innovation as a tool and accepting risks) are not always linked to micro and small businesses, as suggested by Karlsson, Friis, and Paulsson (2005) based on a previous work made by Wennekers and Thurik (1999). It is a highly controversial idea to consider the link between small businesses and entrepreneurship as a standard one instead of accepting that both types of organizations have both entrepreneurial and managerial characteristics. Galloway and Wilson (2005) mention some "confusion" which reflects the need for a more precise definition of these types of organizations.

The results of the present study encourage further research to find practical and theoretical differences inside the SME segment (i.e., separating small and medium-sized firms from micro and very small ones), which are to be considered when new policies toward entrepreneurship and any form of intervention in this process are planned.

This study questions the effectiveness of a Brazilian entrepreneurship education and training programs when its participants are mostly micro business owners and self-employed individuals. The results also support the notion of 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 more rigorous training participant selection processes will strengthen the possible outcomes while avoiding the onus of inconsistencies and contradictory results.

Figure 1 depicts a schematic summary of the conclusions of this study, comparing them to the seminal concepts that came from Schumpeter (1934, 1947) and McClelland (1961). This figure provides a comparison about entrepreneurial attitudes and their interchangeable positions, and helps clarify the present study's findings related specifically to

both groups. This EETP concentrated on the lower levels of the pyramid shown, and most specially, in the micro/very small business owner and self-employed individuals, and inadvertently excluded those higher in the pyramid.

Limitations of the Study

This study has the following limitations: (1) Random distribution of the post-test questionnaires was not possible due to the characteristics of the population involved. (2) Pre-tests could not be administered because the EETP had already been completed when the study was begun. (3) There were no participation criteria in terms of age, professional experience, and education since this EETP was sponsored by a public organization and offered free of charge to any interested participant. (4) No formal evaluation of the participants' newly acquired knowledge was available.

Recommendations for Future Research

We make three recommendations for future research. The first is to measure effectiveness of entrepreneurship education and training programs through longitudinal analysis, a need regularly mentioned in the literature with respect to any training activity (see, e.g., Conger & Xin, 2000). The purpose would be to avoid concentration of findings on immediate post-training assessment, and instead, focus on long-term outcomes.

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

Finally, the specific contribution to the regional and national economies made by micro firms, self-employed individuals, and entrepreneurs should be investigated to help find individuals with characteristics inclined to enable them to deal with innovation and risk.

References

Acz, Z. (1992). Small Business Economics: A Global Perspective, *Challenge*, *30:6*, 38-44.

Aninat, E. (2000, May 26). Speech to the International Monetary Fund, Washington, D.C. Hypertext available at: http://www.imf.org/external/np/speeches/2000/052600.htm.

Aronoff, J. & Litwin, G. H. (1971). Achievement Motivation Training and Executive Advancement, *Journal of Applied Behavioral Science, 7:2*, 215-229.

Audretsch, D .B. (1995). *Innovation and Industry Evolution*. Cambridge, MA: MIT Press.

Begley, T. M. & Boyd, D. P. (1987b). Psychological Characteristics Associated with Performance in Entrepreneurial Firms and Smaller Businesses, *Journal of Business Venturing, 2*, 79-93.

Birch, D. V. (1979). The Job Generation Process: Final Report to Economic Development Administration, Program on Neighborhood and Regional Change, Cambridge, MA, MIT.

Brazilian Embassy (2006). Brazil at a Glance. Retrieved February 10, 2006 from http://www.brasilemb.org/profile_brazil?profile1.shtm1

Brock, W. A. & Evans, D. S. (1989). Small Business Economics, *Small Business Economics*, *1*, 7-20.

Carland, J. W., Hoy, F., Boulton, W. R. & Carland, J. A. (1984). Differentiating Entrepreneurs from Small Business Owners: A Conceptualization, *Academy of Management Review, 9*, 354-359.

Carrée. M. A. & Thurik. A. R. (2002). The Impact of Entrepreneurship on Economic Growth. Center for Advanced Small Business Economics (CASBEC). Rotterdam: Erasmus University. Hypertext available at: http://www.few.dur.nl/few/people/thurik/publications

Chico, L. V. (Ed.). (1984). *Achievement Motivation Training*. Singapore: Technonet Asia.

Conger, J. A. & Xin, C. (2000). Executive Education in the 21st Century, *Journal of Management Education*, 24:1, 73-101.

Cox, L. W. (1997). International Entrepreneurship: A Literature Review. Florida International University. Hypertext available at: http://www.usabe.org/conferences/1997/Proceedings/papers/p180coc.pdf

Durand, D. D. (1975). Effects of Achievement Motivation and Skill Training on the Entrepreneurial Behavior of Black Businessmen, *Organizational Behavior and Human Performance, 14*, 76-90.

Erdle, S. (2003). Test-retest Unreliability: Measurement Error or Personality Change? *BBCS-SCCC Canadian Society for Brain, Behavior and Cognitive Science 13th Annual Meeting*. Hyperterxt available at: http://www.science.mcmaster.ca/~BBCS/2003/viewabstract.php?id=40&symposium=0

Fitz-Gibbon, C. T. & Morris, L. L. (1987). *How to Design a Program Evaluation.* Newbury Park, CA: Sage Publications.

Galloway, L. & Wilson, L. (2005). The Use and Abuse of the 'Entrepreneur,' *Discussion Paper Series on Management*, Heriot Watt University. Hypertext available at: http://www.sml.hw.ac.uk/discussion/DP2003-M03.pdf

Garavan, T. H. & O'Cinneide, B. (1994). Entrepreneurship Education and Training Programmes: A Review and Evaluation—Part 1, *Journal of European Industrial Training, 18:8*, 3-12.

Gasse, Y. (1982). Elaborations on the Psychology of the Entrepreneur. In C. Kent, D. Sexton & K. Vesper (Eds.), *Encyclopedia of Entrepreneurship,* Englewood Cliffs, NJ: Prentice Hall, p. 30.

Gibb, A. (1993, April/June). The Enterprise Culture and Education: Understanding Enterprise Education and Its Links With Small Business, Entrepreneurship and Wider Educational Goals. *International Small Business Journal, 11:3.*

Gilmore, A., Carson, D., & O'Donnel, A. (2004). Small Business Owner-Managers and Their Attitude to Risk. *Marketing Intelligence & Planning*, *22:3*, pp. 349-360.

Gliner, J. A. & Morgan, G. A. (2000). *Research Methods in Applied Settings: An Integrated Approach to Design and Analysis*. Mahwah, NJ: Lawrence Erlbaum Associates.

Global Entrepreneurship Monitor (2004). Entrepreneurship in Brazil—2003. *National Report*. Hypertext available at: http://www.gemconsortium.org/download/1150077085984/GEM%20%20Brazil%202003%20-%20Abridged%20%20-%20English.pdf

Goldsmith, R. E. (1987). Creative Level and Creative Style, *British Journal of Psychology, 26,* 317-326.

Grilo, I. & Thurik, R. (2004). *Determinants of Entrepreneurship in Europe*. U.E. DG Enterprise, Bruxelles, and EIM Business and Policy Research. *Paper,* Erasmus University, Rotterdam. Hypertext available at: http://www.saturno.lombardia.it/upload/file/369/184538/FILENAME/Paper-Grilo.pdf

Guia Múltiplo Edição Regional (2006). La Agencia de Serviços. Hypertext available at: http://www.lsagencia.com.br

Harrison, J.D., Young, J.M., Butow, P., Salkeld, G. & Solomon, M.J. (2003). Is It Worth the Risk? A Systematic Review of Instruments that Measure Risk Propensity for Use in the Health Setting. *Social Science & Medicine* (in press), University of Sydney. Hypertext available at: http://www.cebiz.org/cds/Resource%20files/harrison.pdf

Henry, C. (2000). *The Effectiveness of Entrepreneurship Education and Training Programmes: An Investigative Study*. Doctoral Dissertation. Belfast: Queens University.

Hostager, T. J. & Decker, R. L. (1999). The Effects of An Entrepreneurship Program on Achievement Motivation: A Preliminary Study. *Proceedings of the Annual Meeting of Small Business Directors Association,* 1999). San Francisco, CA: Small Business Institute

Director's Association (SBIDA). Hypertext available at: http://www.sbaer.uca.edu/Research/1999/SBIDA/sbi28.htm

Ibrahim, A.B., Soufani, K. (2002). Entrepreneurship Education and Training in Canada: a Critical Assessment. *Education & Training*, *44:8/9*, 421-430.

Instituto Brasileiro de Georgafia e Estatistica (IBGE). (Retrieved June 25, 2007). Ministerio do Planejamento, Orcamento e Gestao. Hypertext available at: http://www.ibge.gov.br/english/

Instituto de Pesquisa e Economia Aplicada (IPEA). (Retrieved May 25, 2006). Ministry of Planning and Budgeting. Hypertext available at: http://www.ipeadata.gov.br/ipeaweb.dll/ipeadata?1092892515

Jackson, D.N. (1994). *Jackson Personality Inventory—Revised Manual*, Port Huron, MI: Research Psychologists Press.

Jones, C. & English, J. (2004). A Contemporary Approach to Entrepreneurship Education. *Education &Training*, *46:8/9*, 416-423.

Julien, P. A. (1993). Small Business as a Research Subject: Some Reflections on Knowledge of Small Business and Its Effects on Economic Theory, *Small Business Economics, 5*, 157-166.

Julien, P. A. (1998). *The State of the Art in Small Business and Entrepreneurship.* Aldershot, UK: Ashgate Publishing Co.

Karlsson, C., Friis, C. & Paulsson, T. (2005). Relating Entrepreneurship to Economic Growth. Paper, forthcoming in *The Emerging Digital Economy: Entrepreneurship, Clusters and Policy*, Spring-Verlag, Berlin (2005). Editors: B. Johansson, C. Karlsson, and R. R. Stough. Hypertext available at: http://www.infra.kth.se/cesis/documents/WP13.pdf

Liedholm. C. & Mead, D. C. (1999). *Small Enterprises and Economic Development: The Dynamics of Micro and Small Enterprises,* New York: Routledge.

Long, W. L. (1983). The Meaning of Entrepreneurship, *American Journal of Small Business, 8:2*, 47-57.

Lussier, R. N., Sonfield, M. C., Corman, J. & McKinney, M. (2000). Strategies Used by Small Business Entrepreneurs, *Mid-American Journal of Business, 16:1*, 29-40.

Luthje, C. & Franke, N. (2002). Fostering Entrepreneurship through University Education and Training: Lessons from Massachusetts Institute of Technology. Stockolm: *Proceedings of the 2nd Annual Conference on Innovative Research in Management*.

Machlup, F. (1967). Theory of the Firm: Marginalist, Behavioral, Managerial. *American Economic Review*, *57:1*, 1-33.

Mankiw, N. G. (1995). The Growth of Nations, *Brookings Papers on Economic Activity, 1*, 275-326.

McAdam, R., McConvery, T., & Armstrong, G. (2004). Barriers to Innovation Within Small Firms in a Peripheral Location. *International Journal of Entrepreneurial Behaviour & Research*, *10: 3,* 206-221.

McClelland, D. C. (1961). *The Achieving Society.* Princeton, NJ: Van Nostrand.

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

Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods.* Newburg Park, CA: Sage Publications.

Rasheed, H. S. (2000). Developing Entrepreneurial Potential in Youth: The Effect of Entrepreneurial Education and Venture Creation. *Working Paper*. University of South Florida. Hypertext available at: http://www.usasbe.org/conference/s2001/proceedings/papers/063.pdf

Reddon, J. R., Pope, G. A., Friel, J. P. & Sinha, B. K. (1996). Leisure Motivation in Relation to Psychosocial Adjustment and Personality in Young Offender and High School Samples. *Journal of Clinical Psychology*, *52:6*, 679-685. Hypertext available at:

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8912111&dop

Ripsas, S. (1998). Towards an Interdisciplinary Theory of Entrepreneurship, *Small Business Economics, 10*, 103-115.

Robinson, P. & Haynes, M. (1991). Entrepreneurship Education in America's Major Universities, *Entrepreneurship Theory and Practice, 15:3*, 41-52.

Robinson, P. B., Stimpson, D. V., Huefner, J. C. & Hunt, H. K. (1991). An Attitude Approach to the Prediction of Entrepreneurship, *Entrepreneurship Theory and Practice, 15:4*, 13-31.

Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press. Reprinted, New York, NY: Oxford University Press, 1961.

Schumpeter, J. A. (1947). *Essays on Entrepreneurs, Innovations, Business Cycles, and the Evolution of Capitalism,* R.Clemence (Ed.). Oxford, UK: Transaction Publishers.

Sexton, D. L. & Bowman, N. (1983). Determining Entrepreneurial Potential of Students, *Academy Management Proceedings, 1*, 408-412.

Sexton, D. L. & Bowman, N. (1984). Personality Inventory for Potential Entrepreneurs: Evaluation of a Modified JPI/PRF-E Test Instrument, *The Babson Entrepreneurship Research Conference.*

Smith, G. (2002). Down in the Dumps in Latin America. *Business Week,* July 29, 2002. Hypertext available at: http://www.businessweek.com/magazine/content/02_30/b3793094.htm

Stewart, W. H. Jr., Carland, J. C., Carland, J. W. & Watson, W. E. (1999). Entrepreneurial Goal Orientations: A Comparative Exploration of U. S. and Russian Entrepreneurs, *Frontiers of Entrepreneurship Research,* Vol. II (Babson College).

Stewart, W. H., Jr. & Roth, P. L. (1999). Risk Propensity Differences Between Entrepreneurs and Managers: A Meta-Analytic Review. *Working Paper No. 99-109*, Arthur M. Spiro Center for

Entrepreneurial Leadership, Clemson University. Hypertext available at: http://business.clemson.edu/Spiro/images/pdf/WP99-101.pdf

Taylor, S., Thorpe, R., and Down, S. (2002). Negotiating Managerial Legitimacy in Smaller Organizations: Management Education, Technical Skill, and Situated Competence, *Journal of Management Education, 26:5, 550-573.*

Timmons, J. A. (1978). Characteristics and Role Demands of Entrepreneurship, *American Journal of Small Business, 3:1*, 5-17.

Tommaso, M. R. & Dubbini, S. (2000). Towards a Theory of the Small Firm: Theoretical Aspects and Some Policy Implications. In *Serie Desarrollo Productivo, no. 87*, United Nations: Economic Commission for Latin America and the Caribbean.

Wagner, J. & Sternberg, R. (2002). Personal and Regional Determinants of Entrepreneurial Activities: Empirical Evidence from the REM Germany, *Working Paper no. 624*. Bonn: University of Lunenburg. Hypertext available at: http://d.repec.org/n?u=RePec?iza.izadps:dp624

Walters-Kemp, P.A. (2001). Traumatic Brain Injury Self-Report: Identifying the Relationship Between Personality Style and Risk-Taking Behavior. University of Northern Colorado, *Doctoral Dissertation,* 102 pages. Hypertext available at*:* http://www.wemjournal.org/wmsonline/?request=get-document&issn=1080-6032&volume=103&issue=04&page=0629

Wennekers, S. & Thurik, R. (1999). Linking Entrepreneurship and Economic Growth, *Small Business Economics, 13:1*, 27-55.

Table 1: Demographic Characteristics of Participants

Comparison Group	Comparison Group			Treatment 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 years	4	5	9	4	3	1	Up to 2 years
3 to 5 years	4	6	10	8	2	6	3 to 5 years
6 to 7 years	2	6	8	1	-	1	6 to 7 years
8 to 10 years	4	1	5	3	1	2	8 to 10 years
+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 *	25	23	48	33	15	18	Would-be Entrepreneur *
Micro and Small Businesses	3	3	6	24	13	11	Micro and Small Businesses

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

Table 2: Professional Demographics of Participants in the Treatment and Comparison Groups

Categories	Comparison	Treatment
Would-be entrepreneurs		
Unemployed	12	-
Employees	23	2
Self-employed	13	31
Subtotal	48	33
Micro and small businesses		
Owners	5	22
Managers/executives	1	2
Subtotal	6	24
TOTAL	54	57

Table 3: Percentage of Correct Answers, Grouped

Categories	*nAch* %	*Innov* %	*Risk* %
Treatment Group:			
Men	60.9	77.1	34.6
Women	60.1	76.4	30.1
Total of Group	60.5	76.8	32.2
Comparison Group:			
Men	55.3	72.7	39.4
Women	58.7	67.7	33.7
Total of Group	57.1	70.1	36.5

Figure 1: A Summary of the Entrepreneur Profile