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ACADEMY OF ENTREPRENEURSHIP JOURNAL

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LETTER FROM THE EDITOR

We are extremely pleased to present Volume 6, Number 1, of the *AEJ*. The Academy of Entrepreneurship is an affiliate of the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The *AEJ* is a principal vehicle for achieving the objectives of the organization. The editorial mission of this journal is to advance the knowledge, understanding, and teaching of entrepreneurship throughout the world. To that end, the journal publishes high quality, theoretical and empirical manuscripts, which advance the entrepreneurship discipline.

The manuscripts contained in this volume have been double blind refereed. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies.

As editors, we intend to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. We welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier.

The Editorial Policy, background and history of the organization, officer lists and addresses and calls for conferences are published on our web site. In addition, we keep the web site updated with the latest activities of the organization. Please visit our site and know that we welcome hearing from you at any time. Please feel free to contact me with journal submissions at the address below.

Editorial Comment: This edition of the *Academy of Entrepreneurship Journal* includes the first of what we hope will be an attractive new feature - an invited article by a very successful entrepreneur. Harvey Dean is the founder and CEO of Pitsco, a leader in the field of educational technology. Dr. Dean was selected as a *INC Magazine* Entrepreneur of the Year and has described his approach to "hands on" education in *Changing Education: A Success Story*, published in 1997 by Arete Publishing (Dallas, TX).

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EDUCATIONAL ENTREPRENEURISM

Harvey R. Dean, Pitsco

ABSTRACT

We are delighted to begin this issue of the AEJ with an address from well-known educator, Harvey R. Dean, Ed.D. He is the founder and CEO of Pitsco Inc., and a former teacher. He is an author, speaker, and leader in the field of technology education. His research on methods for improving student success has taken him into schools and classrooms across the country. The system he describes in his book, ***Changing Education****, is currently in use in more than 2,000 schools and has transformed the lives of thousands of students nationwide.*

Dr. Dean lives in Pittsburg, KS, with his wife Sharon. He has three children and a grandson, Alex.

INTRODUCTION

Explaining entrepreneurism and how to teach students about this American phenomenon is a challenging undertaking. Experience has shown it to directly relate to one of Mark Twain's observations about spelling. To paraphrase (his quote was a bit more gruff), he said, "I'm a little suspicious of people who can only spell a word one way." I, too, am a little suspicious of those who have formulas or procedures that purport to create entrepreneurs. Entrepreneurs evolve in many ways.

The provision of free public education is one of the major foundations upon which our democracy was created and one that continues as a cornerstone of our great nation. Integral to education has been the evolution of businesses - from small mom-and-pop operations that grow large to megacompanies employing tens of thousands of workers. Our culture is permeated with the desire to be one's own boss, have one's own business, or build a better mousetrap. All are noble, worthy thoughts and dreams. But what is occurring at school to introduce and prepare students for their leap into entrepreneurship?

Chances are, many of today's students will continue the trend of a growing number of individuals who shop their services and expertise through the Internet. The very nature of this kind of work dictates that the person become entrepreneurial at the most basic level because he and his skills are the commodities he is selling. The Internet provides a place where entrepreneurship thrives, a fertile ground where both bold and strikingly simple ideas are exposed to a worldwide audience instantaneously.

So how should educators prepare students for an environment so open to entrepreneurial ideas? Should teachers be expected to teach entrepreneurial characteristics within the boundaries of the three "R's," such as in Steve Mariotti's book, *The Young Entrepreneur's Guide to Starting* *and Running a Business*, where he suggests that entrepreneurial characteristics include adaptability, competitiveness, discipline, drive, honesty, and organization? The answer is, "Of course not." While the entrepreneurial characteristics have applications within the coursework, core curriculum such as language arts, math, science, and social sciences does not - and in most cases cannot - afford teachers, the laboratories, or time to foster and encourage these traits.

MIDDLE SCHOOL SOLUTION

In an economy so tightly driven by the entrepreneurial spirit, we cannot afford to let students slide through school without experiencing the teamwork, problem solving, and perseverance demanded by the economy they will soon enter. My company has assumed the challenge of developing and implementing a methodology to enable the entrepreneurial abilities of students within an educational process that can fit in any school while accounting for the needs of that school's educational outcomes. Through the experience we gained by serving middle school students for 10 years in a unique and award-winning learning environment, we created and released in 1998 an educational process for high school-aged students that enables them to experience teamwork, problem solving, leadership, and initiative within a real-world setting.

Ten years ago Pitsco introduced a middle school curriculum called Synergistic Systems that changed the way students learn and teachers teach. Within the system students become responsible for their own learning, and the teacher becomes a facilitator of that learning. Now, with more than 2,000 labs across the country, we know this approach is the right way to teach middle school students responsibility while they are engaged in the use of technology and concepts that might seem too advanced in a traditional classroom. The system enables students to reach their potential, and when given the responsibility for their own learning, they respond by learning challenging information and completing hands-on applications.

As the number of Synergistic Systems labs grew and increasing numbers of students experienced our unique curriculum, we began receiving requests for a "next level" for students to experience in the upper grades. In middle school, the system's hands-on activities and curriculum integrate math, science, and technology with other subjects, making the concepts taught in other classes more relevant. Add this feeling of relevance to the motivation and engagement they experience by taking responsibility for their own learning, and it's easy to see the void that's created in the high school experience for former Synergistic students.

HIGH SCHOOL APPROACH

This void created both an opportunity and a challenge. Though we had been successful in middle schools, the Synergistic curriculum and approach were developmentally inappropriate for high school-aged students. While the middle school system follows a strict seven-day curriculum framework that accounts for every moment of a class period, a high school system would need to be more detailed and open ended.

The implementation of two-student teams in the middle school system teaches cooperation and responsibility. A high school system needs to prepare students for their next step - college, vocational school, or the workforce, a point that became a key idea behind the development of the new process.

To ensure the relevancy of the high school system, we researched what skills, qualities, and attributes businesses and industries want in their employees. What came out of that research was resoundingly clear. Experiences in the new system must include teamwork, problem solving, leadership, communication, and hands-on interaction with technology.

As the system began to take shape, it was clear that many of the same qualities we were hoping to develop in participating students were the same or complementary to many of the entrepreneurial characteristics noted by Mariotti. The system lent itself so well to those ideals, that one of the first curriculum topics applied to the new educational framework was "Free Enterprise."

The high school system incorporates a six-student team with a workspace that includes three workstations. The student team divides into pairs (Figure 1) that explore a different aspect of the curriculum topic at each of three corner workstations. In the Free Enterprise curriculum, at one corner, called *Entrepreneurship*, students learn about business plans, acquisitions, and ventures. At the second corner, *Marketing*, students explore market surveys and analysis, advertising, packaging, and ethics. At the third corner, *Operations*, students deal with the legal aspects of running a business, as well as profit-and-loss statements, human resource management, inventory, and purchasing. At this level of the curriculum, each student pair within the team gains an expertise in a specific area of Free Enterprise.

When students reach a higher level within the curriculum, the system brings them together at a table in the center of the workspace and challenges them to solve a real-world problem using the resources of the entire team (Figure 2). Captains are designated by the curriculum and lead the team toward completion of a solution to the challenge.

Because each pair of students brings a specific expertise to the table, all six team members must work together and communicate well to complete their task. In Free Enterprise, the first challenge is to generate a business plan and then begin a partnership that provides consumable goods for one of three kinds of stores - a pasta shop, a sporting goods store, or music store.

After deciding on a solution and defining a strategy to complete the challenge, the student pairs return to their respective corner workstations and begin working on their parts of the project, keeping in constant communication via e-mail. The formal aspect of their goal is to create a presentation that shows their solution to the class. It's not unusual to see computer, video, and constructed models as part of a final presentation.

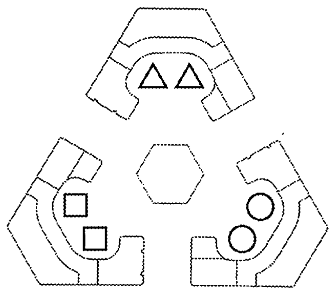
Just as in the corporate world, the student team is brought together to solve a problem, with each person applying his expertise to help achieve a solution. And, just as in the real world, teamwork, leadership, and communication are integral parts of any success achieved.

To complete the curriculum and their experience within the topic, (*Free Enterprise*, in the example above) students rotate to different corners of the workspace and join with different partners to gain expertise on a different aspect of the curriculum topic. Then, as a team, they are given a more difficult challenge than the first, and by applying their newly acquired knowledge, they create a solution and present it to the class. Finally, a third rotation and even more difficult challenge complete the curriculum, each student having explored all three areas of the curriculum topic.

Our results with the high school system, called Pathways, have been outstanding. Most important, the feedback from the teachers, administrators, and students has been very positive. We're seeing the kind of motivation to learn that is reported in our middle school system and witnessing students working beyond the expectations of the curriculum to create outstanding projects and presentations. Teachers have told us about students who skip every other class during a school day except for Pathways, because they don't want to let their teammates down.

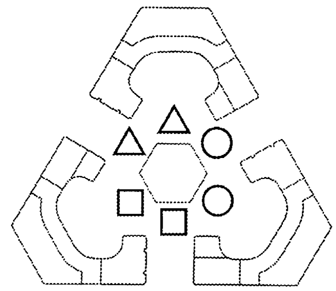
I believe the success of our high school system stems from the qualities it was intended to instill. Today's students are fully aware of the world around them and the entrepreneurial ideals that are rewarded within it. By finding a place where students can put these skills to practice in a real-world setting, solving real-world problems, the relevance of those skills becomes evident. The students are prepared for their next step.

Figure 1. Knowledge Acquisition



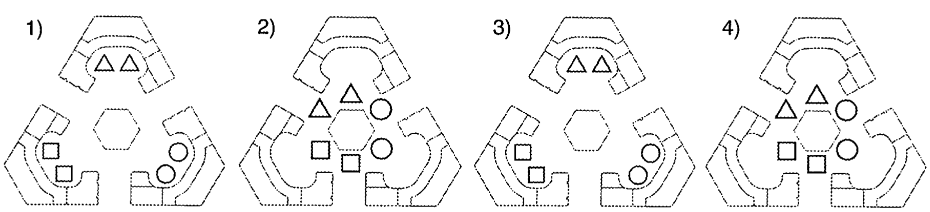
In the first interval of the curriculum, the team of six students works in three pairs of two, with each pair gaining expertise in a unique area of the curriculum topic. This instruction includes both on-screen and hands-on interactions.

Figure 2. Team Challenge



After students gain a certain level of knowledge in their specific area of the curriculum topic, all six students are challenged to solve a problem as a team. The challenge is structured so students must use their unique knowledge of the curriculum topic to help the team reach its goal.

Figure 3. Working as a Team to Solve Problems



The curriculum challenges students to gain a unique knowledge of the curriculum topic and then apply that knowledge to help their team solve a problem. First, as shown in #1, students work in pairs to gain knowledge in one of three unique areas of the same topic. Second, they gather at the team table and are challenged to solve a problem as a team, each member bringing his or her distinct new expertise to bear on the solution. Once a solution is decided upon, students return to their corner (shown in #3) to complete their part of the solution, remaining in contact with the other students through email. Finally, the team assembles its solution and creates a presentation, which is delivered to the class. Students then rotate to a new corner, a new partner, and a new knowledge area within the curriculum. The team is again challenged (#2) with a more difficult problem to solve. After completing the solution and presentation (#3 and #4), the students rotate for a third and final time. This third rotation presents the most difficult challenge.The total time the team spends in this curriculum topic is nine weeks.

THE FIVE-FACTOR MODEL OF PERSONALITY: ASSESSING ENTREPRENEURS AND MANAGERS

Brooke R. Envick, St. Mary's University
Margaret Langford, St. Mary's University

ABSTRACT

This study differentiates entrepreneurs from managers using the Five-Factor Model of personality. The five factors include adjustment, sociability, conscientiousness, agreeableness, and intellectual openness. Adjustment determines confidence versus instability. Sociability measures extraversion versus introversion. Conscientiousness determines impulsiveness versus cautiousness. Agreeableness measures team-orientation versus self-interest. Intellectual openness involves practicality versus originality. Results indicate that managers are significantly more conscientious and agreeable than entrepreneurs. They are also more social than entrepreneurs, but not to a significant degree. Entrepreneurs are more adjusted and open than managers, however results are not significant.

INTRODUCTION

The word *entrepreneur* has existed for more than 250 years; however, entrepreneurism was not a well-respected career in United States until the 1980s. People like Sam Walton and Bill Gates suddenly brought appeal and status to the word entrepreneur. Attention quickly focused on identifying the entrepreneurial personality.

Today, researchers still attempt to discover personality characteristics and behaviors that distinguish entrepreneurs from other people, most typically managers. A few personality traits that recur in the entrepreneurship literature more often than others traits include the need for achievement (e.g. McClelland, 1961; Glennon, 1966; Hornaday & Aboud, 1971; Robinson, Stimpson, Huefner & Hunt, 1991), the propensity to take risks (e.g. Mill, 1848; Ginzberg, 1955; McClelland, 1961; Timmons, 1978; Welsh & White, 1981), and internal locus of control (e.g. Borland, 1974; Brockhaus, 1982; Timmons, 1978).

The purpose of this paper is to continue the study of entrepreneurs' personality traits. However, attention is shifted from the commonly studied aforementioned traits to the Five-Factor Model of personality (Goldberg, 1990; Goldberg, 1992; Goldberg, Sweeney, Merenda, & Hughes, 1998), which has recently emerged from the field of psychology into business applications. The paper compares entrepreneurs to managers on each of the five factors. First, we describe Five-Factor Model and discuss its recent applications to business research. Next, we review research findings that compare entrepreneurs to managers and suggest hypotheses regarding the Five-Factor model. Then, we describe our research methodology. Finally, we discuss results of the study and draw conclusions.

LITERATURE REVIEW

With some controversy in the psychological community, the Five-Factor Model (also referred to as the Big Five) emerged in recent years as a "robust model" or "Great Theory" of personality. While a discussion of the theoretical arguments pertaining to the Five-Factor Model is beyond the scope of this paper, its proponents believe that the model is robust in that the personality of every human being, regardless of his or her culture, can be described utilizing the five dimensions (see Costa & McCrae, 1995; Digman, 1990; Goldberg, 1990, 1992; Goldberg, Sweeney, Merenda, & Hughes, 1998; Wideger & Trull, 1997).

Disagreement exists regarding the exact vocabulary of the five factors (or superfactors); however, conceptually, the factors are these: (1) *adjustment* (on a continuum from stable to neurotic), (2) *sociability* (from extroverted to introverted), (3) *intellectual openness* (from imaginative and interested in many things to practical and narrowly focused), (4) *agreeableness* (from benevolent to belligerent), and (5) *conscientiousness* (from dependable and goal-oriented to undependable and impulsive). The interest of psychologists is not in describing a universal "right" personality (there is none), but rather in examining a person's "score" on each of the five factors in conjunction with other factors (e.g., education, age, gender, job). The Five-Factor Model as it is used in <u>business</u> research is illustrated in Figure 1 below:

The Five-Factor Model in Business Research

Recently, researchers have reported Five-Factor Model results contain implications for the workplace. In jobs involving personal interactions, one study reported that the factors of *conscientiousness*, *agreeableness*, and *adjustment* were related to job performance. Not surprisingly, emotional stability and agreeableness were found to be especially important in jobs involving teamwork (Mount, Barrick, & Stewart, 1998).

With business franchise owners as subjects, Morrison (1997) examined the relationships between the Five-Factor Model and other psychological constructs (e.g., Self-Monitoring, Type A Behavior, Locus of Control, and Subjective Well-being). Results indicate that franchise owners tend to be Type A persons who are more *sociable* and *conscientious* than not. They are relatively more *agreeable* than not, slightly less *open* to new experiences than average. As a group, franchise owners tend to have an internal locus of control, which is also strongly associated with *adjustment*.

The results of a study by Collins and Gleaves (1998) regarding job applicants indicated no significant differences in the Five-Factor Model between African American and Caucasian applicants, although both groups tended to provide socially desirable survey responses regarding the Five-Factor dimensions. Another study reported that applicants who were more *sociable*, *open* to experience, and relatively *conscientious* tended to employ more effective job search strategies and were more successful in obtaining second interviews than those who did not (Caldwell & Burger, 1998).

Figure 1: The Five Factor Model

Adjustment	(Stable, confident, effective)	(Nervous, self-doubting, moody)
Sociability	(Warm, optimistic, talkative)	(Independent, reserved, hard-to-read)
Conscientiousness	(Planful, neat, dependable)	(Impulsive, careless, unorganized)
Agreeableness	(Team-oriented, trusting, considerate)	(Self-interested, cool, skeptical)
Intellectual Openness	(Imaginative, curious, original)	(Practical, unimaginative, literal-minded)

Although each factor represents a collection of traits, the link between personality and behavior becomes clearer when only one trait is the focus rather than one factor. There are several common personality traits that render a natural fit into one of the five factors. For example, locus of control is considered to be a part of the *conscientiousness* factor as it relates to job performance behaviors regarding dependability and responsibility (Lefcourt, 1992; Black, 1990). Another example is self-esteem. People with high self-esteem are more likely to take risks and enter difficult and unconventional occupations because they believe in their abilities. This is an important part of the *adjustment* factor as it relates to stability and confidence (Ellis & Taylor, 1983; Hollenbeck & Brief, 1987).

Other workplace-related studies utilized the Five-Factor Model include those involving employee absence (Judge, Martocchio, & Thoresen, 1997), expatriate success (Ones & Viswesvaran, 1997), job performance in the European Community (Salgado, 1997), and teamwork (Neuman, Wagner, & Christiansen, 1999).

Entrepreneurs Versus Managers

Managers and entrepreneurs are perceived as two groups of individuals, each having unique distinctions. For example, Vesper (1985) states that entrepreneurship is radically different from corporate management. Stevenson and Jarillo (1990) compare key components of entrepreneurial management and traditional management, where entrepreneurial management is characterized by the detection of and willingness to pursue opportunity. Carland, Hoy, Boulton, and Carland (1984) assert that the most critical factor distinguishing entrepreneurs from non-entrepreneurs is innovation. The entrepreneur has a preference for creating activity, manifested in some innovative combination of resources for a profit.

Chandler and Hanks (1994) contend that entrepreneurial competence is different from managerial competence, where entrepreneurial competence is comprised of six items: (1) time and energy spent looking for products/services that provide real benefits to customers; (2) accuracy in perceiving customers' unmet needs; (3) identifying products/services customers want; (4) seizing high-quality opportunities; (5) strong internal drive to see their venture through; and (6) ability to develop technically superior products/services. Managerial competence is characterized by: (1) proper resource allocation; (2) organizing and motivating people; (3) coordinating tasks; (4) ability to supervise, influence and lead people; (5) ability to delegate effectively; and (6) keep the organization running smoothly.

In a study using the Myers Briggs Type Indicator, entrepreneurs were most often profiled with the E, N, and T [i.e., they had an external orientation that promotes opportunity recognition (E), were innovative (N), and were flexible and actively responsive to change (T)]. In contrast, bureaucratic managers were profiled as I, S, and J [i.e., they had an inward orientation to their own practices (I), were sensitive to immediate events within their control (S), and adhered to structure while antagonistic toward change (J)] (Reynierse, 1997).

Hisrich (1990) compares traditional managers to entrepreneurs. He asserts that managers attempt to avoid mistakes and failure while entrepreneurs accept them. Managers' goals are short-term, while entrepreneurs' goals are long-term (5-10 years). He also states that the primary motivation of each group is very different. Managers are motivated by typical rewards such as gaining power and promotion. Entrepreneurs are motivated by opportunity and independence. Additionally, managers delegate tasks, while entrepreneurs prefer direct involvement.

Lastly, using sixteen adjective descriptors similar in concept to the Five-Factor Model, Brandstatter (1997) surveyed business founders, business heirs, and managers. Founders were reported to be more stable emotionally, more independent, and more open to new experiences than heirs as well as managers.

HYPOTHESES

The hypotheses are generated based upon empirical findings regarding the Five Factor Model, previous research regarding entrepreneurs compared to managers, and the nature of the job roles themselves. There is one hypothesis for each of the five factors.

H1: Entrepreneurs will score higher than managers on the *adjustment* factor.

By the nature of their job roles, it is logical to assume that entrepreneurs will score higher on the *adjustment* factor, which is characterized by resilience, confidence, and stability. This is not to say that managers are not stable or confident, nor is it likely they fall on the extreme end of the continuum characterized as self-doubting and nervous. However, entrepreneurs must be more proactive and resilient than managers who have more freedom to be reactive. Studies show that most successful entrepreneurs are self-confident individuals who see the problems in launching a new venture but believe in their own ability to overcome these problems (Longenecker, Moore, & Petty, 1997). Brandstatter (1997) reports founders to be more emotionally stable than heirs or managers.

H2: Managers will score higher than entrepreneurs on the *sociability* factor.

One common trait entrepreneurs possess is the need to be independent. A 1991 survey reveals that 83% of small business owners left corporate jobs because they wanted to be on their own (Viraelli, 1991). Entrepreneurs have an inherent desire to be independent (Brandstatter, 1997) and do not mind working alone. Managers must work with several people, subordinates, supervisors, and other managers. This requires them to be somewhat sociable and talkative. While entrepreneurs must also communicate with several different types of people, it is not uncommon for them to spend an entire day without any personal interactions, especially those operating home-based businesses.

H3: Managers will score higher than entrepreneurs on the *conscientiousness* factor.

Again, this is not to say that entrepreneurs are not conscientious. However, regarding relative positions on the continuum it is logical to assume that managers are more conscientious than entrepreneurs. Managers must be planful, organized, and cautious. Also, managers are accountable and must report to superiors regarding results. Entrepreneurs, by the nature of their job role, can and must take more risks make decisions on impulse. Hisrich (1990) states that entrepreneurs are moderate risk takers, whereas, managers are more cautious and risk-adverse.

H4: Managers will score higher than entrepreneurs on the *agreeableness* factor.

Entrepreneurs are the CEOs and presidents of their organizations. They make the ultimate decisions in many cases. Their independent nature does not provide the propensity to score high on the agreeableness factor, which characterizes someone who is more of a team player, attempting to satisfy others in many situations. Managers do spend a significant amount of time trying to work well with others and encouraging others to work well with one another. Entrepreneurs tend to be more independent, skeptical, and self-interested.

H5: Entrepreneurs will score higher than managers on the *openness* factor.

Intellectual openness is similar to several definitions of entrepreneurship, which involves creating new products, new markets, and innovative ideas. Entrepreneurs are naturally curious and must be imaginative and original. They are open to new experiences (Brandstatter, 1997) This is at the very heart of entrepreneurship. While managers can be open to new ideas and originality, much of their job role requires practicality and conservatism. As Hisrich (1990) contends, managers tend to avoid mistakes and failures and are risk-adverse. This leads to very routine thinking and behavior.

METHODOLOGY

The hypotheses are tested using ANOVA to determine if significant differences exit between entrepreneurs and managers on all five factors.

Subjects

Two hundred and eighteen subjects represent the findings, 99 managers and 119 entrepreneurs. A manager is defined as someone who manages people and or tasks in an organization owned by someone else. An entrepreneur is defined as someone who owns and operates his/her own business.

The Chamber of Commerce in a large Southwestern city generated a list of 2,500 entrepreneurs and managers. Twelve hundred were randomly selected from this list to receive the survey. With a response rate of over 19%, 237 surveys were returned, and 218 were usable. The average career length for manager participants is 17 years, with 9 years being the average tenure in their current position. Entrepreneur participants have owned an average of three businesses, and have owned their current business for an average of 14 years.

Procedures

All subjects received a survey containing background questions regarding their job role and type of business. The Five-Factor Model was tested using the questionnaire developed by Howard, Medina, and Howard (1996), which is commonly used by consultants and trainers and published in textbooks (Hellriegel, Slocum & Woodman, 1998). The survey included twenty-five sets of descriptive words on opposite ends of a continuum. Respondents were asked to circle the number on the continuum that most closely describes their personality. A few examples are provided in Figure 2.

Figure 2: Sample Survey Questions

Question							Factor Measure (not on survey)
Outgoing	3	2	1	2	3	Cool	(sociability)
Trusting	3	2	1	2	3	Skeptical	(agreeableness)
Seek novelty	3	2	1	2	3	Seek Routine	(openness)

Each of the Five Factors is measured by the sum of scores received on a total of five questions. The numerical scale above is converted so that one end of the continuum is a five and the other end is a one. The above scale was used in the survey so that participants would not be biased to circle numbers on either end of the scale assuming the word either next to the one or five was the “right” or “best” answer.

RESULTS

ANOVA was used to test all five hypotheses in order to compare entrepreneurs to managers on each personality factor. The first hypothesis tests *adjustment*. The second tests *sociability*. The third hypothesis tests *conscientiousness*. The fourth one tests *agreeableness*. And the fifth hypothesis tests *intellectual openness*. Table 1 presents the all means, standard deviations, and p-values.

With the first hypothesis, regarding *adjustment*, no significant findings are present. However, the general direction of the hypothesis holds true with entrepreneurs scoring higher (M=13.496) than managers (M=13.152).

No significant findings are present with the second hypothesis regarding *sociability*. Again, however, the general direction appears to be there. Managers are more sociable (M=17.596) than entrepreneurs (M=17.277). However, entrepreneurs may balance their need for independence with a demand for social contact, i.e., customers (Brandstatter, 1997).

The third hypothesis is supported. Managers (M=19.667) are significantly more *conscientious* [$F(1,216) = 3.817$; $p<.10$] than entrepreneurs (M=18.639). This means that managers are more planful, organized, and cautious while entrepreneurs are more impulsive, risky, and flexible.

The fourth hypothesis is also supported. Managers (M=20.081) are significantly more *agreeable* [$F(1,216) = 4.152$; $p<.05$] than entrepreneurs (M=19.101). This means that managers are more team-oriented and considerate to other people's desires while entrepreneurs are more independent and self-interested.

The fifth hypothesis is not significant regarding *intellectual openness*. However, the general direction appears to hold some merit. Entrepreneurs are more open (M=14.941) than managers (M=14.515).

Table 1: The Five Factor Model: Means, Standard Deviations, and p-Values

Factor	Group	Mean	SD	p-value
Adjustment	Managers	13.152	2.701	.3517
	Entrepreneurs	13.496	2.721	
Sociability	Managers	17.596	3.490	.4896
	Entrepreneurs	17.277	3.293	
Conscientiousness	Managers	19.667	3.493	.0520*
	Entrepreneurs	18.639	4.153	

Agreeableness	Managers	20.081	3.383	.0428**
	Entrepreneurs	19.101	3.658	
Intellectual Openness	Managers	14.515	3.253	.3931
	Entrepreneurs	14.941	3.967	

*Significant @ .10
**Significant @ .05

DISCUSSION

This paper makes a contribution by further identifying psychological traits that differentiate entrepreneurs from managers. While several psychological characteristics have been analyzed in order to define entrepreneurs and managers, the Five-Factor Model provides another avenue to differentiate and define each group.

Two of the five hypotheses are supported. Managers are significantly more *conscientiou*s and *agreeable* than entrepreneurs. While the other three hypotheses did not result in significant differences, the general direction of each has some merit. Entrepreneurs scored higher on *adjustment* and *openness*, while managers scored higher on *sociability*.

This study does provide more insight into the psychological profile of the entrepreneur. Several questionnaires exist for the purpose of helping individuals determine if an entrepreneurial career is suitable for them. These quizzes focus on background (education and experience), motivations, and personality traits. The increasingly accepted and robust Five Factor Model of Personality would be valuable tool to include in any questionnaire that guides people toward a corporate versus entrepreneurial career choice, with *conscientiousness* and *agreeableness* being especially important to consider in order to avoid a misfit between personality and profession.

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WORK SATISFACTION AND ENTREPRENEURIAL DREAMS

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ABSTRACT

This paper reports results from a life satisfaction survey (LSS) conducted with a college-educated sample of 345 respondents. The overall objective of this paper to compare some results of this life satisfaction survey with some of the findings of a recent Inc./Gallup poll of Americans at work. The survey instruments are not identical, but certain areas cover similar variables. It is in those areas where comparisons are made. The Gallup poll surveyed 800 people, and is supposedly a random sample of Americans, who are 18 or older and work at least 30 hours a week. The LSS study is directed at a more specific sample of educated respondents. Interestingly, both surveys revealed high work or job satisfaction results. However, LSS has more variable components (24) of life satisfaction, and a ranking of the components reveal that a college-educated sample is more satisfied with personal components versus professional components of their lives. The Gallup poll reported that a significant percent of workers who didn't currently own a business said they dreamed of starting one. More men reported the dream of business ownership compared to women. LSS reported a similar trend. However, the LSS instrument provided a timeline for entrepreneurial dreams, and therefore provides more insight into when people wanted to start their own business.

INTRODUCTION

According to Seglin (1998), “employee satisfaction reigns". Based on the annual Inc./Gallup survey of Americans at work, Seglin (1998) reported that 71% of Americans claim a job satisfaction of 4 or 5 on a five-point scale (where 5 meant "extremely satisfied"). The survey results also showed that 74% of workers think they are fairly paid (76% men and 71 % women). Forty-three percent of workers who didn't currently own a business said they dreamed of starting one. More men (49%) reported the dream of business ownership compared to women (36%). The Inc./Gallup survey was conducted in February 1998. It was a nationwide survey of 800 people over 18 years of age and employed at least 30 hours a week. Results are reported at the 95% confidence level, with a plus or minus 3% error range.

The current study focuses on gender as an important classification variable because the story of women business owners is a compelling one. Women-owned businesses have had stunning growth relative to the overall U.S. economy. In 1994, women-owned businesses hired 15.5 million people and generated 1.4 trillion in sales (Mallory, 1996). According to Mallory (1996) the U.S. Census Bureau reports that women's total share of non-farm businesses (excluding large femaleowned corporations), had reached 34.1 %. According to a more recent report by the National Foundation of Women Business Owners, women now own 36 percent of all U.S. businesses. These businesses have annual revenues of $2.28 trillion. Only 25 years ago, women owned less than 5 percent of all U.S. businesses (Nelton, 1996).

Previous studies have explored the influence of gender on job satisfaction and overall quality of life (Mohan-Neill, 1995; Mohan-Neill & Matusiak, 1995), the influence of gender and opportunity structure on job satisfaction (Mason, 1995; Mohan-Neill, 1996a), and the interactions between gender, opportunity structure and entrepreneurial aspirations (Mohan-Neill, 1996b). Published statistics indicate that women are forming businesses and succeeding as entrepreneurs at a much higher rate than men (Mallory, 1996; Nelton, 1996). Mohan-Neill (1996b) reported that while gender appears to have some influence on professional and entrepreneurial goals, an individual's opportunity structure is also a very important interactive variable. For example, enriched women may be less likely to have entrepreneurial goals early in their corporate careers because they have expectations of corporate advancement. On the other hand, impoverished women may have already been disillusioned concerning the probability of enrichment within a corporate environment, so, they are more likely to look to the future and envision their professional fulfillment within an entrepreneurial setting.

RESEARCH OBJECTIVES

The findings of the Inc./Gallup poll motivated this study with a closer look at what may be occurring behind the summary statistics. Are educated women equally satisfied with their jobs and compensation compared to men? Are men more likely to desire their own business compared to women? The objective of the current paper is to continue to examine the aspirations of subjects before they venture out and start businesses or become self-employed, hence the following research objectives:

- ♦ Does a college-educated sample report high job satisfaction similar to the Gallup survey?
- ♦ Do men and women report similar levels of satisfaction?
- ♦ How do work and job satisfaction rank in relation to the other components of life satisfaction?
- ♦ What is the influence of gender on the goal to be "self-employed or to start a business"? How are the results similar or dissimilar to the Gallup results?
- ♦ Are more men dreaming about owning a business compared to women?

RESEARCH METHODOLOGY

As part of the more long-range *QUALITY OF LIFE //LIFE SATISFACTION STUDY*, a four page questionnaire was developed. The questionnaire underwent several iterations and revisions. Focus group settings and in-depth personal interviews were utilized in the development of the questionnaire. After feedback and comments from a variety of sources, the final data collection instrument was completed. There are six major areas covered in the questionnaire: 1) *LIFE SATISFACTION MEASURES*: there were 24 variable measures of various dimensions of life satisfaction; 2) *DESIRE FOR CHANGE MEASURES*: there were 20 variable measures concerning the desire for change in various areas; 3) *FUTURE GOALS*: there were two categories of goals (personal and professional); respondents were asked to indicate whether the stated measures were goals, and if they were, the time frame they had for achieving those goals; 4) *CURRENT JOB SATISFACTION*: respondents were asked to give their current or most recent position and responsibilities; they were then asked to indicate the extent to which they agreed or disagreed with statements concerning their current/most recent position; 5) *DEMOGRAPHICS*: age, gender, marital status, education level, educational goals were some of the primary variables in the demographic section; 6) *FREE TO DREAM*: respondents were given two opened sentences to complete; the first was an attempt to get the respondent to describe his/her perception of the perfect job or position; the second was an attempt to have the respondent describe what it would take to be personally fulfilled.

VARIABLES OF INTEREST IN THIS STUDY

Life satisfaction measures:

Twenty-four measures of life satisfaction were examined in this study. A ten-point scale was used (I =very dissatisfied; 10=very satisfied). Table 1 is displayed at the end of this article.

Career and entrepreneurial goals:

Respondents were asked to indicate whether the following measures were goals, and if they were, what time frame did they have for achieving those goals. A *5* point scale was employed (1 indicated that it was not a major goal; 2 indicated it was a goal in 1 to 3 years; 3 indicated it was a goal in 4 to 6 years; 4 indicated it was a goal in 7 to 10 years; 5 indicated it was a goal in more than 10 years). The following goal was examined in this study: "start my own business or selfemployment”.

SAMPLE

A non-probability sample was utilized. However, some stratification and randomness was built into the sampling design as it snowballed. The following sources were utilized for developing the preliminary sample utilized in this study: full and part-time students from several universities, people from a variety of professional backgrounds, e.g., hospitals, consumer products company, consulting firms, non-profit associations. Unlike the Inc./Gallup sample, the LSS sample is more educated and younger. The sample utilized in this study consists of 345 respondents; the majority had at least some college education. There were 57.5% females and 42.5% males. In this sample, 35.8 % of the participants were 25 years or younger, 50.1% of the sample was 30 years old or younger and 12.3% were older than 45 years.

RESULTS AND DISCUSSION

Job & Work Satisfaction

With regard to the concept of job and work satisfaction which were measured in terms of the following:

- ♦ Does a college-educated sample report high job satisfaction similar to the Gallup survey?
- ♦ Do men and women report similar levels of satisfaction?

The Gallup poll (Seglin, 1998) used a five-point scale to measure job satisfaction (where 5 represented "extremely satisfied"). Seventy-one percent of the Gallup respondents reported a job satisfaction of 4 or 5 on a five-point scale. The survey results also showed that 74% of workers think they are fairly paid (76% men and 71 % women).

The LSS used a ten-point scale (10 was "very satisfied") to measure life satisfaction variables. There were a total of 24 variables (see Table 1). About 33 % of the sample reported 8 to 10 for work satisfaction; 33.1% men and 33.8 % women reported 8 to 10 for work satisfaction (see Table 2 at the end of the article).

Table 1 reveals the relative ranking of the means for all 24-life satisfaction variables. Overall, personal components rank higher relative to professional components for an educated sample. Work satisfaction is ranked 20th out of 24 variables. Satisfaction with salary and compensation is ranked 24th, and satisfaction with opportunity for advancement is ranked 23rd out of 24 variables.

ENTREPRENEURIAL DREAMING & GOALS

Those questions which addressed the concept of entrepreneurial dreams and goals were the following:

- ♦ What is the influence of gender on the goal to be "self-employed or to start a business"? How are the results similar or dissimilar to the Gallup results?
- ♦ Are more men dreaming about owning a business compared to women?

♦ What influence do gender and children have on the goal to be "self-employed or have one’s own business"?

According to the Gallup poll (Seglin, 1998), 43% of workers who didn't currently own a business said they dreamed of starting one. More men (49%) reported the dream of business ownership compared to women (36%). The results of the LSS study are presented in Table 3. They indicate that a greater percentage of women say that self-employment or business ownership is not a major goal (53.2%) compared to men (45.3%). Therefore more men are dreaming of owning a business compared to women. The LSS data gives a more detailed timetable for when people want to achieve their entrepreneurial dream. A greater percentage of men (13.7%) expressed a desire to be self-employed or start their own business within 1 to 3 years compared to women (7.5%). Eighteen percent of men in the sample expressed a desire to be self-employed or start their own business with 4 to 6 years compared to 17.2% women. The data indicates that a greater percentage of men express the desire to be self-employed or start their own business compared to college educated women.

TABLE 3
THE INFLUENCE OF GENDER ON SELF-EMPLOYMENT OR BUSINESS OWNERSHIP GOAL

TIME FRAME FOR GOAL	WOMEN %	MEN %
1=not a goal	53.2	45.3
2= in 1-3 years	7.5	13.7
3=in 4-6 years	17.2	18.0
4=in 7-10 years	11.3	10.8
5=in < 10 years	10.8	12.2
% of sample	57.2	42.8

The influence of gender and children on business ownership or self-employment was measured by the LSS. The LSS data on children can be used to expand the analysis beyond gender. Table 4 summarize the findings concerning the influence of gender and children on the goal to be "self-employed or start your own business". The sample was divided into four sub-groups: 1) Women, with no children, 2) Men, with no children, 3) Women, with children, and 4) Men, with children. Both groups of women indicated less desire for self-employment and business ownership compared to the groups of men. However, a greater percentage of women with children (14.3%) expressed the goal self-employment and business ownership compared to women without children (3.4%) during the 1-3 year time frame. A greater percentage of men with children (16.7%) also expressed the goal self-employment and business ownership compared to men without children (12.1%) during the 1-3 year time frame. So, when gender is held constant, it appears that the presence of children does increase the likelihood of someone desiring to start a business or to become self-employed. Often people perceive this career option as giving them the flexibility they need to raise children. Unfortunately, some people do not realize that time pressures and responsibilities often increase within entrepreneurial ventures. Women are often more deliberate and slow in starting businesses, and often their "lifestyle and slower paced ventures" have greater likelihood of survival and success.

TABLE 4
THE INFLUENCE OF GENDER AND CHILDREN ON SELF-EMPLOYMENT OR BUSINESS OWNERSHIP GOAL

GOAL	NO CHILDREN WOMEN %	NO CHILDREN MEN %	CHILDREN WOMEN %	CHILDREN MEN %
1=Not a goal	53.4	42.9	52.9	50.0
2=in 1-3 years	3.4	12.1	14.3	16.7
3=-in 4-6 years	18.1	16.5	15.7	20.8
4=-in 7-10 years	12.1	12.1	10.0	8.3
5=-in >10 years	12.9	16.5	7.1	4.2
% of Sample	35.7	28.0	21.5	14.8

CONCLUSION

Although this is a descriptive study, the results are interesting. This LSS study does show that college educated are more satisfied than dissatisfied with their jobs (similar to Gallup). However, when one views the "big picture", job satisfaction and satisfaction with salary and compensation rank much lower than personal variables. Also, interest in Entrepreneurship is also strong as evidenced by both Gallup and LSS. Men do express a greater desire to own their own business. However, the evidence shows that women start and succeed at a much greater rate compared to men. Their dreams are often tempered by reality.

The primary limitations of this study are that the sample does not represent the general population. The sample is more educated and younger than the overall U.S. population. Although, the findings are not generalizable to the overall U.S. population as a whole, it does have implications for a college-educated, younger population of students and professionals. It appears that college-educated women are more optimistic about corporate employment and are less likely to desire self-employment and business ownership compared to men. Independent of gender, the presence of children also increases the likelihood that people will desire self-employment or want to start their own business.

CHI-SQUARE TESTS

	Value	df	Asymp. Sig. (2 sided)
Pearson Chi-Square	7.982[a]	9	.536
Likelihood Ratio	8.006	9	.534
Linear-by-Linear	1.431	1	.232
N of Valid Cases	321		

[a] 2 cells (10.0%) have expected count less than 5. The minimum expected count is 2.10.

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TABLE 1
LIFE SATISFACTION VARIABLES: RELATIVE RANKING

	Rank	Minimum	Maximum	Mean	Std. Dev.
PERSONAL FREEDOM	1	1.00	10.00	7.5263	2.1845
FAMILY RELATIONSHIPS	2	1.00	10.00	7.5000	2.0546
FAMILY RESPONSIBILITIES	3	1.00	10.00	7.3275	2.0344
QUALITY OF LIFE SATISFACTION	4	1.00	10.00	7.3112	.7713
EDUCATIONAL ACHIEVEMENTS	5	1.00	10.00	7.3093	1.9428
INDEPENDENCE	6	1.00	10.00	7.1254	2.2299
PERSONAL RELATIONSHIPS	7	1.00	10.00	7.0673	2.2882
PERSONAL RELATIONSHIPS SATISFACTION	8	1.00	10.00	6.9912	2.3109
PROFESSIONAL FREEDOM	9	1.00	10.00	6.9635	2.1665
PERSONAL IMAGE SATISFACTION	10	1.00	10.00	6.9250	1.8731
CO-WORKERS	11	1.00	10.00	6.8476	2.0246
MARITAL STATUS	12	1.00	10.00	6.8199	3.0405
PROFESSIONAL IMAGE	13	1.00	10.00	6.6152	2.2232
SOCIAL INVOLVEMENT	14	1.00	10.00	6.6093	2.0856
PHYSICAL INVOLVEMENT	15	1.00	10.00	6.5948	2.0652
EMOTIONAL INVOLVEMENT	16	1.00	10.00	6.5505	2.3841
SPIRITUAL INVOLVEMENT	17	1.00	10.00	6.4822	2.1887
SUBORDINATES	18	1.00	10.00	6.3912	2.1828
PROFESSIONAL ACHIEVEMENTS	19	1.00	10.00	6.3565	2.2603
WORK SATISFACTION	20	1.00	10.00	6.2404	2.1750
CAREER/JOB RESPONSIBILITIES	21	1.00	22.00	6.2328	2.4592
POLICIES/CULTURE OF COMPANY	22	1.00	10.00	6.1128	2.4325
OPPORTUNITY-ADVANCEMENT	23	1.00	10.00	5.6727	2.4833
COMPENSATION/SALARY	24	1.00	12.00	5.5151	2.4352

TABLE 2
WORK SATISFACTION * GENDER CROSSTABULATION

WORK SATISFACTION			FEMALE	MALE	TOTAL
	10.00	Count	2	3	5
		% within GENDER	1.0%	2.2%	1.5%
		% of Total	.6%	.9%	1.5%
	9.00	Count	14	1.5	29
		% within GENDER	7.3%	10.8%	8.8%
		% of Total	4.2%	4.5%	8.8%
	8.00	Count	49	28	77
		% within GENDER	25.5%	20.1%	23.3%
		% of Total	14.8%	8.5%	23.3%
	7.00	Count	42	30	72
		% within GENDER	21.9%	21.6%	21.8%
		% of Total	12.7%	9.1%	21.8%
	6.00	Count	22	26	48
		% within GENDER	11.5%	18.7%	14.5%
		% of Total	6.6%	7.9%	14.5%
	5.00	Count	21	15	36
		% within GENDER	10.9%	10.8%	10.9%
		% of Total	6.3%	4.5%	10.9%
	4.00	Count	1.1	8	19
		% within GENDER	5.7%	5.8%	5.7%
		% of Total	3.3%	2.4%	5.7%
	3.00	Count	12	6	18
		% within GENDER	6.3%	4.3%	5.4%
		% of Total	3.6%	1.8%	5.4%
	2.00	Count	9	4	13
		% within GENDER	4.7%	2.9%	3.9%
		% of Total	2.7%	1.2%	3.9%
	1.00	Count	10	4	1.4
		% within GENDER	5.2%	2.9%	4.2%
		% of Total	3.0%	1.2%	4.2%
Total		Count	192	139	331
		% within GENDER	100.0%	100.0%	100.0%
		% of Total	58.0%	42.0%	100.00%

CHOICE OF TYPE OF CORPORATE ENTREPRENEURSHIP: A PROCESS MODEL

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ABSTRACT

Most research on corporate entrepreneurship has disproportionately emphasized external or organizational determinants. Although it is necessary to understand these external determinants, the premise of the present paper is that internal behavioral factors can also be equally helpful in understanding corporate entrepreneurship. Internal behavioral factors refer to the roles played by managers and employees in determining corporate entrepreneurship. Hence, two types of internal behavioral factors are identified and discussed: top managers' perception of the need for entrepreneurship and employees' desire to exploit entrepreneurial opportunities. By crossing high and low levels of the two factors, it is shown that the combination of high and low levels of these factors actually result in different types of corporate entrepreneurship.

INTRODUCTION

Corporate entrepreneurship (C.E.) has become a popular and widely studied phenomenon in the last few years as evidenced by the special issue of *Strategic Management Journal* (Summer 1990) and the appearance of new academic journals (e.g., *Academy of Entrepreneurship Journal, Entrepreneurship Theory and Practice, Journal of Business Venturing*). The importance of C.E. can be primarily attributed to its impact on the renewed success of some declining firms that successfully transformed themselves through entrepreneurial activities (Miller & Friesen, 1985) and its critical role in the survival of underperforming firms (Gimeno, Folta, Cooper, & Woo, 1997). In addition, there has been a growing interest in C.E. because of its use by companies to enhance the innovativeness of their employees and to enjoy corporate success through the creation of new ventures (Kuratko, Montagno, & Hornsby, 1990). C.E. has been linked with superior firm performance (Zahra & Covin, 1995) and pursuit of competitive advantage (Covin & Miles, 1999). The interest in C.E. has even been extended to its study in multinational corporations (Birkinshaw, 1997).

A review of the recent literature and classical articles (see Table 1 for a list of some of the classical articles) on C.E. reveals a disproportionate emphasis on external factors (i.e., organizational and environmental factors). Generally, C.E. is considered more of an organizational property resulting from organizational and environmental factors. In addition, the few studies that examined internal aspects of the organization generally tied the success or lack thereof of entrepreneurial ventures to the entrepreneurs' background/attributes (e.g., Cooper & Bruno, 1975). Although it is necessary to understand the external determinants of C.E., the premise of the present paper is that internal behavioral factors can also be equally helpful in understanding C.E. Internal behavioral factors simply refer to the critical roles played by managers and employees in determining the types of C.E. exhibited by any firm. Hence, while not denying the impact of external factors and organizational factors, this paper contributes to the literature by showing how levels of individual factors can have a significant impact on the type of C.E., an organizational property. The theory developed here broadens our understanding of corporate entrepreneurship by illuminating an area of importance that has not been fully developed before.

Table 1: Review Of Some Classic Articles On C.E.

1. Environmental influences on C.E.	
Cooper (1979)	ı opportunities for successful new product Development
Miller (1983)	Effects of dynamic and hostile environment on the extent of entrepreneurship in firms
Zajac & Shortell (1989)	Impact of environmental changes on generic strategies
Carter et al., (1994)	Identified which strategies dominated in different industries among new business ventures
McDougall et al., (1994)	ıew business ventures
2. Strategic leaders influence on C.E.	
Kanter (1983)	Effects of different management styles on level and performance of new ventures
Burgelman (1983b)	How management effectiveness at promoting the support of new ideas among peers and top management affects the degree of success of implementation
Starr & MacMillan (1990)	Examined the role of venture managers using social contracting as a means of acquiring resources
	Organizational forms/strategies/performance influences on C.E.
Tushman et al., (1985)	Effects of organizational performance downturns on changes in innovative practices and strategic direction
Hitt et al., (1989)	Levels of R&D intensity in firms pursuing strategies of acquisitive growth compared to firms pursuing strategies of internal growth through innovation
Dougherty (1990)	Effects of organizational factors on the understanding of the market for new products in large firms
Lant & Mezias (1990)	Explored the relative effectiveness of entrepreneurial strategies in firms that encountered environmental restructuring

Naman & Slevin (1993)	Conceptualized and measured fit using variables such as structure, strategy, entrepreneurial style, and environment to show that the better the fit, the better the performance
Shan et al., (1994)	The effects of interfirm cooperation on innovation in biotechnology firm

Why is a focus on internal behavioral factors so crucial? Because C.E. is such a complex activity, at a practical level, managers and organizations need more guidelines to direct or redirect resources to establish the desired type of C.E. In addition, although understanding external factors have academic merits, there is more value for practitioners if internal behavioral factors are studied because such factors are more easily changed and controlled. On a theoretical level, researchers need to continually assess and understand the components that actually predict types of C.E. Consequently, internal behavioral factors, which are in the control of management or employees within an organization, are identified and discussed.

LITERATURE REVIEW

Corporate Entrepreneurship

Although the literature abounds with conflicting definitions of entrepreneurship (e.g., Chung & Gibbons, 1997; Stopford & Baden-Fuller, 1994; Zahra, 1996), Sharma & Chrisman's (1999) attempt to propose a converging definition is notable. They define entrepreneurship as encompassing "acts of organizational creation, renewal, or innovation that occur within or outside an existing organization" (Sharma & Chrisman, 1999: 17). As such, corporate entrepreneurship is defined as the "process whereby an individual or group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization" (Sharma & Chrisman, 1999: 18).

The strategy literature identifies three types of C.E. (Stopford & Baden-Fuller, 1994). The first type is the creation of new businesses within existing organization (or corporate venturing) (for example, Block & MacMillan, 1993; Burgelman, 1983). Corporate venturing refers to the creation of new business(es) within existing organizations to take advantage of new opportunities. The second one is the more enduring activity of transforming or renewal of existing organizations (Beer, Eisenstat & Spector, 1990; Kanter, 1983; Zahra, 1996). Corporate renewal refers to the internal transformation of an organization in many areas; this conceptualization hints at fundamental changes in the way an organization conducts its activities. A firm undergoing corporate renewal exhibits changes in its product/market mix and the dimensions on which it chooses to compete. The third is where there is a major change in an industry in which the 'rules of competition' are radically changed (Schumpeter, 1934). Schumpeterian entrepreneurship refers to a situation where a firm changes the very rules of competition in an industry. The changes usually destabilize an existing industry structure and prompt the creation of a new one.

Although extensive research has been done on these three forms of C.E., none has actually used internal behavioral factors to develop an understanding of why firms have different forms of C.E. The present paper focuses on the discussion of two main internal behavioral factors.

As much as it is crucial to distinguish between individuals and organizations in studying C.E., it is also necessary that there is a clear difference between top management and those individuals who "pursue opportunities without regard to the resources the currently control" (Stevenson & Jarillo, 1990: 23). This distinction is necessary because 1) it is clear that top managers are not always the ones who pursue opportunities within organizations, 2) employees who exploit entrepreneurial opportunities (i.e., entrepreneurs) tend to be different from non-entrepreneurs in that they tend to frame business situations differently (Palich & Ray, 1995), 3) entrepreneurs tend to think differently compared to other people (Baron, 1998), and 4) entrepreneurs tend to use different decision-making biases and heuristics in some situations (Busenitz & Barney, 1997). In sum, there is strong evidence supporting a distinction between top managers and the employees (i.e., entrepreneurs) who seek to exploit entrepreneurial activities

The firm constitutes an opportunity structure for potential entrepreneurs within the firm (Burgelman, 1983). These 'intrapreneurs' (Pinchott, 1985) are employees who champion new ideas from development to reality. They tap into their entrepreneurial abilities through internal developments or diversification. This opportunity seeking behavior is seen as a very fundamental characteristic of a firm (Kirzner, 1973; Penrose, 1950) and has been linked to superior firm performance (Pearce & Carland, 1996). However, top management of the firm tolerates autonomous strategic behaviors in different degrees (Burgelman, 1983). In some organizations, top management allow high levels of autonomous strategic behavior while in others, top management rely more on induced behavior from employees (Burgelman, 1983). Consequently, the level of top management's perception of the need for entrepreneurial activity within a firm and the level of employees' desire to exploit entrepreneurial opportunities are identified as the two major internal behavioral factors that jointly determine which type of C.E. is exhibited in an organization.

For the sake of simplicity and discussion, only high and low levels of the two internal behavioral factors are considered. Hence, crossing high and low levels of top management's perception of the need for entrepreneurship and high and low levels of employees' desire to exploit entrepreneurial opportunities provides us with a lucid way to understand C.E.

Table 2
High and low levels of factors

	Top Management Perception Of The Need For Entrepreneurial Activity		
		Low	High
Operational	Low	Cell 1 (Status Quo)	Cell 2 (Corporate Renewal)

Participant's Desire To Exploit Entrepreneurial Opportunities	High	Cell 3 (Corporate Venturing)	Cell 4 (Schumpeterian Entrepreneurship)

The paper is structured as follows. The next section discusses how the crossing of different levels of top managers' perception of the need for C.E. and employees' desire to exploit entrepreneurial opportunities result in different types of C.E. Results are then summarized as propositions. The subsequent section discusses major factors that determine the desire of employees to exploit entrepreneurial opportunities and the top managers' perception for the need for entrepreneurial activities. Finally, some contributions of this paper for the C.E. field are discussed.

TYPES OF CORPORATE ENTREPRENEURSHIP

Crossing high and low levels of both employees' desire to exploit entrepreneurial activities and top managements' perception for the need for entrepreneurial activities result in four cells. Each of the four cells will be discussed to show that based on the conditions that exist within each cell, one specific type of C.E. either exists or will evolve in the firm.

Cell 1: Status-Quo

In this cell, neither top managers nor operational participants exhibit any entrepreneurial behavior. Top managers are unlikely to encourage any autonomous strategic behavior on the part of the employees because they do not see any need for it. This can happen, for example, in times of little environmental changes or when the managers do not recognize the changes or even when they reject the changes. Employees also have no desire to take risks and exploit entrepreneurial opportunities.

A good example of status-quo organizations is a defender type organization. Miles and Snow (1978) suggest that defender type organizations are often active in a narrow niche with which the top management is quite conversant. Such organizations, they add, are characterized by formal rules, standardized procedures, clear and narrow work roles for employees. Autonomous strategic behavior on the part of the employees is not encouraged and, in fact, it would be discouraged because of emphasis on cost control. The slack needed and necessary for the autonomous strategic behavior is usually not available making it difficult for the employees to engage in entrepreneurial activities.

Organizations may also become locked in Cell 1 if there is a reverse of Jelinek's (1976) institutionalization innovation. In such cases, the very mechanisms (and administrative systems) that are set to promote innovation may actually become self-destructive. Administrative systems embody past learning and by becoming institutionalized, set innovation paradigms for the organization. However, these same administrative mechanisms may lead to the reduction of mistakes, discourage investigation of new areas, and encourage development only in known areas. In such cases, stagnation or status-quo is the result.

Consequently, in Cell 1 firms, there is much more emphasis on the induced strategic loop (Burgelman, 1983). Both top managers and employees can work within the current strategy and situation, and C.E. would be at the minimum level. Therefore,

Proposition 1: When both top managers' perception of the need for entrepreneurial activity and employees' desire to exploit entrepreneurial opportunities are low, then C.E. is low.

Cell 2: Corporate Renewal

In cell 2, top management wants some degree of entrepreneurship, but employees do not provide many entrepreneurial activities and projects. Possibly they do not have any prior entrepreneurial experience, or have negligible management experience, or have very little training or education. However, it is also possible that inside environmental factors (i.e., organizational culture, inappropriate reward and compensation systems, declining financial situation, or ignorance of external environment) are constricting entrepreneurial behavior on the part of the operational participants.

Consider, for instance, that struggling or declining organizations can inhibit voluntary participation on the part of employees. Usually, the organizations in decline also show financial losses that make employees worry about their own employment. In addition, managers also make changes to the organizational structure and systems in an effort to revive the organizations. Such changes also unnerve employees. These conditions combined with lack of resources or slack can very likely inhibit any form of entrepreneurial activity on the part of the employees.

Consequently, when top managers face inside environmental factors that are not conducive to employees proposing entrepreneurial activities or are in declining or stagnating firms, serious turnaround is necessary. Corporate renewal represents such serious turnaround and is the likely result in Cell 2.

At a general level, revitalization or renewal involves "enhancing the abilities of, and contributions made by, managers, workers and the organization as a whole..." (Beer et. al., 1990:2). It involves competing in new markets rather than just the current markets. Beer et. al., ’s (1990) research suggests that the initiative and involvement of the employees is the key to the success of these change efforts. There is usually a need for general change in mentality and attitudes. Participation of lower level employees in decision making is found to be critical for successful change efforts. Also, there is greater emphasis on teamwork at all levels of the organization. Employees are empowered to take initiative in reducing costs, improving quality, exploiting of new opportunities and responding to customer needs. In turn, this new organization will ask for different patterns of management and employee commitment, with a redefinition of the company culture.

How does top management participate in the corporate renewal process? They are the ones who have to motivate their employees to exploit entrepreneurial opportunities. They are also the ones who have the ability to change the "Not Invented Here" syndrome that is characteristic of Cell 2 organizations (Merrifield, 1993). They also have the responsibility to create the necessary changes in mentality and attitudes of workers. Hence, they have the ultimate responsibility to initiate the corporate renewal process by securing the employees' participation.

A good example of corporate renewal is General Product Corporation where top managers understood the importance of entrepreneurial activity. They devised ways to recognize the value of innovations, learn from them, and find ways to spread them (Beer et. al, 1990). In most successful renewal experience, the following strategies were usually employed: 1) demanding high performance and investing in human resources, 2) developing innovative organization models, 3) invest in learning, and 4) promoting and training managers who are engaged in and committed to renewal. Hence, typically corporate renewal involves the changing of organization structure and culture to promote the exploitation of new ideas and innovations. From the preceding arguments it is concluded that top management is inclined and often has a strong influence on the lower level employees in encouraging them to participate in the renewal process.

Renewal, therefore, is the appropriate form of corporate entrepreneurship in the present situation because top management will want to perform a turnaround to ensure that workers exploit available opportunities. Hence,

Proposition 2: When top managers perceive a high need for entrepreneurship, but employees have low desire to exploit such entrepreneurial opportunities, corporate renewal is the likely form of C.E. in the organization.

Cell 3: Corporate Venturing

In cell 3, although employees have a strong desire to exploit entrepreneurial opportunities, top managers do not see a need for such activities. The organization may lack the structural features that support entrepreneurship within the firm. In such a situation, two possibilities exist: 1) operational participants may persist and actually convince top management of the viability of their idea and form an internal corporate venture, thereby becoming a ‘corporate venture champion’ (Greene, Brush & Hart, 1999) or 2) if the desire is strong enough and if external funds are available, the entrepreneur might decide to leave the existing organization to create a new one. In both cases, the organization has corporate venturing as a form of C.E.

Corporate venturing is the logical form of C.E. in the firm because it represents the case where employees are actually the ones championing new ideas even with limited or without support of top management. From the top management perspective, a new venture should not only be viable but also be consistent with the firm's current strategic direction. If not, managing the venture within the firm can be difficult and even be damaging to the current businesses (Simon, Houghton & Gurney, 1999). Consequently, if top managers are to take advantage of new opportunities but not risk the current business, they are likely to encourage corporate venturing as a form of C.E.

According to Block and MacMillan (1983), corporate venturing involves a number of crucial steps: 1) involves a new activity, 2) starts or is conducted internally, 3) involves greater risk of failure and has greater uncertainty than the current business, and 4) will be managed separately at some future time. Burgelman (1983: 1349) sees corporate venturing as "the process whereby firms engage in diversification through internal development...which requires new resources combination to extend the firm's activities in areas unrelated, or marginally related, to its current domain of competence...(page 1349)." A corporate venture by definition suggests a new product and or market activity that is very different from the firm's current activities.

Burgelman (1983) argues that very often entrepreneurial projects represent the vision of top management ex post. Large, complex organizations preclude top management from being able to devote as much attention to new projects or ideas. Although top management is usually very familiar with the current business, it lacks the necessary capabilities to comprehend new resource combinations proposed by operational participants. Hence, top management has difficulty in evaluating and even accepting such new venture ideas. This, however, does not mean that the importance of new ideas and exploitation of new opportunities on the part of employees is any less. Therefore, top management, as Burgelman (1983) argues, has a responsibility to blend the new business ideas within its organization, typically through corporate ventures. This may also entail post hoc changes in the strategic plan and the organizational structure. On their part, employees may modify or further refine their ideas to best suit the organizational requirements. Hence, given the above, it is very likely that the employees' high desire to exploit entrepreneurial ventures coupled with low perception of need from top managers result in corporate venturing.

Proposition 3: When employees have a high desire to exploit entrepreneurial ventures, but top managers perceive no need for such ventures, corporate venturing is the form of C.E. in the organization.

Cell 4: Schumpeterian Entrepreneurship

In cell 4, both top managers and operational participants agree on the need and necessity of exploiting entrepreneurial opportunities. There is more emphasis on the autonomous loop (Burgelman, 1983), where top managers would set in place a structure that will actually encourage and reward entrepreneurial activities. In such situations, the stage is set for Schumpeterian type of entrepreneurship. The Schumpeterian type of entrepreneurship referred to here is adopted from Stopford and Baden-Fuller (1994). Schumpeter (1950, pg. 132) defines entrepreneurship or the function of entrepreneurs as "to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on." In the spirit of this definition, Schumpeterian entrepreneurship is recognized as something that transforms the industry through a radical departure from the way business is currently conducted. Schumpeterian entrepreneurship can be distinguished from other types of entrepreneurship in terms of its impact on not only the focal firm but also on the industry in which the firm is located.

Schumepeterian innovation can be viewed as not only the transforming of the enterprise but also the competitive environment into something substantially different (Stopford & Baden-Fuller, 1994). They also argue that these innovations apply to new products or ideas are usually associated with emerging industries, however, they are applicable to existing incumbents in well-established industries. For example, the study of Shell (De Geus, 1988) and GE (Tichy & Charan, 1989) reveals that sometimes organizations react to others' innovations and eventually create new capabilities to the extent that the rules of the industry would be changed. The competition within such an industry is radically altered due to the frame breaking change brought out by a firm in the industry.

Schumepeterian corporate entrepreneurship is the likely outcome of the present situation because the right atmosphere exists for major innovations. Not only are top managers encouraging new initiatives but employees also have very high desire to exploit available opportunities. By definition, this cell embodies the autonomous strategic behavior identified by Burgelman (1983). The basic raw material for Schumpeterian type entrepreneurship and entrepreneurial ideas are provided by the employees. And as Penrose (1950) suggests the slack resources of even average amounts can significantly enhance the entrepreneurial discovery. Hence, in this case, the managerial resource is abundantly available. Consequently, because the right incentives and encouragement are given to employees and because employees provide the new ideas, the likelihood that Schumpeterian entrepreneurship will take place is enhanced. Consequently,

Proposition 4: When top management perceives a high need for entrepreneurship and employees have high desire to exploit entrepreneurial

	opportunities, Schumpeterian type of C.E. exists in the organization.

WHAT ARE FACTORS THAT DETERMINE EMPLOYEES' DESIRE TO EXPLOIT ENTREPRENEURIAL OPPORTUNITIES AND TOP MANAGEMENTS' PERCEPTION OF THE NEED FOR ENTREPRENEURSHIP?

Cells 1 to 4 represent various levels of employees' desire to exploit entrepreneurial opportunities and top management's perception of the need for entrepreneurship. Consequently, a complete inquiry into the determinants of C.E. begs the following question: What are the factors that influence employees' desire to exploit entrepreneurial opportunities? What are the factors that determine top management's perception of the need for entrepreneurship? In this section, we review the relevant literature and provide some answers to the above questions in the form of propositions.

WHAT ARE THE FACTORS THAT DETERMINE EMPLOYEES' DESIRE TO EXPLOIT ENTREPRENEURIAL OPPORTUNITIES?

Cell 3 and 4 refer to situations where employees have a high desire to exploit entrepreneurial opportunities. When can we expect such a situation? In this section, some of the internal factors that influence employees' desire to exploit entrepreneurial opportunities are discussed. It is assumed that the literature that applies to individual entrepreneurs is equally applicable to employees in organizational situations. Also, the discussion is limited to major factors only.

Studies that have looked at the antecedents of operational participant's willingness to exploit entrepreneurial opportunities can be categorized into three major areas: 1) the entrepreneur's background, 2) the entrepreneur's personality, and 3) the environment the entrepreneur is operating in. In the entrepreneur's background research, emphasis is placed on prior exposure, some biographical characteristics, and past entrepreneurial experience. A number of authors have conducted studies to look at psychological antecedents (such as personality traits and other psychological characteristics) of entrepreneurial actions (for e.g., Brockhaus, 1982; Gasse, 1982; Hornaday & Aboud, 1971; Welsch & White, 1981) and even personal motivation (McClelland, 1961). However, most of the latter research has not shown any relationship between such characteristics and entrepreneurship. Similarly, research has not identified any "standard" personality traits that make some individuals more likely to become entrepreneurs (Vesper, 1980; Sexton & Bowman, 1985). In the environment studies, researchers have looked at whether the environment is conducive to entrepreneurship or not. Consequently, after a careful review of the literature, it was decided to focus only on those internal factors that have promise for entrepreneurship research.

The first widely studied antecedent of willingness to engage in entrepreneurial activities is prior entrepreneurial experience (Collins & Moore, 1964; Vesper, 1980). It seems very likely that if somebody has had some prior entrepreneurial experience, then the likelihood of engaging in further entrepreneurial activities will be higher because some learning effect would have occurred. Having been an entrepreneur probably elevates the employee to a higher level of understanding of the business involved, and will probably encourage further experimenting, and exploitation of entrepreneurial opportunities. Exploitation of entrepreneurial opportunities involves the proper identification of entrepreneurial opportunities by the individual, and the subsequent act of merging of resources from the environment with his or her own unique resources to create a new combination. Hence, the following proposition can be advanced:

Proposition 5: Employees with prior entrepreneurial experience have a higher desire to exploit entrepreneurial opportunities.

A second factor that will determine the degree to which operational participants want to exploit entrepreneurial opportunities is exposure to parental business (Morris, Williams, Allen, & Avila, 1997). Typically, it seems that entrepreneurs have a self-employed parent and that they follow in the footsteps of their parents, although some of them opt against self-employment (Brockhaus & Horwitz, 1986). However, as Krueger (1993) argues, self-efficacy theory posits that vicarious experience can have a significant impact on attitudes, beliefs, and intentions. Exposure to and participation in a parental entrepreneurial venture might change one's view of entrepreneurship making one more amenable to such ventures. Such vicarious experiences can also strengthen one’s beliefs that one can be successful at entrepreneurial ventures. Hence,

Proposition 6: Employees with prior parental exposure to entrepreneurship have a higher desire to exploit entrepreneurial opportunities.

A third factor that can account for increased desire to exploit entrepreneurship opportunities is mere exposure to entrepreneurial activities. Hence, in many formerly communist economies where individuals have very little entrepreneurial experience or exposure to parental businesses, entrepreneurship is blossoming. This is possibly due to exposure to other entrepreneurial businesses and entrepreneurship workshops organized by other countries setting the stage to start one's own business. Consequently, we can argue that individuals who are more exposed to entrepreneurial activities would be more inclined to become interested in and exploit entrepreneurial opportunities. Hence,

Proposition 7: Exposure to entrepreneurial activities/businesses increases employees' desire to exploit entrepreneurial opportunities.

Finally, a background factor that determines employees' willingness to exploit entrepreneurial opportunities is education. If the employee is educated in a field that can contribute to the proper identification and recognition of entrepreneurial opportunities, then the participant would most likely be more willing to exploit such opportunities. Education probably gives a more abstract understanding of situations, and most likely will facilitate the entrepreneurial process. Hence, it has been found that education is very important for high-technology entrepreneurs (Cooper, 1979), although its relationship hasn't been established for more general settings (Hoad & Rosko, 1964). In addition, Robinson & Sexton (1994) found that those who were self-employed generally had more formal education and also that those who had more formal education had more success being self-employed. Consequently, education probably prepares employees in terms of understanding the issues inherent in entrepreneurship. The preparation probably facilitates the road to success. Therefore, the following can be advanced:

Proposition 8: Employees with directly relevant and applicable education have a higher desire to exploit entrepreneurial opportunities.

WHAT ARE THE FACTORS THAT DETERMINE TOP MANAGEMENT'S PERCEIVED NEED FOR ENTREPRENEURSHIP?

In Cell 2 and 4, top management's perception of the need for entrepreneurship is high. When does such a situation occur? In this section, it is argued that the top managers' perception for the need for entrepreneurship will depend primarily on the decision-making style of the manager and approach towards risk.

An entrepreneurial venture usually involves risk. Top managers' decision to agree to an entrepreneurial venture will involve a certain amount of risk. Consequently, managers perceived need for entrepreneurship will depend on how risk averse they are. In general, most people are risk averse, preferring a sure thing to a gamble (Kahneman & Lovallo, 1994).

However, some studies have shown that people can be risk-seeking, specially in situations of losses (Bateman & Zeithaml, 1989; Fishburn & Kochenberger, 1979). In addition, some studies have found that as one moves up the hierarchy, there is more inclination for higher level executives to take risks and also encourage others to take risks (MacCrimmon & Wehrung, 1986; Shapira, 1995). In sum, the findings from these studies suggest that people have different notions of risk. However, it is to be expected that the more risk-seeking managers will probably be more inclined towards entrepreneurial ventures. Such managers will most likely be more willing to accept risky entrepreneurial ventures too. Consequently, the following can be proposed:

Proposition 9: Risk-seeking managers are more likely to perceive higher need for entrepreneurship than risk-averse managers.

Perceiving the need for entrepreneurship may also depend on the managers' decision making heuristics and biases. Two of the most widely studied decision making styles are overconfidence bias and the representativeness heuristic (Kahneman, Slovic & Tversky, 1982; Tversky & Kahneman, 1974). Some managers will tend to be overly optimistic in their estimation of an entrepreneurial venture based on initial information received, particularly when they are relatively unfamiliar with the project (Lichenstein & Fischhoff, 1977), while others will be may be more rational and methodical in making a decision. Hence,

Proposition 10: The more overconfident top managers are, the more likely they perceive the need for entrepreneurship.

Inferences about the need to fund a current project can also be made in the light of available current information (Busenitz, 1994). This inference process very often relies on the notion of "representativeness," a heuristic discussed by Tversky and Kahneman (1974) as a relation between a hypothetical process and some event associated with that project. The representativeness argument goes that top managers will tend to perceive the need for entrepreneurship (and judge proposed entrepreneurial ventures) in the light of current knowledge and information that is based on prior experience. If we assume that an entrepreneurial venture is more of a novelty, then the manager who relies on the representative heuristic will tend to disfavor entrepreneurial project, and will most likely not perceive much need for entrepreneurship. The latter is simply because a new entrepreneurial project will not fit in the top managers' schema. Consequently, we can expect that,

Proposition 11:	The more a top management uses the representative heuristic, the less likely they perceive the need for entrepreneurship.

DISCUSSION

The present paper was an attempt to discuss the crucial impact of internal behavioral factors on the type of C.E. that exists in an organization. It was shown how the intertaction of individual behaviors within organizations can result in an organizational phenomenon. This approach shows that C.E. is not necessarily only an organizational phenomenon. Also, a number of testable hypotheses (some new, others old) that can shed some light on the role of these factors were provided.

This paper also clarifies the distinction between corporate venturing and corporate renewal. It is argued that corporate venturing (or intrapreneurship) stems more from employees' desire to exploit entrepreneurial opportunities with minimal support from top management (Kuratko, Motagno, & Hornsby, 1990) while corporate renewal results more from top management actions with less support from employees.

An additional issue that can be tackled with this new formulation of the types of C.E. is its evolution over time. Stopford and Baden-Fuller's (1994) study of corporate entrepreneurship revealed that firms can have different forms of C.E. over time, and that the same firm can also have different forms of entrepreneurship at the same time. The present discussion of the various types of C.E. can provide a novel way of why some firms adopt one type of C.E. while others have a different type. Hence, by building on Stopford and Baden-Fuller's study, it is argued that any organization goes through stages of C.E. in a well-defined manner.

In any organization, Cell 1 (Status-Quo) will probably be the result of careful analysis of the environment and realization that expected future value of change is not beneficial. Firms in such cells are not very keen on making any major improvements and may be content with the status-quo, specially taking into consideration the cost of change. A good example of an organization from cell 1 might be a small family business. However, as argued before, the competitive environment is always changing (Beer et. al., 1990). Ignoring such changes will inevitably threaten chances of survival. To be able to survive, firms have to change and innovate. Innovation can only happen if either top managers or employees or both realize the need to generate and exploit entrepreneurial opportunities. If employees are the ones who perceive the need for change (which may be caused by poor results, or threat of job loss etc.), then firms are in Cell 3 (Corporate Venturing). However, if top managers are the ones who want change and perceive the need for entrepreneurship, then firms will be engaged in Cell 2 (Corporate Renewal).

Stopford and Baden-Fuller (1994) argue that an organization will go through a definite route to Schumpeterian entrepreneurship. Firms initially have a few broad-minded individuals and teams that work on ideas that are remote to the current overall strategy. Eventually, a chief executive recognizes that a new direction is needed and that there is a lack of leadership. The chief executive will then examine entrepreneurial projects more carefully and allow corporate venturing (Cell 3). Once corporate venturing has taken place, the chief executive gets a better appreciation of entrepreneurial activity, which reduces their fear of new projects. Consequently, the executive then embarks on a program of renewal to change the organization so that entrepreneurial ventures are encouraged and rewarded (Cell 2). Eventually, the organization reaches a level where major innovations are possible and where rules of the industry are changed (Cell 4: Schumepeterian entrepreneurship).

According to Stopford and Baden-Fuller's (1994) arguments, firms usually go through stages from corporate venturing (Cell 3) to renewal (Cell 2) and finally to Schumpeterian entrepreneurship (Cell 4). However, it is argued here that firms can move from Cell 1 (status-quo) through either Cells 2 or 3 to Cell 4. Hence, firms can eventually achieve Schumpeterian entrepreneurship by simply going through corporate venturing or through renewal, but not necessarily through both sequentially. The succeeding paragraphs will elaborate on this point.

If corporate venturing has taken place, then it implies that employees have been able to 'sell' their idea to top management. Consequently, it is logical to expect that experience with a novel entrepreneurial project will lessen top managers' fear of accepting future projects. At the same time, trying a new experience will lessen managers' representativeness heuristic and overconfidence bias. Estimates about future projects can be expected to be more accurate and less of a threat. Consequently, it is very possible that after a few corporate venture projects, top managers' view of entrepreneurship will change and they will be more likely to perceive the need for and accept future projects (depending obviously on budget constraints). Hence, from Cell 3, the organization can move to Cell 4 (Schumpeterian entrepreneurship). It is appropriately assume that the level of the employees' interest and involvement in exploiting entrepreneurial opportunities would not wane. Therefore, once the top managers also get interested, the firm has no where but to get into Cell 4.

Similarly, if a firm is in Cell 2 (renewal), then top management is actively involved in changing and creating an a situation where operational participants are willing to exploit entrepreneurial opportunities. Renewal is a very challenging task that involves changing the organization structure and corporate culture so that employees are encouraged and rewarded for their new ideas and entrepreneurial projects. Hence, if top management is successful, then that organization will have a situation where both top managers and operational participants agree on the importance of entrepreneurship. This agreement will then increase the likelihood of a shift to Cell 4, whereby Schumpeterian entrepreneurship is possible. Here again, the assumption is that the top managers' perception of need for entrepreneurial activity does not wane. In fact, it is argued that it would only get stronger.

In summary, it is argued that it is only logical that firms have different forms of C.E. over time, and that contrary to Stopford and Baden-Fuller's (1994) argument, an organization can achieve Schumpeterian entrepreneurship either through corporate venturing or through renewal. The route a firm takes is dependent on who between top management and operational participants has the most influence on entrepreneurial activities of the organization.

CONCLUSION

The present paper was an attempt to propose a theoretical framework to understand how different types of C.E. emerge in organizations. In contrast to past studies that have relied on external determinants of C.E., the dimensions proposed here are primarily of an internal nature and within the control of management. As such, a proper understanding of these factors can help in prescribing organizational action to encourage the desired type of C.E. Academicians can also use these factors to develop a more complete understanding of C.E. In sum, it is hoped that the present paper will stir interest and encourage researchers to develop and empirically test more comprehensive models of C.E.

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SMALL RETAILER HIRING OF OLDER PERSONS: AN ASSESSMENT

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ABSTRACT

This paper discusses a study of small retailer employment of senior citizens. The inquiry considered the extent to which the firms hired older employees, perceived advantages and disadvantages of employing seniors, and forecasted changes in hiring these individuals in the future. Managerial implications of the research are presented.

INTRODUCTION

The last few decades have witnessed a dramatic aging of the population in most developed and some developing economies (Henderson, 1998). The mean age of individuals comprising the population in the United States has advanced, particularly as a result of large numbers in the baby boom population (U.S. Bureau, 1998). In particular, the post-65 senior citizen grouping has expanded at a rapid pace. Improved eating habits, exercise programs, and medical care have created a pattern marked by numerous older persons, many with mental and physical health statures that are far improved over their predecessors (Thackray, 1994). And a large proportion of this grouping prefers to continue working past the customary retirement ages, either on a full or part time basis (Flynn, 1995). This movement reverses earlier trends toward earlier retirement ages, which began in the 1980's (Costa, 1998). The 1990's have witnessed larger percentages of older and more experienced individuals in the work force than was the case for previous decades (Landry, 1999). Research indicates that 15% of the population over the age of 65 are working either full or part time (Leonard, 1999).

During periods of low unemployment, such as the late 1990's, numerous small retailers encounter a scarcity of qualified job applicants They may find it difficult to acquire the personnel which they seek, particularly if essential skills are in high demand. A solution to this problem may lie in the direction of employing older persons, some of which are already in the ranks of the retired.

Some managers of small retail units do not hire seniors, at least not to any substantial degree. In fact, a commonplace development is when management reduces the size of the workforce to become more competitive, older workers are often targeted for layoff or firing (Pave, 1991). Cultural norms in the United States may be responsible for the tendency to target younger workers. Many employers appear to hold the view that these individuals are superior potential employees (Zemke, 1999). They may assume that older people are too old to train, unlikely to stay long enough to justify the investment in them, and more inclined to short-term absence (Worsley, 1996). Research has demonstrated potential age-related bias in the U.S. culture. In one study younger raters tended to give less favorable ratings to older workers when they were not provided with job-relevant information about the workers and when they concurrently rated old and young workers (Burke, Finkelstein & Raju, 1995).

Some small retail managers may not employ seniors because of beliefs that these persons are not as capable as their younger counterparts. According to one source, employers have concerns that older workers cost more, suffer more frequent and more severe illness, cannot learn new skills, and are less productive (Kaeter, 1995). Another source reports that reservations for hiring older managers were overqualified, too old, unfamiliarity with industry, unemployed for more than six months, and changing job functions (Top Five, 1998). There are other possible reasons for not hiring the elderly. Medical and insurance costs may be perceived as excessive. Some potential employees may not have needed computer skills. Others may be perceived as not being physically or mentally capable of fulfilling their responsibilities (Barber, 1998).

There is evidence that older workers can be very productive members of the work force. One study examined the earnings and the productivity of workers in various age groups. It found that workers age 55 and older received higher earnings than younger workers but that this larger level of earnings was more than counterbalanced by larger productivity (as measured in marginal products (Hellerstein, Neumark & Troske, 1999).

Another inquiry surveyed398 employers on their perceptions of employees of various ages, on 12 attributes. Older workers received more favorable ratings overall, including such categories as attendance and salary expectations (Forte & Hansvick, 1999). One sphere where the older workers received high marks was in tasks related to cognition. Research had demonstrated that men and women in the 55-72 age grouping score as well or better as younger individuals in cognitive tasks (Busko & Raynor, 1999). Further, there is evidence that involvement in substantially complex work improves intellectual functioning more among older than among younger workers (Schooler, Mesfin, & Oates, 1999).

Older employees have considerable potential as productive retail employees. Many retailers have realized the value that older workers bring to their stores and have begun aggressively recruiting them (Mullin, 1998). One study revealed thatboth younger and older customers held more favorable attitudes toward older than toward younger salespeople. Both groups of customers indicated that older salespeople showed more interest in helping them, were more likely to provide information, and showed more respect for them as customers (Kang & Hillery, 1998).

It appears that there is evidence and perceptions on the part of managers both for and against the hiring of older workers (those over age 65). This inquiry was conducted to examine the issue in the context of small retailers.

The purpose of this study was to uncover insights on four research objectives:

1. To determine the extent to which small retailers in the United States hire senior citizens.
2. To discover the advantages which small retail managers ascribe to older workers.
3. To uncover the shortcomings of older employees, as perceived by small retail managers.
4. To acquire estimates by small retail managers of their expected future hiring of seniors.

THE INQUIRY

The data-gathering effort involved mailing twenty questionnaires to a randomly-selected set of 50 college and university Small Business Institute directors situated in 50 states. Hence a total of 1,000 (50 x 20) questionnaires were forwarded. Previous studies have indicated that a mailing of this magnitude to SBI directors tends to produce a sample size that is amendable to the statistical analysis utilized in this study (Peterson, 1996). The sampling frame was the membership directory of the International Council For Small Business, 1999. The geographic dispersion of the sample was designed to generate results that were reasonably representative of the population of small business at large. A letter indicating the purpose of the inquiry accompanied the questionnaires. It requested that the S.B.I. director distribute the questionnaires to twenty past and present S.B.I. retail clients and to collect the questionnaires one they were completed and send them back to the researchers. In turn, non-respondents received follow-up letters. The data was acquired during November and December of 1999.

This mailing produced a sample size of 381 usable returned questionnaires (response rate of 38.1%) from 22 geographically dispersed states. Previously, the questionnaires were pretested on a sample of 25 small retail managers located in the city where the researchers were employed. The managers comprising the final sample were all present or past S.B.I. clients. Hence they satisfied the requirements for categorization as a small retailer, in accordance with the guidelines specified by the Small Business Administration agency.

The questionnaire asked the respondents if they hired persons age 65 years of age and older. Those who responded affirmatively were asked to specify the percentage of the work force that were seniors. In addition, they were requested in set forth their perceptions of the advantages and shortcomings of employing older individuals. In addition, they were requested to estimate if they would employ more or less or about the same percentage of seniors in the future as they had to date. In addition sales revenues of the respondents' firms were solicited.

The managers who made up the sample were requested to indicate their 1998 sales revenues. The median figure was $784, 900, reinforcing the notion that the study included only small retailers. Since the inquiry focused only on small retailers, its findings and conclusions cannot be generalized to the full population of retailers. The industry breakdown of the study was twenty-two percent general merchandise and seventy-eight percent limited line and specialty stores.

FINDINGS OF THE STUDY

The subjects were asked if their companies hired seniors and, if they did, the percentage of the work force accounted for by these individuals. Table One sets forth the results. The largest proportion is in the "none" grouping, followed by the 5-9.9% and the 1-4.9% categories. It appears that the bulk of the work forces sampled embody only a relatively small percentage of seniors in their ranks. In contrast, persons age 65 and older make up over eleven percent of the total United States population (U.S. Bureau, 1998).

Table One
Proportion of Subjects' Workforces Comprised of Senior Citizens

Proportion of Workforce	Frequency	
	Number	Percent of Total
None	160	42.0%*
1-4.9%	49	12.9
5-9.9%	63	16.5*
10-14.9%	33	8.7
15-19.9%	20	5.3
20-24.9%	31	8.1
25-29.9%	13	3.4
30% and over	12	3.1
Total	381	100.0%

*Indicates a frequency that is significantly larger than the average frequency for the column according to a *Chi Square* test at the .05 level.

The respondents were requested to indicate the advantages of employing older persons, based upon their experiences with members of this grouping. The researcher reviewed the specific advantages cited by the subjects and compressed these into categories that were developed through a content analysis of advantages cited in seven published manuscripts dealing with the hiring of seniors. Table Two presents the categories of advantages and the frequencies associated with each one. It should be noted that the total frequencies exceed the sample size, since all of of the subjects provided more than one.

The largest frequencies reported were for self motivated, disciplined, dependable, respect for authority, mature behavior, loyal to company, and experienced. Other important advantages were trained, follow instructions, work schedule is flexible, responsible, and honest. Also mentioned were has credibility with customers, few drug problems, willing to train, punctual, limited family, high character, and other.

Many of the advantages, especially those with high percentages of response, relate to the character or moral strength of employees. Examples are self motivated, disciplined, dependable, and respect for authority. Other advantages relate more to traits or characteristics, such as experienced, trained, and limited family. Still other advantages , such as follow instructions, mature behavior, and punctual refer to conduct or behavior.

Table Two
Perceived Advantages of Employing Older Persons

Advantage	Number	Percentage of Total
Self motivated	115	10.1%*
Disciplined	97	8.5*
Dependable	88	7.7*
Respect for authority	87	7.5*
Mature behavior	79	6.9*
Loyal to company	72	6.3*
Experienced	72	6.3*
Trained	68	5.9
Follow instructions	57	5.0
Work schedule is flexible	57	5.0
Responsible	57	5.0
Honest	53	4.6
Has credibility with customers	45	3.9
Few drug problems	45	3.9
Willing to train	39	3.3
Punctual	38	3.2

Limited family	37	3.2
High character	28	2.2
Other	17	1.5
Total	1143	100.0%

*Indicates a proportion that is significantly larger than the average proportion for the column, according to a *Chi Square* test at the .05 level.

The disadvantages reported by the subjects of employing older persons appear in Table Three. As measured by raw numbers, the advantages outweigh the disadvantages. There are nineteen advantages and sixteen disadvantages which were uncovered. In addition, the frequencies associated with the advantages were 1,143, while those associated with the disadvantages were 793, providing some evidence that the respondents experience some degree of satisfaction with these individuals. In the table, those disadvantages which have frequencies significantly larger than those in their columns, according to *Chi Square* tests at the .05 level, are identified with asterisks.

According to the data in the table, the significant disadvantages are physical limitations, less productive, not adaptable, difficult to train, administrative complexities in recruiting and hiring, and cost of medical benefits. Other frequently-mentioned disadvantages were inflexible working hours, do not relate to younger employees, too slow, illness, and will work only part time. Finally, some subjects mentioned forgetful, lack computer skills, complain, unsociable, and "other".

Many of the disadvantages are characteristics or traits of older persons, such as physical limitations, not adaptable, difficult to train, and illness. Other disadvantages relate to the conduct or behavior of these individuals. Examples are less productive, too slow, and will work only part time. Finally, some disadvantages relate to environmental constraints, such as administrative complexities in recruiting and hiring and cost of medical benefits. None of the disadvantages refer to lack or character or moral strength. The analysis of the Table Two data indicated that character or moral strength elements were frequently-cited advantages of hiring seniors.

The questionnaire requested that the subjects indicate the degree to which they planned to employ different proportions of older persons in the future than they do at present. Table Four sets forth the results. Fifty percent forecasted a larger percentage for the future, thirty six percent estimate about the same, five percent a smaller percentage, and seven percent did not know. These estimates suggest a more prominent role for seniors in the work forces of small retailers in the future.

SUMMARY AND CONCLUSIONS

The inquiry described in this paper was employed to assess the extent to which a sample of small retailers employed older persons. In addition, an investigation was made of the perceived managerial views of the advantages and disadvantages of employing seniors and estimates of expected hiring of seniors. The majority of the respondents employ older persons. However the percentage of their work forces accounted for by these individuals is moderate. A number of advantages of employing these individuals were cited. The most frequently mentioned advantages were self motivated, disciplined, dependable, respect for authority, mature behavior, loyal to company, and experienced. The subjects mentioned numerous advantages which related to character or moral strength. In addition, they provided other advantages related to characteristics (traits) and behavior.

Table Three
Perceived Disadvantages of Employing Older Persons

Disadvantage	Number	Percentage of Total
Physical limitations	90	11.3%*
Less Productive	73	9.2*
Not adaptable	71	9.0*
Difficult to train	68	8.6*
Administrative complexities in recruiting & hiring	65	8.2*
Cost of medical benefits	61	7.7*
Inflexible working hours	49	6.3
Do not relate to younger employees	46	5.8
Too slow	46	5.8
Illness	42	5.3
Will work only part time	41	5.2
Forgetful	40	5.0
Lack computer skills	36	4.5
Complain	31	3.9
Unsociable	21	2.6
Other	13	1.6
Total	793	100.0%

*Indicates a proportion that is significantly larger than the average proportion for the column, according to a *Chi Square* test at the .05 level.

The most frequently cited disadvantages provided by the respondents were physical limitations, less productive, not adaptable, difficult to train, administrative complexities in recruiting and hiring, and cost of medical benefits. The largest number of these related to characteristics (traits). Others related more to behavior and environmental constraints confronting the firm.

Slightly more than half of the subjects forecasted increased hires by their firms of seniors in the future. Over one third reported that the percentage would remain the same, while smaller numbers estimated decreases in the percentage of seniors or "don't know".

Table Four
Forecasted Changes In the Employment of Older Persons

Estimate of Change	Number	Percentage of Total
Greater Percentage	192	50.4*
About the Same	138	36.2*
Smaller Percentage	21	5.5
Don't know	30	7.9
Total	381	100.0%

*Indicates a proportion that is significantly larger than the average proportion for the column, according to a *Chi Square* test at the .05 level.

The subjects associated numerous advantages with the employment of seniors. This suggests
that small retailers who fail to hire older persons may forego potential advantages arising from a large pool of operative and managerial talent. This is especially true for those small retailers that have difficulty in attracting and maintaining high quality personnel. If they launch recruiting campaigns focusing on older persons, they may be able to surmount this problem.

A negative reason for employing older persons is avoiding lawsuits. Age discrimination is one of the practices which is prohibited by the federal fair employment laws. Lawsuits revolving around this issue can be costly to the firm, both in dollar expenses and in loss of goodwill in the community at large.

Certainly, small retailers who contemplate hiring older persons should evaluate the strengths and weaknesses of these individuals. Should self motivation, discipline, dependability, respect for authority, mature behavior, loyalty to the company, and experience be sought by the firm, older individuals may be a good target. On the other hand, if the vacant positions could not be filled with persons who have physical limitations, are less productive, not adaptable, difficult to train or there are high administrative complexities in recruiting and hiring or high costs of medical benefits, retail recruiters should exercise caution before hiring older persons. However, it is sometimes possible to make modifications, such as alterations in work methods, that will enable seniors to work as productively as their junior counterparts.

Companies who seek job applicants from the ranks of older persons may find it necessary to use alternative recruiting sources. Some organizations, such as Aging in America, specialize in placing seniors. In addition, there are numerous senior citizen centers who are involved in job placement for their members. Some employment agencies specialize in this field. Further, older persons can often be reached through help wanted sections of newspapers and magazines. Small retailers who seek senior employees can often benefit from the use of these particular sources.

When small retailers hire older persons, they may find if necessary to alter work methods and supervisory techniques. As seniors are self motivated, disciplined, and dependable, they may require less close supervision. Since they tend to respect authority , have maturity and have company loyalty, it may be less necessary to monitor and follow up their work than is the case for younger workers. It may be necessary to lessen physical demands for some positions. Further, it may be advisable to convert jobs to part time or job sharing and to utilize flexitime, if this is not already in place.

Many small retailers will discover that their training methods and procedures should be altered for seniors. As numerous older workers are experienced, they may require less training in certain areas. The training format may have to be altered, as by presenting ideas at a slower pace. A benefit to the recruiters is that the training benefits may exist for an extensive time period, as seniors' turnover is less than that for other workers and they are less prone to move on to other companies after receiving their training.

The study described in this paper had several limitations. One is that the sample was composed of retailers who had a relationship with colleges and universities. The sample may be biased in favor of firms that are actively seeking information and therefore more knowledgeable regarding current issues such as the benefits of hiring older persons. Further, the study did not address differences in hiring and perceptions of seniors between managers serving in small retailers of different sizes. It is possible that very small retailers, for instance, might differ in their hiring practices and perceptions about seniors from larger retailers. Even though all of the retailers were classified as "small" there are differences in size within this category. Finally, the hiring practices and perceptions of managers may differ from one retail category to another. It is entirely possible that there would be differences between electronics and grocery stores, for instance.

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EVALUATION OF TWO APPROACHES TO ENTREPRENEURSHIP EDUCATION USING AN INTENTION-BASED MODEL OF VENTURE CREATION

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ABSTRACT

A class experiment was conducted among a group of Commerce undergraduate students taking an introductory course on entrepreneurship and small business management. These students were given a choice between two term projects: a business plan or a field study. The objective of the experiment was to measure the impact of completing these different assignments on: 1) the students' perceptions of the desirability and feasibility of starting their own venture, 2) their learning in terms of either skills or knowledge, and 3) their level of awareness to entrepreneurship and the small business context. Results indicate that the choice of assignement had a significant impact on 1) and 2), but not on 3).

INTRODUCTION

In recent years, educational institutions have tried to respond to the growing popularity of entrepreneurship by offering a variety of courses in entrepreneurship and small business management. The thrust of such courses varies according to the clientele at which they are aimed. Generally speaking, they serve as an introduction to the entrepreneurial field, provide the skills, knowledge and abilities required to start a venture and lastly, try to awaken and stimulate the entrepreneurial spirit of participants. However, we still do not know very much about the effectiveness of the various pedagogical approaches used to achieve any of these educational objectives. In light of this, a class experiment was conducted among a group of Commerce undergraduate students. These students were given a choice between two term projects in an entrepreneurship course: a business plan or a field study. The objective of the experiment was to measure the impact of completing these different assignments on: 1) the students' perceptions of the desirability and feasibility of starting their own venture, 2) their learning in terms of either skills or knowledge, and 3) their level of awareness to entrepreneurship and the small business context.

THEORETICAL FRAMEWORK

Several paradigms exist in the field of Entrepreneurship to explain the phenomenon of new venture creation. Logically, the pedagogical approach favored by an instructor to increase the level of entrepreneurial activity among participants should be a function of his own understanding of the factors leading to the start-up of new ventures. For example, it is expected that those who adhere to the Trait approach will try to develop among participants personality traits such as the need for achievement, self-confidence or creativity. For those others who believe that entrepreneurial intentions are the best predictor of venture creation, efforts will be made to develop and strengthen these intentions. It is such a behavioral intention model that we tested in a classroom environment.

The decision to start a business and the actions taken to implement such a decision undoubtedly qualify as planned behavior. According to Ajzen's (1991) theory of planned behavior, an individual's intention to perform a given behavior is a quite accurate predictor of the actual performance of such behavior. In the context of new venture creation, this means that an individual's intention to start a business should be a good indicator that this individual will indeed start his own firm. According to Shapero and Sokol's model of the Entrepreneurial Event (1982), the intention to initiate a venture is largely driven by one's perception of the desirability and feasibility of such endeavour. Perceived desirability or attractiveness of a behavior will be influenced by the individual's attitude towards the behavior and social norms, that is, the perception of what important people in one's life think about the intended behavior. Perceived feasibility, often associated to the self-efficacy concept, refers to the capacity and ability to execute a given task or behavior.

Several studies have found considerable support for the hypothesis that perceptions of desirability and feasibility form entrepreneurial intentions (Krueger, Reilly & Carsrud, forthcoming; Reitan, 1996). From an educational perspective, this means that the best way for an instructor to increase the level of entrepreneurial activities of his students is to impact on their perceptions of the desirability and feasibility of starting a venture, thereby increasing the strength of their entrepreneurial intentions.

In this experiment, students were given the choice of either completing a business plan or a field study. In the first assignment ("the business plan"), students were asked to find a business idea, perform a market research to assess its commercial potential and develop a comprehensive business plan around this business opportunity. In the second ("the field study"), students had to perform an in-depth study of an entrepreneur and his venture. More precisely, they had to : 1) find an entrepreneur willing to collaborate, 2) gather information on his industry to learn about the firm's external environement, 3) interview him about his experience as an entrepreneur and several other aspects of his venture (start-up and growth process, strategic planning, human resource management, internationalization of activities, etc.), 4) analyze the information collected in light of entrepreneurship and small business management theory, and finally 5) write up a report. The interview was meant to give the students a unique opportunity to meet with a genuine entrepreneur, in a private, informal setting. These were group projects, each team consisting of a maximum of five students. Each assignment counted towards more than half of the final grade (55%).

As these two projects required the students to develop different sets of skills and abilities while acquiring a different knowledge base, it seemed that the choice of assignment would impact on the students' perceptions in different ways. Firstly, students doing the field study were likely to be exposed to more positive aspects of the entrepreneurial experience than the business plan students. Indeed, as entrepreneurs are known to have a strong positive orientation, it is fair to think that they would talk to the students about their experience in highly favourable terms. On the other hand, in the course of doing their business plan, students would face the harsh reality of nascent entrepreneurs: they would have to struggle to find reliable market information and put together credible financial projections, worry about possible sources of financing, etc. In light of this, we formulated our first hypothesis as:

H1: The gain in perceived desirability of starting one's own business will be greater among the field study students than among the business plan students.

Perception of feasibility is enhanced when individuals have direct experience in overcoming obstacles through effort and perseverance (Wood & Bandura, 1989). Completing a business plan should provide the students with such highly valuable hands-on experience, thus giving them a higher sense of their own skills and abilities to start a business.

H2: The gain in perceived feasibility of starting one's own business will be greater among the business plan students than among the field study students.

One of our educational objectives for this introductory course was to sensitize students to the entrepreneurial world. As the choice of assignment was likely to have impacted in different ways on the students' learning about entrepreneurship and small business, we also looked at this dimension of the term projects. Working on the field study required the students to observe and analyze several facets of small business management and the process of new venture creation. The knowledge and understanding of small business those students were to gain was bound to be both broad and deep, while the specific business skills they had to develop were few. On the other hand, the business plan assignment provided the students with an excellent opportunity to acquire business skills and abilities as it involved performing tasks that required a great deal of practical business skills. However, the knowledge they were to gain was likely to be narrow as these students only needed to focus their attention on the critical steps leading to new venture creation. Hence,

H3: Field study students will rate their assignment higher in terms of the knowledge and understanding of entrepreneurship and the small business world it helped them acquire than in terms of the business skills and abilities it helped them develop.

H4: Business plan students will rate their assignment higher in terms of the business skills and abilities it helped them develop than in terms of the knowledge and understanding of entrepreneurship and the small business world it helped them acquire.

Even though the two assignments are likely to have a different impact on the students' learning, it is not clear that the choice of either one will have an influence on their level of awareness to the entrepreneurial world. It seems fair to think that both assignments will equally increase the students' level of awareness of entrepreneurship and the small business context. This is reinforced by the fact that while attending classes, all students were exposed to lectures on this topic, participated in class discussions on cases centered around entrepreneurs and small businesses, were shown videos of entrepreneurs and finally, had a chance to meet with entrepreneurs who came as guest speakers. As a result:

H5: There will be no difference between field project and business plan students in terms of gaining awareness about entrepreneurship and the small business world.

METHODOLOGY

The sample consisted of 89 third year undergraduate Commerce students. A total of 77 students agreed to complete the survey (87% response rate), of which 21 worked on the business plan and 56 on the field project. The course not being an elective, we expected to find a large variation in the students' level of interest on the topic and hence, in their perception of the desirability to start their own business. The vast majority of students were from either Accountancy, Finance, Marketing or MIS concentrations. The participating students were registered in two different sections (groups of approximately 45 students) but they had the same instructor.

A questionnaire was administered to the students during the last week of class. Students were told that the purpose of the survey was to assess the impact of the two different assignments on learning. They did not have to reveal their identities but had to indicate which assignment they had chosen to work on.

Perceptions of feasibility and desirability were assessed by asking the students how confident they were about their skills and abilities to start a business they were and how attractive to them was the idea of one day starting their own business. To measure the level of change in the students' perceptions, they were asked to rate their perceptions of the desirability and feasibility of starting a venture (1) as it was at the beginning of the term and (2) now that they had completed their term project. The difference in ratings (score after - score before) was the measure of change in perceptions. The same procedure was followed to measure the change in the level of awareness of entrepreneurship and small business management, students being asked to rate their awareness both before and after having taken the course. Finally, students were asked to rate their respective assignments in terms of the knowledge and understanding of the small bsuiness world it had helped them acquire and in terms of the business skills and abilities it had helped them develop. All variables were measured on a scale from 1 to 5.

RESULTS

The first hypothesis was confirmed: the mean gain in perceived desirability of starting one's own business was significantly greater ($p < .05$) among field study students than among business plan students. The field study students were effectively exposed mainly to the brighter sides of entrepreneurship such as financial success, independence and self-realization. Moreover, some of them confessed that the passion and enthusiasm of the entrepreneur they had met had truly been contagious. One finding worth mentioning is that the perception of desirability of business plan students actually decreased after having completed their assignment! One plausible explanation is that at the beginning of the term, these students held a rather romantic vision of what it was to be an entrepreneur. When forming their perception, they had possibly underestimated or simply not taken into account the staggering amount of work such a career choice implied. Reality struck them in the face when they found themselves scrambling for market information, juggling with numbers and worrying about cash flow problems.

The second hypothesis was also confirmed: the increase in feasibility perception was much greater among business plan students than among field study students ($p < .01$). It seems that the level of confidence of the business plan students greatly increased when they realized they had been able to successfully complete a full-fledged business plan. Even though field study students didn't have to perform the actual tasks required to start a business, their perception of the feasibility of such an endeavour increased. This is probably so because they were asked to read about the start-up process, were given several lectures on this topic and worked on two cases dealing specifically with a start-up situation. Their learning was vicarious and probably more superficial than the one acquired by business plan students. However, one has to keep in mind that theory on entrepreneurial intentions deals with perceptions of mastery, not actual mastery of a specific task.

Hypotheses 3 and 4 were confirmed although the statistical significance of H3 was low ($p < .10$). Business plan students rated their assignment higher in terms of the skills and abilities it brought them than in terms of knowledge acquisition. Along the same line, field study students rated their term projects as a better opportunity to gain knowledge as opposed to skills and abilities.

Finally, the last hypothesis was confirmed: the choice of assignment did not impact on the level of change in awareness of the entrepreneurship phenomenon. On average, students reported a greater level of awareness after having taken the course, which is not all that surprising taking into account the number of hours they spent reading and hearing about this topic.

It appears that the choice of term assignment can have a significant impact on the learning of the students and their perception of an entrepreneurial career. There could be a long debate as to whether we should favor assignments that enhance skills and abilities or knowledge and understanding. By letting the students choose the nature of their term project, it becomes up to them to make that judgement call. The impact the choice of term project will have on their perceptions leaves the author a bit puzzled. Indeed, an increase in perceived desirability among field project students seems to be accompanied by a somehow false or biased perception of feasibility, while an increase in perceived feasibility among business plan students brings about a decrease in perceived desirability. We certainly don't want to discourage potential entrepreneurs by giving them a hard time through a business plan assignment. On the other hand, we don't want to depict a rosy picture of the life of the entrepreneur, at the risk of pushing into an entrepreneurial career people who will be ill prepared, who will quickly be disillusioned and disappointed, and who might ultimately fail.

CONCLUSION

This study seems to indicate that the pedagogical approach favored by an instructor is likely to impact on the attainment of his educational objectives. Several limitations must be acknowledged. First of all, the sample was relatively small as only 21 students had chosen to complete the business plan assignment. Secondly, the theory of planned behavior has only partially been tested in the context of the entrepreneurial event. As mentioned earlier, studies have shown considerable support to the hypothesis that perceptions of desirability and feasibility predict entrepreneurial intentions. However, the crucial link between entrepreneurial intentions and the actual start-up of a venture has not yet been verified. At this stage we can at best say that entrepreneurial intentions should be a good indicator of future venture creation. Indeed, previous studies that tested the strength of the relationship between intentions and targeted behaviors were of a very different nature in terms of : 1) the control the individual had over the behavior, and 2) the period of time ellapsed between the formation of intentions and the actual performance of the behavior. Our objective is to use the data gathered in this project as part of a longitudinal study on business start-ups initiated by university graduates. This will allow us to test the link between entrepreneurial intentions and new venture creation and thus, strengthen the value of our findings as they relate to entrepreneurship education.

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THE INFLUENCE OF COGNITIVE MAKE-UP ON NEW VENTURE SUCCESS[1]

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ABSTRACT

One of the major challenges in the development of a new venture is the need for different thinking styles over time. The growing body of research on entrepreneurship has largely ignored the influence of cognition during the evolution of the new venture. In this paper, we develop a conceptual model which shows how cognitive make-up may influence the success of the new venture growth process. This line of inquiry may prove fruitful in explaining why many creative ideas and once successful ventures fail to succeed. Also, matching task demands and thinking styles should increase entrepreneurial satisfaction and the chances of firm success. This model should also aid the entrepreneur in knowing when to step aside and let others proceed with the development of the formal organization. It provides insights into team building and selection processes as organizations change and develop.

INTRODUCTION

> *"Entrepreneurs are typically very creative and action oriented.... When they build a new organization, they often try to avoid hierarchy. Unfortunately, if their initial vision is successful, and their new company expands rapidly, the growth (an indicator of success) stimulates a need for hierarchical coordinating mechanisms (often seen as an indication of failure). This phenomenon is often called the formalization crisis. Many successful entrepreneurs are forced, like Steve Jobs, to leave their company because they cannot comprehend the paradox or manage the competing values."*
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> (Quinn, 1995, p. 54).

Flexibility has been recognized as one of the most critical elements during the evolutionary process of any new venture. One of the major challenges of a new venture is that both the problems faced and the skills necessary to deal with them change as the firm moves from one stage of development to another (Churchill & Lewis, 1983). Hence, as the above quote highlights, an entrepreneurs' skills, capabilities, and approaches, though desirable for one stage, may be inappropriate for subsequent stages.

A brief historical look suggests that one cannot understate the chances of firm failure while it moves through its developmental stages. For instance, every single venture started by Thomas Edison failed due to lack of appropriate skills in managing the venture through various stages of growth. These failures happened despite the business concept itself being an immediate success and achieving initial growth (Drucker, 1990). More recently, John Walters, CEO of Walters Design Associates, started his business as a sole proprietorship in 1977. In the mid 80s this company had $1.5 million in revenues and 12 employees. However, poor financial planning and impulsive behavior led this venture to bankruptcy in its growth stage. Only then, did Walters realize that he lacked certain business skills necessary to run his company and he needed certain restraints to prevent him from acting on his entrepreneurial instincts (Mochari, 1998). Similar illustrations can be made of many companies.

People differ in many ways. One basic way is that our minds are organized differently. In other words, we have differing mental structures (i.e. physical make-up of the brain) and styles (i.e. preferred way of thinking). Cognitive science can help us to understand why given comparable potential, one person is highly successful in a chosen career and another less so. It can also help us to understand why individuals who are promoted fail to perform as well in their new positions. It should be noted, that both cognitive structure and styles are independent of one's intelligence. Myron Scholes and James Merton recently received the Nobel Prize in economics for Options Theory. Their intelligence and intellectual prowess is beyond question. However, their LTCM business venture recently required a $3.6 billion bailout (McNatt, 1999). "People with different styles like to use their abilities in different ways, and so respond differentially well to the kinds of thinking required in different occupations. Styles also help us understand why some people succeed in their chosen careers and others don't" (Sternberg, 1997, pg. 11). It may also help us to understand why some organizations (a compilation of individuals with varying cognitive make-ups) succeed given certain challenges and others don't. The link between cognition and organizational development may aid in uncovering issues that lead to greater productivity and morale in the workplace.

Cognitive make-up, as defined in this paper, refers to both the physical connection of brain functions (structure) and the preferred way a person approaches a given problem or situation (style). To illustrate thinking styles, two individuals given the same problem may come to similar conclusions, but the approach followed by each could be very different. Cognitive make-up may help to uncover issues that lead to greater productivity and morale in the workplace. "A consensus figure would be that tested differences in ability account for perhaps 20% of the variation among students in school performance, and 10% of the variation among workers in job performance" (Sternberg, 1997, pg. 9). Cognitive make-up, coupled with an understanding of organizational contexts, may serve as one possible explanation for a portion of the remaining variance in performance.

The entrepreneurship literature is rich in studies of individual personality variables and their relationship to success in entrepreneurial endeavors. Researchers have studied the age, gender, personality types, education levels, parental employment choices, etc. of entrepreneurs (e.g. DeCarlo & Lyons, 1980). Our research differs in two important ways. First, although related to personality, we are proposing a strictly cognitive approach. There are a number of researchers (Anzieu, 1987; Federn, 1952; Freud, 1923, 1925; Rapport, 1960) who have studied boundaries between ego, id, and super-ego. Researchers agree that there is a close link between personality and cognition but the precise relationship is yet unknown. We are only looking at the organization of the brain (structure) and ones' preferred way of thinking (style). Second, our research differs in that we are attempting to develop a model linking cognitive make-up to new venture stages of development. Existing research in entrepreneurship though extensive on new venture development, has largely ignored the influence of individual cognitive make-up (even though acknowledging the need for change by the entrepreneur) during the evolution of the new venture. The objective of this paper is to develop conceptual linkages which show how cognitive make-up may influence the success of the new venture growth process[2].

The identification of links between cognitive make-up and new venture success could have significant practical implications. First, this paper will help clarify the conceptual linkages or "relationships" with respect to individual cognitive make-up and new venture success. Second, the paper will help in determining the importance of cognitive styles thereby reducing the possibility of firm failure during the process of new venture development. We hope to help the entrepreneur to anticipate and manage change during new venture development. More specifically, this paper may help entrepreneurs in understanding that individuals with certain thinking styles are most capable of handling the situational constraints of differing organizational contexts. Additionally, it may help to align the expectations of those involved in the venture thereby influencing performance (Nygaard, 1997; Caruana, Pitt & Berthon, 1999). The first section of the paper consists of a review of relevant literature on cognitive make-up and stages of new venture development. Section two develops links between cognitive make-up and the stages of new venture development. Section three discusses implications for theory and practice. Finally, the closing comments include suggestions for future research.

LITERATURE REVIEW

One of the basic premises of this paper is that we can gain insights into individual and organizational effectiveness from the growing body of literature on cognition and cognitive process. Once considered the "black box," we now witness researchers in the fields of cognitive psychology, biology, communications, business, etc. studying the inner mechanisms of the human brain and their effects on decision making. Most frequently researchers choose one of two approaches, namely, structural variation and procedural variation. The study of cognition in terms of the physical structure of the mind (boundaries or schemata) is referred to as structural variation. Procedural variation refers to the styles we use most frequently (thinking styles or scripts). In this paper, we choose to look at cognition from a comprehensive or multifaceted perspective, combining the aforementioned approaches. It should be noted that as studies of cognition advance, there appears to be a convergence of these general approaches. This phenomenon may be driven by the complex relationship between structure and style (a relationship beyond the scope of this paper). Cognitive make-up as defined in this paper is used to refer to both structural variations in the brain and thinking styles, details of which will be discussed below.

Structural Variation

Hartmann (1991) introduced the concept of boundaries in the mind. The central idea being that our brains are organized differently. Some of us tend to be more structured or rigid while others are more fluid or conceptual in brain organization. When we consider the constructs of our minds - thoughts, feelings, memories, ego, id, superego, perceptual, semantic, and memory processes, we are speaking of parts, regions, or functions that are separate from one another and yet connected with one another. The boundaries between them are not absolute separations: they can be relatively thick (impenetrable) or thin (permeable) in nature. The concept of thick and thin boundaries has a number of precursors that capture at least part of what we are discussing (James, 1907; Lewin, 1935, 1936).

William James (1907) introduced two types of principal temperaments: rationalists and empiricists. Empiricists appear to coincide with thick boundaries and rationalists with thin boundaries. Kurt Lewin (1935, 1936) used the concept of boundaries more explicitly. He diagrammed the mind as divided into a number of regions or "psychical systems" acting upon each other and separated from each other by lines of different thickness. The thickness of the lines between systems represents the boundary concept which varies between individuals. The rough hypothesis being that some people have more fluid communications between different psychical systems (thin boundaries) while others are more structured (thick boundaries) in their communications between these parts of the brain.

Preliminary neuropsychological results suggest that there are measurable differences in brain function in people who differ on the psychological measure of thick versus thin boundaries (Beal, 1988; Bevis, 1986). The differences are consistent with what one would expect: those with thick boundaries are systematic, but show less ability to change course; those with thin boundaries are less systematic, but more changeable or adaptable.

Procedural Variation

The term cognitive style refers to an individuals way of processing information. The term was developed by cognitive psychologists conducting research on sensory and perceptual abilities and problem solving. It should be noted that most researchers go to great pains to explain that styles are not abilities, but rather how we utilize the abilities that we have. An ability refers to how well someone can do something. A style is a preference for a certain way of doing something. One style may be better than another in a given context, but on average styles are no better or worse than others (Sternberg, 1997). Researchers appear to agree that fitting the style to the environment is of utmost importance.

Research on cognitive styles has taken many different forms. These include the conceptualization of such terms as field-dependence/independence, equivalence range, category width, conceptual style, compartmentalization, and scanning. Although a discussion of specific works is beyond the scope of this paper, Table 1 provides a summary of the most influential studies.

Table 1
Summary of Various Themes in Cognitive Makeup

Structural Variation	Procedural Variation
James (1907)	Gardner (1953; 1959; 1962)
Principal Temperaments: Rationalist and Empiricists	Equivalence Range: Ability to see different things as similar in nature
Lewin (1935; 1936)	**Kagan (1958; 1965; 1966)**
Psychical Systems: Different parts of the brain perform different functions	Propensity of Individual to develop different strategies when faced with different problems

Hartmann (1991)	Harvey et al (1961)
Notion of Boundaries : Thick (impenetrable, rigid process) and, Thin (permeable, fluid process)	Conceptual Integration: Tendency of a person to integrate parts to each other to make meaningful wholes.
	Gardner and Moriarity (1968)
	Scanning: Extent to which a person seeks verification for the judgement s/he makes.
	Witkin (1973)
	Field Dependence – Independence Theory: Some people are dependant on visual field in developing meaning.
	Gregorc (1979; 1982; 1984; 1985)
	Theory of Styles: People differ in the way they organize time and space
	Sternberg (1997)
	Thinking Style - A preferred method of processing information Five Components of Theory of Self-Government: Functions *(Legislative/Executive/Judicial)* Forms *(Monarchic/Hierarchic/Oligarchic/Anarchic)* Levels *(Global/Local)* Scope *(Internal/External)* Leanings *(Liberal/Conservative)*

The most recent work on cognitive styles is Sternberg's theory of Mental Self-government. We have chosen to use this work in the development of our model because its comprehensive nature integrates the findings from much of the previous research. A brief description follows.

Sternberg (1997) uses government as a metaphor to describe the way we organize our thoughts. He has developed a theory and measures for each category. The theory consists of various levels (functions, forms, levels, scope, and leanings) just as governments exist at different levels (national, state, local).

Governments serve three functions: legislative, executive, and judicial. The legislative branch designs new laws which are carried out by the executive and evaluated by the judicial branches respectively. Sternberg suggests that one thinking style is that of the legislative. Legislative people like to develop their own rules and prefer problems that are not pre-structured. Legislative people are prone to creative task because of their desire to develop new ideas. Executive people like to follow rules and prefer problems that are prefabricated. They follow directions well and prefer to use existing structure. Judicial people like to evaluate rules and procedures and prefer critiquing existing rules or concepts.

Besides the styles, Sternberg introduces several forms which we use to govern our mental activity. Monarchic people are single minded and driven. They usually see a task to fruition regardless of the circumstances and have little understanding for others with excuses or extenuating circumstances. The hierarchic person sets priorities and realizes that all goals cannot be fulfilled equally well. This person tends to be more accepting of complexity than the monarchic person, and recognizes the need to view things from multiple angles. Oligarchic people tend to be motivated by several competing goals of equally perceived importance. The anarchic person tends to take a random approach to problems and usually reject systems which are in place.

Finally, the theory of mental self government describes the preferred level or scope of thinking for individuals with different styles. Global individuals prefer dealing with large and abstract issues. Alternatively, local individuals like concrete problems requiring attention to detail. Internal individuals are concerned with their own thoughts and feelings. They prefer working with things and ideas in isolation of other people. Externals tend to be extraverted, socially sensitive, outgoing, and people oriented. The liberal individual likes to go beyond existing rules and procedures and seeks ambiguous situations. The conservative individual is more comfortable with the adherence to existing rules and procedures, likes familiarity, and avoids ambiguity where possible.

There is much we can glean from the previous discussion. In a general sense, we can conclude that there exists structural variations in how our minds are organized. At the same time, there exists procedural variations or styles that individuals become comfortable utilizing. These lead individuals to possess a variety of world-views, to interpret the same event differently, and to approach problems from divergent perspectives. More specifically, individuals who possess flexible mental structures appear more adaptable to changing their perspective. Finally, although no structure or style is superior across contexts, there may be some advantages to utilizing particular cognitive approaches in certain environments. The particular environment in question is stages in the development of a new venture.

New Venture Growth

A new business venture evolves through sequential stages of growth. The critical nature and importance of managing these stages for organizational survival is well documented (e.g., Churchill & Lewis, 1983; Galbraith, 1982). Previous literature on new venture stages has generally classified the number of sequential stages as three (e.g., Christensen & Scott, 1964), four (e.g., Steinmetz, 1969) and five (e.g., McGuire, 1963) distinct stages. Despite this disagreement between authors on the number of stages in the new venture process commonalities exist between the various classifications in terms of the sequence of events described in the new venture process.

This paper uses the Scott and Bruce (1987) five-stage classification of small business growth as a starting point as it is the most recent work and it also incorporates previous ideas on this topic. According to Scott and Bruce (1987) the various stages in the new venture process are: Inception, Survival, Growth, Expansion, and Maturity. Table 2 presents a review of each of the stages in terms of managerial factors of interest to entrepreneurs. The following describes briefly the characteristics of these stages.

The inception stage is the first stage in the new business venture. It is generally the embryonic stage. The business at this point has few employees. Management activities are largely unstructured or even experimental. The new venture's major goal at this stage is to receive market feedback as quickly as possible to adapt its products and services to be successful (Cooper, 1981). The management style in this stage is largely entrepreneurial and very individualistic of the entrepreneur himself. The entrepreneur at this stage is carrying out activities in all functional areas and may be forced to do tasks which s/he may not be competent to perform. The entrepreneur's ability to handle issues creatively without running out of existing capital or support is the major factor determining the outcome of this stage.

Once a business venture has a workable business concept it moves from the inception to survival stage. A business in this stage generally has to seek capital to grow and protect itself from new competition that may arise (Scott & Bruce, 1987). This is a stage where the entrepreneur realizes the need to bring in some order to the firm where chaos reigned supreme since its inception. The entrepreneur is required to build administrative and budgetary arrangements that control cost and promote information sharing. The entrepreneur will realize soon that some delegation of low level managerial tasks is needed.

The growth stage is the point where the business venture has established itself and is largely in a self-sustaining mode. The organization and entrepreneur are faced with a larger question of sustained organizational growth. The organization setup needs to move from an "inventing" to an "operating" organization (Galbraith, 1982). The demands placed by the organization on the entrepreneur tend to be multifunctional. Apart from setting functional areas staffed with people the entrepreneur also needs to develop linkages and process between these areas so that the firm functions seamlessly.

Table 2
Previous Classifications of New Venture Stages

Author	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
McGuire (1963)	Traditional Small Company	Planning for Growth	Take-off or departure from existing conditions	Drive to Professional Management	Mass production with a diffusion of interests
Christensen and Scott (1964)	One-Unit Management with no specialized parts	One Unit Management with functional parts such as marketing and finance	Multiple operations units such as divisions that act in their own behalf.		
Steinmetz (1969)	Direct supervision	Supervised supervision	Indirect Control	Divisional Organization	
Galbraith (1982)	Proof of principle stage	Prototype stage	Start-Up	Natural Growth	Strategic Maneuvering
	Quarterback	Player/Coach	Coach	Manager	Strategist
Scott and Bruce	Inception	Survival	Growth	Expansion	Maturity

(1987)	Entrepreneurial, Individualistic	Entrepreneurial, Administrative	Entrepreneurial, Co-ordinate	Professional, Administrative	Watchdog
Churchill and Lewis (1983)	Existence	Survival	Success	Take-Off	Resource Maturity
	Growth through Creativity; Crisis of Leadership;	Growth through Direction; Crisis of autonomy	Growth through Delegation; Crisis of Control	Growth through Coordination; Crisis of red tape	Growth through Collaboration; Crisis of ?
Ruhnka and Young (1987, 1991)	Produce working prototype; Initial production and marketing ; Assemble Team; Develop Plans; Risk - Largely Internal	Make initial sales; Verify demand; Establish manufacturing feasibility; Build management organization; Risk - Largely Internal	Achieve market penetration and sales goals; Reach BEP; Build Sales Force; Risk - Internal/External	Achieve sales growth and market share targets; Begin Window dressing for IPO, buyout, or merger; Risk – Largely External	Establish profitability; Increase market share; Risk - Largely External

The key feature distinguishing the earlier stage of growth and the subsequent stage of expansion is that, the growth stage is characterized by rapid growth, as opposed to more of a natural level of growth in relation with the industry growth rate at the expansion stage. Managing growth and development of formal systems and procedures and continued growth is representative of this stage (Scott & Bruce, 1987). If the entrepreneur is unable to manage this stage well the organization may fall back to the growth stage. The key to the organization succeeding in this stage is developing professional managers who would be able to understand customer needs and act accordingly. Product and service innovation at this stage is incremental. The business venture is also infused with a certain extent of organization politics as both the number of employees and bureaucracy grows. The organization at his stage should also be in position to introduce a second generation of products and services as the competition probably has reacted to the entry of this new firm.

The maturity stage is the final stage of development. The goal of this stage is for the business unit to dominate a market niche so that the venture will be able to ride the shakeout that is bound to occur in the industry. At this stage the entrepreneur needs to decide which approach (mergers, acquisitions, and IPOs) the firm needs to take to further growth in related business segments. Another strategic issue occupying the entrepreneurs time, involves the retainment of the entrepreneurial spirit and flexibility held by the organization in previous stages (Galbraith, 1982). The key role played by the entrepreneur in this stage is to prevent the organization from slipping into decline.

Organizational facets evolve too during the sequence of new venture development, but problems arise "because managers do not think stage-wise" (Galbraith, 1982). For example, organizational decision making which in the early stages is largely based on the entrepreneurs "gut feeling" or "immediate situational needs" (make do approach) becomes inappropriate in the later stages of development. Similarly, when the venture is in its initial stages the organization would be characterized by broad goals or "milestones" and the entrepreneurial tasks are largely undefined. This lack of control changes wherein new control systems are installed with definitive quantitative targets and defined roles to be played. This change in the venture also creates the need for the entrepreneur to evolve along with new venture growth. Stated differently there exist a need for the venture to gain a degree of "fit" between its internal organization characteristics and roles played by the entrepreneur at each of the developmental stages. "Fit" refers to the degree of consistency or congruence needed among all organizational facets for a firm to be successful (Galbraith & Kazanjian, 1986). This notion of fit is used to develop the conceptual linkage between cognitive make-up and new venture growth in the following section.

DEVELOPMENT OF CONCEPTUAL LINKAGES

"If I've learned anything over the past 35 years, it is the importance of drawing from the best qualities of both the entrepreneur and the professional manager. These are truly the left and right sides of the business brain, and they must harmonize in a healthy corporation."

Lillian Katz (Hirsh & Peters, p. 48, 1989)

The literature is wrought with examples of entrepreneurs who had successful ideas but failed to capitalize on them for various reasons. The above quote from the founder and Chairperson of Vernon Specialties Company, highlights one potential deeply rooted reason for failure. The type of thinking necessary to develop and launch a new idea may not be effective in successfully managing its' later growth. The previously summarized literature on new venture growth stages allows us to draw a few conclusions. First, although unique aspects will exist with any new venture, most progress through a similar pattern of development. Second, this pattern provides some common challenges at certain junctures and some decision making styles may be more appropriate at different stages. Third, as people become more expert in a field, their ability to distinguish between minor factors sharpens and thus the equivalence range narrows (Gardner, 1953, 1959, 1962). This term equivalence range refers to the ability to see things that are very different as similar in nature. The advantage of having a broad equivalence range is that one can see the relationship between objects. The disadvantage is that one misses important differences. Hence a narrow equivalence range which is an advantage during the earlier stages of the new venture may become a disadvantage in the subsequent stages as the entrepreneur may fail to see important trends in the environment. In the following paragraphs, we will show where different cognitive make-ups (structure and style) may be appropriate at differing stages of new venture growth. A summary of these appear in Table 3.

Table 3
Linking Cognitive Makeup with New Venture Growth Stages

Stage of New Venture Growth	Inception	Survival	Growth	Expansion	Maturity
Styles of Thinking					
Functions	Legislative	Legislative	Executive	Executive	Judicial
Forms	Monarchic	Hierarchic	Hierarchic	Oligarchic	Anarchic
Scope	Internal	External	External	External	External
Leanings	Liberal	Liberal	Conservative	Conservative	Liberal
Structural Variation	Thin	Thin	Thick	Thick	Thin

A detailed discussion of the table follows. The hope is that it will

> *"help in anticipating the key requirements at various points-for example, the inordinate time commitment for owners during the start-up period and the need for delegation and changes in their managerial roles when companies become larger and more complex."*
>
> (Churchill & Lewis, 1983, p.263).

The inception stage is characterized as chaotic, unstructured, and experimental. It is a time where maximum flexibility is needed because opportunities and problems cannot be predicted. Obviously it is a time where creativity reigns most important. Churchill and Lewis (1983) point out that the entrepreneur has to perform many functional tasks alone. Unfortunately, innovation poses a cost that many cannot bear - change (Stevenson & Gumpert, 1990). Individuals that take comfort in routine and predictability will not enjoy the type of thinking necessary at this phase. Individuals fluid mental structures (thin boundaries) may be more suitable for this stage as they have been found to be more adaptable and creative (Beal, 1988; Bevis, 1986; Hartmann, 1991). Regardless of the physical structure of the brain, individuals with certain styles may be more suited for this stage of the organizational development process. Legislative thinkers who prefer unstructured problems will find this type of work of interest. Monarchic thinkers who fixate on one project and see it through to fruition will be needed. Finally, the creative aspects of this tasks may require the skills of the liberal thinker who enjoys going beyond existing rules and procedures. Hence, the theory of mental self-government (Sternberg, 1997) suggests the thinking style most suitable for the types of problems and opportunities encountered in the initial stages of a new venture is legislative, monarchic, and liberal.

The entrepreneur attempts to bring order and set up some operating structure during the survival stage. The primary managerial function concerns the development and evaluation of structure. In today's complex business environment this most often involves a great deal of creativity (i.e. boundaryless organizations and virtual corporations). Many firms fail to stabilize production and product quality at this junction and therefore fail to gain sufficient customer acceptance to become viable (Churchill & Lewis, 1983). Once again, legislative style thinkers may be most suited for this activity as creativity and tolerance for ambiguity are crucial. The entrepreneur will have to be less monastic and more hierarchical in thinking. S/he will have to develop (or hire someone to develop) a hierarchy of goals for achieving some of the operational efficiencies needed to survive. There is no doubt more of a need to communicate with others at this stage because often there is a need for capital influx and human resources. This leads us to believe that individuals who are outgoing and socially sensitive (i.e. externals) will thrive. It would appear that the thinking style most appropriate in the survival stage is legislative, hierarchical, and external. As in the initial stage, thin boundary people may find this stage more comfortable than their counterparts. Entrepreneurs at this stage may also consider hiring experienced individuals with complementary skills to set the stage for the growth phase of the venture.

The growth stage involves the transition of the organization from the inventing mode to the operating mode of development. Here we experience a basic shift from the entrepreneurial style to the managerial style of thought (i.e. what some have referred to as left and right brain thinking). In many cases, functional managers take over the duties performed by the entrepreneur. The business is largely in a self-sustaining mode at this point as systems development has been accomplished. The thick boundary person who enjoys a place for everything and everything in its' place thrives in these environs. Alternatively, their thin boundary counterparts often do not function well as they quickly lose interest. Stevenson and Gumpert (1990, p. 22) point out "If a desire for routine and order comes to dominate corporate attitudes, a more formal structure is attractive and reassuring." The executive thinking style is often the most functional at this point. These people are most content when following the rules which have already been established. Again, the hierarchic form of thought may be most appropriate. Managers who are external in their focus (understand other people) and conservative in their approach to problems (i.e. like familiarity and avoid ambiguity) appear most suited for this stage of the organizations development. To summarize, the executive, hierarchic, external, and conservative thinker should find the growth stage of development most suited to their style of thought.

The key factor distinguishing the growth and expansion stages is the introduction of a second generation of products. Here product development is not radical, but rather incremental. The key survival factor at this stage is the influx of individuals who can evaluate the potential success of new products with confidence. Individuals using the executive style of thought would appear to once again be important as knowledge of existing products and structure are key. The oligarchic form of thought will be most appropriate as several competing goals will have to be evaluated simultaneously. Additionally, an external focus will be important as the communication of the reasons for new direction will be key. To summarize, it appears that managers with an executive, oligarchic, and external thinking style would appear to be most appropriate for the expansion phase of organizational development.

The maturity phase requires an organization to re-invent itself to avoid extinction. Unfortunately, "administrators often see the need to change as the result of failure of the planning process" (Stevenson & Gumpert, 1985, p.15). Here creativity again comes to the forefront. Mature companies must preserve the entrepreneurial spirit or risk decline. The question is "how" or maybe more accurately "by whom?" The literature on thinking styles once again provides insight. Many firms often pass on the development of new products and focus more on short term growth (ROE and ROI) at this stage. This is not surprising given that most of the decisions at this stage are being made by individuals who tend to be executive style thinkers. Again, there may be a need for the thin boundary thinker who can make some connections not previously seen. The thinking style most appropriate in the mature stages of organizational development are judicial, managers who can deal with ambiguity and change in making critical evaluations of direction and focus. Also, individuals with an anarchic form may help because they naturally reject systems that are in place and look for new approaches. Finally, liberal thinkers and externals should do well with the challenges provided by the mature phase of new venture development.

Quinn (1988) maintains that organizational effectiveness depends upon managerial ability to utilize the contradictory logic of different worldviews. His competing values framework takes an open systems perspective of the organization and maintains that an organization's biggest strength could lead to its demise if flexibility (incorporation of multiple perspectives) is not valued.

> *"At higher levels what matters is how people see the world, and everyone sees it differently. Technical facts are not as available or important.... The people who come to be masters of management ...have the capacity to see it as a complex, dynamic system that is constantly evolving. In order to interact effectively with it, they employ a variety of different perspectives or frames.... The ability to see the world*

> *in a dynamic fashion requires transcending the rules of mechanistic logic used to solve well defined problems and adopting a more comprehensive and flexible kind of logic."*
>
> (Quinn, 1995, 47-48.).

Quinn's (1988) "master manager" would most likely possess the following thinking style: judicial, anarchic, and external. In this stage, individuals have to be able to utilize contradictory logic in guiding organizational members in a new direction.

IMPLICATIONS FOR THE NEW VENTURE PROCESS

The previous discussion has focused on conceptually linking individual cognitive make-up and organizational new venture stages of development. This section focuses on the implications of using knowledge of cognitive make-up in the new venture process. More specifically, we are offering possible approaches to reduce the chance of failure.

Matching Tasks Demands and Skills Possessed

The management of a new venture is a demanding task, requiring different skills at differing stages of the venture. The entrepreneurial role inevitably evolves as the new venture moves through various stages (Slyke, Stevenson & Roberts, 1990). The central concept is that an entrepreneur needs to ask him or herself, "what are the needs of the business?" (Drucker, 1990). This paper is the first step in the development of a model matching organizational contexts and individual cognitive make-up. One insight is that in the development of a new venture, *how* people prefer to think (their style) may be more important than *how well* they think (intelligence). People with different styles like to use their abilities in different ways and so respond differentially well to the kinds of thinking required in certain business contexts. Certainly, a match between styles and task requirements should increase entrepreneurial satisfaction and reduce frustration.

When to Step Aside

According to Pilot Pen CEO Ronald Shaw, "People need to know where their skills best fit" (Lancaster, 1999, p. B23). The entrepreneur may be aided in learning when to step aside and let others proceed with the management and development of the formal operation. The decision to focus on "doing" versus delegating may be the determining factor between success and failure (Churchill & Lewis, 1983). Literature has long supported the idea that entrepreneurs are innovative, risk takers, creative, and flexible individuals (Stevenson & Gumpert, 1985). These very same characteristics which are necessary for initial success may lead to future organizational demise (Quinn, 1988, 1995). Thus, there may be good reasons and appropriate timing for the entrepreneur to step aside and give control of the operation to others. This would appear to be in the transition between the survival and growth phases. Also, there may be a need for her/him to re-enter the picture to help in re-inventing the corporation later on in the developmental process (maturity phase).

More specifically, as a source of unexplained variation, the match between cognitive make-up and organizational development may help to explain why certain individuals who perform well in formal organizations fail miserably in entrepreneurial endeavors. They prefer a structured environment. Additionally, insights may be gained into why "experienced people from large companies fail to make good as entrepreneurs or managers of small companies" (Churchill &Lewis, 1983, p. 274). It may not only provide an explanation why many successful entrepreneurs feel encumbered in formal organizations, but also why they did not perform up to their abilities in educational settings. In essence, the entrepreneur who prefers creative and constructive planning activities will lose interests when they don't have the freedom to develop their own way of doing things. These individuals would be better off playing the role of serial entrepreneurs.

Team Building

This model linking cognitive make-up with new ventures may help entrepreneurs to understand the type of thinking most suitable for a given context. The implications are many. At a very basic level, it helps in the recognition and acceptance of others when they think in ways we don't understand. And, thus it may heighten our awareness and understanding of the merits of cognitive diversity. Evidence exists to support the belief that the incorporation of diverse thinking styles will increase both creativity and productivity (Roy & Dugal, 1998). For instance, Soichiro Honda the founder Honda Motor had on onset decided that his forte belonged to engineering and production and not business management. Honda did not start a venture till he found an appropriate partner Takeo Fujisawa who provided the necessary financial and marketing strengths. The same may be said of Henry Ford who had James Couzens as a partner during the early years.

The above discussion is helpful in understanding the complementary roles that can be played by others in the new venture development process. This complementary role is critical in one stage of the new venture growth in particular, namely, the survival stage. In this stage, the entrepreneur needs to develop new systems and bring order to the chaos in the venture. The entrepreneur needs to realize that s/he needs to actively seek advice from outsiders like venture capitalists, experienced managers, and other entrepreneurs to bring in innovative yet tested ideas from outside the firm (Elango, Fried, Hisrich, & Poloncheck, 1995).

Hiring and Promotion

The need for complementary roles brings the question of who to hire to the forefront. We believe that this model may help in the selection process of individuals at various stages of the organizations developmental process. As the organization grows and becomes more complex there will be a need for individuals to perform different tasks. Cognitive make-up may help us to hire managers who will be most suited for the type of thinking most prevalent at that stage of the organizations development. There exist valid and reliable measures of cognitive structures (Hartmann, 1991) and styles (Sternberg, 1997) which may be used in the hiring process for different positions. To hire someone who possesses thick boundaries and is most comfortable using an executive style to be the new product development manager will only lead to individual frustration and organizational under performance.

The link between cognitive make-up and organizational development may help us to reduce the effects of the *Peter Principle* in new ventures. We frequently see reference to the notion that people are promoted to a point of incompetence. For example, Ken Iverson of Nucor points to the fact that the biggest mistake of his career was promoting a conscientious and well-liked manager to a level beyond his ability (Inc, 1998). Cognitive make-up may provide an explanation for the Peter Principle. Organizations generally want entry level people to do what they are told. Conversely, organizations want higher level managers to question where the organization is going and if they are performing the right activities to get there. Note, that almost opposite styles of thinking are required. Lower level managers use more executive style thought process while higher levels utilize more judicial and legislative styles. Unfortunately, the people who are promoted are to higher levels of management are usually the ones who do the job well at the lower levels. Meanwhile others whose thinking styles do not match the requirements of the lower level position are derailed. This model may help managers to be more tolerant of underlings who appear to frequently play the devils advocate. The recognition of individual differences at lower levels may help to reduce the ill effects of promoting someone to incompetence.

Adaptation

Lastly, this model may help entrepreneurs in changing their thinking styles over time. The following quote demonstrates that management scholars have recognized the need for heightened attention to innovative thought processes. "Learning to think temporally and act processually are increasingly important skills" (Tsui, 1998, p. 598). Research shows that thinking styles are malleable through the socialization process (Sternberg, 1997). Such modifications may be minor and may not be easy, but one thing we know is that the more that people use a particular style, the more comfortable they become with it. Hence, knowing the styles which are needed in a certain contexts may help the entrepreneur to focus on change and flexibility (i.e. become Quinn's "master manager").

The purpose of this paper is to provide some practical insight into the development of a working model of individual cognition and organizational development. The hope is that this line of inquiry will help us to understand why so many creative ideas or solid companies fail to succeed. Although, this is an exciting and fruitful research topic, there are a few limitations and many unanswered questions which need to be probed.

CLOSING COMMENTS

There has been a call to push the boundaries of entrepreneurial research beyond the current level of analysis (Aubert-Gamet & Cova, 1999). However, doing this means drawing upon imprecise concepts to a certain level of logic and rationality. To this extent, this research is an exploratory approach linking cognitive make-up and new venture development. As a first step, we are pushing the boundaries of entrepreneurship research to include cognitive attributes.

The next step in the research process is to empirically test this model on a sample of entrepreneurs to determine if linkages exist between cognitive makeup and stages of new venture development using the notion of Fit. A large number of studies exist on the notion of Fit in both the entrepreneurship and strategy literature. These studies may provide a point of reference as to how the various linkages may be empirically tested. Fortunately, reliable and valid scales exist for operationalization of cognitive make-up (Hartmann, 1991; Sternberg, 1997).

Another related area for the extension of this line of research is the topic of Intrapreneurship. Future research may explore whether differences exist in the cognitive makeup of managers who succeed in the dual roles of new business creation and general managerial administration and managers who only excel administratively. Hopefully, future studies on cognitive makeup and entrepreneurship will further develop our understanding of the new venture process.

END NOTES

1. Both authors contributed equally to this manuscript.
2. The authors would like to differentiate the new venture growth process (or new venture life cycle) discussed in this paper with the more commonly known product life cycle (Dhalla & Yuspeh, 1976), or organizational life cycle (Miller & Friesen, 1984). The new venture growth cycle is of a shorter duration and can even be viewed as a cycle within the one of the stages of the product life cycle and organizational life cycle. This shorter duration of the new venture life cycle makes it more relevant to the topic, as opposed to product or organizational life cycle, which could even outlast one's lifetime.

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LEADERSHIP TRAINING PROGRAMS: A FIVE YEAR IMPACT STUDY

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ABSTRACT

The purpose of this study was twofold: 1) to discover if the group of leaders selected for the program did have a basic understanding of economics and economic issues, relative to other groups, and if that understanding developed as a result of attending the program events, and 2) to determine if the training had any effect on the entrepreneurial performance of the group after one year. This study was longitudinal in that the researchers came back 5 years later to see what changes had taken place with this class.

The Leadership Program had both the short term and long term impact that it had hoped for in its design. There is no doubt that this leadership program and the growth in the general economy were both factors in our sustained growth in this region. Leadership programs can play an important role in progress.

INTRODUCTION

In 1985 the local government and Chamber of Commerce of Jonesboro, Arkansas contracted with the Midwest Research Institute (MRI) in Kansas City, Missouri to identify key factors that needed to be strengthened in Jonesboro to expand economic development. MRI identified the need for a broad based leadership-entrepreneurship training program as a critical requirement for continued progress. Arkansas State University, designed such a program in 1988 with the cooperation of the Greater Jonesboro Chamber of Commerce. This successful series continues to the present having trained 1,256 citizens to become successful entrepreneurs and community leaders.

Over 100 major cities (MSA's) have leadership programs designed to develop future community leaders and identify community social and economic issues. Leadership Jonesboro's mission is to identify, educate and motivate potential leaders to become better entrepreneurs and to become actively involved in the future direction of the community. The Leadership Jonesboro program uses ASU faculty and current community leaders as resources to examine the dynamics of the economic and social chances effecting the community and business performance.

PURPOSE OF THE STATISTICAL RESEARCH

The purpose of this research was two fold to:

1. discover if the group of leaders selected for the program did have a basic understanding of economics and economic issues, relative to other groups, and if that understanding developed as a result of attending the program events. This is important since these citizens have been classified as individuals who will play a major role in the progress of the Jonesboro area and the entire region of the Arkansas Delta, since Jonesboro is a regional leader in marketing, education, medicine and manufacturing.

2. determine if the training had any effect on the entrepreneurial performance of the group after one year. In addition we came back 5 years later to see what changes had taken place with this class.

The ten month program is designed to provide entrepreneurship skills training, to enhance the understanding of economic development concepts and provide opportunities for future leaders to interfaces with the current local and state leadership. The participants attend three overnight training sessions and meet twice each month to discuss an array of topics.

Table I provides a schedule of the 1995 topics as a sample of the program, which did vary from year to year. During the program, participants are grouped into teams to identify economic and social issues that face the community. At the end of the program year the teams present their problem solving solutions. A second grouping relates to the formation of a successful business, with an emphasis on leadership skills and problem solving.

During the past nine years the graduates of Leadership Jonesboro have become actively involved in the community. They serve as officers and board members in a variety of civic, professional, religious and community organizations. They have also served on task forces related to economic development and social issues. Several have run for school board, city council and other government offices, many of them volunteer positions. The knowledge and experience they gained from the leadership program not only helped them do a better job in those offices, but proved to be a motivating force behind greater success in their business.

TABLE I
Leadership Jonesboro Schedule

Orientation Breakfast
Leadership Training Retreat Lake Norfork Inn
Entrepreneurship Seminar: “History, Trends & Issues”
State Government Retreat Little Rock
Quinstate Economic Development Conference
Networking Breakfast: “Local Government Structures”
Networking Breakfast: “Jonesboro Traffic Plan”
Leadership Seminar: “Local Government”
Entrepreneurship Seminar: “Industrial”
Entrepreneurship Seminar: “Industrial Tours”
Transportation & Distribution Retreat
Leadership Seminar: “Social Issues”
Networking Breakfast: “Quality of Life”
Entrepreneurship Seminar: “Working with the Media”
Networking Breakfast: “Healthcare”
Leadership Seminar: “Education”
Networking Breakfast: “Education”
Entrepreneurship Seminar: “Team Presentations”
Program Summary

RESEARCH MODEL

The investigator first examined if the entrepreneurship group had developed a better understanding of basic economic principles. The entrepreneurship group's performance (sample size, n = 101) on a standardized test of economic understanding. The Test of Economic Literacy (TEL) developed by the National Council on Economic Education, was compared to a control group of private citizens selected at random (sample size, n = 352). A series of Chi Square tests of independence were run, at the .01 level of significance, to determine if there was any significant difference between the groups. A comparison of the difference in the mean scores on the pre-test versus the post-test was used to determine if the difference, if any, for the entrepreneurship group was due to the leadership training experience or other factors.

Further a regression analysis was run to determine what factors were significant determinants of success on the test including these dependent variables: sex, age, education complete, occupation, number of courses in economics and number of course taken in business (non-economics courses).

Phase II of the research was designed to determine if the entrepreneurship group had obtained an understanding of economic development issues, as a result of the program. The Community Inventory Survey (CIS) was used to explore this factor.

Phase III looked at this same group five years later in 2000 to see if they had improved their knowledge and to determine it the group had remained active in community development.

SURVEY RESULTS

A preliminary examination of the raw data indicates that the entrepreneurship group had a post-program mean score of 39, out of a possible 46. This is well above the national average for the standardized test. The pre-test mean of 29, was still above the national average, and showed significant improvement as a result of the program experience. We used a chi-square test of the difference of the means to determine that the experience of the program did result in improved knowledge that was significant. We came back in 2000 to this same group of 33 people. We were able to catch up with 25, seven had moved from the area and one was unavailable at the time of the survey. Those remaining agreed to retake the standardized test. Their mean score was 39.42, indicating a slight gain from their post experience test, which was not statistically significant. Considering the 5 year passage of time that indicates that the group had retained their interest in economic knowledge and were using that in their community efforts.

A Chi Square test comparing the general population, with a mean score of 21, with the entrepreneurship -roups indicated that the test groups performed significantly better than the control group, the null hypothesis was rejected. Interestingly enough the entrepreneurship group did about as well on the standardized test of economics as students who had just completed a course in economics. The TEL score was used, as the independent variable, in a regression analysis of the data on each of the following factors; sex, age, occupation, degree, previous courses in economics and previous courses in business. After econometric testing for possible adverse effects of multicollinearity, heteroskedasticity and autocorrelation, a simultaneous multiple linear regression analysis was established.

TABLE II
Leadership Jonesboro Demographics, 1987-1991

Occupation:		
	Education	8.04%
	Healthcare	8.31%
	Finance	21.98%
	Manufacturing	12.71%
	Social Services	3.81%
	Retail	14.71%
	Public Utility & Government	12.51%
	Professional (Lawyer, Architect, Accountant)	15.91%
Sex:		
	Male	35.7%
	Female	64.3%
Education:		
	High School Graduate	47.01%
	College Graduate	48.90%
	Post Graduate	4.09%

TABLE III
Comparison of Post-test TEL Scores Using X^2 for Control and Experimental Groups

Group A: Group B:	Control Group Leadership Group	
Group	X^2	Significance
A/B	.0075	Significant

VARIABLES

TELS = bo + B1LE + b2SX + b3PEC + b4AGE + b5OCC + b6PBC

TELS = Score on the Test of Economic Literacy (independent variable)
LE = Highest educational decree earned
SX = Sex
PEC = Previous courses taken in economics
AGE = Age
OCC = Occupation
PBC = Previous courses taken in business other than economics

The results of the regression are included in Table IV. The following were found to be significant factors in determining one's score on the TEL:

Level of Education. As would be expected the most significant predictor in the regression equation was the general level of education with college graduates outperforming high school graduates. Since only one high school graduate had ever taken a course in economics that factor should have also been significant.

Sex. 64% of the respondents were female. In all groups tested sex was the second most significant predictor of success with males scoring significantly higher than females on the test. This reflects data collected from a variety of sources over the years and demonstrates a significant difference in the interest level toward economics between the sexes. Interestingly the difference in levels of performance held for both groups. Male entrepreneurs out performed females and male in the general population also out performed females in that group. Females in the leadership group outperformed their female counterparts and males in the general population on both pre and post test in business and economic issues.

Previous Courses completed in Economics. As would be expected, the more college level courses one has completed in economics the better their performance on the TEL.

Occupation. The fact that occupations was found to be a significant predictors is not surprising. This factor distinguish the entrepreneurship group from the general population. In general, business leaders, professionals and students outperformed service and manufacturing laborers from the control group.

The other factors were not significant including previous business courses taken and age. The CIS was used to determine if there was any difference between the groups understanding of economic development issues. The CIS was administered as a post-program survey to all groups. The entrepreneurship group outperformed the control groups in their understanding of basic economic development issues as well as an understanding of specific local development issues. This is not truly surprising since the leadership group had attended 40 sessions specifically designed for the purpose of creating that awareness while none of the other groups had ever participated in such an activity. The importance of this significant difference, as presented by Chi Square statistical analysis, is that the Leadership Jonesboro program did meet one of it's major goals of helping improve the performance of community leaders by creating a better understanding of community relationships and economic development needs.

TABLE IV
A Multilinear Regression Analysis
Using the TEL as the Independent Variable

Included	Control Group Only	Experimental Groups	2000
Degree Earned	.8712 (1)	.2732 (3)	.8812
Sex	.8334 (2)	.9192 (1)	.8454
Previous Economics Course	.8211*	.0211*	
Age	.2337*	.2776*	.2212*
Occupation	.8001	.9042	.8802
Business Courses Taken	.4312*	.1311*	.5111*

*Not significant contribution

This group's statistics were run through the same analysis again in 2000 and the following statistics proved to be statistically significant:

Level of Education. This was significant both in the first run and the second run 5 years later. It would be assumed that the most significant predictor in the regression equation was the general level of education with college graduates outperforming high school graduates. Since only one high school graduate had ever taken a course in economics that factor should have also been significant.

Sex. While still significant, with females (mean score 36.91) doing worse than males (mean score 40.44) after five years the females shoed greater improvement on the test (mean score in 95 was 32.45 almost 2.5 points less than in 2000), an indication that they had increased their interest and knowledge of economic development issues. If it had not been for the improvement of females the groups mean score would have actually slipped a few point on the 2000 test.

Previous Courses completed in Economics. As would be expected, the more college level courses one has completed in economics the better their performance on the TEL.

Occupation. The fact that occupations was found to be a significant predictor is not surprising. This factor distinguish the entrepreneurship group from the general population. In general, business leaders, professionals and students outperformed service and manufacturing laborers from the control group.

CONCLUSIONS

The leadership program had a significant effect on the members understanding of basic economic concepts and vocabulary. The entrepreneurship group had a higher than normal understanding of basic economic concepts, as indicated by the difference between the mean scores of the control group and the entrepreneurship group. A time lapse in the interval between college graduation and current activity ranged from 3 to 29 years. The economic knowledge of the leadership group came from general interest and practical experience as much as formal training.

The level of economic knowledge helped the entrepreneurship group focus on economic development issues in general and local development problems in particular. These knowledgeable leaders developed additional tools that would make it possible for them to cope with economic development problems and prospects of their own home region.

An Entrepreneurship Survey was given at the end of the year long program. The group was asked to rate the sessions as to their development of entrepreneurial leadership skills. The group mean rating, on a ten point scale with 10 representing Invaluable, was 8.32. Most participants identified the development of leadership and training skills as the most valuable parts of the experience. Twelve months later the same survey was mailed to the group to determine the long lasting effects of the experience on entrepreneurship. The groups mean rating, with a 96.32% return of surveys, indicated an improved perception of the value of the experience relative to the development of entrepreneurial skills to a mean of 9.07. Participants provided numerous concrete examples of the effectiveness of this program. Nearly one-third mentioned the importance of networking contacts as a critical skill. Others pointed out that the training helped them develop greater efficiencies, skills as employee trainers and skills in developing additional networking contacts as important benefits of the program.

Time strengthened this groups interest in economic development issues. A new survey indicated that the leadership experience had made them more active in Chamber of Commerce and community activity than before, with 87% saying they were very active and only 3% responding they were inactive.

The Leadership Program had both the short term and long term impact that it had hoped for in its design. Jonesboro has had significant growth in the presents of new industry and the expansion of old interest. There is no doubt that this leadership program and the growth in the general economy were both factors is our sustained growth in this region. Leadership programs can play an important role in progress. At least three other communities in the Northeast corner of our state have since adopted leadership programs model on the Jonesboro program.

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NON-TRADITIONAL VS. TRADITIONAL ENTREPRENEURS: EMERGENCE OF A NATIVE AMERICAN COMPARATIVE PROFILE OF CHARACTERISTICS AND BARRIERS

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ABSTRACT

This research provides a comparison of Wisconsin and Minnesotan Native American entrepreneurs (non-traditional) with Non-Native American (traditional) entrepreneurs. The authors identify the characteristics and barriers which are similar and those which distinguish the two groups. Significant variation occurs with Native American entrepreneurs as a group in subjective thinking, community orientation and parental experience. Differences in aspirations, communication skills, education level, and discrimination were barriers to Native American entrepreneurs, but access to financial resources was found as a common barrier to both groups

INTRODUCTION

The goal of this research paper was to assess the current status and history of entrepreneurship and small businesses of Native Americans living and working in Wisconsin and Minnesota. O'Hare reports that in the latest U.S. Census Report, Native Americans owned and started the fewest small businesses of all minority groups in the United States (25). The goal of the U.S. Census Report is to gather numerical data and not provide possible explanations, consequently no rationale for these figures was given. This finding, however, demonstrates that there is a uniqueness regarding entrepreneurship and Native American ethnic background. For this reason, the authors decided to compare Native and Non-Native Americas on their entrepreneurial characteristics and perceived inhibitors to small business start-ups.

LITERATURE REVIEW AND BACKGROUND

A review of current literature failed to provide either a discussion of the possible factors for the low number of small businesses started by these non-traditional entrepreneurs or very focused research done seeking to provide possible reasons for this situation. There has been scant research on Native American entrepreneurship and small businesses in general (Cook, 1983; Jamieson, 1990; Robey, 1983; Schifrin, 1987). Most information available regarding Native American businesses has been compiled by the U.S. Bureau of Indian Affairs and has focused on tribal businesses such as natural resource development enterprises, production of Native American tourist products and gambling casinos (American Indians, 1991; Cohen, 1989; Cook, 1983; Swepston, 1987).

In addition to the intrigue over the census data, the authors were interested in the research topic since in this two state region (Wisconsin and Minnesota) there are relatively more Native American students as a minority group compared with other minorities located in the regional colleges and universities but few are taking degrees in any business administration majors despite the many scholarships available to Native American students, both private and governmental. If such scholarships are not sufficient a stimulus for Native American students to study business administration and economics, what strategies could be implemented to attract Native American students to careers in business?

SIGNIFICANCE

The importance of such a study relates to the fact that very few Native Americans have started small businesses. In fact, "American Indians are the least likely of any major American racial and ethnic group to own a business, with only 1 Indian in 100 a business owner" (O'Hare, 1992, 32). What are the reasons for this? What are the social, cultural, political, legal and/or economic factors which inhibit this or encourage movement into other areas of work? Perhaps we can turn to some international studies for the answers. In many non-industrialized countries, social values and attitudes of the indigenous population do not encourage business ownership as the societies were communal and/or were agriculture or hunting based (Akbar, 1990; Aldrich, 1990; Aldrich & Waldinger, 1990; Brockhaus, 1982; Danandjaja, 1987; Waldinger, Aldrich & Ward, 1992). Additionally, many countries have histories of colonial governments and/or expatriate populations which have controlled the economic systems and small business enterprises (Chan & Chiang, 1993; Fratoe, 1986; Geottery, 1992; Reynolds, 1991; Reynolds & Miller, 1990; Townsand, 1999).

The significance of studying Native American entrepreneurship and small business development would be to identify the possible factors which impact on the behavior of Native Americans. Knowing which factors serve as barriers would also be a step in developing strategies to overcome these factors and ease the way for development policies which could be used by the SBA's Small Business Development Centers, State Economic Development Centers, and universities in their regional economic development and recruitment efforts aimed at Native Americans. Understanding differences in characteristics of existing Native American and Non-Native American entrepreneurs may help educator and policy makers alike to identify potential entrepreneurs who might be encouraged to develop their business skills.

METHODOLOGY AND SAMPLE

After an exhaustive search of library holdings and an online databases for literature dealing with the topic, two trips to major institutions which have holdings on Native American studies were planned. These two institutions were the University of Wisconsin and University of Minnesota. The major methodology used in this research project was personal interviews of the Native American and Non-Native American entrepreneurs who have started and/or operated their own small business in Wisconsin and Minnesota. A database of Native American businesses was utilized from the University of Wisconsin Superior's Center for Indian Studies and Non-Native American businesses were acquired from a business list by states through a consulting service. On-site field interviews with various tribal leaders and entrepreneurs located in Wisconsin and Minnesota were a prelude to developing the in depth interview survey. Additionally, appropriate governmental officials, such as the Bureau of Indian Affairs, were interviewed and their reactions to the questionnaire were solicited. Mailings to potential interviewees with follow up phone calls initiated the interview process. The Principal Investigators conducted the one on one personal field interviews with the logistical help of a work study position. Eighty interviews (40 in each group) were implemented during the years from 1996-8.

RESULTS OF THE INTERVIEWS

The profile of Native American entrepreneurs which emerges from the research is predominantly male, aged 35 or older and some education beyond high school. The Non-Native American group were also a strong majority of males, 35 years or older and some college education. The factors which contributed to startup success were similar for both ethnic groups. Common behavioral characteristics included "hard work",, "customer orientation", "competitive pricing", "good business sense", and "high quality". These factors have also been found in past literature on entrepreneurs (Acs & Audretsch, 1993; Allen & Truman, 1993; Bird, 1989; Brandt, 1993; Chell, Haworth & Brearley, 1987; Gartner, 1989; Knudsen & McTavish, 1986; Montagno, Kurato & Scarcella, 1986).

Significant differences among Native American entrepreneurs and Non-Native American entrepreneurs are found in the following characteristics: parents being an entrepreneur, objective versus subjective thinking, orientation and perceived barriers to startup. Table 1 shows the Chi Square results for the first characteristic, parental background. Non Native American business people had a higher percentage of parents who were entrepreneurs themselves. This bears out the research that very few Native Americans have tried entrepreneurship as a career and certainly there is lack of influence from parents in this direction (Aldrich, & Zimmer, 1986; Jamieson, 1990; Knudsen & McTavish, 1989; O'Hare, 1992).

TABLE 1: PARENTAL BACKGROUND FOR NATIVE AMERICAN AND NON-NATIVE AMERICAN GROUPS

CHARACTERISTICS	NATIVE AMERICAN	NON-NATIVE AMERICAN

ENTREPRENEUR PARENTS	13%	75%
NON-ENTREPRENEUR PARENTS	87%	25%
CHI SQUARE (N=40 PER GROUP, DF=3) = 20.83 (.000)		

Another differentiating characteristic which was emphasized in Native American entrepreneurs was a greater propensity to be subjective thinkers or as people responded "thinking with their hearts." Non-Native American entrepreneurs saw themselves most often as objective thinkers and this finding is paralleled in previous studies (Bird, 1989; Brockhaus, 1982; Knudsen & McTavish, 1986; Montagno, Kurato & Scarcella, 1986). Similarly, the non-traditional entrepreneurs valued community more than their counterparts who prized individual orientation. The differences were moderately significant for both the mode of thinking and orientation. These characteristics are more cultural in nature and are summarized in Table 2.

TABLE 2: THINKING AND ORIENTATION CHARACTERISTICS FOR NATIVE AMERICAN AND NON-NATIVE AMERICAN GROUPS

CHARACTERISTICS	NATIVE AMERICANS	NON-NATIVE AMERICANS
THINKING		
OBJECTIVE	42%	63%
SUBJECTIVE	58%	37%
ORIENTATION		
INDIVIDUAL	26%	67%
COMMUNITY	74%	33%
CHI SQUARE (N=40 PER GROUP, DF=4) = 8.15 (.005)		

Lastly, the research showed that 4 of the top 5 perceived barriers to startup which were ranked by survey respondents varied significantly by the ethnic grouping. Significant variation occurred in "aspiration level", "formal business education", discrimination, and "communication skills", with Native American entrepreneurs as a group ranking these inhibitors as more important than the Non-Native American group. The factor which emerged as not being influenced by ethnic grouping was "limited access to funding and/or capital" with 93% of non-traditional and 94% of traditional entrepreneurs ranking this factor as one of the most important barriers they are facing as small business people. Access to financial resources is a common barrier regardless of the ethnic background of the entrepreneur as borne out in the research (Knudsen & McTavish, 1986; Montagno, Kurato & Scarcella, 1986; Reynolds, 1991;

Waldinger, Aldrich & Ward, 1992; Wehrung, Tse, Lee& Vertinsky, 1996; Weiss, 1988; Wenger & Snyder, 2000).

Overall, no significant differences in any entrepreneurial characteristics or barriers were found based on location of the business, that is, whether the business was located in Wisconsin or Minnesota.

TABLE 3: PERCEIVED BARRIERS FOR NATIVE AMERICAN AND NON-NATIVE AMERICAN GROUPS

INHIBITORS (TOP 5 RANK)	NATIVE AMERICANS	NON-NATIVE AMERICANS
ASPIRATION LEVEL	93%	42%
FORMAL BUSINESS EDUCATION	95%	56%
LIMITED CAPITAL ACCESS	93%	94%
DISCRIMINATION	87%	22%
COMMUNICATION SKILLS	75%	45%
CHI SQUARE (N=40 PER GROUP, DF=5) = 67.2 (.000)		

DISCUSSION OF THE RESULTS OF THE RESEARCH

What are the implications for educational and governmental based programs to develop entrepreneurship among native peoples? For an answer, we can turn to our Northern neighbors in Canada. They have initiated the Canadian Council for Native Business (CCNB), a partnership between private sector business and Native Canadians, which helps native people develop economic self-sufficiency by providing access to the opportunities of business enterprise. To contribute to the long-term well being of native people, the CCNB has concentrated on improving business expertise, business experience, and business education. As shown in this research business skills such as in communication and analytical thinking as well as overall business education are seen as barriers to success.

Over the past 5 years, the CCNB has developed a range of programs and initiatives whose aims have been to promote self-help and personal choice while helping improve native business skills. CCNB efforts include education, business counseling, internship and facilitation services, and sponsorship of business workshops. The key success factor of CCNB programming is that it is tailored made to the local conditions (Jamieson, 1990, 35).

Phyllis Wolf, executive director of the Minnesota American Indian Chamber of Commerce (MMAICC), says that "Native American business people don't look at it as a bottom line concern. Their commitment is to the community. They look at it as their obligation to provide jobs, or strengthen the community." The MMAICC has found their Business Builders series and mentoring programs to be most successful to increase entrepreneurship as these activities are tied to the values of 'community' shared by Native American people (Haapola, 1993, 4).

Correspondingly, some psychographic characteristics were highlighted in the research as different for Native American entrepreneurs, such as subjective versus objective thinking or individualistic versus community oriented. What do these differences mean in terms of entrepreneurial education and development? Lee Little Soldier, a professor of education at Texas Tech and consultant for Indian education, confirms that building self esteem and understanding the values of Native people are the first steps to relevant, success oriented education (Soldier, 1992, 21).

Developing different approaches and learning styles to adapt to these various culturally based characteristics are important to entrepreneurial education and development. Efforts which build on past successes of Native American entrepreneurs networking people together and programs which are specifically tied to the needs and values of Native Americans will be the ones that enhance entrepreneurial development (Aldrich & Zimmer, 1986; Firley, 1985; Haapola, 1993).

Government policies which endorse "tribal self-determination" and continuing education for Native Americans will develop tribal owned enterprises as well as individual business people who may initiate businesses of all sizes, both on and off the reservation (Cohen, 1989, 43). To overcome perceived inhibitors of low aspiration levels and formal education, role models and mentoring programs could begin to broaden the experiences of young people so they can see themselves as successful entrepreneurs (Birley, 1985; Haapola, 1993; Jamieson, 1990; Knudsen & McTavish, 1986).

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LESSONS FROM THE SMALL FIRM EFFECTS

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ABSTRACT

Small company stocks have several behavioral characteristics that distinguish them from medium and large capitalization stocks. For instance, it is well documented that small stock returns have been higher than those predicted by the Capital Asset Pricing Model. This paper examines two other anomalies associated with the small-stock price behavior that should be of special interest to small firms on the threshold of a public offering. First, we demonstrate that small stock prices are more sensitive to the general market when the market is falling than when it is rising. We rule out the possibility that variance effects in small stock returns are a cause for this anomaly. Second, we demonstrate a relationship between the sensitivity of small stocks to the general market and the level of business risk: the betas of small stocks are found to be highly related to the spread between Baa rated and default-free bonds. In other words, we demonstrate that small capitalization stocks are especially sensitive to movements in the overall market when the market is most risky.

INTRODUCTION

The initial public offering (IPO) market for common stock has been both active and extremely cyclical over the past few decades. For instance, a study by Ibbotson, Sindelar, and Ritter (1993) notes that, between 1970 and 1995, more than 8000 firms went public, raising more than $130 billion. During this period, the number of IPOs have ranged from only 9 in 1974 to over 900 in 1986, and the proceeds from these IPOs ranged from $50 million to almost $25 billion.

There are both, demand-side and supply side explanations for the cyclical nature of the IPO market in the US. Choe, Masulis, and Nanda (1993), providing a demand side explanation for the cyclical behavior, suggest that there are periods when exceptionally large number of firms have capital needs which are unlikely to be met by private funding. The internet startups in the mid 1990s are good examples. On the supply side, Loughran and Ritter (1995) suggest that there might be periods when investors that traditionally invest in IPOs have money and the urge to invest. The liquidity surge into internet startups in the late 1990s is a good representation.

A firm considering an IPO or a public offering should be interested in knowing whether a particular hot issue period is demand driven or supply driven. For instance, if the hot issue period is demand driven, entrepreneurs may wish to avoid going public during that time as competition for funds could drive up the cost of capital. On the other hand, the entrepreneur could benefit by timing his IPO to the hot issue periods that are supply driven. Such periods are characterized by high price to earnings ratios, a symptom of lower cost of equity for a new issue.

In this paper we provide further insight on how an entrepreneur might time his IPO to avoid high costs of capital. We suggest that small capitalization stocks have several inherent characteristics that at least temporarily distinguish them from medium and large capitalization stocks. The paper presents evidence on these tendencies, or small firm effects, and goes on to elaborate on how they might impact cost of capital for new issues. The ideas generated in this paper can be employed together with those developed in Choe, Masulis, and Nanda (1993) and Loughran and Ritter (1995) to form a checklist of sorts that could ultimately aid in the effective timing of an IPO.

The main results of our paper may be summarized as follows. First, we demonstrate that small stock prices are more sensitive to the general market when the market is falling than when it is rising. We rule out the possible asymmetry in variance of small stocks across falling and rising markets as a cause for this anomaly. Second, we update prior research and demonstrate a relationship between the sensitivity of small stocks to the general market and the level of business risk: the betas of small stocks are found to be positively related to the spread between Baa-rated and Aaa-rated (default-free) bonds. In other words, we demonstrate that small capitalization stocks are especially sensitive to movements in the overall market when there is a great deal of risk in the market. For IPOs, this translates to an especially high cost of equity when the markets are falling or when the yield spread is high. However, this paper also finds that the yield spread holds little in terms of predictive capacity for the return behavior of small stocks.[1]

The remainder of the paper is organized as follows. In section II we discuss the nature and significance of the small firm effects and further motivate our empirical section. Section III presents empirical evidence of the small firm effects. Section IV provides some concluding thoughts.

SMALL STOCKS EFFECTS

Small capitalization stocks have several behavioral characteristics that distinguish them from medium and large capitalization stocks. For instance, it is well noted that small capitalization stocks are more market-sensitive (have a larger beta) than large stocks, and as they progress to become medium and large capitalization stocks, their beta approaches that of the market. It is also well documented that small stock returns have been higher than those predicted by the Capital Asset Pricing Model. This size-effect was first noted for the US by Banz (1981), and since then, there has been a great deal of international evidence on the subject. Notably, small stocks have been found to have larger returns than the overall market despite their higher market sensitivities.[2]

A prominent explanation to this size effect has been forwarded by Jagannathan and Wang (1996). The authors suggest that the effect arises because human capital, more specifically the present value of an individuals future wages, is not explicitly included in the benchmark market portfolio. According to the authors, since individuals typically want to insure against job-loss, they as investors will be willing to accept lower rates of return on stocks that do relatively well during high layoff periods. If investors believe that large firms are likely to outperform smaller stocks during economic events that lead to increased layoffs or wage reductions, they would prefer investing in larger stocks, even at the expense of lower expected returns.[3] Similarly, under adverse economic conditions, investors may avoid small stocks even though expected returns are higher.

If Jagannathan and Wang's (1996) understanding of investor behavior is correct, the behavior of small stocks in the IPO and secondary markets may also depend on the investors' perceptions of general business risk rather than market risk alone. In support of such an explanation for small stock performance, Chan, Chen, and Hsieh (1985) and Jagannathan and Wang (1996) make a number of interesting observations on small stock price behavior. First, the authors find that small company stock returns seem to covary more with per capita income than do large company stocks. Second, they indicate that small stock returns appear positively correlated with the changes in the spread between the Baa-rated and Aaa rated bonds. Third, the authors find that the small companies have higher market betas when this spread is higher. Thus, small stocks tend to be especially sensitive to the market when the risk in the market is at its highest.

Another important implication of Jagannathan and Wang's (1996) claims on investor behavior, is the likelihood of asymmetries in the sensitivity of small stocks across rising and falling markets. Given that there is considerable overlap between business- and market-risk factors, periods of high market risk are also likely to be periods of high business risk. In other words, it is implicit that if investors systematically avoid small stocks in periods of high business risk, they systematically avoid small stocks during periods of market downturns.

There is already some evidence of such a tendency in real estate investment trusts (REITs), noted to be fairly small in capitalization. Goldstein and Nelling (1999) and Chatrath, Liang and McIntosh (2000) find that REITs tend to be more market sensitive when markets are falling than when they are rising. Chatrath, Liang and McIntosh (2000) regress the excess returns of equity REITs on the product of the S&P 500 index returns and a dummy representing a rising market, and on the product of the S&P 500 index returns and a dummy representing a declining market. The authors find highly significant differences in the betas corresponding to the two series. However, it is notable that the findings for REITs may not be easily applicable to the remainder of the small-stock universe. Unlike most small stocks, REITs have relatively low betas and relatively high dividend yields. Moreover, their correlation with the general market has been decaying of late (for instance, see Chatrath, Liang & McIntosh, 2000).

Thus, while we already know much about small stock price behavior, some important questions remain unanswered. Namely, is there a pattern of asymmetry in the sensitivity of small stocks across rising and falling markets? Does the nature of the variance of small stock returns play a role in these tendencies?[4] What information does the yield spread have on the behavior of small stocks? The next section develops some testable hypotheses on these and other questions and presents empirical evidence from the US stock market.

EVIDENCE FROM THE U.S. MARKET

Summary Statistics

Our study employs monthly total returns of the S&P 500, Small Stocks, Russell 1000, and Russell 2000 indices, and the 30-day treasury bill. The Small Stocks total returns are prepared by Ibbotson Associates, which are published in *Stocks, Bonds, Bills and Inflation* (Ibbotson and Sinquefeld (1999)). The series are from the U.S. Investment Benchmark data module supplied by Ibbotson Associates. Returns are given by $[(P_t+d_t)/P_{t-1}]*100$, where P_t and d_t represent the index value and dividend at time *t*, respectively. The data for S&P 500 index, the Small Stocks index, and treasury bills span the interval 1/1972 - 12/1998. The Russell index returns are available only from 1/1979. It is notable that the Russell 2000 and the Small Stock Indices represent the smallest stocks among the four, and the Russell 1000 returns are expected to more closely mimic the S&P

500. We find that the four stock index returns series are stationary employing standard unit root tests: the Dickey-Fuller and Phillips-Perron tests reject the null for nonstationarity in the return series at the 1 percent level.[5]

Table 1 presents summary statistics and diagnostics for the four return series. It is apparent from comparing the standard deviations that the small stock returns have had larger variations. Further, the Q statistics indicate significant autocorrelation in the monthly returns for small stocks (at least for 6 lags), but no autocorrelation for large stocks. Finally, all four series suggest considerable variance persistence. The solution of the conditional variance equation from Bollerslev's (1986) Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model yielded α and ß coefficients that would suggest that the impact of volatility shocks persist over long periods of time. In summary, Table 1 captures some notable similarities and differences in small and large capitalization stocks.

Beta Asymmetry

A central issue in our study relates to the potential differences in small stock behavior across rising and falling markets. We first examine the nature of the small stock betas by estimating variations of the regression

$$R_{t,i} = \alpha + \beta_1 R_{t,R_{SP}} + \beta_2 R_{t,R_{SP}} D^- + \varepsilon_t$$

where $R_{t,i}$ and $R_{t,SP}$ represent, respectively, the monthly returns for the *i*th small-firm index and the S&P 500 index, and D^- is a dummy variable equal to 1 if $R_{t,SP}$ is below the return on the 30-day t-bill (i.e., when excess market returns are positive), and 0 otherwise. A positive and significant $ß_2$ coefficient would indicate that small stock sensitivities are higher when markets are falling than when they are rising. Table 2 reports the results from these regressions.

Table 1
Diagnostics of Monthly Returns

Returns for each index are given by [(P_t+d_t)/P_{t-1}]*100, where P_t and d_t represent the index value and dividend at time t, respectively.
Q is the Ljung-Box-Pierce (Modified Box-Pierce) statistic (chi-square distributed) for return autocorrelation. The results from the GARCH(1,1)

model are the coefficients from the conditional variance equation; α_1 and β_1 represent the coefficients of the maximum likelihood estimation of the impact of past return shocks (error terms) and past variance on the contemporaneous variance; $\alpha_1+\beta_1$ close to 1 suggests the memory in variance persists over long periods of time.

Figures in () are t-statistics. a, b and c represent significance at the .01, .05 and .10 levels respectively.

	S&P 500 (1/72-12/98)	Small (1/72-12/98)	Russel 1000 (1/79-12/98)	Russell 2000 (1/79-12/98)
Mean	1.183	1.345	1.436	1.270
Std. Dev	4.425	6.027	4.380	5.488
Q(Box-Pierce)				
lag 1	0.03	8.02[a]	0.13	10.32[a]
2	0.37	9.08[b]	0.29	10.33[a]
3	0.38	9.68[b]	1.10	10.91[a]
4	0.99	11.06[b]	2.69	13.31[a]
5	3.52	11.79[b]	4.24	14.53[b]
6	5.57	12.08[c]	4.56	14.68[b]
GARCH(1,1)				
α_1	0.068[b]	0.049[a]	0.056[c]	0.001
	(2.25)	(2.72)	(1.78)	(1.22)
β_1	0.879[a]	0.886[a]	0.907[a]	0.989
	(20.36)	(23.37)	(17.82)	(23.38)
$\alpha_1+\beta_1$	0.947	0.935	0.963	0.990

The results from the regression of small stock returns on the S&P 500 index returns (Model 1 in Table 2) indicate that the small stock betas are generally larger than 1 (Panel A and C), while the beta of the Russell 1000 is similar to that of the market (Panel B). It is also notable that the R^2 is almost equal to 1 for the Russell 1000 index and much smaller for the Small Stock and Russell 2000 indices, again suggesting that the former more closely mimics the market. The table also provides strong evidence of asymmetry in the betas. The estimation of equation 1 (Model 2 in Table 2) resulted in highly significant β_2 coefficients for the Small Stock and Russell 2000 index.[6] On the other hand, the β_2 coefficient was barely statistically significant for the larger-cap Russell 1000 index.

Table 2
Evidence of Asymmetry in Small Stock Betas

The results are from the regression

$$R_{t,i} = \alpha + \beta_1 R_{t,R_{SP}} + \beta_2 R_{t,R_{SP}} D^- + \varepsilon_t$$

where $R_{t,i}$ and $R_{t,SP}$ represent, respectively, the monthly dividend-inclusive returns for the *i*th small-firm index and the S&P 500 index, and D^- is a dummy variable equal to 1 if the S&P 500 excess returns are negative, and 0 otherwise. Returns for each index are given by $[(P_t+d_t)/P_{t-1}]*100$, where P_t and d_t represent the index value and dividend at time t, respectively. a, b and c represent significance at the .01, .05 and .10 levels respectively.

	Constant	$R_{t,SP}$	$R_{t,SP}*D^-$	R^2
A. Small Stock (1/72-12/98)				
Model 1	0.110	1.044[a]	-	.58
	(0.49)	(21.43)		
Model 2	0.662[b]	0.897[a]	0.337[b]	.59
	(2.05)	(11.36)	(2.34)	
B. Russell 1000 (1/79-12/98)				
Model 1	-0.026	1.009[a]	-	.99
	(-1.07)	(190.27)		
Model 2	0.020	0.996[a]	0.027[c]	.99
	(0.57)	(114.97)	(1.78)	
C. Russell 2000 (1/79-12/98)				
Model 1	-0.260	1.081[a]	-	.72
	(-1.31)	(24.63)		
Model 2	0.481[c]	0.883[a]	0.452[a]	.74
	(1.68)	(12.54)	(3.54)	

Further testing is conducted to consider the possibility that the asymmetric beta pattern found in Table 2 is a reflection of a positive relationship between small stock returns and their variances. Specifically, conditional return variances have been noted to be higher in falling markets (e.g., Glosten, Jagannathan, and Runkel (1993)), and as already noted, small stocks have been found to be especially sensitive when risk levels are high. If it is true that the asymmetry in small stock betas noted in Table 2 result from dependencies between returns and variances, adjustments for such variance effects in the return data should subsequently remove the asymmetries that have been noted. Such an exploration could also be considered a test of the robustness of the regressions we have undertaken so far: if return-variance effects are substantial, heteroskedasticity may be leading us to false inferences regarding beta behavior.

Consider, first, a generalization of the noted asymmetric relationship between small stocks and the market. The

$$Cov(R_i, R_m)^- > Cov(R_i, R_m)^+,$$

greater sensitivity between small stocks and the market in falling markets can be represented as

where the superscript signifies market performance. We can be rewrite the above as

$$[E(R_iR_m) - E(R_m)E(R_i)]^- > [E(R_iR_m) - E(R_m)E(R_i)]^+.$$

$$[R_iR_m]^- > [R_iR_m]^+,$$

Assuming conditional means to be time-invariant, we have

$$[\varepsilon_i\varepsilon_m]^- > [\varepsilon_i\varepsilon_m]^+.$$

which can be extended to residual returns, without loss of generality, as in,

Given the notion that the return-dependence in betas may actually be the result of return-variance relationships, one would like to see this inequality dissipate when adjustments for variance-effects are made.

To evaluate the impact of accounting for the possible return-variance relationship in our tests for beta asymmetry, we

$$\frac{\varepsilon_{R_{t,i}}}{root}h_{R_{t,i}} = \alpha + \beta_1\frac{\varepsilon_{R_{t,SP}}}{root}h_{R_{t,SP}} + \beta_2\frac{\varepsilon_{R_{t,SP}}}{root}h_{R_{t,SP}}D^- + \varepsilon_t,$$

undertake the regression

where $\varepsilon_{t,i}/\sqrt{h_{t,i}}$ is the standard residuals of the *i*th small stock index, and $\varepsilon_{t,SP}/\sqrt{h_{t,SP}}$ is the standard residuals of the S&P 500 index; $\varepsilon_{t,i}$ represents the return shock (error) at *t*, and $\sqrt{h_{t,i}}$ is the conditional standard deviation at *t*. The standard residuals are obtained from the GARCH model with controls for variance asymmetries as suggested in Glosten et al. (1993).[7] In effect, if we find that $ß_2$ in (6) is positive and significant, the asymmetry in the small stock betas would not be explained by variance effects in the data.

The results from (6) are reported in Table 3. They indicate the asymmetry in the relationship between small stocks and the market persists after controls for possible variance effects. This is implied by the significant $ß_2$ coefficients in Panels A and C. Further, as in Table 2, the $ß_2$ coefficient is weakly significant for the Russell 1000. In sum, the patterns observed for small stocks, *vis a vis* their relationship to the market cannot be explained by variance effects in the data.

Table 3
The Role of Variance in the Asymmetry in Small Stock Betas

Statistics are from the regression

$$\frac{\varepsilon_{R_{t,i}}}{root\,h_{R_{t,i}}} = \alpha + \beta_1 \frac{\varepsilon_{R_{t,SP}}}{root\,h_{R_{t,SP}}} + \beta_2 \frac{\varepsilon_{R_{t,SP}}}{root\,h_{R_{t,SP}}} D^- + \varepsilon_t$$

where $\varepsilon_{t,i}/\sqrt{h_{t,i}}$ is the standard residuals of the *i*th small stock index, and $\varepsilon_{t,SP}/\sqrt{h_{t,SP}}$ is the standard residuals of the S&P 500 index, and D^- is a dummy variable equal to 1 if the S&P 500 excess returns are negative, and 0 otherwise. Standard residuals are obtained from the GARCH model with controls for variance asymmetries as suggested in Glosten et al. (1993). a, b and c represent significance at the .01, .05 and .10 levels respectively.

	Constant	$\varepsilon_{t,SP}/\sqrt{h_{t,SP}}$	$\varepsilon_{t,SP}/\sqrt{h_{t,SP}}*D^-$	R^2
A. Small Stock (1/72-12/98)				
Model 1	0.022	0.784[a]	-	.61
	(0.64)	(22.89)		
Model 2	0.109[b]	0.652[a]	0.239[b]	.63
	(2.17)	(9.90)	(2.34)	
B. Russell 1000 (1/79-12/98)				
Model 1	-0.061[a]	1.006[a]	-	.99

	(-9.54)	(155.00)		
Model 2	-0.049[a]	0.988[a]	0.032[c]	.99
	(-5.25)	(82.56)	(1.73)	
C. Russell 2000 (1/79-12/98)				
Model 1	-0.061[c]	0.859[a]	-	.71
	(-1.68)	(23.23)		
Model 2	0.053	0.691[a]	0.316[a]	.74
	(1.01)	(10.25)	(2.97)	

Small Stock betas, Returns, and Business Risk

In this section we evaluate whether the small stock sensitivity is dependent on the level of business risk, as indicated in prior research (Chan, Chen, and Hsieh (1985)). We also evaluate whether small stock returns are predictable by the yield spread, a common proxy for the level of business risk.

First, we conduct 30-month rolling regressions of the Small Stock Index returns on the returns of the S&P 500 index (over the period 1972-1998) to obtain 240 betas. These betas, along with the corresponding yield spread between Baa and default free bonds are presented in Figure 1. We then regress these betas on the difference between the Baa and Aaa yields (Spread). The results are

$$\beta_t = \underset{(21.88)}{0.778} + \underset{(7.71)}{0.221}\, Spread_t + \varepsilon_t, \quad R^2 = .17,$$

where the figures in parentheses are t-statistics. The Spread coefficient (.221) is highly significant, indicating a strong, positive relationship between small stock sensitivities and the spread. Similar results were obtained when we estimate the above regression for the Russell 2000 Index returns.

To examine the relationship between small stock *returns* and the yield spread, and to examine whether the relationship is robust to variance effects, we undertake the pair of regressions

$$R_{t,i} = \alpha + \beta_1 Spread_t + \varepsilon_t$$

$$\frac{\varepsilon_{R_{t,i}}}{root} h_{R_{t,i}} = \alpha + \beta_1 Spread_t + \varepsilon_t .$$

and

The results in Panel A of Table 4 suggest that the Small Stock Index returns and Russell 2000 Index returns are highly related to the spread: the $ß_1$ coefficient is significant at the 1 and 5 percent levels respectively. On the other hand, the coefficient for the Russell 1000 is insignificant, indicating a relative lack in the relationship between the yield spread and larger-cap stock returns. However, there is evidence that variance effect do account for some of these patterns. The $ß_1$ in Panel B are significant only for the Small Stock Index.

Table 4
Small Stock Returns and Credit Risk

The results are from the regressions

$$R_{t,i} = \alpha + \beta_1 Spread_t + \varepsilon_t$$

$$\frac{\varepsilon_{R_{t,i}}}{root} h_{R_{t,i}} = \alpha + \beta_1 Spread_t + \varepsilon_t$$

where $R_{t,i}$ represents the monthly dividend-inclusive returns for the *i*th small-firm index, Spread is the difference in the yield between the Baa and Aaa rated corporate bonds, and $\varepsilon_{t,i}/\sqrt{h_{t,i}}$ is the standard residuals of the *i*th small stock index. a, b and c represent significance at the .01, .05 and .10 levels respectively.			
	Small Stock	Russell 1000	Russell 2000
Panel A. Returns and the Yield Spread			
Constant	-0.964	0.944	-0.132
	(-1.10)	(1.32)	(-0.14)
Spread	2.065[a]	0.442	
	(2.89)	(0.77)	(1.76)
R^2	.02	.00	.01
Panel B. Standard Residuals and the Yield Spread			
Constant	-0.293[b]	-0.286[c]	-0.046
	(-2.02)	(-1.75)	(-0.27)
Spread	0.282[b]	0.139	0.183
	(2.34)	(1.06)	(1.35)
R^2	.01	.00	.01

As the yield spread seems to be related to the performance of small stocks, it behooves us to determine whether the spread holds significant predictive powers vis a vis the performance of small stock returns. Table 5 reports results pertaining to the forecasting performance of the yield spread. Here we compare the mean square errors (MSE) from a simple autoregressive regression of each index against the MSE from an extended model with contemporaneous and past levels of the yield spread. The results indicate that the drop in MSEs are statistically insignificant. In other words, the inclusion of the yield spread into a simple forecasting model for small stocks does not result in an improvement.

Table 5 **The Predictive Power of the Yield Spread**			
The figures are mean square errors from alternative autoregressive models. MSE-AR represent mean square errors from the model where index returns are regressed on past returns (3 lags). MSE-AR,Spread represent mean square errors from the model where index returns are regressed on past index returns and past and contemporaneous levels of the spread between Baa and Aaa rated bonds. The figures in () are standard deviations. The F statistic tests the equality of the MSE-AR and MSE-AR,Spread.			
	MSE-AR	MSE-AR,Spread	F

Small Stock Index	35.066	34.095	0.02
	(91.84)	(85.83)	
Russell 1000	18.575	18.268	0.01
	(44.16)	(43.32)	
Russell 2000	27.072	26.508	0.01
	(73.54)	(72.09)	

SUMMARY AND CONCLUSIONS

The paper outlines some important differences in the behavior of small- and large capitalization stocks and demonstrates two small stock anomalies that should be of particular interest to entrepreneurs considering a public offering. First, we demonstrate that small stock prices are more sensitive to the general market when the market is falling than when it is rising. We rule out the possibility that variance effects in small stock returns are a cause for this anomaly. Second, we demonstrate a relationship between the sensitivity of small stocks to the general market and the level of business risk: the betas of small stocks are found to be highly related to the spread between Baa rated and default-free bonds. In other words, we demonstrate that small capitalization stocks are especially sensitive to movements in the overall market when the market is most risky.

As discussed in the paper, the hot issue periods for IPOs can be either demand or supply driven. If the hot issue period is demand driven (driven by capital needs of firms), entrepreneurs may wish to avoid going public during that time as competition for funds could drive up the cost of capital. As noted in this paper, the entrepreneur may also benefit from examining an easily available proxy for the level of business risk, the yield spread. Given that the yield spread is closely related to the small firm beta, and that the pricing of new issues will be impacted by the performance of other small stocks at that time, it may benefit the entreprenuer to time his issue when the spread is not unduly high. Further, our results on beta asymmetry demonstrate that cost of equity for small firms may be exaggerated relative to the average firm when the overall market is declining. Thus, entrepreneurs ought to be especially deliberate in avoiding going public when the benchmark indices are faltering.

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ENDNOTES

1 Other than being of interest to small firm mangers, the asymmetry in the relationship between small stocks and the market would certainly have some important implications for portfolio managers. In particular, short term estimates of relatedness between small stocks and the market would be considered unreliable, complicating basic questions on hedging small stock returns, or requiring further qualifications to questions like "how much in small stocks?".

2 For the US, Hawawini and Keim (1995) find that the lowest capitalization stocks (average beta of 1.17) yielded returns of about 9% higher than the largest stocks (average beta of 0.95) over the period of 1951-1989. Ziemba (1991) finds that the smallest Japanese stocks outperformed their larger counterparts by 1.2 percent per month over the 1965-1987 period. Levis (1985) finds that small stocks in the UK market outperformed the large stocks by 0.4 percent over the 1958-1982 period. The most noteworthy evidence comes from the Australian market for which Brown et al. (1983) find a small stocks premium of 5.73 percent from 1958 to 1981. Thus, there is international evidence that small firms provide higher returns despite the tendency to have higher betas.

3 There is evidence that larger firms perform fairly well during layoffs. For instance, Chatrath and Song (1995) provide evidence that layoffs by large corporations in the early 1990s actually resulted in significant gains in shareholder wealth.

4 The conditional variances of stocks have been noted to be higher in falling markets (e.g., Glosten, Jagannathan & Runkel, 1993). It has been suspected that inferences on stock return patterns may be biased by such an effect.

5 Nonstationarity would have implied that the series are not mean-reverting and that the traditional econometric methodologies could lead to false inferences. The stationarity results are available for the authors.

6 These results are similar to those found for REITs by Goldstein and Nelling (1999) and Chatrath, Liang and McIntosh (2000).

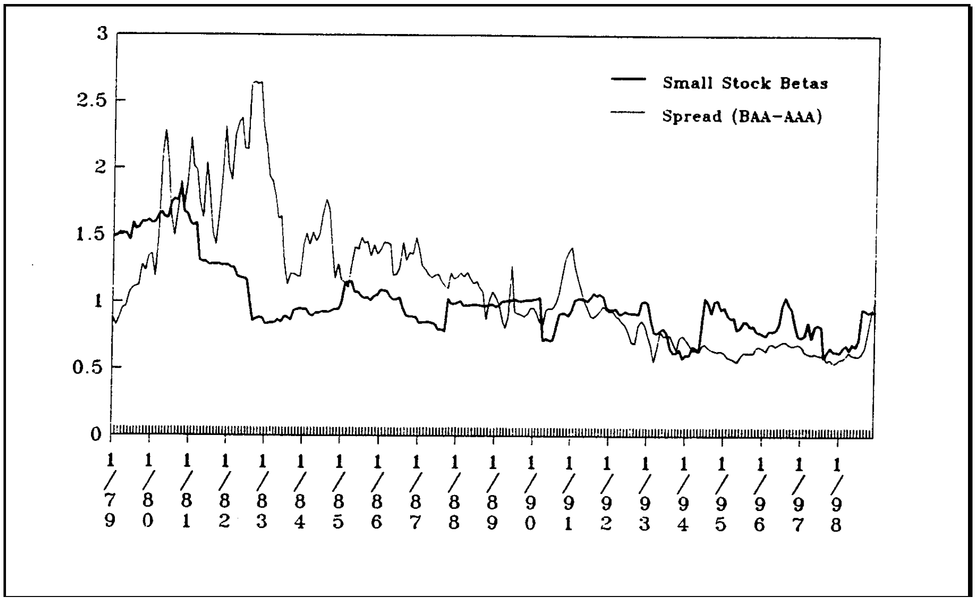
7 The Glosten et al. model for each return series is given by

$$R_t = b_0 + b_1 R_{t-1} + b_2 h_t + \varepsilon_t,$$

$$\varepsilon_t \sim N(0, h_t),$$

$$h_t = \alpha_0 + \alpha_1 h_{t-1} + \alpha_2 \varepsilon_{t-1}^2 + \alpha_3 \varepsilon_{t-1}^2 \eta_t^+ + u_t,$$

where h_t is the variance of returns, and η_t^+ takes on the value of 1 if ε_{t-1} is positive, and 0 otherwise. The variance term in the return equation allows for the returns to be dependent on return variance.



Small Stock Betas
Spread (BAA-AAA)
3
2.5
2
1.5
1
0.5
0
1/79
1/80
1/81
1/82
1/83
1/84
1/85
1/86
1/87
1/88
1/89
1/90
1/91
1/92
1/93
1/94
1/95
1/96
1/97
1/98

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