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Antecedents of entrepreneurial orientation: A contingency approach

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ANTECEDENTS OF ENTREPRENEURIAL ORIENTATION:
A CONTINGENCY APPROACH

by

Laurent Stephane Josien, ESCI, MBA, MS

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Business Administration

COLLEGE OF BUSINESS
LOUISIANA TECH UNIVERSITY

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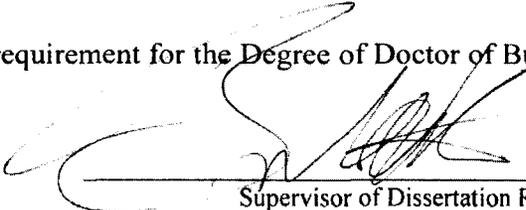
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We hereby recommend that the dissertation prepared under our supervision
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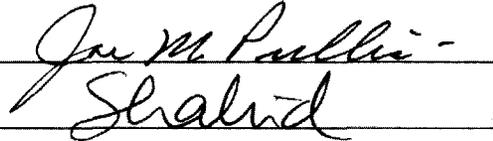
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ABSTRACT

This research was created in order to offer a better understanding of the entrepreneurial orientation construct. Based on the literature review several antecedents of the entrepreneurial orientation construct were identified: risk, achievement, innovation, locus of control, self-esteem, opportunity, autonomy, proactiveness, and competitive aggressiveness. Relying on the contingency theory developed by Burns and Stalker (1961), it was decided to use the Carland's trichotomy of entrepreneurs as a moderator variable between the antecedents and the entrepreneurial orientation construct. As a result, three main areas of research were identified. The first area deals with determining which dimensions are underpinning the entrepreneurial orientation construct, while the second is centered on the number of dimensions composing that construct. The third axis of research was to determine if there is a relationship between entrepreneurial orientation and performance. All things considered, 13 sets of hypothesis were created and tested for the research.

The survey was sent through e-mail to entrepreneurs based in Louisiana, it was received by 1003 entrepreneurs. 103 surveys were returned for analysis, resulting in a 10.2% response rate.

After analyzing the results, it became clear that several different types of entrepreneurs exist and that these types are heterogeneous. The three types of entrepreneurs tested did not have the same number of antecedents or even the same kind

of antecedents. Finally, only one type of entrepreneurs showed a significant, albeit negative, relationship between entrepreneurial orientation and performance.

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Author Laurant Josien

Date 4/16/08

In Memoriam
Christiane Josien 1937-2007

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CHAPTER 1

INTRODUCTION

The entrepreneurial orientation construct in entrepreneurship has received considerable attention from researchers, even if there are some controversies in its dimensions (Lyon, Lumpkin, & Dess, 2000; Aragon-Correa, 1998; Barringer & Bluedorn, 1999; Zahra & Covin, 1995; Dess & Lumpkin, 1996). This high level of interest is stemming from the significant impact the entrepreneurial activity has on an economy. This economical impact can be seen through the number of jobs created by entrepreneurs. Entrepreneurial ventures, defined as small firms with fewer than 500 employees, accounted for 69% of the total employment growth for the 1992-1996 period. Small business ventures represented all of the employment growth in goods-producing industries, 59% of the growth in service, and 79% of the growth in information technology (U.S. Small Business Administration, 2000).

Previous research on the entrepreneurial orientation construct has yielded some conflicting results. The first level of conflict that exists is in the number of dimensions that compose the entrepreneurial orientation concept. For some researchers, entrepreneurial orientation is composed of three dimensions: innovativeness, proactiveness, and risk taking (Wiklund & Shepherd, 2005; Morris & Sexton, 1996). For some others, that same concept has five dimensions: autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness (Dess & Lumpkin, 1996). There

are also some researchers who use a different set of five dimensions: achievement, personal control, innovation, self-esteem, and opportunism (Robinson, 1987; Shanthakumar, 1992), and one researcher even included two more dimensions to the model described above: risk taking and independence (Solymossy, 1998). The second level of conflict that exists is in the dimensions themselves. For instance, a difference in locus of control was found by Shanthakumar (1992) but was not found in Begley and Boyd (1986). Another conflicting area is based on risk. Palmer (1971) and Liles (1974) reported that entrepreneurial functions primarily involve risk taking. Calculated risk taking is reported to be a strategic behavior of entrepreneurs (Hoy & Carland, 1983). However, some other findings may indicate that some entrepreneurs may be risk-averse due to their strategic behavior (Burns & Kippenberger, 1988). A third area of discord rests in the need for achievement; for some it is associated with risk-taking propensities (McClelland, 1961). However, numerous researchers have reported inconsistencies in the risk-taking propensity of entrepreneurs (Brockhaus, 1982).

As we can see, there are several conflicts in the area of entrepreneurial orientation; and since entrepreneurs have such an impact on society (i.e. employment, wealth creation), it is important to understand the foundation of the entrepreneurial orientation so that we can help in developing future entrepreneurs. My contribution to the field is going to try to explain why some of the conflict exists and to propose a new frame that would solve these conflicts.

In my opinion, the reason for the conflicting results rests in the wide range that exists in entrepreneurs. Entrepreneurs can vary tremendously, from the kid with a lemonade stand to the successful executive who decides to create his or her own venture

and invests a few hundred thousand dollars in it (i.e., the engineers who left IBM to create SAP).

Carland and Carland (1996, 1997, & 2002) approached that wide range in entrepreneurship and extensive diversity question by splitting the field of entrepreneurs into a trichotomy: micro-entrepreneurs (who are satisfied with a certain level of success), macro-entrepreneurs (who consistently seek a higher level of success), and entrepreneurs (who also seek to increase their success level but at a slower pace than macro-entrepreneurs).

The Carland & Carland's trichotomy should help solve the conflicts that exist in the entrepreneurial orientation research. Without the Carland separation, both macro- and micro-entrepreneurs would be considered entrepreneurs in a comparison with non-entrepreneurs. However, the intrinsic differences between these two groups of entrepreneurs might be the reason why some researchers showed relationships and others did not. Maybe the ratio of macro/micro-entrepreneurs was different in Shanthakumar (1992) compared with Begley and Boyd (1986), and that might explain why one found a difference in locus of control while the other did not.

Therefore, I propose to test if the trichotomy of entrepreneurs would have a moderating effect on the dimensions of entrepreneurial orientation. I would base that moderating effect on the contingency theory developed by Burns and Stalker (1961). According to Burns and Stalker, the effectiveness of a leader will depend on both the characteristics of the leader (internal characteristics) and the favorableness of the situation (external characteristics). Furthermore, they define a leader as an individual who is given the task of directing and coordinating task-relevant activities, or the one who

carries the responsibility for performing these functions when there is no appointed leader. In the case of entrepreneurs, we can affirm that the entrepreneurs are the self-appointed leaders of their organization. Also, each dimension of the entrepreneurial orientation (i.e., risk propensity, locus of control) are individual characteristics of the entrepreneurs. Therefore, the contingency theory is applicable for my research.

Thanks to my research we will gain a deeper understanding of the entrepreneurial orientation construct, and that greater understanding should lead to further research and better prescriptive results. One of the contributions of the previous research in the field of entrepreneurship relates to the link between entrepreneurial orientation and performance. There is a common belief in academic research and in the popular press that suggests a positive influence of entrepreneurial activity on a firm's performance-- where companies that exhibit entrepreneurial behavior outperform those that do not. However, proving this link is not easy: "Despite considerable research, the strength of direct relationships between entrepreneurship and performance is generally less robust than the normative belief would indicate" (Lyon, Lumpkin, & Dess, 2000, p. 1055). I would advance that controlling for the trichotomy of entrepreneurs would yield better results than treating a sample of entrepreneurs as a single entity.

Organizational Plan

The next chapter will present the results of a literature review related to the dimensions of entrepreneurial orientation. Its first section will deal with a historical review of the entrepreneurship concept and the development through time of its dimensions. Then, a second section will explain in detail the concept of micro- and

macro-entrepreneurs as developed by the Carlands. A third section will then offer some hypotheses about the moderating effect that the Carland's trichotomy has on the dimensions of the entrepreneurial orientation concept.

The third chapter will focus on the operationalization of the constructs and the methodology to be used in the study. Its first section will explain in detail how entrepreneurs have been pre-selected for the study. The second section will provide which scales are going to be used for the study and the reasons why such scales have been selected. A third section will explain how the survey will be provided to the potential respondents and how the information is going to be gathered. Finally, a final section will provide what statistical tests are going to be used in order to test the hypotheses developed in the second chapter.

The fourth chapter will present all the mathematical results of the study and will provide the answers to the hypotheses. The fifth and final chapter will offer an analysis of the findings discovered in the fourth chapter, and it will provide closure on some research ideas and open new possible areas of research.

CHAPTER 2

LITERATURE REVIEW

This chapter will first develop a historical perspective of the entrepreneurship concept, from its early beginnings in the 16th century to its recent developments. Then, the Carland & Carland's trichotomy of entrepreneurs as well as the contingency theory will be thoroughly explained. The next section will then provide hypotheses about the moderating effect that the Carland & Carland's trichotomy has on the entrepreneurial orientation concept.

Evolution of the Entrepreneurship Concept

Throughout Time

The Early Years

When I look at entrepreneurship research, I found that this area has attracted research from many fields. Obviously, business is the one area that provides most of the research, either from economics, management, organizational theory, or marketing. However, other areas, such as psychology and sociology, also contribute to the development of the entrepreneurship theories. In 1986, Churchill's and Lewis' review of the field showed that more than 6,000 articles were published related to the entrepreneurship concept between 1971 and 1984. With most of the articles published

after 1981 (3,694 out of the 6,322 articles), it proves that the entrepreneurship concept is attracting a strong interest from researchers. However, this sum of articles revealed much disagreement among researchers about what constitutes entrepreneurship (Churchill & Lewis, 1986). One of the most salient disagreements is the definition and theoretical background of the concept itself. Some have called for developing unique theories (i.e., Bygrave, 1989; Cooper & Artz, 1993), while some advanced that there is no theory. Amit, Glosten, and Muller (1993) state that “. . . there is, as yet, no entrepreneurship theory that meets even some of the criteria for completeness that emerge from recent studies” (Amit et al., 1993, p. 815). On that subject, they are backing Sandberg who declares that “the defenders of the faith themselves disagree on doctrine” (Sandberg, 1992, p. 78) and who also states that the boundaries of entrepreneurship are “porous.” Even earlier, Kilby (1971) compared the search for entrepreneurs to hunting the heffalump, a large but never-caught animal from A. A. Milne’s Winnie the Pooh. Finally, Chell, Haworth, and Brearley (1991) recognized that there is no standard or universally accepted definition of entrepreneurship and entrepreneurs.

Another problem lies in the definition of the term “entrepreneur” itself, as developed by Carland, Hoy, and Carland (1984) or Stearns and Hill (1996). Therefore, in order to provide a clarification on these problems, this dissertation will provide a chronological review of the various influences that make up the notion of entrepreneurship.

Entrepreneurs have existed always, from Christ’s chasing the merchants out of the temple in Biblical time to the merchants of today. The earliest reference to the term “entrepreneur” can be traced back to the 12th century French. Entrepreneur is rooted in

the verb “entreprendre,” meaning to do something different (Long, 1983). Later, one can find the modern term entrepreneur in Savery’s “Dictionnaire Universel de Commerce” (Paris, France, 1723). That term appears also in the work of several French economists such as Richard Cantillon (1680-1734), Jean Batiste Say (1767-1832), and Baudeau (1730-1792).

Cantillon was the first to develop a theory of the entrepreneur. In his “Essai sur la Nature de Commerce en General” (1755), he makes over one hundred references to entrepreneurs. For him, the entrepreneur is a pivotal figure operating within a set of economic markets (Herbert & Link, 1988). Cantillon is also the first to describe the entrepreneur as a risk taker, as someone who is self-employed, and as someone who is willing to assume risks. The entrepreneur has also the foresight to recognize the existence of an opportunity and to take the necessary action in order to realize a profit while recognizing the possibility of a loss, and in doing so contribute to the balancing of a market economy. Cantillon was more interested in the economic function of entrepreneurs rather than their characteristics or behaviors. This concept might be seen through his characterization of chimney sweeps, beggars, and robbers as entrepreneurs. For him, all these entrepreneurs reacted to profit opportunities, and through their self-serving interest or daring activities contributed to bringing a tentative balance between supply and demand in a specific market. Therefore, for Cantillon, the entrepreneur is aware of the supply and demand curve, but he is not expected to create a demand. The entrepreneur is just reacting to the supply and demand, which means that the entrepreneur is not to be considered as an innovator (Herbert & Link, 1988).

Another economist from the French school is Jean Batiste Say. Say grounded his work in Cantillon's. Say views the industry as having three different contributions. First, the industry is there to develop specialized, scientific knowledge. Second, it applies this knowledge to a useful purpose. Finally, the industry has a third function: the production of goods. For Say, the entrepreneur exists in order to transform knowledge into a marketable product. Drucker (1986) stressed transformation as Say's biggest contribution: the entrepreneur identifies an area of opportunity and relocates economic resources from an area of lower productivity to one with a higher prospect. Also for Say, entrepreneurs must possess the art of superintendence and administration (Herbert & Link, 1988).

A third French economist, Baudeau (1730-1792), brought in the innovator dimension of the entrepreneur. His view was that the entrepreneur is a person who invents and applies new techniques in order to reduce his costs and thereby raise his profit (Shanthakumar, 1996). Here again, we have that transformation notion, applying new knowledge, but compared to Say, Baudeau is more technology oriented.

Finally, Chell et al. (1991) point to another development of the French school via Turgot, who showed a difference between the plain capitalist and an entrepreneur. The main difference evolves from their activities. For Turgot, entrepreneurs manage and develop a business, whereas the capitalists do not.

In that regard, the French school of economics differs from the British school. Indeed, Adam Smith in --The Wealth of Nations (1776)-- likens the entrepreneur to the capitalist. Ricardo sees the entrepreneur as just a kind of manufacturer, and J. S. Mill treats the entrepreneur as a "passive capitalist" (Shanthakumar, 1996).

The next development of the entrepreneurship concept comes from the German school of economics. Von Thunen (1783-1850) put into perspective the profit motivation of the entrepreneur. That attraction of monetary gain was implicit in all the previous work, but Von Thunen separated the entrepreneurial profit from the capitalistic gain. For him, entrepreneurial profit was the remainder of the profit once the interests to be paid on the capital, and the insurance and wage costs have been deducted. He also split that profit into two components: a reward for risk and a return for ingenuity. And while presenting the entrepreneur as having knowledge and ability comparable to managers, Von Thunen articulated the concept of opportunity cost, risk and innovation, and merging the risk-bearing characteristic developed by Cantillon with the innovative characteristic of Baudeau (Herbert & Link, 1988).

Another German economist, Adolph Riedel (1809-1872), developed theories extending the work of Cantillon and Von Thunen. Riedel equates the entrepreneurial profit to a premium for scarcity. Grounding his idea in the fact that uncertainty in economic issues is inevitable, Riedel views the entrepreneur as an economic agent willing to take risks for other economic agents who are more risk averse, charging them a premium for that risk. Later, Riedel's work would be the basis of Coase's transaction cost theory (1937) (Herbert & Link, 1988).

The subsequent school to add to the knowledge of entrepreneurship is the Austrian school. The first Austrian to develop entrepreneurship research was Carl Menger (1840-1921). Menger advanced two major thoughts regarding entrepreneurship theory. The first theory is that the entrepreneurial function was central to the economic process rather than an exogenous factor. The second theory developed by Menger is

somewhat a negation of the risk element in entrepreneurship. According to Menger, risk was an insignificant part of the entrepreneurial function because the chances of loss were offset by the possibilities of gain. Menger's work was later developed by another Austrian, Schumpeter (1883-1950).

Schumpeter is considered one of the founding fathers of modern entrepreneurship thought. Katz (2003), in his chronology of American entrepreneurship education, notes that Schumpeter published his Theory of Economic Development in 1911 (German version, translated in English in 1937) and began teaching in the U.S. at Columbia University in 1913, then at Harvard in 1932. Schumpeter has had a tremendous influence on entrepreneurship thought. His view of entrepreneurship can be summarized in three different perspectives: static economies versus dynamic economies; the dichotomy of a circular flow of economies toward equilibrium contrasted by change in economic routines; and entrepreneurship as opposed to management (Solymossy, 1998). Schumpeter focused his attention on a macro-economic approach to develop the importance of entrepreneurship. His view is that economies are in perpetual disequilibria and that the concept of entrepreneurship tends to address these disequilibria. Schumpeter presents the entrepreneurial activities as a central force in economic development: a dynamic, proactive force that shakes the equilibrium of the economy through innovation, moving the economy from one state of status quo to another one. This notion of innovation is central to Schumpeter's thought, even if his definition of innovation is somewhat different from the invention of something new. For Schumpeter, an innovation can simply be a new way of conducting business, using the same final product in a different way or developing a new distribution channel (Solymossy, 1998).

“To carry any improvement into effect is a task entirely different from the inventing of it, and a task, moreover, requiring entirely different kinds of attitudes. Although entrepreneurs of course may be inventors just as they may be capitalists, they are inventors not by nature of their function but by coincidence and vice versa. Besides, the innovations which it is the function of entrepreneurs to carry out need not necessarily be any inventions at all” (Schumpeter, cited by Solymossy, 1998, p. 89)

Also, Schumpeter places a limit on the entrepreneurial concept, since over time any innovation is going to be absorbed by the marketplace; after a while any firm or individual will cease to be entrepreneurial and “regress back” to a simple manager. In Schumpeter’s view, the difference between managers and entrepreneurs exists in the ability to create and sustain new elements in the production process, whether by inventing something new or by finding new ways, or by a combination of both (Solymossy, 1998).

In the U.S., the first to add to the entrepreneurship concept is Herbert Davenport (1861-1931). Davenport’s work focused on the role of the entrepreneur. According to Davenport’s research (1913), the entrepreneur is an economic agent trying to adjust the supply and demand balance, while factoring elements of time preferences, opportunity costs, decision making under uncertainty, and competitive issues between entrepreneurs. According to his framework, the entrepreneur is not setting the prices; a competitive market in which the entrepreneur operates determines the prices. That notion led Davenport to conclude that profit for an entrepreneur is not a return in proportion to risk or a payment for managing labor, but rather is a compensation for entrepreneurial labor for the work done of adjusting the supply and demand process.

Another American researcher is Knight (1921). Knight provides further advances based on Cantillon’s research. He views the entrepreneur as the individual taking on uncertain investment, and he focuses on individuals’ needs. Also, part of Knight’s

research is on the personal characteristics required in order to be an entrepreneur. Knight views risk, as whether the probability of outcome can be determined. A gamble is risky if the probabilities of outcomes can be determined; the gamble is uncertain if these probabilities are uncertain (Amit, Glosten, & Muller, 1993). According to Knight, the probability of outcome can be estimated if there is a recurrence of a situation, which can lead to experiential knowledge and a reduction of overall risk. If risk cannot be evaluated over time, it cannot be insured and needs to be borne by the entrepreneur. Therefore, uncertainty aversion rather than risk aversion is the key to entrepreneurial activity for Knight (Solymossy, 1998).

Modern Approaches to the Entrepreneurship Concept

More recently, the field of entrepreneurship has received the attention of fields other than economics. Researchers have developed a sociological perspective. Starting with Max Weber (1958:1930 in English, but 1904 in German), who linked entrepreneurial activities to his Protestant work ethic. The Protestant work ethic focuses upon independence, self-reliance, hard work, and achievement values, which produce entrepreneurship. Furthermore, Weber observed the relationship between his Protestant work ethic and the development of capitalism. That Weberian model was later extended by Cochran (Kilby, 1971), who added cultural values, role expectations, and social sanctions in the analysis of entrepreneurial behavior.

The most significant research to link specific motivations to entrepreneurial behavior was developed by McClelland (1961, 1965, & 1987). McClelland separated himself from the economic perspective and initiated a cross-disciplinary research stream.

Instead of defining entrepreneurs by their economic function, his focus was directed on the role and process of creating and maintaining a business venture.

McClelland hypothesized that the motivation for achievement was a factor for economic development across cultures and societies; he also believed that the primary focus should be on an “ideal type” and that entrepreneurial behavior in differing environments was of secondary consideration (McClelland, 1961, p. 207). He then tested his idea through a selection of students from several countries. He found that there was a relationship between entrepreneurial tendencies and a strong need for achievement. This result prompted the examination of other characteristics, theorized by the economic research studies that were posited to have an impact on entrepreneurial behavior. Quite a few relationships were found as a result. First, internal locus of control was found to exhibit a relationship with entrepreneurial attitude (Rotter, 1966). Second, intentionality (defined as practical purposiveness of the individual’s action) was added by Bird (1988). Third, risk-taking propensities (Slevin & Covin, 1992) were developed. Finally, efficacy (Boyd and Vozikis, 1994) and proactiveness/aggressiveness (Crant, 1996) were found to be characteristics to have an impact on entrepreneurial behavior. However, despite all the positive relationships developed, further research showed that no individual traits have uniquely distinguished entrepreneurs (Johnson, 1994; Brockhaus & Nord, 1979; Jacobwitz & Vidler, 1982; Brockhaus, 1982).

These results led researchers to try and develop a comprehensive profile of entrepreneurs. Sexton and Bowman (1986) were able to pinpoint entrepreneurs from students or managers, utilizing a nine-personality characteristics model. Solomon and Winslow (1988) differentiated their entrepreneurs using the following characteristics:

confidence and optimism, not being reckless, and independence and self-reliance. However, Gasse (1982) showed that while composite profiles demonstrated some success, there were also inconclusive results; for instance, it is frequent for research to be unable to separate entrepreneurs from successful managers. Furthermore, empirical research demonstrated that personal characteristics did not represent the best and only measure of entrepreneurial activity (Box, Wall, & Hirsch, 1994); instead of personal characteristics, research showed that a combination of experience and environmental awareness was demonstrated as a significant predictor of venture success. As stated by Gasse, "No clear link was established between the personality characteristics of entrepreneurs and the success of their business venture" (1982, p. 66).

However, researchers have presented several frameworks of attitude orientation. Among these frameworks, Morris and Sexton (1996) identified innovativeness, risk-taking, and proactiveness as the foundational dimensions for entrepreneurial attitude and behavior. Another framework is advanced by Dess and Lumpkin (1996). They defined entrepreneurial orientation as being composed of autonomy, risk-taking, proactiveness, and competitive aggression. Finally, the most thorough framework was developed by Robinson (1987), which was revised by Stimpson, Robinson, Waranusuntikule, & Zheng in 1990 and by Shanthakumar in 1992. This framework has been repeatedly used as well as measures of achievement, personal control, innovation, self-esteem, and opportunism. Solimossy (1998) also used this model. However, he indicated that this model was weak since it was not using the avoidance, risk-taking, and independence characteristics. Therefore, he enhanced Robinson's model with these concepts in his own model.

Multidimensional Approach

More recently, researchers in the entrepreneurship field tried to develop models using multidimensional conceptualizations. As Cole (1969) suggested, the diversity of perspectives and the complexity of reconciling them into a comprehensive and meaningful entrepreneurial model have hindered the ability of researchers to achieve a fuller and more complete understanding of entrepreneurship.

Two research studies are of particular interest here regarding the multidimensional approach. The first one is by Gartner in 1984. His goal was to analyze the start-up behavior of 106 entrepreneurial firms; he presented a model of individual characteristics and behaviors interacting with environmental characteristics and firm characteristics as affecting start-up behavior. One outcome of his research was the discovery of eight entrepreneurial types. These eight types were labeled as follow: aggressively competitive, emphasizing innovation, stressing risk/uncertainty avoidance, high level of technological change within environmental complexity, emphasizing personal and professional contacts, and three entrepreneurial types representing various combinations of individual behavior and environmental opportunities. However, researchers need to take Gartner's result with caution due to some weaknesses in his research methodology. For instance, he provided neither data nor analysis regarding the variations within his three dimensions (individual characteristics, environmental characteristics, and firm characteristics). Also, his sample size of 106 respondents combined with the fact that he used 19 variables makes his research below the 10 observations per variable recommended for exploratory factor analysis (Kachigan, 1982).

The other multidimensional approach of interest is by Dess and Lumpkin (1996). They expand on the concept of entrepreneurial orientation, advancing that the relationship between entrepreneurial orientation and performance is context specific, and that entrepreneurial dimensions may vary independently of each other in differing contexts. Their view is based on the contingency theory (Steiner, 1979; Ginsberg & Venkatraman, 1985), which advances that there is not a one “best way” to organize a business. In summary, Lumpkin and Dess present a multidimensional entrepreneurial conceptualization composed of three main elements:

- a) Individual entrepreneurial orientation-- including autonomy, innovativeness, risk-taking, proactiveness, and competitive aggressiveness.
- b) Organizational factors-- including size, structure, strategy, strategy-making processes, firm resources, culture, and top-management team characteristics.
- c) Environmental factors-- including dynamism, munificence, complexity, and industry characteristics.

From the 12th century to today, as we have seen, much research has been conducted on entrepreneurship; trying to grasp that elusive concept has proven difficult and can still be explored further. The following section will offer a new way to look at that entrepreneurship concept and will provide a different approach that might generate consensus in the field of entrepreneurship.

Trichotomy of Entrepreneurs

Entrepreneurs can vary tremendously from one to another; some researcher even compared the entrepreneur to the heffalump in Winnie the Pooh (Bygrave, 1989; Shanthakumar, 1992; Carland & Carland, 2002). Many people have their own definition

of what a heffalump is, but they cannot agree on a description or a definition. Entrepreneurs are very similar in that respect, running the gamut from a “mom and pop” convenience store to huge companies such as Microsoft, Dell, or Trump.

One research idea developed by Carland and Carland (1997) was to separate entrepreneurs into three groupings. Their trichotomy includes micro-entrepreneurs, entrepreneurs, and macro-entrepreneurs.

Macro-entrepreneurs are highly driven entrepreneurs who see their involvement with their business as the primary vehicle for pursuing self-actualization. They measure success in terms of changing the world or creating something that no one else has been able to do. They have one thing in common: a dream to create, a dream to change, a dream to shape the world differently. Macro-entrepreneurs are innovative and creative and have a tremendous risk-taking propensity. They never cease striving, taking risks, expanding, growing, and competing, even when they might be considered by others to be highly successful or tremendously wealthy (Carland & Carland, 1997).

Micro-entrepreneurs are quite the opposite of macro-entrepreneurs. These individuals have a different and often unique view of success. They see their business ventures as a primary source for family income or as a mean for establishing family employment, and they view their business as being an important aspect of their lives rather than being consumed by it. Micro-entrepreneurs pursue self-actualization through their individual freedom. For these people, success is measured by their freedom; operating their own business frees them from the pressures and demands of a career, while still providing their families with financial support. They often have no real idea of

their profitability, but measure success in their ability to pay their bills (Carland & Carland, 1997).

Between these two groups is the main body of entrepreneurs: individuals who have a great deal of their self-perception connected to their business. They aspire to attain recognition, advancement, wealth, and admiration, and they want to be financially successful. They enjoy work but are not consumed by it, and they tend to avoid risks that might jeopardize their established business (Carland & Carland, 1997).

Carland and Carland (1997) also point out that these three sets of entrepreneurs might be represented in any given data set. This mixture of entrepreneur types can be an explanation as to why there are inconsistencies in the entrepreneurship literature. It is easy to see that if one sample is mainly comprised of micro-entrepreneurs, it may or may not deliver the same finding that another sample mainly composed of entrepreneurs or macro-entrepreneurs would. Micro-entrepreneurs are ubiquitous; they can be found on every street corner in every city in the U.S.A. or the rest of the world. Their presence in an entrepreneur data set is likely, even though their concentration is impossible to predict in advance. Macro-entrepreneurs are a different group; they would be much more rare, even if they are widely recognized and fill folklore with stories that glorify entrepreneurship (i.e., Michael Dell, Bill Gates, and Donald Trump). However, their presence in a data set is much more unlikely than the presence of micro-entrepreneurs. To some extent, they might never be included in a data set because, even if in a data set, they might not respond to a survey since they are so engrossed in their business that they would not take the time to answer a questionnaire. Finally, the Carland and Carland's "entrepreneurs" (those who are neither micro-entrepreneurs nor macro-entrepreneurs) are

likely to compose the breadth of any data set of entrepreneurs. A difficulty that arises is that the individuals themselves will be at different points in their professional lives. The Carland and Carland (1997) trichotomy suggests that entrepreneurs will change their view of the importance of their business after they attain what they consider to be a successful level of financial achievement. In other words, we can expect an entrepreneur who has not yet reached his goal to act like a macro-entrepreneur, engrossed in developing his or her business. Once that goal is achieved, that pseudo macro-entrepreneur would change orientation and focus attention on maintaining his or her business instead of continuing to develop it and therefore transform his or her orientation to an entrepreneur or micro-entrepreneur.

Based on their research, the Carlands developed the Carland Entrepreneurship Index (CEI) (Carland & Carland, 1996). The CEI index is composed of 33 questions; entrepreneurs who score below 15 points are considered micro-entrepreneurs, those who score between 16 and 25 are categorized as entrepreneurs and the respondents who score between 26 and 33 are categorized as macro-entrepreneurs.

Since my sample should be representative of the population, it is expected that I will have all three types of entrepreneurs in it. I propose to test these three groups to determine if a moderating effect exists that would change the relative influence of each dimension. As mentioned before, I am basing that moderating effect on the contingency theory that will be defined in the next section.

Contingency Theory

The contingency approach to management is grounded on the idea that there is no “one best way to manage” and that to be effective, business decisions on planning,

organizing, leading, and controlling must take into account the particular circumstances faced by an organization. Managers and entrepreneurs alike have always asked questions such as "What is the right thing to do? Should we have a mechanistic or an organic structure? A functional or divisional structure? Wide or narrow spans of management? Tall or flat organizational structures? Simple or complex control and coordination mechanisms? Should we be centralized or decentralized? Should we use task- or people-oriented leadership styles? What motivational approaches and incentive programs should we use?" The contingency approach assumes that there is no right or wrong answer to these questions because organizations, people, and situations fluctuate and develop over time. Thus, the right thing to do depends on a complex variety of critical environmental and internal contingencies (Hofler, unknown).

Classical management theorists such as Henri Fayol and Frederick Taylor identified and emphasized management principles that they believed would make companies more successful. However, these classicists were challenged in the 1950s and 1960s from management thinkers who believed that the Fayol and Taylor approach was inflexible and did not consider environmental contingencies. Although the criticisms were largely invalid (both Fayol and Taylor, for example, recognized that situational factors were relevant but did not dwell on the subject), they launched what has become the contingency school of management. Research conducted in the 1960s and 1970s focused on situational factors that affected the appropriate structure of organizations and the appropriate leadership styles for different situations. Although the contingency perspective purports to apply to all aspects of management and not just organizing and

leading, there has been little development of contingency approaches outside organization theory and leadership theory (Wren, 1994).

Contingency Theory and Organization Theory. Environmental change and uncertainty, work technology, and the size of a company are all identified as environmental factors impacting the effectiveness of different organizational forms. According to the contingency perspective, stable environments suggest mechanistic structures that emphasize centralization, formalization, standardization, and specialization to achieve efficiency and consistency. Certainty and predictability permit the use of policies, rules, and procedures to guide decision making for routine tasks and problems. Unstable environments suggest organic structures that emphasize decentralization to achieve flexibility and adaptability. Uncertainty and unpredictability require general problem-solving methods for non-routine tasks and problems. Lawrence and Lorsch suggest that organizational units operating in differing environments develop different internal unit characteristics, and that the greater the internal differences, the greater the need for coordination between units (Lawrence & Lorsch, 1967).

Organizational size is another contingency variable thought to impact the effectiveness of different organizational forms. Small organizations can behave informally, while larger organizations tend to become more formalized. The owner of a small organization may directly control most things, but large organizations require more complex and indirect control mechanisms. Large organizations can have more specialized staff, units, and jobs. Hence, a divisional structure is not appropriate for a small organization but may be for a large organization (Lawrence & Lorsch, 1967).

In addition to the contingencies identified above, customer diversity and the globalization of business may require product or service diversity, employee diversity, and even the creation of special units or divisions. Organizations operating within the United States may have to adapt to variations in local, state, and federal laws and regulations. Organizations operating internationally may have to adapt their organizational structures, managerial practices, and products or services to differing cultural values, expectations, and preferences. The availability of support institutions and the availability and cost of financial resources may influence an organization's decision to produce or purchase new products. Economic conditions can affect an organization's hiring and layoff practices as well as wage, salary, and incentive structures. Technological change can significantly affect an organization. The use of robotics affects the level and types of skills needed in employees. Modern information technology both permits and requires changes in communication and interaction patterns within and between organizations (Lawrence & Lorsch, 1967).

Contingency Theory and Leadership. Dissatisfaction with trait-based theories of leadership effectiveness led to the development of contingency leadership theories. Fred Fiedler was an early pioneer in this area. Various aspects of the situation have been identified as impacting the effectiveness of different leadership styles. For instance, Fiedler suggests that the degree to which subordinates like or trust the leader, the degree to which the task is structured, and the formal authority possessed by the leader are key determinants of the leadership situation. Task-oriented or relationship-oriented leadership should each work if they fit the characteristics of the situation (Fiedler, 1967).

As we can see, the contingency theory has been proven as a valuable tool in management research. Based on this theory, I would advance that the influence of each dimension of entrepreneurial orientation might not be the same according to the type of entrepreneurs as described by the trichotomy of entrepreneurs. Therefore, in the next section I will go through all the dimensions that have been developed in the first section and hypothesize if that dimension is going to be significant for the micro/macro-entrepreneur subgroup.

Entrepreneurs and Risk Taking

Risk taking has always been a part of the early entrepreneurship literature, dating back to Cantillon (1734) who argued that the principal factor that separated entrepreneurs from hired employees was the uncertainty and risk of self-employment. Other research studies on risk taking and entrepreneurship include Palmer (1971) and Liles (1974) who reported that entrepreneurial functions primarily involve risk taking. Calculated risk taking is reported to be a strategic behavior of entrepreneurs (Hoy & Carland, 1983). However, some other findings may indicate that some entrepreneurs may be risk-averse due to their strategic behavior (Burns and Kippenberger, 1988). Similarly, chief executives with external control were found to be conservative in their decision-making, while chief executives with internal locus of control were more prepared to adopt riskier decisions (Miller & Friesen, 1982). Also, the need for achievement is associated with risk taking propensities (McClelland, 1961). However, numerous researchers have reported inconsistencies in the risk-taking propensity of entrepreneurs (Brockhaus, 1980). One of the reasons advanced for such inconsistencies is the possibility that an aversion to risk could be overcome by either careful study and investigation or confidence in a good idea.

Another possibility, as advanced by the trichotomy of entrepreneurs, is that some entrepreneurs like to take risk. By definition, macro-entrepreneurs are said to have a tremendous risk-taking propensity. On the other hand, micro-entrepreneurs are not said to be risk takers, according to the Carlands. That leaves the entrepreneurs, who are said to avoid risks that might jeopardize their established business. Therefore my first hypothesis is as follow:

H1: The influence of risk-taking propensity on entrepreneurship orientation will be contingent on the trichotomial group of entrepreneurs.

H1a: Entrepreneurs with a high CEI score (>26) will have risk as a dimension of entrepreneurial orientation.

H1b: Entrepreneurs with a low CEI score (<15) will not have risk as a dimension of entrepreneurial orientation.

H1c: Entrepreneurs with a medium CEI score (16-25) will have risk as a dimension of entrepreneurial orientation.

Entrepreneurs and Achievement

The construct of achievement or need to achieve is based on McClelland's research (1961). It is defined as a motive to do well and to achieve a goal to a set of standards. McClelland (1987) also believes that besides the need to achieve, personal characteristics like being proactive contribute to entrepreneurial behavior. Cooper (1986) reports that the desire for independence and self-achievement are major factors for entrepreneurs, and Cooper and Dunkelberg (1986) also report that a specific set of motivations and attitudes are associated with entrepreneurial types. For instance, men and women are motivated by autonomy, achievement, a desire for job satisfaction, and other

non-economic rewards. A further differentiation was later advanced by Cromie (1987), in which women were less concerned with making money, and they used entrepreneurship as a means of meeting career needs and the needs of their children. In our case macro-entrepreneurs exhibit such a high need for achievement to the extent that they might never be satisfied since they always want more. Micro-entrepreneurs are very different according to the definition provided by the Carlands. Micro-entrepreneurs have already satisfied that need; they are satisfied with what they have; and, therefore, they should not show a high need for achievement. Entrepreneurs are in between these two groups; however they dream of recognition, which would indicate that they have a high need for achievement. Consequently, the second hypothesis is as follow:

H2: The influence of achievement on entrepreneurial orientation will be moderated by the trichotomial grouping of entrepreneurs.

H2a: Entrepreneurs with a high CEI score will have a need for achievement as a dimension of entrepreneurial orientation.

H2b: Entrepreneurs with a low CEI score will not have a need for achievement as a dimension of entrepreneurial orientation.

H2c: Entrepreneurs with a medium CEI score will have a need for achievement as a dimension of entrepreneurial orientation.

Entrepreneurs and Innovation

Schumpeter was the first to recognize the relationship that exists between entrepreneur and innovation. In 1934, he proposed the role of the entrepreneur as the one that disturbs the economic status quo through innovations and thereby creates new combinations to reach a new equilibrium. Anderson (1959) sees the entrepreneur as a

creative person. Miller and Friesen (1982) have product innovation as their main criterion for entrepreneurial activities; based on this criterion, they were able to show a difference between entrepreneurial and conservative firms. Later, Miller (1983) defines two types of firms: the adaptive firm and the innovative firm, in which the adaptive firm in a moderately challenging environment will adopt an incremental strategy, whereas the innovative firm cannot compete directly and so will pursue a niche strategy. Drucker (1986) describes the process of innovation as being “a specific instrument of entrepreneurship.” Carland et al.(1984) affirm that the entrepreneur is characterized principally by innovative behavior and will use strategic management practices in his/her business. Finally, Dess and Lumpkin (1996) split the innovativeness construct into two separate elements: technological innovativeness and product-market innovativeness. Technological innovativeness focuses primarily on product and process development, engineering, research, and an emphasis on technical expertise and industry knowledge (Cooper, 1973; Maidique & Patch, 1982). In opposition to technological innovativeness, product-market innovativeness focuses on product design, market research, and advertising and promotion (Miller & Friesen, 1978; Scherer, 1980). As far as the trichotomy is concerned, I believe that the macro-entrepreneurs should be innovators, as they are always trying to improve their market position; they should take advantage of innovations or create innovations in order to grow. Micro-entrepreneurs are less likely to use further innovation once they are settled in their business since it would increase their risk level; however, they might be innovators when they start their business. Overall, I would forecast that micro-entrepreneurs will have innovation as a dimension of their

entrepreneurial orientation. Finally, entrepreneurs should be innovators since both macro- and micro-entrepreneurs are forecasted as innovators.

H3: The influence of innovation on entrepreneurial orientation will not be moderated by the trichotomial grouping of entrepreneurs.

H3a: Entrepreneurs with a high CEI score will have innovation as a dimension of their entrepreneurial orientation.

H3b: Entrepreneurs with a low CEI score will have innovation as a dimension of their entrepreneurial orientation.

H3c: Entrepreneurs with a medium CEI score will have innovation as a dimension of their entrepreneurial orientation.

Entrepreneurs and Locus of Control

The theory of locus of control was developed by Rotter (1966). His theory was that an individual perceives the outcome of an event as being either within or beyond his/her own personal control and understanding. It has been shown that locus of control is related to the need for achievement (McGee & Crandall, 1968; Lao, 1974). Borland (1974) even found that a belief in internal locus of control was a better predictor of entrepreneurial intentions than need for achievement. Rotter (cited in by Shapero, 1975) found that Italian and Texan entrepreneurs were more internal than the general norm. That finding is also reported by Shanthakumar (1992) with Indian entrepreneurs, citing the work of Rao and Moulik (1978), Rao (1985), and Sarupiya (1982). However, some studies did not support Rotter's theory. For instance, entrepreneurs and managers have been reported not to be differentiable on their scores on locus of control. Furthermore, Begley and Boyd (1986) reported that in their study they were not able to differentiate

between entrepreneurs and non-entrepreneurs based on their locus of control score.

Regarding the trichotomy in this dissertation, macro-entrepreneurs are bound to believe that they are in charge of their future. Micro-entrepreneurs would also have an internal locus of control; they believe that their business will be able to sustain them for the foreseeable future and that they are in charge. Finally, entrepreneurs would also exhibit an internal locus of control.

H4: the influence of locus of control on entrepreneurial orientation will not be moderated by the trichotomical grouping of entrepreneurs.

H4a: Entrepreneurs with a high CEI score will have an internal locus of control as a dimension of their entrepreneurial orientation.

H4b: Entrepreneurs with a low CEI score will have an internal locus of control as a dimension of their entrepreneurial orientation.

H4c: Entrepreneurs with a medium CEI score will have an internal locus of control as a dimension of their entrepreneurial orientation.

Entrepreneurs and Self-Esteem

Arkes and Garske (1982) reported that self-esteem is a better predictor for entrepreneurial behavior than need for achievement for a task-specific situation. Crandall (1973) has found that entrepreneurs can be distinguished from others based on self-esteem score. However, Stimpson et al. (1990) could not differentiate between entrepreneurs and non-entrepreneurs in Korea, Thailand, and China. As far as the trichotomy is concerned, macro-entrepreneurs are going to have, by definition, a high esteem of themselves (i.e., Donald Trump). Micro-entrepreneurs are very satisfied with their current level of success and therefore should also be found to have high self-esteem.

Furthermore, since entrepreneurs are between micro- and macro-entrepreneurs, they should also have high self-esteem.

H5: the influence of self-esteem on entrepreneurial orientation will not be moderated by the trichotomial grouping of entrepreneurs.

H5a: Entrepreneurs with a high CEI score will have self-esteem as a dimension of their entrepreneurial orientation.

H5b: Entrepreneurs with a low CEI score will have self-esteem as a dimension of their entrepreneurial orientation.

H5c: Entrepreneurs with a medium CEI score will have self-esteem as a dimension of their entrepreneurial orientation.

Entrepreneurs and Opportunism

Opportunism, which can also be called Machiavellism, refers to what extent an individual tries to gain and use power. There are a number of studies that related the concept of opportunity to entrepreneurs. For instance, McClelland and Burnham (1976) report that the need for power plays a significant role in entrepreneurial behavior. Another study by Smith and Miner (1983) focused on the difference that exists in opportunism between males and females. Their study found that there was a significant difference between the two groups and that women were more opportunistic than men. In this dissertation, macro-entrepreneurs, according to their definition would be seeking opportunities to expend their businesses. Therefore, macro-entrepreneurs should be opportunists. Micro-entrepreneurs, on the other hand, would not be opportunists. Micro-entrepreneurs might see the opportunities that are out there but would choose not to pursue them since they are satisfied with their current position. Therefore, I expect them

not to be opportunists. Entrepreneurs want to increase their own business; consequently, I would imagine that they would be opportunists.

H6: The influence of opportunism on entrepreneurial orientation will be moderated by the trichotomial grouping of entrepreneurs.

H6a: Entrepreneurs with a high CEI score will have opportunism as a dimension of their entrepreneurial orientation.

H6b: Entrepreneurs with a low CEI score will not have opportunism as a dimension of their entrepreneurial orientation.

H6c: Entrepreneurs with a medium CEI score will have opportunism as a dimension of their entrepreneurial orientation.

Entrepreneurs and Autonomy

Autonomy refers to the independent action of an individual, or a team, in developing an idea or a vision and developing it to completion. In other words, it means the ability and will to be self-directed in the pursuit of opportunities and challenges. Therefore, autonomy is considered a major trait in entrepreneurial orientation. As Dess and Lumpkin (1996, p. 140) state:

“Entrepreneurship has flourished because independently minded people elected to leave secure positions in order to promote novel ideas or venture into new markets, rather than allow organizational superiors and processes to inhibit them.”

Research in entrepreneurial activity in the strategy-making process in the literature stresses the role of autonomous behavior. Mintzberg (1973) and Mintzberg and Waters (1985) describe an entrepreneurial strategy-making mode where a strong leader takes decisive and risky actions. This type of autonomy is also called autocratic (Shrivastava & Grant, 1985) and is commonly found in smaller, owner/manager firms

where “the force for pattern or consistency in action is individual vision, the central actor’s concept of his or her organization’s place in its world’. This is coupled with “an ability to impose that vision on the organization through his or her personal control of its actions” (Mintzberg & Waters, 1985, p. 260).

Miller (1983) also found that the most entrepreneurial firms had the most autonomous leaders. Small, simple firms showed higher levels of entrepreneurial activities when associated with chief executives who maintained strong central authority and who also acted as the firm’s knowledgeable leader by being aware of emerging technologies and markets. This finding was corroborated by Shrivastava and Grant (1985). They found a similar strong reliance on managerial autocracy in their study of 32 Indian firms. Of the ten firms that used a strong managerial autocracy, eight were classified as entrepreneurial. For the trichotomy of entrepreneurs, it is easy to see that macro-entrepreneurs would be autonomous; they do what they want to do and will follow their goals and aspirations at all cost. Micro-entrepreneurs would also be autonomous. In referring to the definition by the Carlands, it says that micro-entrepreneurs operate their business to be free from the pressure and demand of a career, which indicates that they want to be autonomous. Consequently, it would mean that entrepreneurs would also be autonomous.

H7: The influence of autonomy on entrepreneurial orientation will not be moderated by the trichotomical grouping of entrepreneurs.

H7a: Entrepreneurs with a high CEI score will have autonomy as a dimension of their entrepreneurial orientation.

H7b: Entrepreneurs with a low CEI score will have autonomy as a dimension of their entrepreneurial orientation.

H7c: Entrepreneurs with a medium CEI score will have autonomy as a dimension of their entrepreneurial orientation.

Entrepreneurs and Proactiveness

Webster defines pro-activeness as “acting in anticipation of future problems, needs, or changes.” Penrose (1959) argued that proactiveness is important for entrepreneurial managers because it provides their firms with opportunistic expansion. Lieberman and Montgomery (1988) emphasized proactiveness through first-mover advantage; by exploiting asymmetries in the marketplace, the first mover can capture unusually high profits. Therefore, taking initiative by anticipation, pursuing new activities, and participating in emerging markets can be construed as being proactive and as having been traditionally associated with entrepreneurship. Miller (1983, p. 771) also described an entrepreneurial firm as “the first to come up with ‘proactive innovations.’” Finally, Venkatraman (1989, p. 949) suggested that proactiveness refers to the process aimed at anticipating and acting on future needs by “seeking new opportunities which may or may not be related to the present lines of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle.”

Also, according to Dess and Lumpkin (1996), there has been a tendency in the entrepreneurship literature to equate proactiveness with competitive aggressiveness. Dess and Lumpkin see a difference between the two concepts. Proactiveness refers to how a firm relates to market opportunities in the process of new entry. It does so by seizing

initiative and acting opportunistically in order to influence trend or create demand. In contrast, competitive aggressiveness refers to how firms relate to competitors; that is, how firms will respond to trends and demands already existing. Therefore, proactiveness is more related to meeting demand, while competitive aggressiveness is about competing for existing demand. In this dissertation, macro-entrepreneurs should be found to be proactive; once again, they want to increase their success, to keep growing, and to compete, which are the foundation of proactiveness. On the other hand, micro-entrepreneurs are not going to be proactive; they are satisfied with their current situation; therefore, they should not be found to be proactive. Entrepreneurs would most likely be proactive as long as it does not jeopardize their current situation.

H8: The influence of proactiveness on entrepreneurial orientation will be moderated by the trichotomial grouping of entrepreneurs.

H8a: Entrepreneurs with a high CEI score will have proactiveness as a dimension of their entrepreneurial orientation.

H8b: Entrepreneurs with a low CEI score will not have proactiveness as a dimension of their entrepreneurial orientation.

H8c: Entrepreneurs with a medium CEI score will have proactiveness as a dimension of their entrepreneurial orientation.

Entrepreneurs and Competitive Aggressiveness

New ventures are much more likely to fail than established businesses; many scholars have argued that an aggressive stance and intense competition are critical to the survival and success of new entrants (McMillan, 1982; Porter, 1985). Therefore, competitive aggressiveness is recognized as a major element of entrepreneurial

orientation. Competitive aggressiveness relates to a firm's propensity to directly and intensely challenge its competitors to achieve entry or improve its position in its market. Competitive aggressiveness can be seen through responsiveness (i.e. head-to-head confrontation) or through a willingness to be unconventional rather than rely on traditional forms of competition. Porter (1985) recommended three possible ways to aggressively compete with existing firms. One can do things differently (reconfiguration), change the context (redefine the product or market), or outspend the industry leader. Dean (1993) reported that competitive aggressiveness explained more variance (37%) in the measured structural variable of corporate entrepreneurship than did any other strategy or structural variable analyzed.

I would hypothesize that micro-entrepreneurs would not focus on competitive aggressiveness. The reason for this hypothesis is that micro-entrepreneurs, according to the Carlands' (1997) definition, are not very concerned by their business and may not even realize the level of competition that they are facing or recognize that a competitor is attacking their market share. To the contrary, macro-entrepreneurs would intensively engage in competitive aggressiveness, since their goal is to expand their business to infinity. In the middle, entrepreneurs would more than likely engage in competitive aggressiveness. The reason for that hypothesis is based on their need for advancement and financial success; a bigger market share should translate into bigger earnings; therefore, entrepreneurs should be engaging in competitive aggressiveness.

H9: The influence of competitive aggressiveness on entrepreneurial orientation will be moderated by the trichotomical grouping of entrepreneurs.

H9a: Entrepreneurs with a high CEI score will have competitive aggressiveness as a dimension to their entrepreneurial orientation.

H9b: Entrepreneurs with a low CEI score will not have competitive aggressiveness as a dimension to their entrepreneurial orientation.

H9a: Entrepreneurs with a medium CEI score will have competitive aggressiveness as a dimension to their entrepreneurial orientation.

In conclusion, this research will provide a better understanding of the entrepreneurial orientation of entrepreneurs and will highlight any differences that may exist between all three groups of entrepreneurs. The final hypothesis is as follows:

H10a: Entrepreneurs with a high CEI score will have nine dimensions in their entrepreneurial orientation.

H10b: Entrepreneurs with a low CEI score will have four dimensions in their entrepreneurial orientation.

H10c: Entrepreneurs with a medium CEI score will nine dimensions in their entrepreneurial orientation.

Table 1 shows a summary of the dimensions and the different hypothesis.

Table 1. Summary of Dimensions

Dimensions	Macro-entrepreneurs	Micro-entrepreneurs	Entrepreneurs
Risk	YES	NO	YES
Need for achievement	YES	NO	YES
Innovation	YES	YES	YES
Internal locus of control	YES	YES	YES
Self-esteem	YES	YES	YES
Opportunism	YES	NO	YES
Autonomy	YES	YES	YES
Proactiveness	YES	NO	YES
Competitive aggressiveness	YES	NO	YES

Entrepreneurial Orientation and Performance

As mentioned in the first chapter, one of the contributions of my research is to provide better results for issues related to entrepreneurial orientation. One of these topics is the relationship between entrepreneurial orientation and performance. The main researchers in the link between entrepreneurial orientation and performance are Dess and Lumpkin (1996) who offer several propositions about that relationship. They note that there are a number of assumptions concerning that relationship (Collins & Moore, 1970; Covin & Slevin, 1991; Peters & Waterman, 1982; Schollhammer, 1982; Zahra, 1993), but that these assumptions remain largely untested. They cite Zahra (1993, p. 11): "There is a paucity of empirical documentation of the effect of entrepreneurship on company financial performance". Dess and Lumpkin even theorized several possible alternate

models (with moderating, mediating, independent, and interaction effects) of the relationship. However, current empirical research studies have shown conflicting result in the relationship between entrepreneurial activity and performance. For instance, Becherer and Maurer (1997) reported that they found a significant relationship between entrepreneurial orientation and change in a firm's profitability. That relationship was confirmed by Yussuf (2002) who documented that relationship in a sample of 228 businesses in the Gulf of Oman. Yussuf reported a significant and positive relationship between entrepreneurial orientation and firm performance, in which entrepreneurs with high entrepreneurial orientation exhibited higher performance. However, research from Wiklund and Shepherd (2003) only found some support for that relationship. They did not find a significant direct relationship; their finding suggested that knowledge-based resources are positively related to firm performance and that entrepreneurial orientation enhanced that relationship. Further research by Wiklund and Shepherd (2005) provided more insight in that relationship. They found a positive relationship between entrepreneurial orientation and performance for small business; however, that relationship was enhanced when access to capital and environmental dynamism were added in their model. They also point out the controversy that exists regarding the relationship between entrepreneurial orientation and performance:

“This conceptual argument put forth by Covin and Slevin (1991) has received empirical support in the literature. Studies have found that those businesses that adopt a more entrepreneurial strategic orientation perform better (e.g., Wiklund, 1999; Zahra, 1991; Zahra and Covin, 1995). However these findings are not uncontested. Smart and Conant (1994), for example, were unable to find a significant relationship between EO and performance, and Hart (1992) argues that entrepreneurial-type strategies under certain circumstances may even be associated with poor performance. Although differences in findings may be attributed to differences in research design or methodological

idiosyncrasies, such differences apparently reflect the fact that EO may sometimes, but not always, contribute to improved performance (Wiklund & Shepherd, 2005, p. 73)

With the trichotomy of entrepreneurs as a moderator, I will be able to separate my sample into three subgroups. By definition, micro-entrepreneurs are not that interested in performance. They are satisfied with their current level of performance and are not going to try to increase performance as much as possible, while entrepreneurs and macro-entrepreneurs are going to try their best to develop and expand their businesses. Therefore, my next hypothesis is as follows:

H11: The strength of the relationship between entrepreneurial orientation and performance will be moderated by the trichotomial grouping of entrepreneur.

H12: Entrepreneurs with a high or medium CEI score will exhibit higher performance than entrepreneurs with a low CEI score.

H13: Entrepreneurs with a high or medium CEI score will have a higher correlation score between EO and performance than the correlation score obtained for the full sample.

CHAPTER 3

RESEARCH METHOD

Procedures

The data needed to conduct the research developed in the previous chapter will be collected by way of an electronic survey. Electronic surveys have been developing rapidly in recent years. Several questions have been raised about their ability to truly measure the respondents' answers (McConkey, Stevens, & Loudon, 2003; Boyer, Olson, Calantone, & Jackson, 2002). However, the results of the research on this issue showed that there was no major difference between an Internet survey and a mail-based survey. As far as response rate is concerned, McConkey et al. (2003) report that Internet surveys enjoyed a higher response rate than mail-based surveys, even though the difference between the two was not significant. Their results also point to no difference in most of the responses themselves.

Boyer et al. (2002) used the same survey instrument as McConkey et al. (2003) for their research, sending some questionnaires via mail for 60% of their sample, with the remaining 40% receiving the survey via the Internet. Boyer et al. report that electronic surveys are generally comparable to print surveys in most respects, but that there are a few key advantages and challenges that should be considered. One of the challenges is the "Internet ability" of the respondent, which could bias some respondents. As far as

entrepreneurs are concerned, Internet ability might be a potential problem. However, I do not believe that it is going to be a major issue in this dissertation for two reasons. First, the research by McConkey et al. was published in 2003; since then, entrepreneurs have had more time to master these skills. Second, the skill level required for answering the survey instrument via computer is very basic, and no one should have any trouble going through it.

One of the advantages advanced by Boyer et al. (2002) was that electronic surveys had fewer missing responses than the mail-based surveys in their sample and that electronic surveys could be coded/presented in a more flexible manner. Electronic surveys also offer an advantage in suppressing a source of data error. Data-entry error has two sources of error: the error can be made by the respondent (checking a “3” instead of a “4”, even though the respondent thought that “4” was his/her answer for that question) or the error can come from the researcher who transcribed a “3” instead of the “4” that the respondent checked. Of the two errors, researcher error is the biggest one. Since the survey will be electronically sent to the respondents, they will be the ones who are going to enter their responses directly into the database; therefore, a major source of data error will be avoided. Another benefit of using an electronic survey is that there will be no transfer of respondent data from paper to a database by the researcher, which will also speed up the research process.

There will be three waves of e-mail with the survey link for respondents, following the usual mail based approach. These waves will be spaced by a one-week interval. This interval has been chosen so that the pace of the research will be fast, and it will also limit any time-based difference that can occur. That fast pace should not have

any negative impact on the research results. According to Claycomb, Porter, and Martin (2000), there is no time-interval effect between successive mail-survey waves, so a quick follow-up strategy will not jeopardize response rate. The third-wave results will also be used to assess if there are any differences between the respondents and late/non-respondents by conducting a T-test between the two groups (first and second-waves vs. third-wave).

Also, in order to maximize the chance of getting a high response rate, I will follow Yammarino, Skinner, and Childers' recommendations (1991). Their research emphasized that the response rate could be positively affected by using a cover letter, limiting the survey length to fewer than four pages, providing a return envelope, and offering some financial incentive. Out of these four recommendations, only the return envelope does not apply to this research methodology since I will be using e-mails. However, the sample of entrepreneurs will receive an email with a link to the survey instrument. That e-mail will serve as a cover letter; introducing, the research to the respondents and offering them a reward for their participation (see Appendix). Upon following the link, the respondents will be taken directly to the survey's site where they will be asked to answer the questions used to assess their entrepreneurial orientation and other items related to the research. The response rate will be calculated by comparing the number of usable surveys that will be answered to the number of "invitations" sent. As far as the reward is concerned, three "lucky respondents" will be selected. One will receive a grand prize of \$300, and two others will receive \$100 each.

Sample

The entrepreneurs' sample was obtained through the Louisiana Economic Development organization developed by the State of Louisiana. I received two listings of entrepreneurs from that organization; after removing all entrepreneurs listed without an e-mail address (so that I would not have to worry about a survey instrument bias), a total of 683 possible respondents are present in the final list*.

Operationalization of Variables

Performance

The performance of the entrepreneurs will be determined by asking their total amount of sales, their ROI, and their profit. Respondents may be reluctant to provide such information; hopefully, the promise of privacy will be enough to alleviate their reluctance.

Risk Taking

Finding a risk-taking scale prove to be a difficult task; however, I have been able to find some scales from the medical/psychological fields. Rohrmann (2004) developed two scales that aim to one risk propensity. The first scale is based on 12 five-points Likert-style items, and the second scale approach the risk assessment in a holistic manner, asking questions such as, "In general, my propensity for accepting financial risk is (0 to 10 scale)."

* Due to hurricane Katrina, I removed from the list all businesses registered in New Orleans and surrounding parishes. Many of those small businesses are no longer in operation, and the ones that do might not be interested in responding because of their current amount of work.

Micro- and Macro- Entrepreneurs

The micro/macro-entrepreneurial attitude will be determined by using the Carland Entrepreneurship Index. This index is composed of 33 questions that determine if someone is a micro-entrepreneur, an entrepreneur, or a macro-entrepreneur. A score of 0-15 indicates a micro-entrepreneurial orientation, a score of 16-25 an entrepreneurial orientation, and a score of 26-33 reflects a macro-entrepreneurial orientation. The index was developed by Jim and JoAnn Carland and has been validated through several research studies (www.thecarland.com, RISE conference, 1996). The index exists in two forms, one for active entrepreneurs and one for prospective entrepreneurs. In this dissertation, the active entrepreneur index will be used since respondents have been selected from an active entrepreneur list.

Achievement, Innovation, Locus of Control, Self-esteem, and Opportunism

These five constructs will be measured by using the scale adapted from Robinson (1987) and used by Solymossy (1998) and Shanthakumar (1992). In order to keep the survey as short as possible, I will use the short version of the entrepreneurial attitudes-orientation scale. Five items measure achievement; innovation has seven items; locus of control has four items; self-esteem has five items; and opportunism has four items.

Autonomy

The need for autonomy will be measured by using the scale developed by Simmering, Colquitt, Noe, and Porter (2003). This five-item scale was adapted from the “independence” subscale of the “work aspect preference” scale by Pryor (1998).

Proactiveness and Competitive Aggressiveness.

In order to measure the proactiveness and the competitive aggressiveness of the respondents, we will use the scales developed by Lumpkin and Dess (2001). The proactiveness scale has three items, and the competitive aggressiveness scale has two items.

Demography

The demography section will ask for the respondents' gender, age, ethnic origin, education level, and previous business experience.

Hypotheses Testing

Several methods will be needed to test the 16 hypotheses developed in the second chapter. The main statistical method to be used will be factor analysis to test whether or not a construct is a dimension of the entrepreneurial orientation construct. I will conduct the research with two different approaches: one will be to use the factor analysis statistics through SPSS, and the other will be to use EFA and CFA through structural equation modeling using AMOS. The fit of the models developed with AMOS will be analyzed with the chi-square statistic, the p-value, RMSEA (Root Mean Square Error of Approximation), GFI (Goodness of Fit Index), and AGFI (Adjusted GFI) as defined by Byrne (2001, p. 78-88). Finally a correlation analysis will be needed to address hypotheses 11 and 12.

CHAPTER 4

ANALYSIS OF DATA

Sample Selection

The data collected for this dissertation were obtained through primary research. A survey was created in May 2007, and it was distributed electronically to entrepreneurs from June to October 2007.

The list of potential respondents was selected from the Louisiana Economic Development (LED) agency. In order to register with the LED, entrepreneurs have to meet the following definition:

“A Small Entrepreneurship (SE) is a firm independently owned and operated; not dominant in its field of operations, which shall be determined by consideration of the business’ number of employees, volume of business, financial resources, competitive status, and ownership or control of materials, processes, patents, license agreements, facilities, and sales territory, is owned by and has officers who are citizens or legal residents of the United States, all of whom are domiciled in Louisiana, and who maintain the principal business office in Louisiana; and together with its affiliate entities, has fewer than 50 full-time employees with average annual gross receipts not exceeding \$5,000,000.00 per year for construction operations and \$3,000,000.00 per year for non-construction operations, for each of the previous three tax years” (LED, 2007)

This list is composed of 3285 registered small businesses; after removing all members that didn't provide an email address and those whose email was no longer valid, the survey was sent to 1003 entrepreneurs.

The survey was delivered via email and a website host specialized in survey hosting. I selected SurveyMonkey.com to host the survey created for this research for their ease of use, low hosting price, and reliability.

Each potential respondent received an email from me with an explanation of what the research was to be used for and a link to access the survey itself (see the Appendix for the survey and the introduction letter). Once the respondent clicked on the link provided, a new window opened with the survey itself.

This method provided several benefits for the research. First, it guaranteed the researcher that only the people selected for the research could access the survey and answer it. Also, it guaranteed anonymity for the respondent since the hosting website recorded only the IP address of the respondent with their selected responses.

The first wave of the survey was sent in early June 2007; that first wave generated 46 responses. After no new answers were recorded for a week, the second wave was sent. This wave created another 20 responses for analysis. After another week of waiting with no new answers, a third wave of emails was sent to all potential respondents. That last email wave produced another 9 answers. Therefore, for the first three waves, a total of 75 answers were recorded.

Due to the low number of responses, it was decided to try to generate more answers by calling some entrepreneurs directly and asking them to answer the survey. Entrepreneurs in the 318 area code were selected for that fourth wave. The 318 area code

was selected since it was the same as Louisiana Tech University, and it was hypothesized that it would generate more goodwill than any other area code. That fourth wave was responsible in gathering another 16 answers.

A fifth and final wave was added to push the total number of responses above 100. These respondents were selected from the members of the Yankton's Chamber of Commerce that fit the definition used by the LED. That fifth wave generated 12 answers for analysis.

In summary, a grand total of 103 responses were recorded for analysis out of a sample population of 1003 entrepreneurs. Therefore, the response rate for the research analysis is 10.20%.

Data Analysis

As mentioned in Chapter 3, the goal was to use structural equation modeling in order to test the hypotheses developed earlier. Unfortunately, with the number of responses obtained for the research, such a method cannot be used as it would violate its mathematical assumption. Therefore, a new method of analysis was needed; it was deemed appropriate to use regression analysis instead of structural equation modeling.

Reliability Analysis of the Scales

In order to assess the reliability of the scales used for the research, a Cronbach alpha analysis through SPSS (v.13) was used. The result of each scale is analyzed below. In social sciences, it is recommended that the Cronbach alpha result for the scale be above 0.600. Therefore, each scale will be tested with its full set of questions associated with its construct. If the result is above the recommended level, no further action will be taken. If the result is below the recommended level of .600, the item total statistic will be

used to identify the question whose removal results in the highest increase of the Cronbach alpha, this question will then be removed. That procedure will be done until the recommended level is achieved or no other alternative is available.

Risk Taking. The survey instrument had two scales for risks. One of the scales was developed by Rohrman (2004); the other scale was developed by Robinson (1987).

The Rohrman scale is a 12-item scale that was answered by 70 respondents (68%, question number 99 in the survey); the Cronbach Alpha for the 12 items was .658.

The Robinson scale is a five-item scale that was answered by 83 respondents (80.6%, questions number 36, 44, 50, 60, and 72 in the survey). The Cronbach alpha for the five-item scale was 0.341; if question number 60 is dropped, the Cronbach alpha rises to 0.562. If question number 44 is dropped, the Cronbach alpha increased to 0.569. Furthermore, if question number 50 is dropped from the scale, then Cronbach alpha for the remaining two items improves to 0.626. Therefore, we will use the Rohrman scale for the rest of the analysis since it has the highest Cronbach alpha of the two scales.

Achievement. The survey instrument had one scale for measuring achievement for this research. The scale was developed by Robinson (1987) and is composed of seven items (questions number 35, 42, 45, 46, 48, 69, and 73), it was answered by 83 respondents out of the 103 (80.6%). The Cronbach alpha result for the seven items was 0.172. If question 42 is removed, the Cronbach alpha rises to 0.478. If question 73 is dropped, then Cronbach alpha increases to .521. Furthermore, if question number 48 is removed from the analysis, then the Cronbach alpha increases to 0.544. Finally, if question number 35 is dropped, the Cronbach alpha will increase to its maximum value

of 0.573. For the rest of the analysis we will use the remaining three items in order to analyze the impact of the achievement construct.

Innovativeness. The survey instrument had one scale for measuring innovativeness for the research. The scale was developed by Robinson (1987) and is composed of seven items (questions number 43, 53, 54, 56, 59, 61, and 71); it was answered by 82 respondents out of the 103 (80.6%). The Cronbach alpha result for the seven items was 0.290. If question 43 is removed, the Cronbach alpha rises to 0.485. If question 71 is dropped, then Cronbach alpha increases to 0.512. Furthermore, if question number 54 is also removed from the analysis, then the Cronbach alpha increases to 0.533. Finally, if question number 59 is dropped, the Cronbach alpha will increase to its maximum value of 0.558. For the rest of the analysis we will use the remaining three items in order to analyze the impact of the Innovation construct.

Locus of Control. The survey instrument had one scale for measuring locus of control for the research. The scale was developed by Robinson (1987) and is composed of six items (questions number 34, 39, 55, 58, 62, and 66), it was answered by 88 respondents out of the 103 (85.4%). The Cronbach alpha result for the six items was 0.57. If question 62 is removed, the Cronbach alpha rises to 0.603. For the rest of the analysis we will use the remaining five items in order to analyze the impact of the locus of control construct.

Self-Esteem. The survey instrument had one scale for measuring self-esteem for the research. The scale was developed by Robinson (1987) and is composed of six items (questions number 38, 51, 63, 65, 67, and 76); it was answered by 84 respondents out of the 103 (81.6%). The Cronbach alpha result for the six items was 0.455. If question 63 is

removed, the Cronbach alpha rises to 0.575. No further improvement could be obtained by removing any other questions. Therefore, we will use the remaining five items in order to analyze the influence of the self-esteem construct.

Opportunism. The survey instrument had one scale for measuring opportunism for the research. The scale was developed by Robinson (1987) and is composed of five items (questions number 41, 49, 52, 68, and 70); it was answered by 81 respondents out of the 103 (78.6%). The Cronbach alpha result for the five items is 0.486. If question 68 is removed the Cronbach alpha rises to 0.529. If question number 49 is dropped, then the Cronbach alpha increases to 0.540. No further improvements could be obtained by removing additional questions. Therefore, we will use the remaining three items in order to analyze the influence of the opportunism construct.

Autonomy. The survey instrument had two scales for measuring autonomy for this research. One of the scales was developed by Robinson (1987) and is composed of five items (questions number 37, 40, 47, 57, and 64); it was answered by 87 respondents out of the 103 (84.5%). The Cronbach alpha result for the five items was 0.375. If question 40 is removed, the Cronbach alpha rises to 0.483. No further improvements could be obtained by removing any other questions.

The second scale was developed by Simmering, Colquitt, Noe, and Porter (2003) and is composed of 10 items (questions number 100 to 104 in the survey); it was answered by 76 of the 103 respondents (73.8%). The Cronbach alpha for the 10 items was 0.869. Therefore, we will use the second scale for further analysis of the influence of the autonomy construct.

Proactiveness. The survey instrument had one scale for measuring proactiveness for the research. The scale was developed by Lumpkin and Dess (2001) and is composed of three items (questions number 77, 79, and 81); it was answered by 78 respondents out of the 103 (75.7%). The Cronbach alpha result for the three items was 0.653. This scale will be used to analyze the proactiveness construct in the rest of the analysis.

Competitive Aggressiveness. The survey instrument had one scale for measuring competitive aggressiveness for the research. The scale was developed by Lumpkin and Dess (2001) and is composed of two items (questions number 83, and 85); it was answered by 78 respondents out of the 103 (75.7%). The Cronbach alpha result for the two items was 0.611. This scale will be used to analyze the competitive aggressiveness construct in the rest of the analysis.

Entrepreneurial Orientation. The survey instrument had one scale for measuring the Entrepreneurial Orientation of entrepreneurs for the research. The scale was developed by Covin and Slevin (1989) and is composed of six items (questions number 87, 89, 91, 93, 95, and 97). The Cronbach alpha result for the six items was 0.733. Those items were answered by 75 respondents out of the 103 (72.8%). This scale will be used to represent entrepreneurial orientation for the rest of the analysis. Table 2 will present a summary of the scale and their final Cronbach alpha.

Table 2. Cronbach alpha

Construct	Cronbach Alpha	Number of items
Risk	0.658	12
Achievement	0.573	3
Innovativeness	0.558	3
Locus of Control	0.603	5
Self-Esteem	0.575	5
Opportunism	0.540	3
Autonomy	.869	10
Proactiveness	.653	3
Competitive Aggressiveness	.611	2
Entrepreneurial Orientation	.733	6

Wave Analysis

In order to determine if there were some variations in the respondents' responses between the five waves of surveying, an independent sample T-test analysis was conducted between each of the five waves. The result of that analysis is presented below.

Risk Taking. The p-values for the Levene's test of equality of variance between the waves for the risk-taking construct are shown below in Table 3. The lowest p-value is 0.08 between wave 1 and 2, all other p-values are well above the 0.10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the risk-taking construct.

Table 3. Risk

Risk	1	2	3	4	5
1		0.080	0.743	0.501	0.568
2			0.276	0.487	0.557
3				0.436	0.650
4					0.969

Achievement. The p-values for the Levene's test of equality of variance between the waves for the achievement construct are shown below in Table 4. All p-values are well above the .10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the achievement construct.

Table 4. Achievement

Achievement	1	2	3	4	5
1		0.507	0.130	0.275	0.348
2			0.515	0.760	0.853
3				0.667	0.554
4					0.882

Innovation. The p-values for the Levene's test of equality of variance between the waves for the innovation construct are shown below in Table 5. It appears that there might be an inequality of variance between wave 2 and wave 3, 4, and 5. Therefore, caution will be needed while using the innovation construct in further analysis.

Table 5. Innovation

Innovation	1	2	3	4	5
1		0.226	0.132	0.088	0.304
2			0.037	0.021	0.085
3				0.993	0.549
4					0.524

Locus of Control. The p-values for the Levene's test of equality of variance between the waves for the locus of control construct are shown below in Table 6. The lowest p-value is 0.027 between wave 1 and 2, all other p-values are above the .10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the locus of control construct.

Table 6. Locus of control

Locus of Control	1	2	3	4	5
1		0.027	0.512	0.845	0.384
2			0.122	0.182	0.503
3				0.390	0.416
4					0.621

Self-Esteem. The p-values for the Levene's test of equality of variance between the waves for the self-esteem construct are shown below in Table 7. All p-values are well above the 0.10 except as wave 1 is compared to wave 5, which produces p-value of 0.031. Therefore, there might be a difference between early and late respondents.

Table 7. Self-Esteem

Self-Esteem	1	2	3	4	5
1		0.589	0.510	0.629	0.031
2			0.877	0.998	0.267
3				0.879	0.397
4					0.241

Opportunism. The p-values for the Levene's test of equality of variance between the waves for the opportunism construct are shown below in Table 8. All p-values are well above the 0.10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the opportunism construct.

Table 8. Opportunism

Opportunism	1	2	3	4	5
1		0.335	0.630	0.961	0.960
2			0.377	0.586	0.501
3				0.746	0.675
4					0.995

Autonomy. The p-values for the Levene's test of equality of variance between the waves for the autonomy construct are shown below in Table 9. All p-values are well above the 0.10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the autonomy construct.

Table 9. Autonomy

Autonomy	1	2	3	4	5
1		0.584	0.745	0.576	0.521
2			0.555	0.962	0.945
3				0.441	0.945
4					0.985

Proactiveness. The p-values for the Levene's test of equality of variance between the waves for the proactiveness construct are shown below in Table 10. All p-values are well above the 0.10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the proactiveness construct.

Table 10. Proactiveness

Proactiveness	1	2	3	4	5
1		0.969	0.955	0.152	0.114
2			0.947	0.291	0.243
3				0.346	0.298
4					0.985

Competitive Aggressiveness. The p-values for the Levene's test of equality of variance between the waves for the competitive aggressiveness construct are shown below in Table 11. All p-values are well above the 0.10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the competitive aggressiveness construct.

Table 11. Competitive Aggressiveness

Comp. Agg.	1	2	3	4	5
1		0.760	0.994	0.329	0.437
2			0.843	0.520	0.662
3				0.376	0.481
4					0.720

Entrepreneurial Orientation. The p-values for the Levene's test of equality of variance between the waves for the entrepreneurial orientation construct are shown below in Table 12. Since all the p-values are above 0.10. Therefore, I am confident that there is no late-respondent difference between the early waves and the late waves for the entrepreneurial orientation construct.

Table 12. Entrepreneurial Orientation

E.O	1	2	3	4	5
1		0.211	0.710	0.325	0.464
2			0.592	0.936	0.707
3				0.665	0.833
4					0.736

CEI Analysis

The Carland Entrepreneurship Index (CEI) is a set of 33 dichotomous questions scored either 0 or 1 depending on the answer for that particular question. Thus any respondent can have a CEI score between 0 and 33. By definition, someone who scores 15 or less is categorized as a micro-entrepreneur. A score between 16 and 24 tags the respondent as an entrepreneur. Finally, a score of 25 and above categorize the respondent as a macro-entrepreneur (Carland and Carland, 1997).

The first 33 questions in the survey instrument are taken from the CEI questionnaire set up for current entrepreneurs. Since it was extremely important that

every question be answered, the survey was set up in such manner that respondents could not access any other portion of the survey if one or more of the questions were not answered.

Overall, out of the 103 respondents, eight were characterized as micro-entrepreneurs (7.77% of the respondents), another seven were categorized as macro-entrepreneurs (6.80), and the 88 other respondents being grouped as entrepreneurs (85.44%).

Table 13 shows the total CEI score and its associated percentage for the whole set of respondents. Figure 1 represents a bar chart of the CEI score and Figure 2 represents a histogram (with a normal curve) of the CEI score.

Table 13: CEI score

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 12	4	3.9	3.9	3.9
13	1	1.0	1.0	4.9
15	3	2.9	2.9	7.8
16	5	4.9	4.9	12.6
17	7	6.8	6.8	19.4
18	8	7.8	7.8	27.2
19	17	16.5	16.5	43.7
20	17	16.5	16.5	60.2
21	10	9.7	9.7	69.9
22	11	10.7	10.7	80.6
23	9	8.7	8.7	89.3
24	3	2.9	2.9	92.2
25	1	1.0	1.0	93.2
26	4	3.9	3.9	97.1
27	2	1.9	1.9	99.0
30	1	1.0	1.0	100.0
Total	103	100.0	100.0	

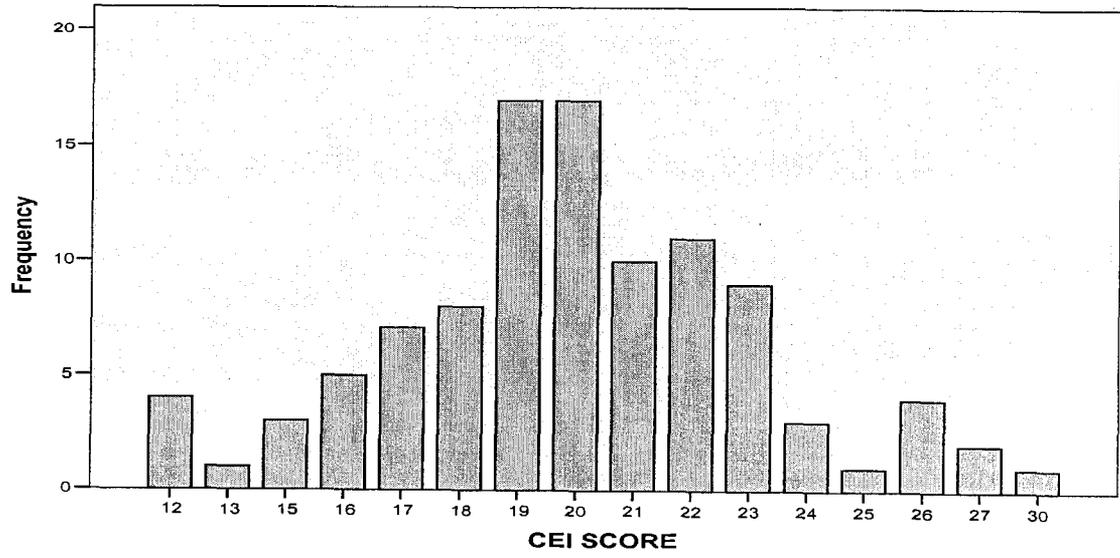


Figure 1. CEI score (Bar Chart)

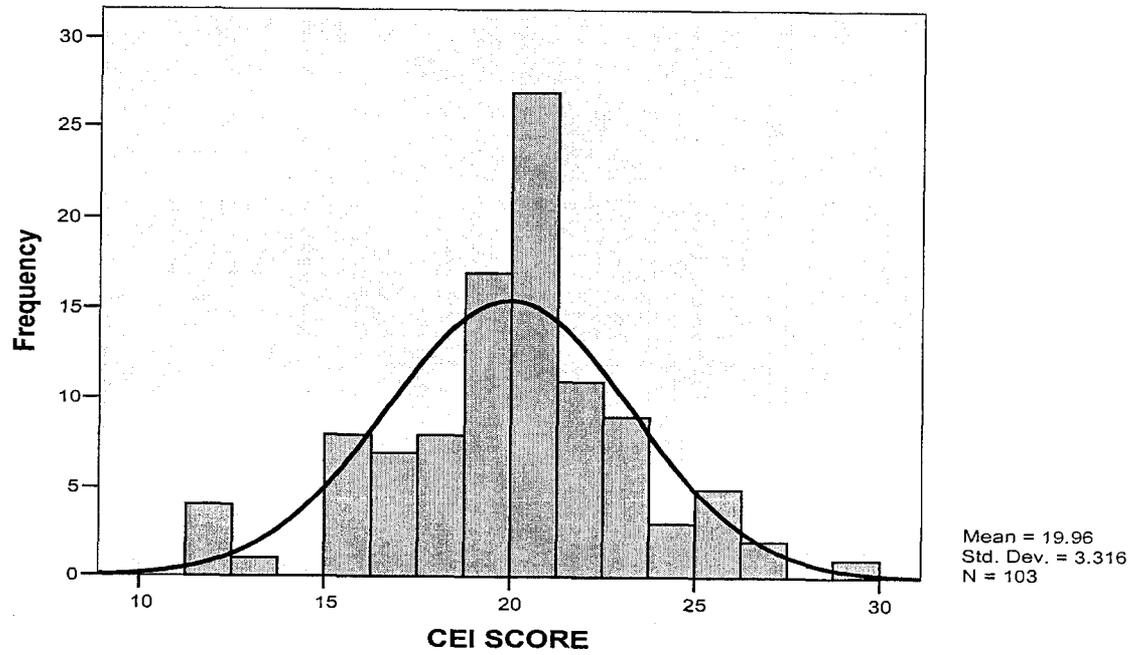


Figure 2. CEI score (Histogram with normal curve)

Hypothesis Testing

Risk Taking. The first hypothesis set for the research was to determine if the separation of entrepreneurs in three groups would produce different results in the relationship between the risk taking construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H1: The influence of risk-taking propensity on entrepreneurship orientation will be contingent on the trichotomical group of entrepreneurs.

H1a: Entrepreneurs with a high CEI score (>26) will have risk as a dimension of entrepreneurial orientation.

H1b: Entrepreneurs with a low CEI score (15<) will not have risk as a dimension of entrepreneurial orientation.

H1c: Entrepreneurs with a medium CEI score (16-25) will have risk as a dimension of entrepreneurial orientation.

In order to test that relationship, a regression analysis was run for the full sample and another one with splitting the file according to the type of entrepreneur as determined by the CEI score. For the full sample, R^2 was 0.032; the Beta coefficient was 0.179 with a p-value of 0.147. For the split sample the R^2 for the macro-entrepreneurs was 0.128; the Beta coefficient was 0.359 with a p-value of 0.642. For entrepreneurs, the R^2 was 0.067; the Beta coefficient was 0.258 with a p-value of 0.050. Finally, for the micro-entrepreneurs, R^2 was 0.023; the Beta coefficient was -0.152 with a p-value of 0.807.

Therefore, H1a is not supported. H1a advanced that there would be a significant relationship between risk and entrepreneurial orientation for macro-entrepreneurs.

However, with a p-value of 0.642 we have to reject that hypothesis, even if the R² represent 12.8% of the variation in the relationship.

Hypothesis H1b is supported; H1b predicted that risk would not be related to entrepreneurial orientation for micro-entrepreneur, and with a p-value of .807 this hypothesis can be safely rejected. Furthermore, a negative beta coefficient would tend to prove that micro-entrepreneurs are risk averse.

H1c is also supported; H1c predicted that entrepreneurs would have a significant relationship between risk and entrepreneurial orientation. A p-value of .05 shows that this moderate relationship stands as predicted.

Finally, since different findings were obtained between the three types of entrepreneurs, we have to conclude that H1 is supported; the trichotomy of entrepreneurs has a moderating effect on the relationship of risk taking and entrepreneurial orientation. Table 14 summarizes the findings.

Table 14. Risk and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.032	0.179	0.147	
Macro-Entrepreneur	0.128	0.359	0.642	No
Entrepreneur	0.067	0.258	0.050	Yes
Micro-Entrepreneur	0.023	-0.152	0.807	Yes

Achievement. The next hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different results in the relationship between the achievement construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H2: The influence of achievement on entrepreneurial orientation will be moderated by the trichotomial grouping of entrepreneurs.

H2a: Entrepreneurs with a high CEI score will have a need for achievement as a dimension of entrepreneurial orientation.

H2b: Entrepreneurs with a low CEI score will not have a need for achievement as a dimension of entrepreneurial orientation.

H2c: Entrepreneurs with a medium CEI score will have a need for achievement as a dimension of entrepreneurial orientation.

In order to test that relationship, a regression analysis was run for the full sample and another with splitting the file according to the type of entrepreneur as determined by the CEI score.

For the full sample, R^2 was 0.095; the Beta coefficient was 0.309 with a p-value of 0.009. For the split sample, the R^2 for the macro-entrepreneurs was 0.741; the Beta coefficient was 0.861 with a p-value of 0.061. For entrepreneurs, the R^2 was 0.045; the Beta coefficient was 0.211 with a p-value of 0.102. Finally, for the micro-entrepreneurs, R^2 was 0.003; the Beta coefficient was 0.050 with a p-value of 0.936.

Therefore, H2a is supported. H2a advanced that there would be a significant relationship between achievement and entrepreneurial orientation for macro-entrepreneurs, with a p-value of 0.061, this moderate relationship cannot be rejected. Hypothesis H2b is supported; H2b predicted that achievement would not be related to entrepreneurial orientation for micro-entrepreneurs and with a p-value of 0.936 we can safely support that hypothesis.

H2c is also supported; H2c predicted that entrepreneurs would have a significant relationship between achievement and entrepreneurial orientation. With a p-value of 0.102 we have to conclude that this relationship stands as predicted, even though that relationship is weak.

Finally, since we obtained different findings between the three types of entrepreneurs, we have to conclude that H2 is supported; the trichotomy of entrepreneurs has a moderating effect on the relationship of achievement and entrepreneurial orientation. With the full sample, we found that achievement was significantly related to entrepreneurial orientation; with the moderator in place, it became apparent that micro-entrepreneurs were not exhibiting that relationship. Table 15 summarizes the findings.

Table 15: Achievement and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.95	0.309	0.009	
Macro-Entrepreneur	0.741	0.861	0.061	Yes
Entrepreneur	0.067	0.211	0.102	Yes
Micro-Entrepreneur	0.003	0.050	0.936	Yes

Innovation. The third hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different results in the relationship between the innovation construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H3: The influence of innovation on entrepreneurial orientation will not be moderated by the trichotomical grouping of entrepreneurs.

H3a: Entrepreneurs with a high CEI score will have innovation as a dimension of their entrepreneurial orientation.

H3b: Entrepreneurs with a low CEI score will have innovation as a dimension of their entrepreneurial orientation.

H3c: Entrepreneurs with a medium CEI score will have innovation as a dimension of their entrepreneurial orientation.

In order to test that relationship a regression analysis was run for the full sample and another with splitting the file according to the type of entrepreneur as determined by the CEI score. Also, since the wave analysis showed that the second wave was different than the other waves, another analysis was run with the responses of wave two dismissed from the sample to determine if that created any differences.

- All waves

For the full sample, R^2 was 0.017; the Beta coefficient was 0.129 with a p-value of 0.268. For the split sample the R^2 for the macro-entrepreneurs was 0.623; the Beta coefficient was 0.790 with a p-value of 0.112. For entrepreneurs, the R^2 was 0.000; the Beta coefficient was .012 with a p-value of 0.926. Finally, for the micro-entrepreneurs, R^2 was 0.158; the Beta coefficient was -0.397 with a p-value of 0.508.

- Wave 2 dismissed

For the full sample, R^2 was 0.035; the Beta coefficient was 0.188 with a p-value of 0.157. For the split sample the R^2 for the macro-entrepreneurs was 0.534; the Beta coefficient was 0.730 with a p-value of 0.479. For entrepreneurs, the R^2 was 0.003; the Beta coefficient was 0.052 with a p-value of 0.717. Finally, for the micro-entrepreneurs, R^2 was 0.200, the Beta coefficient was -0.447 with a p-value of 0.553.

In conclusion, the results are the same whether we use the responses from wave number two or not. All hypotheses are rejected at this point. All p-values from either macro-entrepreneurs, entrepreneurs, or micro-entrepreneurs indicate that innovation is not related to entrepreneurial orientation, which means that H3a, H3b, and H3c are not supported in our sample. Furthermore, there is no difference between the undifferentiated sample and the split samples; therefore, H3 is supported. Tables 16a and 16b summarize the results.

Table 16a: Innovation and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.017	0.129	0.268	
Macro-Entrepreneur	0.623	0.790	0.112	No
Entrepreneur	0.000	0.012	0.926	No
Micro-Entrepreneur	0.158	-0.397	0.508	No

Table 16b: Innovation and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.035	0.188	0.157	
Macro-Entrepreneur	0.534	0.730	0.479	No
Entrepreneur	0.003	0.052	0.717	No
Micro-Entrepreneur	0.200	-0.447	0.553	No

Locus of Control. The fourth hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different results in the relationship between the locus of control construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H4: the influence of locus of control on entrepreneurial orientation will not be moderated by the trichotomical grouping of entrepreneurs.

H4a: Entrepreneurs with a high CEI score will have an internal locus of control as a dimension of their entrepreneurial orientation.

H4b: Entrepreneurs with a low CEI score will have an internal locus of control as a dimension of their entrepreneurial orientation.

H4c: Entrepreneurs with a medium CEI score will have an internal locus of control as a dimension of their entrepreneurial orientation.

In order to test that relationship, a regression analysis was ran for the full sample and another one with splitting the file according to the type of entrepreneur as determined by the CEI score. For the full sample, R^2 was 0.000; the Beta coefficient was 0.011 with a p-value of 0.927. For the split sample the R^2 for the macro-entrepreneurs was 0.113; the Beta coefficient was -0.336 with a p-value of 0.580. For entrepreneurs, the R^2 was 0.001; the Beta coefficient was -0.028 with a p-value of 0.825. Finally, for the micro-entrepreneurs, R^2 was 0.000, the Beta coefficient was 0.004 with a p-value of 0.994.

In conclusion, all hypotheses are rejected at this point. All p-values from either macro-entrepreneurs, entrepreneurs, or micro-entrepreneurs indicate that locus of control is not related to entrepreneurial orientation, which mean that H4a, H4b, and H4c are not supported in our sample. Furthermore, there is no difference between the undifferentiated sample and the split samples; therefore, H4 is supported. Table 17 summarizes the results.

Table 17. Locus of Control and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.000	0.011	0.927	
Macro-Entrepreneur	0.113	-0.336	0.580	No
Entrepreneur	0.001	-0.028	0.825	No
Micro-Entrepreneur	0.000	0.004	0.994	No

Self-Esteem. The fifth hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different results in the relationship between the self-esteem construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H5: the influence of self-esteem on entrepreneurial orientation will not be moderated by the trichotomial grouping of entrepreneurs.

H5a: Entrepreneurs with a high CEI score will have self-esteem as a dimension of their entrepreneurial orientation.

H5b: Entrepreneurs with a low CEI score will have self-esteem as a dimension of their entrepreneurial orientation.

H5c: Entrepreneurs with a medium CEI score will have self-esteem as a dimension of their entrepreneurial orientation.

In order to test that relationship, a regression analysis was run for the full sample and another with splitting the file according to the type of entrepreneur as determined by the CEI score. Also, since the wave analysis showed that the fifth wave was different than the other waves; an another analysis was also run with the responses of wave five dismissed from the sample to see if that created any differences.

- All waves

For the full sample, R^2 was 0.022; the Beta coefficient was 0.149 with a p-value of 0.209. For the split sample the R^2 for the macro-entrepreneurs was 0.523; the Beta coefficient was 0.723 with a p-value of 0.167. For entrepreneurs, the R^2 was 0.015; the Beta coefficient was 0.124 with a p-value of 0.334. Finally, for the micro-entrepreneurs, R^2 was 0.060, the Beta coefficient was -0.246 with a p-value of 0.690.

- Wave 5 dismissed

For the full sample, R^2 was 0.014; the Beta coefficient was 0.118 with a p-value of 0.365. For the split sample the R^2 for the macro-entrepreneurs was 0.523; the Beta coefficient was 0.723 with a p-value of 0.167. For entrepreneurs, the R^2 was 0.006; the Beta coefficient was 0.079 with a p-value of 0.582. Finally, for the micro-entrepreneurs, R^2 was 0.060; the Beta coefficient was -0.246 with a p-value of 0.690.

In conclusion, the results are the same whether the responses from wave number five are taken into account or not. All hypotheses are rejected at this point. All p-values from either macro-entrepreneurs, entrepreneurs, or micro-entrepreneurs indicate that self-esteem is not related to entrepreneurial orientation, which means that H5a, H5b, and H5c are not supported in this sample. Furthermore, there is no difference between the undifferentiated sample and the split sample; therefore, H5 is supported. Tables 18a and 18b summarize the results.

Table 18a. Self-Esteem and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.022	0.149	0.209	
Macro-Entrepreneur	0.523	0.723	0.167	No
Entrepreneur	0.015	0.124	0.334	No
Micro-Entrepreneur	0.060	-0.246	0.690	No

Table 18b. Self-Esteem and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.014	0.118	0.365	
Macro-Entrepreneur	0.523	0.723	0.167	No
Entrepreneur	0.006	0.079	0.582	No
Micro-Entrepreneur	0.060	-0.246	0.690	No

Opportunism. The sixth hypothesis set for the research was to investigate if the separation of entrepreneurs into three groups would produce different results in the relationship between the opportunism construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H6: The influence of opportunism on entrepreneurial orientation will be moderated by the trichotomical grouping of entrepreneurs.

H6a: Entrepreneurs with a high CEI score will have opportunism as a dimension of their entrepreneurial orientation.

H6b: Entrepreneurs with a low CEI score will not have opportunism as a dimension of their entrepreneurial orientation.

H6c: Entrepreneurs with a medium CEI score will have opportunism as a dimension of their entrepreneurial orientation.

In order to test that relationship, a regression analysis was run for the full sample and another with splitting the file according to the type of entrepreneur as determined by

the CEI score. For the full sample, R^2 was 0.006; the Beta coefficient was 0.076 with a p-value of 0.529. For the split sample the R^2 for the macro-entrepreneurs was 0.583; the Beta coefficient was -0.764 with a p-value of 0.133. For entrepreneurs, the R^2 was 0.003; the Beta coefficient was 0.058 with a p-value of 0.655. Finally, for the micro-entrepreneurs, R^2 was 0.754; the Beta coefficient was 0.868 with a p-value of 0.056.

In conclusion, most hypotheses are rejected at this point. The p-values from either macro-entrepreneurs or entrepreneurs indicate that opportunism is not related to entrepreneurial orientation, which means that H6a and H6c are not supported in the sample. As far as H6b is concerned, the hypothesis was that opportunism would not be associated with the opportunism construct. That hypothesis is not only rejected but the opposite has been found. In the research sample, opportunism is significantly, albeit moderately, related to entrepreneurial orientation. Therefore, there is a difference between the undifferentiated sample and the split samples; which implies that H6 is supported. Table 19 summarizes the result.

Table 19. Opportunism and Entrepreneurial Orientation

	R^2	Beta	P-value	Support
Full sample	0.006	0.076	0.529	
Macro-Entrepreneur	0.583	-0.764	0.133	No
Entrepreneur	0.003	0.058	0.655	No
Micro-Entrepreneur	0.754	0.868	0.056	No

Autonomy. The seventh hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different results in the relationship between the autonomy construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H7: The influence of autonomy on entrepreneurial orientation will not be moderated by the trichotomial grouping of entrepreneurs.

H7a: Entrepreneurs with a high CEI score will have autonomy as a dimension of their entrepreneurial orientation.

H7b: Entrepreneurs with a low CEI score will have autonomy as a dimension of their entrepreneurial orientation.

H7c: Entrepreneurs with a medium CEI score will have autonomy as a dimension of their entrepreneurial orientation.

In order to test that relationship, a regression analysis was run for the full sample and another one with the file split according to the type of entrepreneur as determined by the CEI score. For the full sample, R^2 was 0.022; the Beta coefficient was 0.150 with a p-value of -.207. For the split sample the R^2 for the macro-entrepreneurs was 0.006; the Beta coefficient was -0.075 with a p-value of 0.904. For entrepreneurs, the R^2 was 0.027; the Beta coefficient was 0.165 with a p-value of 0.196. Finally, for the micro-entrepreneurs, R^2 was 0.002; the Beta coefficient was 0.040 with a p-value of 0.949.

In conclusion, all hypotheses are rejected at this point. All p-values from either macro-entrepreneurs, entrepreneurs, or micro-entrepreneurs indicate that autonomy is not related to entrepreneurial orientation, which means that H7a, H7b, and H7c are not supported in our sample. Furthermore, there is no difference between the undifferentiated sample and the split samples; therefore, H7 is supported. Table 20 summarizes the result.

Table 20. Autonomy and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.022	0.150	0.207	
Macro-Entrepreneur	0.006	-0.075	0.904	No
Entrepreneur	0.027	0.165	0.196	No
Micro-Entrepreneur	0.002	0.040	0.949	No

Proactiveness. The eighth hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different results in the relationship between the proactiveness construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H8: The influence of proactiveness on entrepreneurial orientation will be moderated by the trichotomical grouping of entrepreneurs.

H8a: Entrepreneurs with a high CEI score will have proactiveness as a dimension of their entrepreneurial orientation.

H8b: Entrepreneurs with a low CEI score will not have proactiveness as a dimension of their entrepreneurial orientation.

H8c: Entrepreneurs with a medium CEI score will have proactiveness as a dimension of their entrepreneurial orientation.

In order to test that relationship, I ran a regression analysis for the full sample and another with splitting the file according to the type of entrepreneur as determined by the CEI score. For the full sample, R² was 0.327; the Beta coefficient was 0.572 with a p-value of 0.000. For the split sample the R² for the macro-entrepreneurs was 0.678, the Beta coefficient was 0.823 with a p-value of 0.087. For entrepreneurs, the R² was 0.413; the Beta coefficient was 0.643 with a p-value of 0.000. Finally, for the micro-entrepreneurs, R² was 0.021; the Beta coefficient was -0.143 with a p-value of 0.818.

Therefore, H8a is supported. H8a advanced that there would be a significant relationship between achievement and entrepreneurial orientation for macro-entrepreneurs; with a p-value of 0.087, that relationship cannot be rejected, even if the significance is weak. Hypothesis H8b is supported; H8b predicted that proactiveness would not be related to entrepreneurial orientation for micro-entrepreneur and with a p-value of 0.818 we can safely support that hypothesis.

H8c is also supported; H8c predicted that entrepreneurs would have a significant relationship between achievement and entrepreneurial orientation. With a p-value of .000 we have to conclude that this strong relationship stands as predicted.

Finally, since different findings were obtained between the three types of entrepreneurs, we have to conclude that H8 is supported; the trichotomy of entrepreneurs has a moderating effect on the relationship of proactiveness and entrepreneurial orientation. With the full sample, we found that proactiveness was significantly related to entrepreneurial orientation, with the moderator in place; it became apparent that micro-entrepreneurs were not exhibiting that relationship. Table 21 summarizes the results.

Table 21. Proactiveness and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.327	0.572	0.000	
Macro-Entrepreneur	0.678	0.823	0.087	Yes
Entrepreneur	0.413	0.643	0.000	Yes
Micro-Entrepreneur	0.021	-0.143	0.818	Yes

Competitive Aggressiveness. The ninth hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different

results in the relationship between the competitive aggressiveness construct and the entrepreneurial orientation construct. The hypotheses were set as follows:

H9: The influence of competitive aggressiveness on entrepreneurial orientation will be moderated by the trichotomous grouping of entrepreneurs.

H9a: Entrepreneurs with a high CEI score will have competitive aggressiveness as a dimension to their entrepreneurial orientation.

H9b: Entrepreneurs with a low CEI score will not have competitive aggressiveness as a dimension to their entrepreneurial orientation.

H9c: Entrepreneurs with a medium CEI score will have competitive aggressiveness as a dimension to their entrepreneurial orientation.

In order to test that relationship, a regression analysis was run for the full sample and another with splitting the file according to the type of entrepreneur as determined by the CEI score. For the full sample, R^2 was 0.079; the Beta coefficient was -0.281 with a p-value of 0.015. For the split sample the R^2 for the macro-entrepreneurs was 0.679, the Beta coefficient was -0.824 with a p-value of .086. For entrepreneurs, the R^2 was 0.055, the Beta coefficient was -0.234 with a p-value of .060. Finally, for the micro-entrepreneurs, R^2 was 0.308; the Beta coefficient was 0.555 with a p-value of 0.332. Therefore, H9a is supported. H9a advanced that there would be a significant relationship between competitive aggressiveness and entrepreneurial orientation for macro-entrepreneurs, with a p-value of 0.086, this weak relationship cannot be rejected.

Hypothesis H9b is supported; H9b predicted that competitive aggressiveness would not be related to entrepreneurial orientation for micro-entrepreneurs and with a p-value of .332 we can safely support that hypothesis.

H9c is also supported; H9c predicted that entrepreneurs would have a significant relationship between achievement and entrepreneurial orientation. With a p-value of 0.060 we have to conclude that this moderate relationship stands as predicted.

Finally, since different findings were obtained between the three types of entrepreneurs, it is safe to conclude that H9 is supported; the trichotomy of entrepreneurs has a moderating effect on the relationship of proactiveness and entrepreneurial orientation. With the full sample, we found that competitive aggressiveness was significantly related to entrepreneurial orientation, with the moderator in place; it became apparent that micro-entrepreneurs were not exhibiting that relationship. Table 22 summarizes the results.

Table 22: Competitive Aggressiveness and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.079	-0.281	0.015	
Macro-Entrepreneur	0.679	-0.824	0.086	Yes
Entrepreneur	0.055	-0.234	0.060	Yes
Micro-Entrepreneur	0.308	0.555	0.332	Yes

Number of Dimensions. The tenth hypothesis set for the research was to determine if the separation of entrepreneurs into three groups would produce different results in the number of dimensions related to the entrepreneurial orientation construct. The hypotheses were set as follows:

H10a: Entrepreneurs with a high CEI score will have nine dimensions in their entrepreneurial orientation.

H10b: Entrepreneurs with a low CEI score will have four dimensions in their entrepreneurial orientation.

H10c: Entrepreneurs with a medium CEI score will have nine dimensions in their entrepreneurial orientation.

In order to test these hypotheses, a backward regression analysis was run, in which all dimensions are entered in the analysis to begin with and then SPSS removes all inadequate dimensions from analysis and keeps only the significant dimensions.

For the macro-entrepreneurs, the backward regression analysis result provided a model with three dimensions related to entrepreneurial orientation. These dimensions are risk, autonomy, and achievement, with beta coefficient of 0.245, -0.371, and 0.945 respectively. Unfortunately, SPSS was not able to calculate any p-value associated with these dimensions.

For the micro-entrepreneurs, the backward regression analysis result provided a model with four dimensions related to entrepreneurial orientation. These dimensions are opportunism, innovation, autonomy, and achievement, with beta coefficient of 0.840, -0.673, 0.350, -0.200 respectively. Unfortunately, SPSS was not able to calculate any p-value associated with these dimensions.

For the entrepreneurs, the backward regression analysis result provided a model with three dimensions related to entrepreneurial orientation. These dimensions are competitive aggressiveness, proactiveness, and achievement, with beta coefficient of -0.177, 0.591, and 0.213 respectively. The p-values associated with these dimensions were 0.098, 0.000, and 0.043.

In conclusion, all hypotheses are rejected at this point. H10a and H10c advanced that all dimensions would be related to the entrepreneurial orientation construct. The results from the backward regression reject that hypothesis, macro-entrepreneurs would only have three dimensions: risk, autonomy, and achievement. Entrepreneurs would also

have three dimensions; however, these would be: competitive aggressiveness, proactiveness and achievement.

H10b did expect that micro-entrepreneurs would have four dimensions associated with entrepreneurial orientation. The backward regression analysis did find four dimensions; however, the dimensions found (opportunism, innovation, autonomy, and achievement) were not the ones that were hypothesized to be found (Table 1: Innovation, locus of control, autonomy, and achievement). Only two of the four are present in the results; therefore, H10b has to be discarded. Table 23 summarizes the results.

Table 23: Backward Regression Analysis.

Type	Dimensions	Beta	P-value
Macro-entrepreneurs	Risk	0.245	N/A
	Autonomy	-0.371	N/A
	Achievement	0.945	N/A
Micro-entrepreneurs	Opportunism	0.840	N/A
	Innovation	-0.673	N/A
	Autonomy	0.350	N/A
	Achievement	-0.200	N/A
Entrepreneurs	Competitive aggressiveness	-0.177	0.098
	Proactiveness	0.591	0.000
	Achievement	0.213	0.043

Entrepreneurial Orientation and Performance. The last hypotheses set for the research was to determine if the separation of entrepreneurs into three groups would have a moderating effect on the relationship between performance and entrepreneurial orientation. The hypotheses were set as follows:

H11: The strength of the relationship between entrepreneurial orientation and performance will be moderated by the trichotomial grouping of entrepreneur.

H12: Entrepreneurs with a high or medium CEI score will exhibit higher performance than entrepreneurs with a low CEI score.

H13: Entrepreneurs with a high or medium CEI score will have a higher correlation score between EO and performance than the correlation score obtained for the full sample.

In order to test H11, a regression analysis was run for the full sample and another with splitting the file according to the type of entrepreneur as determined by the CEI score. Performance was operationalized by the profit generated from each respondent.

For the full sample, R^2 was 0.000; the Beta coefficient was 0.007 with a p-value of 0.960. For the split sample the R^2 for the macro-entrepreneurs was 0.987; the Beta coefficient was -0.993 with a p-value of 0.073. For entrepreneurs, the R^2 was 0.000; the Beta coefficient was 0.013 with a p-value of .935. Finally, for the micro-entrepreneurs, R^2 was 0.718; the Beta coefficient was -0.847 with a p-value of 0.357.

Based on these results, since different findings were obtained between the three types of entrepreneurs, we have to conclude that H11 is supported. The trichotomy of entrepreneurs has a moderating effect on the relationship between entrepreneurial orientation and performance. With the full sample, it was determined that performance was not related to entrepreneurial orientation. However, when using the CEI score as a moderator, a significant relationship was found between performance and entrepreneurial orientation for the macro-entrepreneurs, even if that relationship is not supported for micro-entrepreneurs and entrepreneurs. Table 24 summarizes the results.

Table 24. Profit and Entrepreneurial Orientation

	R ²	Beta	P-value	Support
Full sample	0.000	0.007	0.960	
Macro-Entrepreneur	0.987	-0.993	0.073	
Entrepreneur	0.000	0.013	0.935	
Micro-Entrepreneur	0.718	-0.847	0.357	

In order to test H12, the profit given by the respondents was ranked. Out of the 51 responses received, the highest micro-entrepreneur is ranked 30th, the other two were tied for 42nd. Therefore, we have some support for H12. Table 25 lists the responses.

In order to test H13, the correlation score obtained during the analysis done for H11 was used. In which, it was found that there was no correlation between performance and entrepreneurial orientation for entrepreneurs, that there was a high correlation between performance and entrepreneurial orientation for both micro- and macro-entrepreneurs (see R² in table 24). Therefore, H13 is not supported.

Table 25. Entrepreneur Type and Profit

	type2	PROFIT
1	entrepreneur	\$7,400,000.00
2	entrepreneur	\$1,200,000.00
3	entrepreneur	\$600,000.00
4	entrepreneur	\$450,000.00
5	entrepreneur	\$450,000.00
6	entrepreneur	\$400,000.00
7	entrepreneur	\$400,000.00
8	entrepreneur	\$400,000.00
9	entrepreneur	\$300,000.00
10	entrepreneur	\$298,361.00
11	entrepreneur	\$290,000.00
12	entrepreneur	\$210,000.00
13	entrepreneur	\$200,000.00
14	entrepreneur	\$180,000.00
15	entrepreneur	\$170,000.00
16	entrepreneur	\$150,000.00
17	entrepreneur	\$127,000.00
18	Macro-entrepreneur	\$125,000.00
19	Macro-entrepreneur	\$125,000.00
20	entrepreneur	\$100,000.00
21	Macro-entrepreneur	\$100,000.00
22	entrepreneur	\$95,000.00
23	entrepreneur	\$90,000.00
24	entrepreneur	\$80,000.00
25	entrepreneur	\$80,000.00
26	entrepreneur	\$78,000.00
27	entrepreneur	\$70,000.00
28	entrepreneur	\$50,000.00
29	entrepreneur	\$50,000.00
30	Micro-entrepreneur	\$50,000.00
31	entrepreneur	\$48,000.00
32	entrepreneur	\$45,000.00
33	entrepreneur	\$40,000.00
34	entrepreneur	\$32,694.00
35	Macro-entrepreneur	\$30,000.00
36	entrepreneur	\$28,000.00
37	entrepreneur	\$27,000.00
38	entrepreneur	\$15,000.00
39	entrepreneur	\$10,000.00
40	entrepreneur	\$10,000.00
41	entrepreneur	\$3,999.00
42	entrepreneur	\$.00
42	Micro-entrepreneur	\$.00
42	Micro-entrepreneur	\$.00
48	entrepreneur	-\$10,000.00
49	entrepreneur	-\$24,346.20
50	entrepreneur	-\$30,000.00
51	entrepreneur	-\$50,000.00

CHAPTER 5

CONCLUSIONS

The goal of this research was to seek a better understanding of the entrepreneurial orientation construct by using Carland's trichotomy of entrepreneurs, as a moderator. Based on the literature that exists on this topic, three main areas for research were identified and were used as a root for this dissertation. The first area dealt with determining which dimensions are underpinning the entrepreneurial-orientation construct, while the second is centered on the number of dimensions composing that construct. The third axis of research was to determine if there is a relationship between entrepreneurial orientation and performance. As a result, 13 sets of hypotheses were created and tested for the research. The sample was composed of entrepreneurs listed in the Louisiana Economic Development. After removing members who didn't supplied their e-mail address or had an outdated e-mail (undeliverable surveys), the survey was received by 1500 entrepreneurs. Following several waves of e-mails and phone calls, a total of 103 surveys were returned for analysis.

Findings

Risk

The first set of hypotheses dealt with the relationship between risk and entrepreneurial orientation. It was hypothesized that micro-entrepreneurs would be risk-averse, while entrepreneurs and macro entrepreneurs would be inclined to take risks.

After analysis of the results gathered for the research, it was determined that risk was not a significant antecedent for micro-entrepreneurs, as predicted (single- or multi-antecedents study). Furthermore, the beta coefficient associated between risk and entrepreneurial orientation for the micro-entrepreneurs was found to be negative; the sign of that relationship clearly shows that micro entrepreneurs in the sample collected were risk-averse.

Also, it was established that risk was moderately associated with the entrepreneurial-orientation construct for entrepreneurs, as predicted, but that same relationship couldn't be found for the macro-entrepreneurs when risk was analyzed as a single antecedent of entrepreneurial orientation. However, when a multi-antecedents study is conducted, risk becomes part of the antecedent set for macro-entrepreneurs but not for entrepreneurs.

Therefore, using Carland's trichotomy of entrepreneurs as a moderating factor provides a clearer view of the relationship that exists between risk and entrepreneurial orientation. The literature review clearly showed some inconsistencies in the published body of knowledge regarding risk and entrepreneurs. Now there is an explanation for these inconsistencies: depending on the type of entrepreneurs surveyed, the relationship

with risk varies, which can explain why some studies found risk as an antecedent while others did not.

Need for Achievement

The second set of hypotheses was centered on the possible relationship between entrepreneurial orientation and the need for achievement and it was predicted that macro-entrepreneurs and entrepreneurs would exhibit achievement as an antecedent of their entrepreneurial orientation, while micro-entrepreneurs would not.

As a single antecedent of entrepreneurial orientation, it was determined that achievement is indeed related to entrepreneurial orientation for macro-entrepreneurs and entrepreneurs, while that relationship could not be found for micro-entrepreneurs, as predicted. However, as part of a multi-antecedent set, the need for achievement is present for all types of entrepreneurs.

Even if the last finding is slightly different from what was expected, overall, the use of the trichotomy of entrepreneurs as a moderator enhances the analysis of entrepreneurs. It explains why not all entrepreneurship studies report achievement as an antecedent of entrepreneurial orientation.

Innovation

Innovation was the focus of the third set of hypotheses. Based on the literature review, it was hypothesized that all types of entrepreneurs would have innovation as an antecedent of entrepreneurial orientation. However, the analysis of the results showed that this relationship was not present when innovation was tested as a single antecedent of entrepreneurial orientation for all types of entrepreneurs. When the multi-antecedent

analysis is conducted, innovation appears only within the micro-entrepreneurs set; it cannot be found for entrepreneurs and macro-entrepreneurs.

This result contradicts the usual thinking that entrepreneurs need to innovate in order to be successful. Further studies will be needed to explain such a result.

Locus of Control

The fourth set of hypotheses dealt with the potential relationship between entrepreneurial orientation and locus of control and it was forecasted that all types of entrepreneurs would exhibit locus of control as an antecedent of their entrepreneurial orientation. After analysis of the results obtained for the research, it was determined that this relationship could not be found in either the multi-antecedents or the single-antecedent analysis. In the sample obtained, locus of control doesn't have any significant relationship with entrepreneurial orientation.

This result is somewhat surprising; entrepreneurs are known to be in charge and believed to be in control of their destiny. However, this current finding couldn't link locus of control with entrepreneurial orientation. Maybe what is needed is to develop a better scale to measure locus of control in entrepreneurs. Another possibility could be that it is the result of a type II error.

Self-Esteem

The fifth set of hypotheses analyzed the relationship that might exist between entrepreneurial orientation and self-esteem. It was hypothesized that all types of entrepreneurs would have self-esteem as an antecedent of their entrepreneurial orientation. However, after analyzing the results, it became apparent that self-esteem had

no significant relationship with any type of entrepreneurs, either in the single-antecedent analysis or the multi-antecedents analysis.

Like the result for locus of control, this total lack of relationship between entrepreneurial orientation and self-esteem is baffling, and further research will be needed in order to explain it.

Opportunism

The sixth set of hypotheses focused on the link between opportunism and entrepreneurial orientation. Based on the literature review, it was hypothesized that entrepreneurs and macro-entrepreneurs would have opportunism as an antecedent of their entrepreneurial orientation, while micro-entrepreneur would not. Surprisingly, the analysis of the results showed a different arrangement. No relationship was found for macro-entrepreneurs and entrepreneurs between opportunism and entrepreneurial orientation, neither as a single antecedent nor as part of a multi-set of antecedents. However, a moderate relationship was found between the two constructs for the micro entrepreneurs, in both the single- and multi-antecedent analysis; a moderately significant relationship was found to exist.

This counterintuitive result is interesting; macro-entrepreneurs and entrepreneurs, by definition, are supposed to take advantage of opportunities in order to develop their businesses, while micro entrepreneurs are thought to be able to recognize opportunities but would choose not to pursue them in order to lower their risk and focus on maintaining their current situation. The results of this dissertation indicate the opposite, which might indicate that micro-entrepreneurs are looking for opportunities to seize some niche activities in order to maintain their current level of earnings.

Autonomy

Autonomy was the focus of the seventh set of hypotheses. Based on the literature review, it was hypothesized that all types of entrepreneurs would have autonomy as an antecedent of entrepreneurial orientation. However, the analysis of the results showed that this relationship was not present when autonomy was tested as a single antecedent of entrepreneurial orientation for all types of entrepreneurs. When the multi-antecedent analysis is conducted, autonomy appears in the multi-antecedent set for micro-entrepreneurs and macro-entrepreneurs; it could not be found for entrepreneurs.

Therefore, these results might indicate that autonomy is an underlying component of other constructs; by itself, autonomy doesn't seem to be significant. However, when used in a set of antecedents, autonomy becomes significant, potentially drawing significance from the other antecedents.

Proactiveness

The eighth set of hypotheses dealt with proactiveness, which examines the potential link that can exist between proactiveness and entrepreneurial orientation. Based on the literature review, it was hypothesized that macro-entrepreneurs and entrepreneurs would exhibit a significant relationship between the two constructs, while micro-entrepreneurs would not. The results of the study showed that these hypotheses could not be rejected. Macro-entrepreneurs showed a weak significant relationship and entrepreneurs had a strong significant relationship, while the analysis of the micro-entrepreneur revealed no significant relationship when proactiveness was examined as a single antecedent of entrepreneurial orientation. When the multi-antecedent analysis is conducted, proactiveness is found to be part of the multi-antecedent set for entrepreneurs,

but that construct was not significant for the macro-entrepreneurs or the micro-entrepreneurs.

The findings support the hypotheses that entrepreneurs in the higher end of the spectrum of the Carland Entrepreneurship Index are more proactive than entrepreneurs in the lower end.

Competitive Aggressiveness

The final construct for analysis focused on competitive aggressiveness. It was forecasted that macro-entrepreneurs and entrepreneurs would have competitive aggressiveness as an antecedent of their entrepreneurial orientation, while micro-entrepreneurs would not. The results of the analysis for competitive aggressiveness as a single antecedent of entrepreneurial orientation confirmed the hypotheses developed for the research: macro-entrepreneurs had a significant, albeit weak, relationship; entrepreneurs showed a moderately significant relationship; and for micro-entrepreneurs, no significant relationship could be established. When the multi-antecedent analysis is conducted, competitive aggressiveness is found to be part of the multi-antecedent set for entrepreneurs, but that construct was not significant for the macro-entrepreneurs or the micro-entrepreneurs.

These results mean that competitive aggressiveness is a very important part of the entrepreneurial orientation of entrepreneurs. These results provide support to Carland's definition of macro-entrepreneurs and entrepreneurs that posits that these types of entrepreneurs are willing to compete in order to get ahead of their competitors, while micro-entrepreneurs are more willing to stay away from outright competition even if it means lowering their financial gain.

Number of Dimensions

The second area of research was to demonstrate that different types of entrepreneurs would have a different set of dimensions and also a different number of dimensions underpinning their entrepreneurial orientation.

This research showed that only one construct was present for all types of entrepreneurs: achievement. Overall, it was found that macro-entrepreneurs had three antecedents (risk, autonomy, and achievement); micro-entrepreneurs had four antecedents (opportunity, innovation, autonomy, and achievement); and entrepreneurs had three antecedents (competitive aggressiveness, proactiveness, and achievement).

These results prove that treating entrepreneurs as one group would be incorrect. There are strong differences between the types of entrepreneurs, and not separating studied entrepreneurs into their respective types would lead to false conclusions. These results and that might be the reasons why this research study obtained contradicting results from other studies on the same topic.

Entrepreneurial Orientation and Performance

The last area of research for this study was to examine the relationship that potentially exists between entrepreneurial orientation and performance. Many studies have been conducted on this topic, yielding conflicting results. It is commonly thought that the higher the entrepreneurial orientation, the higher the performance of the entrepreneur. Therefore, if that were true this study should have found that macro-entrepreneurs attained a higher performance level than entrepreneurs or micro-entrepreneurs. Indeed, the analysis of the results of the study showed that there was a significant relationship between entrepreneurial orientation and performance for macro-

entrepreneurs but not for micro-entrepreneurs or entrepreneurs. However, these results yielded another important finding: not only is the relationship significant, but the beta coefficient associated with it is negative! This finding would mean that being a macro-entrepreneur would be detrimental to performance. Furthermore, when looking at the self-reported profit (used as a proxy for performance), one sees that entrepreneurs are the ones yielding the highest profit; the first macro-entrepreneur is ranked only in the 18th position.

Therefore, a researcher has to conclude that being a macro-entrepreneur is not a pre-requisite for higher performance. A potential explanation for such a result might be a conjoint, moderating economic effect; i.e., macro-entrepreneurs would enjoy a greater performance rate in a stable economic system.

Limitations

This study had several limitations. The first limitation is grounded in the type of survey used. In order to reach potential respondents, it was deemed efficient to use an internet survey. Using this method, an email was sent to each respondent containing an introduction to the research and a link to the survey web site.

This method didn't yield a sufficient number of responses (<10%); in an attempt to increase the response rate, it was decided to call potential respondents and plead directly with them to respond to the survey. While talking directly with these entrepreneurs, two potential explanations for the low responses rate became clear.

The first potential explanation was the fact that the email list that was obtained contained a lot of personal email. Quite a few people who were contacted by phone were

upset that I had access to their personal email and let me know in no uncertain terms that they were not happy about it.

The second potential explanation was in the choice of the web site hosting the survey. I used a company called Survey Monkey that has a good reputation in academic circles. However, a number of entrepreneurs didn't seem to know that web site, and the name didn't appear to be "appropriate" for legitimate research.

The combination of these explanations, the typical responses to spam, and the fear of identity theft, made it apparent that using email and an internet survey was probably not the best choice of medium to conduct this research. Another medium might have yielded a higher response rate for the research.

Another limitation was in the fact that the research sample was located in Louisiana. Two potential problems arise from such a choice. First of all, there might be a difference between Louisianan entrepreneurs and using entrepreneurs from the rest of the U.S. or using international entrepreneurs. Another problem was related to the long term economic effect of hurricane Katrina. This research was conducted a year after Katrina; however, it is entirely possible that the surveyed entrepreneurs might still be experiencing some economic aftereffects from the hurricane.

A final limitation resides in the choice of the mathematical technique used to analyze the result of the surveys. Before knowing the response rate, it was thought that the best method to analyze the anticipated surveys would be to use structural equation modeling. With such a mathematical tool, all constructs would be linkable and all hypotheses could be answered with strong confidence in the analyses. However, this mathematical technique demands that at least 15 answers per construct be used in the

analysis (i.e., a model with opportunity, proactiveness, competitive aggressiveness, and entrepreneurial orientation would need at least 60 answers). Unfortunately, the results obtained yielded fewer than ten micro-entrepreneurs or macro-entrepreneurs, far from the number needed to be able to use structural equation modeling. Therefore, regression analysis was used instead. Even with this method, the capability of the mathematical tool was stretched in order to analyze the results. Since the results were based on a relatively small number of respondents, this researcher and other researchers should be very cautious in regard to the findings of this study.

Conclusions

Based on the findings described earlier, it is now possible to draw some conclusions out of the research conducted. The most important conclusion that can be reached from the study is the fact that there are several different kinds of entrepreneurs. The findings clearly showed that some significant differences exist between macro-entrepreneurs, entrepreneurs, and micro-entrepreneurs, especially regarding risks, opportunism, and competitive aggressiveness. Therefore, doing research without separating the entrepreneurs into their respective homogeneous group could lead to unreliable results.

Another conclusion that can be reached after completing the study is that the use of the Internet to deliver the survey instrument was not as fruitful as thought to be. It was hypothesized that entrepreneurs would have no problems with the use of that medium. However, the results of the study showed that it is not the case and the conclusion to be drawn is that entrepreneurs and internet surveys don't seem to mix with one another.

The third conclusion that can be attained is based on the relationship that was found between entrepreneurial orientation and performance. By using the Carland's Entrepreneurship Index it was possible to find a significant relationship between entrepreneurial orientation and performance where it was not present before separating the entrepreneurs into more homogeneous groups. Therefore, it can be concluded that, with the help of the CEI, researchers should be able to gain a better understanding of the relative importance of entrepreneurial orientation and its relationship with other constructs.

Recommendations

This study yielded several interesting conclusions; it also opened the door for some further studies.

One of these studies would be to create a better way to identify and separate the different types of entrepreneurs. Indeed, the Carland Entrepreneurship Index was useful in separating the sample of entrepreneurs into three types of entrepreneurs. However, the CEI scale is a 33-item scale. Using such a long scale in entrepreneurial research is going to be cumbersome and might lead to a low response rate. It would be worthwhile to try to create another scale that would achieve the same separation while being shorter. By creating a shorter scale, it would become easier to include it in further entrepreneurship studies and it would enhance the depth of research. Also, it might help with the response rate, as shorter surveys are more likely to be answered than longer surveys (Yamarino et al., 1991)

Another study related to the findings regards the use of electronic survey. It might be fruitful to conduct research to know whether the use of a commercial web host would differ from the use of an academic host. By that is meant, would the response rate be higher by using a regular, paid-for, web-hosting service compared with using an in-house, with the .edu-ending, host? It could be argued that using the .edu-ending web address might create more goodwill and generate more responses than a regular .com address since the .edu-ending is reserved for academic activities and the .com are set aside for commercial activities.

Another proposed research study coming from the conclusions of this study would be to search for the “right” number of types of entrepreneurs. In this research there were three types of entrepreneurs: macro-entrepreneurs, entrepreneurs, and micro-entrepreneurs. After the hypotheses were established, it was realized that entrepreneurs were hypothesized to be like macro-entrepreneurs. After analyzing the results, some significant differences were found between the three groups. However, that doesn't mean that there are only three potential groups. In the current literature about entrepreneurs, another type of separation exists, “lifestyle entrepreneurs” (which would be quite similar to micro-entrepreneurs). Lifestyle entrepreneurs are being compared to entrepreneurs, which would be a two-cluster partition of entrepreneurs. One might imagine that there might even be four different types of entrepreneurs. This study was designed to test for different groups of entrepreneurs, now that this difference have been established, it might be worth to seek further knowledge and establish how many group should be considered.

The next study that would be recommended would be to examine if entrepreneurs change their type according to their current economic state. For instance, it could be

argued that an entrepreneur might be acting as a macro-entrepreneur until he or she reached a satisfactory level where that entrepreneur would switch his or her focus back to being a micro-entrepreneur. This current research is static; however, it might be that the entrepreneurial type could be dynamic.

Finally, as mentioned before, further research is definitely needed to help explain some of the findings. The first area of concern is the negative coefficient found between entrepreneurial orientation and performance. One explanation for such a result might be the impact of another moderating variable. Could it be that the economic environment has an influence on the relationship? For instance, macro-entrepreneurs might have a different success rate in a stable economy compared with that of a rapidly changing economy. It would be interesting to investigate such an assumption.

Another area worth studying is the relationship found between opportunism and entrepreneurial orientation for micro-entrepreneurs. The result obtained in this research was counter-intuitive: why would a micro-entrepreneur be opportunistic? By definition, micro-entrepreneurs are “set in their ways” and tend to protect their current situation; opportunity, therefore, should not have impacted on micro-entrepreneurs, since opportunity could only result in a change of the status quo that micro-entrepreneurs strive to preserve. Finding the reason why such a relationship occurred could be part of one’s research agenda.

In conclusion, this research study answered some questions in regard to entrepreneurs and their entrepreneurial orientation. The entrepreneurship field gained a new perspective, but in doing so, it also created some new questions that will need to be answered. Research is a never-ending story.

APPENDIX
SURVEY DOCUMENTS

Survey

Please, answer all questions. Your responses will be held in strict confidence.

1. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- Written objectives for this business are crucial
- It's enough to know the general direction you are going

2. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I like to think of myself as a skillful person
- I like to think of myself as a creative person

3. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I wouldn't have started this business if I hadn't been sure that it would succeed
- I'm never sure whether this business will succeed or not

4. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I want this business to grow and become a major force
- The real purpose of this business is to support my family

5. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- The most important thing I do for this business is plan
- I am most important in day to day management of this business

6. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I like to approach situations from a sympathetic perspective
- I like to approach situations from an analytical perspective

7. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- My primary purpose here is to survive
- I won't rest until we are the best

8. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- A plan should be written in order to be effective
- An unwritten plan for development is enough

9. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I probably spend too much time with this business
- I balance my time between this business, family and friends

10. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I tend to let my heart rule my head
- I tend to let my head rule my heart

11. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- My priorities include a lot of things outside this business
- One of the most important things in my life is this business

12. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I'm the one who has to do the thinking and planning
- I'm the one who has to get things done

13. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- People who work for me, work hard
- People who work for me, like me

14. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I look forward to the day when managing this business is simple
- If managing gets too simple, I'll start another business

15. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I think I am a practical person
- I think I am an imaginative person

16. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- The challenge of being successful is as important as the money
- Money, which comes with success is the most important thing

17. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I'm always looking for new ways to do things
- I try to establish set procedures to get things done right

18. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I think it is important to be sympathetic
- I think it is important to be logical

19. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I think that standard operating procedures are crucial
- I enjoy the challenge of invention more than anything else

20. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I spend as much time planning as in running this business
- I spend most of my time running this business

21. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I have found that managing this business falls into a routine
- Nothing around here is ever routine

22. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I prefer people who are realistic
- I prefer people who are imaginative

23. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- The difference between competitors is the owner's attitude
- We have some things which we do better than the competitors

24. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- My personal objectives revolve around this business
- My real life is outside this business with family and friends

25. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I enjoy the idea of trying to outwit the competition
- If you change too much, you can confuse the customers

26. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- The best approach is to avoid risky moves whenever possible
- If you want to outdo the competition you have to take some risks

27. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I hate the idea of having to borrow money
- Borrowing is just another business decision

28. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- Quality and service aren't enough. You must have a good image
- A fair price and good quality is all any customer really wants

29. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- People think of me as a hard worker
- People think of me as easy to get along with

30. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- The only undertakings this business makes are those that are relatively certain
- If you want the business to grow you have to take some risks

31. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- The thing I miss most about working for someone else is security
- I don't really miss much about working for someone else

32. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- I am concerned about the rights of people who work for me
- I am concerned about the feelings of people who work for me

33. Please check the box next to the ONE of each pair of statements which comes CLOSEST to representing the way you USUALLY feel.

- It is more important to see possibilities in a situation
- It is more important to see things the way they are

Please indicate your personal attitudes to the following questions as honestly as possible by choosing the appropriate answer

34. What happens in my business is affected more by my abilities, control and guidance than by external forces

- strongly disagree disagree neither agree nor disagree agree strongly agree

35. I push myself, and feel real satisfaction when my work is among the best there is

- strongly disagree disagree neither agree nor disagree agree strongly agree

36. I need to know that it's already been done before I'm willing to try it

strongly disagree disagree neither agree nor disagree agree strongly agree

37. I respect rules and established procedures because they guide me

strongly disagree disagree neither agree nor disagree agree strongly agree

38. I feel self-conscious when I am with very successful business people

strongly disagree disagree neither agree nor disagree agree strongly agree

39. I am ultimately responsible for my own business success

strongly disagree disagree neither agree nor disagree agree strongly agree

40. I am quite independent of the opinions of others

strongly disagree disagree neither agree nor disagree agree strongly agree

41. In pursuing business opportunities, I enjoy intimidating others

strongly disagree disagree neither agree nor disagree agree strongly agree

42. My goals and ambitions are generally modest and easily achieved

strongly disagree disagree neither agree nor disagree agree strongly agree

43. I do not consider myself to be particularly inventive or creative

strongly disagree disagree neither agree nor disagree agree strongly agree

44. I enjoy the uncertainty and risks of business; they energize me more than circumstances with predictable outcomes

strongly disagree disagree neither agree nor disagree agree strongly agree

45. Nothing that life can offer is a substitute for great achievement

strongly disagree disagree neither agree nor disagree agree strongly agree

46. I spend more time thinking about my future goals than my past accomplishments

strongly disagree disagree neither agree nor disagree agree strongly agree

47. I am uncomfortable when I have complete responsibility for deciding how and when to do my work

strongly disagree disagree neither agree nor disagree agree strongly agree

48. I seldom get a sense of pride and accomplishment from my work

strongly disagree disagree neither agree nor disagree agree strongly agree

49. I get excited creating my own business opportunities

strongly disagree disagree neither agree nor disagree agree strongly agree

50. I am willing to risk my personal and family's material well being for the sake of business

strongly disagree disagree neither agree nor disagree agree strongly agree

51. I am confident of my abilities and feel good about myself

strongly disagree disagree neither agree nor disagree agree strongly agree

52. An opportunity to beat a competitor in a business deal is always a personal thrill

strongly disagree disagree neither agree nor disagree agree strongly agree

53. I enjoy being able to use old business concepts in new ways

strongly disagree disagree neither agree nor disagree agree strongly agree

54. Success comes from conforming to accepted business practices more so than constantly doing new things

strongly disagree disagree neither agree nor disagree agree strongly agree

55. I can control most situations I find myself in

strongly disagree disagree neither agree nor disagree agree strongly agree

56. It is important to continually look for new ways to do things in business

strongly disagree disagree neither agree nor disagree agree strongly agree

57. I like a job in which I don't have to answer to anyone

strongly disagree disagree neither agree nor disagree agree strongly agree

58. I frequently find myself in situations where I am powerless to control the outcome(s)

strongly disagree disagree neither agree nor disagree agree strongly agree

59. I often approach business tasks in unique ways

strongly disagree disagree neither agree nor disagree agree strongly agree

60. I buy insurance every time I travel

strongly disagree disagree neither agree nor disagree agree strongly agree

61. I do not enjoy being the catalyst for change in business

strongly disagree disagree neither agree nor disagree agree strongly agree

62. Most business circumstances happen because of luck, whether good or bad

strongly disagree disagree neither agree nor disagree agree strongly agree

- 63. My knack for dealing with people has enabled me to create many of my business opportunities**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 64. I find that I can think better when I have guidance and advice from others**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 65. I frequently have doubts about myself or my abilities when making business proposals**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 66. I am in total control of my destiny**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 67. I worry about what my business associates think of me**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 68. In business, I enjoy turning circumstances to my advantage**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 69. I am driven to ever greater efforts by an unquenched ambition**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 70. Successful business people pursue any opportunity, and do what they have to do in order to survive**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 71. I thrive in situations which encourage and reward my creativity**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 72. I need to know the answer before I'll ask a question**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 73. I judge my work by considering whether it meets the minimum requirements for the task**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 74. My goal when starting this venture was to "do the kind of work I wanted to do"**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 75. My goal when starting this venture was to "make more money than otherwise"**
 strongly disagree disagree neither agree nor disagree agree strongly agree
- 76. Because I'm unsure of myself, I spend a lot of time looking for someone who**

89. How many new lines of products or services has your business unit marketed during the past three years?

No new lines of product or services	1	2	3	4	5	6	7	Very many new lines of products or services
	<input type="radio"/>							

Changes in product or service lines have been mostly of a minor nature	1	2	3	4	5	6	7	Changes in product or service lines have usually been quite dramatic
	<input type="radio"/>							

93. In general, the top managers of my business unit have . . .

A strong proclivity for low risk projects (with normal and certain rates of return)	1	2	3	4	5	6	7	A strong proclivity for high risk projects (with chances of very high returns)
	<input type="radio"/>							

95. In general, the top managers of my business unit believe that . . .

Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior	1	2	3	4	5	6	7	Owing to the nature of the environment, bold, wide ranging acts are necessary to achieve the firm's objectives
	<input type="radio"/>							

97. When confronted with decision making situations involving uncertainty, my business unit . . .

Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions	1	2	3	4	5	6	7	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities
	<input type="radio"/>							

99. The following sentences describe how various people deal with risky situations and what their attitude towards risk decisions is. We would like to learn how you

think about these issues. Could you please read each sentence and then rate to what extent that statement is true for you.

no, not at all (1) -----> yes, very much so (7)

I'm quite cautious when I make plans and when I act on them

1	2	3	4	5	6	7
<input type="radio"/>						

I follow the motto, "nothing ventured, nothing gained"

1	2	3	4	5	6	7
<input type="radio"/>						

I've not much sympathy for adventurous decisions

1	2	3	4	5	6	7
<input type="radio"/>						

If a task seems interesting I'll choose to do it even if I'm not sure whether I'll manage it

1	2	3	4	5	6	7
<input type="radio"/>						

I don't like to put something at stake, I would rather be on the safe side

1	2	3	4	5	6	7
<input type="radio"/>						

Even when I know that my chances are limited I try my luck

1	2	3	4	5	6	7
<input type="radio"/>						

In my work I only set small goals so that I can achieve them without difficulty

1	2	3	4	5	6	7
<input type="radio"/>						

I express my opinion even if most people have opposite views

1	2	3	4	5	6	7
<input type="radio"/>						

My decisions are always made carefully and accurately

1	2	3	4	5	6	7
<input type="radio"/>						

I would like to act in my boss's job some time so as to demonstrate my competence, despite the risk of making mistakes

1	2	3	4	5	6	7
<input type="radio"/>						

I tend to imagine the unfavorable outcomes of my actions

1	2	3	4	5	6	7
<input type="radio"/>						

Success makes me take higher risks

1	2	3	4	5	6	7
<input type="radio"/>						

The following questions describe characteristics of people's job. For each statement we would like to ask you two questions.

- a. How much of the characteristic do you personally feel acceptable
- b. How much of the characteristic is present in your job now?

Please answer these questions using the following scale:

1 None at all..... 7 Very Much

100. The opportunity to work as fast or as slow as I like

How much do you think is acceptable? 1 2 3 4 5 6 7

How much do you think is present now? 1 2 3 4 5 6 7

101. The opportunity to do my work in my own way

How much do you think is acceptable? 1 2 3 4 5 6 7

How much do you think is present now? 1 2 3 4 5 6 7

102. Starting and finishing my work when I like

How much do you think is acceptable? 1 2 3 4 5 6 7

How much do you think is present now? 1 2 3 4 5 6 7

103. Experimentating with different ways of doing things

How much do you think is acceptable? 1 2 3 4 5 6 7

How much do you think is present now? 1 2 3 4 5 6 7

104. Making important decisions each day

How much do you think is acceptable? 1 2 3 4 5 6 7

How much do you think is present now? 1 2 3 4 5 6 7

105. What year was this venture started?

106. Is this your first "entrepreneurial venture?"

- Yes
- No

107. Did you start this business?

- Yes
- No

108. What percentage of this business do you own?

109. What is your gender?

- Male
- Female

110. Indicate your highest education level

- Some high school
- High school/ GED
- Some college
- Associate degree
- Bachelor degree
- Some Graduate work
- Master's degree
- Ph.D.

111. How many years have you been with your present firm?

112. How many years of work experience do you have?

113. What industry are you in?

- Professional Services (e.g. accounting, consulting...)
- Consumer Services (e.g. hairdressing, auto service...)
- Guest Services (Hotel, restaurant...)
- Manufacturing
- Transportation
- Retail
- Wholesale
- Construction
- Agricultural

114. How many years of work experience in your current industry do you have?

115. What would you consider to be your primary function at the present time?

- Engineering
- Finance
- Marketing
- Manufacturing
- Accounting
- Sales
- General Management

116. What is your socio-cultural background?

- African American
- Asian
- Caucasian
- Hispanic
- Native American

117. How many full time equivalent employees work in your firm?

118. What was your firm total sales for last year?

119. What was your total profit after tax last year?

120. What is your average return on investment (ROI)?

Thank you very much for completing this survey. Rest assure that your answers are going to be kept confidential and that only aggregate data will be used for academic research on entrepreneurship.

121. Would you like to be entered in the cash drawing (\$300)?

- Yes
- No

122. Would you like to receive a copy of the aggregated results?

- Yes
- No
-

123. If you checked "Yes" on any of the previous two questions, please enter an e-mail address for me to reach you.

Survey Letter

Dear Entrepreneur,

Would you help a student?

I am a doctoral student writing my dissertation on an entrepreneurship topic. I'm trying to create a better understanding of entrepreneurs and for that I need your help.

I have created a survey that I would like you to answer. It will take only a short time to complete and will help to solve some entrepreneurial questions for my research. Of course, all answers are confidential and will only be accessible by you and me. All answers will be used in an aggregate form and no individual responses will be singled out.

I know that your time is important. I wish I could pay for your time answering the survey but unfortunately my budget can not support that. However, I will select one lucky respondent from all the entrepreneurs that answered the survey and that person will receive a **\$300 reward**.

What do you need to do to answer the survey? All you have to do is click on the following link.

http://www.surveymonkey.com/s.aspx?sm=s1M90Qoh019vSX3BCnvA7g_3d_3d

It will take you to the survey (4 pages) where you are asked to select an answer for either a paired group or multiple-choice questions. You will be done in just a few minutes.

I assure you that this survey is legitimate academic research and is not a scam. If you have any questions, feel free to email me back and I would be glad to answer. You can also visit my webpage if you want to (<http://www.mtmc.edu/academics/faculty/ljosien.html>). If you are not an entrepreneur, please email me back.

Thank you in advance for responding to my survey.

Yours truly,

Laurent Josien
Doctoral Candidate.

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