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New England Journal of Entrepreneurship

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New England Journal of Entrepreneurship (NEJE), published twice a year by Sacred Heart University’s College of Business, is intended to be an invaluable forum for exchange of scholarly ideas, practices, and policies in the field of entrepreneurship and small business management.

The journal is currently seeking original contributions that have not been published or are under consideration elsewhere. The scope of the articles published in NEJE ranges from theoretical/conceptual to empirical research, with maximum relevance to practicing entrepreneurs. The journal tries to appeal to a broad range of audience, so articles submitted should be written in such a manner that those outside of academics would be able to comprehend and appreciate the content of the material.

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New England Journal of Entrepreneurship

From the Editors

We have a terrific year last year but found the first half of this year to be challenging. Like many companies, we were impacted by the economy and world events. In response to this, we altered our strategy. We did the following:

1. We adjusted our positioning so that our selling process would be less evangelical and more bottom-line oriented. This meant re-factoring our existing products so that we could more easily enter sales situations by leading with products that solve problems that the customer already thinks they have, and then following with our products that solve problems that customers do not realize they have. In simple terms, we now lead with the security aspects of our technology as opposed to the integration aspects.
2. We added a services component to our business that allows us more flexibility in customizing our offering.
3. We have reduced our dependence on channel partners to sell for us. To this end, we expanded our existing direct sales team.

It would appear that our strategy is paying off. We have regained traction with commercial hospitals, and we recently closed a huge contract with the Department of Veterans Affairs. Several of our products will be installed in all 163 VA hospitals. This deal is worth $10 million to us. (See our web site www.sentillion.com for the press release.)

If there is a message for your readers, it is to pay attention to early warning signs of market changes that could affect your business. If you are really tuned to your business, odds are you will pick up on these warning signs before they manifest in a serious manner. It is not unlike seeing the early signs of ill health in a loved one or close friend even before symptoms appear.

The next trick is to react briskly, but thoughtfully. In our case, we did not drop our business and go do something else, but rather studied the reasons why sales had become challenging for us and attacked those issues. This can mean changes that can be hard to swallow, but are necessary. Conversely, if one is blessed with a good team, as I am, then the changes come more easily. New assignments, reorganizations (but no downsizing), and a shift in priorities for some people have resulted in a the rapid mobilization of Sentillion in pursuit of our expanded strategy.

It is too early to tell yet just how well this will all pay off, as the fourth quarter is classically our biggest quarter. I can tell you that we are well on the path to two times revenue growth year-to-year. In contrast, we are only at 120 percent of sales year-to-year, with a great shot at ending at 150 percent and, with the push we have on, we might even achieve 200 percent. Stay tuned!

We hope you enjoy this issue of NEJE, and as always, we encourage your feedback and input.

Dr. Laurence Weinstein  Dr. Shawn Blau  Christopher Sheehan
Editor in Chief  Managing Editor  Associate Editor

Dr. Joshua Shuart
Associate Editor

SampleCopies
Sample copies of the previous issues will be available from the Editor on a first-come, first-served basis.
Jane Pollak is a Westport, Connecticut, artist who started her career as a high school art teacher. She has now branched out into public speaking, is the author of two books, and embraces the life of entrepreneur as a sole proprietor of her rapidly expanding business of decorating eggs. For Jane, her life path has been one of hope and unexpected personal and business achievements.

NEJE: Your background of artist, then entrepreneur, and now a sought-after public speaker and author sounds so varied. When did the spark of inspiration come?
Pollak: There wasn’t a direct path, if that’s what you’re looking for. My mom did own her own business. She was a party planner and I helped her out when I could. Before that, my sister for a time ran her own business decorating matchboxes with felt for sale in the neighborhood. So I guess you could say I picked up some things from family.

NEJE: When did you realize you were a talented artist?
Pollak: The “talented” part came later, but as a child I was one of four siblings and we each seemed to pick up a label that we had to live up to. One sister was “the writer,” another sister was the “pretty one,” and my brother was “the funny one.” I was “the artist.”

NEJE: Did you also consider using your creative interests and being in business for yourself at a young age?
Pollak: No, not at all. I grew up in the 1950s and 60s when there were almost no women that I knew of who had their own businesses. In that culture, women were encouraged and expected to become either teachers or nurses. So it was with me as well.

I took some education classes at Mount Holyoke College and later graduated from Columbia University’s Teachers College. However, the seed was planted very early on for my later career interests because I actually started my undergraduate degree at George Washington University. I took nine hours in drawing and really enjoyed the classes. While at Mount Holyoke, I pursued my creative interests by studying studio art and theatre as my major.

NEJE: So that helps explain your first job as an art teacher in a nearby high school.
Pollak: Yes it does. I enjoy being an artist and felt comfortable teaching the subject to young people. However, I was brand new to the field, there was no curriculum to follow, and I must say it was pretty tricky at first figuring out what to do to keep up the students’ interest.

What happened that first year was absolutely serendipitous. Back when I was seven or eight years old, my dad brought home a Ukrainian egg from work. I greatly admired it, then forgot about that experience for the next twenty years. When one of my colleagues suggested that I have my class decorate Ukrainian eggs for Easter, I was hesitant and a bit concerned about using class time for what might be perceived as a quasi-religious purpose.

My colleague showed me how to use a Rapidograph-like, fine-point stylus to decorate the eggs and I caught on to the technique right away. It takes patience and a steady hand, but my students enjoyed the egg decorating and a one- or two-day project actually lasted six weeks. The students loved it and so did I!

NEJE: So your business got started?
Pollak: No, not right away. I did call the New York Times and they ended up printing a two-column article about the class in 1973. Their interest in the egg-decorating class project affirmed how I felt about the experience so it stuck with me. The actual business came later.

NEJE: How much later?
Pollak: I stayed with teaching for two years, from 1972 to 1974. After that I got pregnant with our first child and left the field. During that time I exhibited at my first craft shows. I devoted myself to raising our three children, but kept up my artwork on the side exhibiting in one or two craft shows a year—hardly a career. Someone must have noticed my work because I was invited by the White House to design Easter eggs for the annual White House Easter egg hunt in 1981. The invitation came from “out of the blue” and I was flattered to be considered worthy of that kind of attention.

I started decorating eggs on a fairly regular basis at that time and sold them for $8 apiece. Some artists use a canvas; I decided that eggs would be my mode of self-expression. It’s very fine work. Each egg takes roughly two to three hours of intense concentration, and during the creative process I am completely “in the zone.” I am literally unaware of time passing or what is happening around me. I feel completely alive and totally involved in what I am doing!
NEJE: Are we ready for the “ta da! A business is born”?  
Pollak: Almost! During the 1980s, my work was still more a hobby than a business. In 1985, Country Living printed an article on quilt designs I was painting on the eggs and that seemed to generate more interest in what I was doing. In fact, I think I raised my prices after the article to $75 an egg! In 1987, our last child went off to kindergarten and I had more time to think about where I wanted to take my creative interests. Although my business was growing steadily financially, I thought I wanted something with more status and a steady paycheck. I saw an advertisement for an arts administrator in New Haven. They were looking for someone with an academic background who had a teaching degree and experience in the art field. The pay was $40,000 per year and that was an excellent salary back then. I hadn’t updated my resume for a while, so I went to the alumnae office at Mount Holyoke and asked for assistance. The woman assigned to help me asked what I was doing at the time. After I told her about my creative pursuits, she responded, “Why would you want to do anything else?” Her comment really surprised me. It made me take stock of my life and for the first time consider what being an entrepreneur would involve. By the way, I went in my updated resume anyway for the arts administrator job but never did get called for an interview. That helped me make the decision to turn my egg decorating business into more of a full-time venture. It was a true turning point in my life. I promised myself I would do the very best I could to succeed at it.

NEJE: Did you prepare a business plan?  
Pollak: Not until 1989. I attended a full-year course offered by the American Women’s Economic Development Corp. (AWED) in New York. The course was designed for women who were small business owners and we were each asked to generate our own business plan. I think I was the only one who actually took the time to do it, but it was a great experience and well worth the time and effort.

NEJE: What else did you learn from the course?  
Pollak: The main thing I learned was the importance of developing my own brand identity. That involved things like creating a logo, a business card, my website, the right combinations of copy and visuals to use and so on. It wasn’t easy. I went through several iterations and finally realized that spending money to hire a real pro for this type of marketing communication was very, very important.

I’m proud of what I’ve accomplished and I welcome your readers to see for themselves how my business has evolved. They can check out my website at www.janepollak.com.

NEJE: How did your business develop?  
Pollak: I started entering my decorated eggs into juried craft shows and exhibited in about 10 such shows a year. My big break came at a trade show where I wound up with $7,000 worth of orders for my eggshell jewelry! I was so excited! I called my duck egg source and told them I needed dozens and dozens of eggs. I use hen eggs for the decorated eggs and duck eggs for the jewelry pieces. They told me, “Duck eggs only start becoming available in the spring of each year. We don’t have any to sell you.” Did I ever learn about entrepreneurship then! I scrambled until I could get hold of a new vendor. It was quite the scene.

NEJE: In your book, Soul Proprietor, you spend a considerable amount of time discussing how important it is to work on self-development. How come?  
Pollak: Before there can be business development there has to be personal development. It’s hard, but one has to learn that being rejected in a business environment is not the same as personal rejection. If orders stop coming in, for instance, I have to remind myself what’s happening is not about the work. It’s about the normal business cycle or perhaps I’m not pursuing leads aggressively enough. I have to separate my personal feelings from what’s occurring in the business.

NEJE: Rejection was hard for you?  
Pollak: Isn’t it for everyone? We all have to deal with rejection. I was working with an executive coach some years ago and I had recently been ignored by the American Egg Board to work for them on an ongoing basis. The coach told me they weren’t rejecting me, Jane Pollak. They just didn’t feel my talents fit into their plans at that moment in time. Understanding that, accepting that, was a big step for me as an artist because we artists like to keep ourselves in the background. “Don’t look at me, look at my work.” Most artists would rather “hunker down” in their studios than face hearing negative things about their efforts or risk rejection. Our whole being in a way is held up for public scrutiny every time we show our work. We’re awfully sensitive as a group. So I had to desensitize myself and understand how to separate my business self from my artist self.

I work pretty much alone. There are two high school art students who come in for about ten hours a week to help me out. Otherwise, it’s just me and it can be very isolating. I listen to educational business and motivational tapes while I’m painting to keep my mind occupied and my focus where it should be. Wayne Dyer, Roger Dawson, and Brian Tracy are my personal favorites. I also joined Toastmasters to become a better public speaker. This has given me enormous self-confidence. I write a vision statement at the end of every year and I keep it posted right next to my workbench. This motivates me to ask myself continually if I am doing everything I can to meet those goals. If I’m not meeting my goals, then I have to ask myself, “What should I be doing differently?” I just can’t sit here and hope things will turn out differently. I am in control of my destiny. Now what do I have to do to make it a reality?”

NEJE: How is business for you now?  
Pollak: Well, I can tell you that it will cost you $300 an egg if you want to buy one today. Also, I’m paid thousands of dollars to share with audiences what I’ve learned. That’s progress! Business ebbs and flows, but I am satisfied with my work and the visions I have changed into reality.

NEJE: Your earrings are stunning. Did you make them as well?  
Pollak: Yes; I started producing a line of earrings several years ago. I make the earrings from eggshells that are filled with epoxy. They sell from $59 on up for a set. I decided to go into jewelry items because you can’t stay in one place as an entrepreneur. You need to keep pursuing ideas to keep yourself fresh and interesting to your customers. If you have a new product idea to develop, keep showing up, and keep working on developing yourself. Eventually, that kind of persistence and hard work will pay off! —S.B.

—L.W.
As on previous occasions, the editors of the New England Journal of Entrepreneurship have sought to interview local small business owners as well as entrepreneurs who have national reputations. One such small business operator is Allan Lichter, coowner of Millennium Graphics in Bridgeport, Connecticut. Mr. Lichter’s story is certainly unique to him and to his partner, but readers may resonate with portions of this story as to how challenging it can be to surmount the ups and downs of the business cycle.

NEJE: How long have you and your partner owned Millennium Graphics?
Lichter: Twenty-two years. We started in 1980 by purchasing an existing printing business. The business had three employees and achieved only $150,000 in annual sales at its peak. By contrast, in our best year, 1997, the company grossed more than $6 million.

NEJE: Congratulations!
Lichter: Thanks. It’s been a challenging experience for my partner and myself since we decided to leave our common employer, a large commercial printing operation in New Haven, Connecticut, to borrow money on our homes—it was a second mortgage for both of us—and to go off on our own.

NEJE: You seem to have prospered. Your operation now has more than 30 employees and everyone seems to be busy.
Lichter: For the moment, we are busy and we are thankful for that. However, our business is very sensitive to business cycles and we are worried about a possible “double-dip recession” in 2003. We simply have to continue to work hard everyday to maintain current business and develop new business.

NEJE: So it appears we need context for your remarks. Why such wary comments?
Lichter: Part of it is the economy. Our current customers are buying less and new clients are more difficult to acquire. Part of it is also due to customers leaving Connecticut for lower wage or lower tax states. And a piece of why we are in a challenging financial environment is due to a former company employee who embezzled hundreds of thousands of dollars from us.

NEJE: Whoa! You just said a mouthful. Let’s start with the economy. Many economists have been saying the country is starting to climb out of a recession that has lasted longer than had been forecasted.
Lichter: That speaks only to the national economy, not what’s happening locally. And locally, every one of our customers has cut back spending to the bone to stay profitable. One of the biggest areas in which they have cut expenses is consumer promotion. Not just local advertising, which admittedly has been especially hard hit, but sale promotion and collateral materials as well. That means us. Printers depend on that type of activity. Thank goodness for our specialty label business—it has offered Millennium Graphics a stable and fairly secure source of revenue. It’s also a growing segment of the printing industry.

NEJE: When did you get into the label business?
Lichter: Actually, that was the first business we were in because we inherited it from the former owner. We have taken labels into new areas, but that was how we drew our first paychecks—from printing labels.

NEJE: How do you and your partner sort out who does what?
Lichter: My partner concentrates on production and finance. I focus on sales and marketing. We make a really good team. He has his area of expertise and I have mine. We get along well professionally because we don’t get into each other’s way and we don’t second-guess each other. Actually, that’s why I picked him as my business partner.

When I thought about going into my own business back in the late 1970s, I wanted someone who could supplement my skills, not duplicate them. What’s the sense of having a partner who only knows what I already know well? Ours is a business that needs both an “inside” production person and an “outside” salesperson. So when I finally made the decision to become my own boss, I only considered partnering with someone who was strong in areas where I considered myself weak.

NEJE: Was it hard to convince your current partner to leave a safe job with secure income coming in every week?
Lichter: No, not at all. He was ready. I asked him if he wanted to work for someone else all his life or start making money for himself with a “sky’s-the-limit” attitude. We were both ambitious and we were ready to make a commitment to working long hours.

Bouncing Back

Allan F. Lichter
Millennium Graphics
Lichter: Absolutely! We’ve had an amazing run and it’s been reflected in our lifestyles. It’s been only the last four to five years that we’ve started seeing the fruits of our labor. We’ve become so outnumbered in terms of long-term outcomes.

Consider this. Once we took over the business, we were eager to do double-digit growth every year for five or six years running. We identified business areas that were growing rapidly within the Fairfield County, Connecticut market. We wanted to take advantage of their success. One example is the chemical industry. Our entry was labeling printing, opened doors into commercial offset. We were going, we bought press after press to handle the volume. At first, all we could afford were secondhand presses. Then, our business grew and we made terrific connections with local banks, we were able to borrow money against the business by opening up strong lines of credit, and efficient collections.

By the mid- to late-1980s, we continued to grow the business substantially but the base was too large to double it every year so we had to be content with strong double-digit, not triple-digit, growth. That’s still a tremendous achievement and we’re proud of it. For some of us, double-digit, not triple-digit, growth. That’s still a tremendous achievement and we’re proud of it.

Lichter: When a supplier became threatening, she would stand by us. They would make sure we would be okay and not let us go bankrupt. From the highs of 1997 to the depths by 1999, it’s been some roller-coaster ride!
This article explores whether the longevity phenomenon experienced by entrepreneurial women born between 1720 and 1940 can be explained by the life circumstances of these women or whether other research may provide better insights into their remarkable tenacity. The characteristics of hardiness, resiliency, and self-efficacy should be examined as well as the newly developing research theories of perseverance in the face of adversity to determine which are most appropriate in explaining what is clearly female entrepreneurial endurance.

Recent historical research into the lives of entrepreneurial women (Oppedisano 2000) unveiled a dramatic fact: 97 percent of the profiled women born between 1720 and 1940 surpassed the life expectancy of their generation—and, for the most part, by large margins. This article delves into whether the longevity phenomenon is easily explained by the life circumstances of these women (e.g., being born into affluence, living in a physically safe time/environment, choosing low-stress career paths, not getting pregnant). It also explores whether the research on hardiness, resiliency, self-efficacy, and perseverance in the face of adversity provides insights into possible alternative explanations for the long lives of these women.

Introduction and Background

Commonly identified factors that contribute to life expectancy are heredity, lifestyle, health and health care opportunities, income, marriage, stress management, and personality. According to gerontologist Kevan Namazi, 20 to 30 percent of the success of living a long life is based on heredity, 50 percent on lifestyle, with the balance influenced by factors such as socioeconomic status and strong social ties (Schneider 2002). “All along the social class gradient, at each of its levels, richer and more socially prominent people live longer than poorer and less advantaged people—even in the advantaged group, those higher up in the hierarchy are healthier than those lower down,” reports Shelley Taylor, professor of psychology (Taylor 2002, 163).

Additionally, starting an entrepreneurial venture has substantial negative impact on not only the entrepreneur, but on the spouse and family because of conflicting needs/demands of business interests and family commitments (Kuratko and Hodgetts 1995; Liang and Dunn 2002). This family pressure is supported in research conducted by Liang and Dunn (2002). When they posed the question to entrepreneurs of whether they would start a business again, of those who responded affirmatively, more than 50 percent cited not enough time for spouse and children as a problem. Of those who would not start such a venture again, the numbers climbed to 61 percent and 72 percent, respectively. Taylor’s research on health and stress highlights the importance of social ties for women. She points out that women and men respond differently to stress. Instead of a “flight or fight response” typified by men, women respond in a nurturing manner referred to as the “tending instinct” (Taylor 2002).

Ecological Approach to Assessing Longevity Factors

Dr. Robert Butler, president and CEO of the International Longevity Center, brought together a group of researchers and experts in medicine and public health to explore the factors that contribute to a healthy life. Among their suggestions was that an expanded, ecological approach be used to effectively assess the dynamics involved. (See Figure 1.) They noted that it was a necessity to identify “…behavioral determinants including psychological factors…interpersonal processes, primary social groups…institutional factors…community factors, public policies, and physical environmental factors (Butler 2000, 13).

Ecological Approach Applied to Profiled Female Entrepreneurs

This section explores physical environmental factors, the historical context, social factors, and capacity of individual and resources that influenced the longevity of entrepreneurial women.

Physical Environmental Factors

Women born in the 1700s to the 1800s were primarily “frontier” immigrant women living through all of the dangers such a label implies. Women like Ann Lee, Mary Donoho, Abigail Dunaway, and Freda Ehmann crossed oceans, continents, mountains, and rivers by boat, wagon train, horseback, or early railcars often in the face of possible attack by robbers, Indians, or persons of malicious intent. Others were born into or were children of slavery; for example, Madame C. J. Walker, Lucy Laney, Clara Brown, Elizabeth Keckley, and Mary Ellen Pleasant.
ENTREPRENEURIAL WOMEN AND LIFE EXPECTANCY 15

However, Ann Lee (1736–1784), founder of the Shaker religion, going against them in terms of health care. Juxtapose this with the historical framework in which these women found themselves. Their goals might seem exaggerated if we could not place them in the historical framework in which these women found themselves.

In analyzing the life factors of these women, we must also consider the dynamics of an entrepreneurial venture itself. From the earliest definition of entrepreneurship to those frequently utilized now, such ventures incorporate starting an entity, taking risk (human, physical, and financial), and having an economic impact (Cantillon, in Brewer 1992). Certainly such an undertaking produces significant stress that puts strain on the entrepreneur’s body, mind, and spirit. For those willing to take on such responsibility, this choice could have a negative impact on overall life expectancy.

Gender-Role Expectations. In addition to the gender constraints noted above, female children had extremely limited access to education if they had any access at all. Emma Willard (1787–1860) was one of the first to change this. Although she had actually begun to teach at the age of 16, Willard started her first school, Middlebury Female Seminary, when she was 37. She advocated that girls should be taught such “nontraditional” subjects as science, mathematics, and social studies. Religion was another arena where females had limited opportunities. In the 19th century, women like Ann Lee (1736–1784), the Shaker religion founder, and Aimee Semple McPherson (1890–1944), archbishop of the International Church of the Foursquare Gospel, chose this line of work. According to Oppedosano, Lee’s American persecutors had great difficulty accepting that a woman would choose to take this path. To erode their theory that she had to be a man in disguise, they tore her clothes and beat her across the chest—once in front of a judge in a court of law, and he didn’t object” (2000, 159). Even centuries later, Molly Haley (1942) was still feeling the constraints of being born female. In 1967 she was married and a schoolteacher, but had to leave her job when she became pregnant because women were not allowed to teach in this “condition.” She went on to establish Marblehead Handprints with her friend, Kathy Walters, a business that they shared for almost 25 years.

Capacity of Individual and Resources

Additionally, even women born into privilege, such as Henriette Delille, Juliette Low, Jane Addams, Lucy Scribner, and Katherine Drexel, gave their money away because those living in the 17th, 18th, and early 19th centuries did not have antibiotics or even widely practiced sanitation methods. Henriette Delille (1813–1862), founder of the Order of the Sisters of the Holy Family—a religious community for women of color as well as a school, hospital, and orphanage—was sick with tuberculosis for 12 years. She fought the disease and survived calamities such as a diphtheria epidemic, an avalanche, blizzards, and mountain lions as she traveled across the United States in search of patients throughout her life. Susan Anderson, M.D. (1860–1960), went to Colorado because she was suffering from tuberculosis. Here she met a professor, was cured of the disease, and married him. She practiced, and the doctors (almost entirely men) were not supposed to look at the naked body of a female. Juliette Low (1860–1927) had an ear infection that led to deafness, yet she founded the Girl Scouts of America. Julia Morgan (1872–1957), who led her own architectural firm for more than 46 years, had an “altered” line to her face because of a bone infection behind the ear. Susan La Flesche Picotte (1865–1915), the first female Native American medical doctor, became deaf and eventually died following a long struggle with cancer. (At the hospital she initiated in Nebraska was renamed the Dr. Susan Picotte Memorial Hospital in her honor.)

Infections. Infections developed and spread quickly because those living in the 17th, 18th, and early 19th centuries did not have antibiotics or even widely practiced sanitation methods. Henriette Delille (1813–1862), founder of the Order of the Sisters of the Holy Family—a religious community for women of color as well as a school, hospital, and orphanage—was sick with tuberculosis for 12 years. She fought the disease and survived calamities such as a diphtheria epidemic, an avalanche, blizzards, and mountain lions as she traveled across the United States in search of patients throughout her life. Susan Anderson, M.D. (1860–1960), went to Colorado because she was suffering from tuberculosis. Here she met a professor, was cured of the disease, and married him. She practiced, and the doctors (almost entirely men) were not supposed to look at the naked body of a female. Juliette Low (1860–1927) had an ear infection that led to deafness, yet she founded the Girl Scouts of America. Julia Morgan (1872–1957), who led her own architectural firm for more than 46 years, had an “altered” line to her face because of a bone infection behind the ear. Susan La Flesche Picotte (1865–1915), the first female Native American medical doctor, became deaf and eventually died following a long struggle with cancer. (At the hospital she initiated in Nebraska was renamed the Dr. Susan Picotte Memorial Hospital in her honor.)

Illegal Actions. Legals actions and legal constraints also were penetrated on some of the entrepreneurial women. In assessing these experiences, we must remember that these women lived in times when females were considered a property of their fathers or husbands and did not yet have the right to vote. Harriet Hubbard Ayer (1849–1903), initiator of her own international cosmetics firm called Harriett Ayer, legally unfit and institutionalized. She went on to become a vocal advocate for the mentally ill. At the age of 21, Martha Coston’s (1826–1902) husband died, leaving her with three small boys to raise. She soon discovered she was penniless because her husband’s partners had swindled her of his assets. She went on to invent the Coston maritime signals and founded the Coston Supply Company. While still a teenager, Eliza Pinckney (1722–1793) was left in charge of her father’s plantation after his death. She sued and was successful in her suit to control the estate’s affairs. She married John Stuart, with whom she had five children, and quickly became a “cash crop” for that state. However, her overstep went to great lengths to sabotage her early efforts. Eventually, her husband was forced to sell her and her children to a slave trader. This was a common occurrence in the island of Montserrat—the original source of the indigo trade. Her husband sold her and five of her children to a slave trader. It is hard to say how many of these women died due to these factors.

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Capacity of Individual and Resources

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Table 1

Life Expectancy v. Actual Life Span for Women Entrepreneurs

<table>
<thead>
<tr>
<th>Life Expectancy at Birth</th>
<th>Age at Death</th>
<th>Race/Ethnicity</th>
<th>Entrepreneur</th>
<th>Life Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700-1799 25-35°</td>
<td>48</td>
<td>Caucasian</td>
<td>Lee, Ann</td>
<td>1736-1784</td>
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<td></td>
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<td>Lukens, Rebecca</td>
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<tr>
<td>1800-1899 35-45°</td>
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<td>1855-1890</td>
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<td>1846-1893</td>
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<td></td>
<td>49</td>
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<td>Delille, Henriette</td>
<td>1815-1862</td>
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<td></td>
<td>50</td>
<td>Native American</td>
<td>Picotte, Susan La Flesche</td>
<td>1865-1915</td>
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<td></td>
<td>52</td>
<td>African American</td>
<td>Walker, Madame C./Bredlove</td>
<td>1867-1919</td>
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<tr>
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<td></td>
<td>85</td>
<td>Caucasian</td>
<td>Morgan, Julia</td>
<td>1883-1957</td>
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Table 1 (con’t.)

<table>
<thead>
<tr>
<th>Life Expectancy at Birth</th>
<th>Age at Death</th>
<th>Race/Ethnicity</th>
<th>Entrepreneur</th>
<th>Life Span</th>
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<tr>
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<td>Hinds, Catherine</td>
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<td>African American</td>
<td>Austin, Hattie Moseley</td>
<td>1900-1998</td>
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<td>Still Living…</td>
<td>63</td>
<td>Asian</td>
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<td>1938</td>
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<td>71</td>
<td>Caucasian</td>
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<td>Vernon, Lilian</td>
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<td>1925</td>
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<td>Caplan, Frieda</td>
<td>1923</td>
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<tr>
<td></td>
<td>81</td>
<td>African American</td>
<td>Stewart, Ellen</td>
<td>1920</td>
</tr>
</tbody>
</table>


old. And Patricia Billings (1926) initiated the Geobond Company, a chemical research facility, as she was turning 70. Although primarily only one example of life circumstances is presented in the text for each of these women, most of them experienced multiples of these factors such as death of or divorce from a spouse, racism and sexism, poverty, danger, poor health as well as shouldering responsibility for parents, children, and community. Thus, their life expectancy should be shorter than what was projected for their contemporaries, not longer. (See Table 1 for a listing of these women, their life expectancy at birth, and their age at death.)

Table 2

Toward a Better Understanding of Life Expectancy and Women Entrepreneurs

The women entrepreneurs born between 1720 and 1940 who were profiled by Oppedsiano (2000) lived much longer lives than their generational counterparts (see Table 2). Their significant successes in the face of great adversity may be due to their innate personalities. It certainly appears that, rather than being overcome or defeated by adversity, these women turned stressful events into life-changing possibilities and opportunities for their personal and professional development and that of others around them.

Some might argue that longevity of entrepreneurs cannot be compared directly with the general population life expectancy at birth because the former suffers from a form of survivor bias. However, the differences in Table 2 are so great that further research is warranted to understand their causes.

Research on hardiness, resiliency, self-efficacy, and perseverance in the face of adversity holds much promise in understanding the factors that contributed to the long lives of the profiled women entrepreneurs. Four major research constructs emerge about which greater understanding is needed for the relevant contribution to life expectancy for female entrepreneurship.

Hardiness

Research was initiated on the hardiness concept in the mid-1970s by Salvatore Maddi at the Illinois Bell
Telephone Company. Psychologist Suzanne Kobasa expanded this work, identifying psychological hardness as a critical factor in an individual’s well-being. Indeed, the “hardy personality” has been conceptualized as a source of resistance to the negative effects on health of stressful life events (Kobasa and Puccetti 1983) which enables individuals not only to cope but to thrive during the stress of adverse life events. These “hardy” personalities are able to turn life-changing situations into positive, transformational experiences.

Kobasa (1979) proposed that hardness is a constellation of personality characteristics that function as a resistance source in the encounter with stressful life events. Three personality dispositions characterize hardness: commitment, control, and challenge.

Commitment. Commitment is the tendency of individuals to involve themselves in, rather than experience alienation from, whatever they do or encounter. Perhaps the most important result of this deep involvement in their life activities is their refusal to give up easily when under pressure.

Control. This attribute is expressed as the tendency of individuals to feel and act as if they are influential, rather than helpless, in the face of the varied situations and adversities of life (Kobasa, Maddi, and Kahn 1982). They evaluate a particular event in the context of an overall life plan, thus lessening the potential disruption of any single occurrence.

Challenge. Challenge manifests itself in the belief that change is normal and that situations that offer interesting incentives to growth and transformation of the self rather than threats to security (Kobasa 1979, Kobasa, Maddi, and Kahn 1982). Kobasa and Puccetti (1983) therefore, “hardy” people are enabled by their perceptions to evaluate and cope in a manner that leads to successful resolution of the situation created by stressful events (Kobasa and Puccetti 1983).

Hypothesis 1: Hardiness is positively related to longevity of female entrepreneurs.

Resiliency

Resiliency is the ability of individuals to survive and thrive despite exposure to serious threats or consequences. Resiliency is the ability of individuals to overcome serious threats or consequences in order to survive and thrive despite exposure to serious threats or consequences. Resiliency research seeks to understand the processes that account for these good outcomes (Masten 2001).

To be considered resilient, an individual must have experienced current or past hazards (e.g., maltreatment or violence) judged to have the potential to deter normative development (i.e., there must be demonstrable risk; Masten 2001). Additionally, there are different ways in which the relationship between risk and protective factors (e.g., importance of religion, self-esteem) might predict behavior.

Interestingly, it has already been observed that there may be gender differences in the resiliency process. For example, Masten et al. (1988) found that females were exposed to more negative life events than males before they experienced negative effects on their behavior. Others have found that females may be more resilient than males to the negative impact of risk (Masten 2001). This finding is particularly intriguing when trying to understand why women entrepreneurs beat the life expectancy odds by such great margins.

Hypothesis 2: Resiliency is greater among female entrepreneurs than among other females, male entrepreneurs, and other males.

Self-Efficacy

An individual’s belief in her or his capability to perform a specific task is referred to as self-efficacy (Bandura 1977; Holmes and Masuda 1974). Research on self-efficacy suggests that this characteristic has important implications for work motivation. Because feelings of self-efficacy necessarily have an impact on the difficulty of goals selected by individuals, the more difficult and challenging goals tend to be chosen by those with higher self-efficacy. Similarly, individuals who have high self-efficacy tend to respond to negative feedback with increased effort and motivation. Thus, persons with greater self-efficacy are likely to work harder to overcome diseases and other threats to their lives, are more likely to choose riskier opportunities, and are more likely to stay at a task until completely successful.

Hypothesis 3: Self-efficacy is positively related to longevity of female entrepreneurs.

Perseverance

Recently, Markham, Baron, and Balkin (2001) linked the concept of self-belief with determination and posited a new measurement tool for studying entrepreneurs—an adversity quotient. They suggest that the ability of the entrepreneur to persevere in the face of adversity is a determinant in her or his success in this type of endeavor and that this can be explained from an environmental, historical context, and social factors identified in this article coupled with the examples of entrepreneurial women who succeeded in spite of multiple adverse circumstances demonstrate this concept. This emerging body of research is promising for the question being pursued: What factors contribute to the longevity of women entrepreneurs in spite of what would appear to most people to be insurmountable obstacles?

Hypothesis 4: Perseverance is positively related to longevity of female entrepreneurs.

Summary and Conclusions

Since this article provides a limited analysis of those entrepreneurial women born between 1720 and 1940 contained in Oppedosiano’s (2000) research, further study should be directed toward providing greater insights into the longevity factors brought to light here. If, as Oppedosiano (2000) and Masten (2001) suggest, entrepreneurs could build an empirical research stream to further understanding of the relationship of gender-based factors and entrepreneurial life expectancy. As the uniqueness of the female entrepreneur will be attained. This would necessitate a comparable historical review of male entrepreneurs for comparative analysis. Based on the data in Table 2, demographers should analyze characteristics of the population from an innovative, entrepreneurial perspective. Longitudinal research on both female and male entrepreneurs born between 1940 to 1980 should also be analyzed for hardiness, resiliency, self-efficacy, and perseverance. This article has presented several hypotheses from which researchers could build an empirical research stream to further understanding of the relationship of gender-based factors and entrepreneurial life expectancy. As the uniqueness of the female entrepreneur will be attained.

Table 2

<table>
<thead>
<tr>
<th>Time Period</th>
<th>General Population Average Life Expectancy at Birth (years)</th>
<th>Studied Entrepreneurs Average Life Years at Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700-1799</td>
<td>30</td>
<td>65.5</td>
</tr>
<tr>
<td>1800-1899</td>
<td>40</td>
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<td>1900-1940</td>
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JEANNETTE OPPEDISANO (oppeedisano1@southernct.edu) is an associate professor in the School of Business and is a participant in the Women’s Studies Program at Southern Connecticut State University. She earned her B.A. in English education and her M.S. in educational administration in higher education from the State University of New York at Albany. Her Ph.D. in management is from Rensselaer Polytechnic Institute.

Dr. Oppedisano has practitioner experience as an executive administrator, teacher, researcher, and entrepreneur. For more than 10 years, she has been writing about and encouraging the direct approach to economic independence for girls and women as a faster, more effective, less emotionally debilitating route to equality. In the fall of 2000, Dr. Oppedisano published the first Encyclopedia of American Women Entrepreneurs 1776 to the Present (Greenwood Press). Her articles and case studies have appeared in several journals as well as in many academic proceedings. Dr. Oppedisano established the first women’s multidisciplinary entrepreneurship course at Skidmore College and the first to be offered at Southern Connecticut State University. While at Skidmore, she also spearheaded the effort to bring the summer entrepreneurship program for teenage girls, Camp $tart-Up, to the college.

SANDRA LUEDER (luedersr1@southernct.edu) earned her B.A. from the University of Wisconsin at Madison, M.C.P. from the University of Cincinnati, M.B.A. from the University of Connecticut, and Ph.D. from the City University of New York. She is a tenured associate professor in the Marketing Department/School of Business at Southern Connecticut State University where she has been on the faculty since 1981. Her degrees cover the topical areas of American institutions, community and comprehensive health planning, marketing, and consumer inferences of retail store quality. Prior to coming to SCSU, Dr. Lueder was a principal planner for the state of New Jersey in the Department of Institutions and Agencies and the Department of Community Affairs. Subsequently, she joined United Engineers and Constructors, Inc., a subsidiary of Raytheon, as a manager of technical subdiscipline and environmental planning.
Firm Resources and Entrepreneurship

Schumpeter (1942) viewed entrepreneurship as the process of carrying out new combinations (e.g., new products, market products, processes, technologies) by relying on the firm's existing stock of resources. He also suggested that the purpose of the firm is not to seize competitive opportunities by creating or adopting innovations that make competitors' positions obsolete. Similarly, Penrose (1959) argued that the firm is not created by the market but instead by the creative capabilities of the firm's managers as they seek to take advantage of the firm's opportunities. Rumelt (1984) echoed the arguments made by Schumpeter and Penrose by suggesting that strategy should be viewed as entrepreneurship. If managers can create new processes that are ambiguous, these processes have uncertain imitatibility and any benefits that accrue to the firm from these processes may be long lasting (Rumelt 1984). Both Schumpeter and Rumelt each stressed that entrepreneurship is the source of change and growth within a firm. Under this view, firms that seek to change should use externally generated information that is integrated with internal knowledge to develop new ways of exploiting the firm's existing resources.

Sharma and Christman defined corporate entrepreneurship as the "process whereby an individual or a group of individuals, in association with an existing organization, instigate renewal or innovation within that organization" (1999: 18). Thus, corporate entrepreneurship is the deployment of new resource combinations to renew an organization (Guth and Conner 1990). Corporate entrepreneurship can occur internally, by exploiting the firm's existing stock of resources (Penrose 1959), or externally, by the acquisition of resources (Alchian and Demsetz 1972). However, because most attempts to create value in the new environment through mergers and acquisitions fail (Hoskisson and Hitt 1990), CEOs are increasingly looking inside the firm for new sources of value. The emphasis on creating value within the firm was noted by the CEO of one Fortune 500 company who said, "I think innovation, most of the time, is simply taking A, B, C, and D, which already exist, and putting them together in a form called E" (Marshall 1994: 270). This suggests that CEOs who understand a firm's existing set of resources may be in the best position to reconfigure these resources in ways that are already valuable but have not been previously leveraged.

CEOs and Corporate Entrepreneurship

Human and social capital have been suggested as the "fundamental building blocks" of corporate entrepreneurship (Greene et al., 1999: 107). Much of the research grounded in this view focuses on the role that individuals within an organization play in corporate entrepreneurship. These individuals are sometimes said to be corporate venture champions who are responsible for a particular entrepreneurial process with an organization (Burgelman 1983; Greene et al. 1999; Shane 1994; Venkataraman, MacMillan, and McGrath 1992). For example, the champion of ideas is an individual who seeks to convince organizational stakeholders that an idea has merit, whereas the resource champion presents the idea to those with the power to allocate the resources needed to complete the process (Petersen and Rothbard 1999: 581).

Clearly the CEO is intertwined among the firm's human and social capital that is crucial for fostering corporate entrepreneurship (Greene et al., 1999). While the firm's CEO may not serve as the corporate venture champion (although in some firms, particularly small firms [Miller 1983], the CEO may serve in this capacity), it seems reasonable to argue that the CEO may be a "central actor" in the eventual emergence of many entrepreneurial initiatives (Stinchcombe 1965) and instead be seen as a "corporate venturer" (Castanias and Helfat 1991) and the "key actor" (Venkataraman 1989) that can make competitors' positions obsolete. Similarly, Penrose (1959) defined central actors as key individuals in the firm's communication processes who are also likely to have a direct impact on entrepreneurial initiatives.

Braziel and Herbert (1999) also suggested that top management plays a key role in corporate entrepreneurship. For example, the entrepreneurial process is enabled by the allocation of resources and the articulation of a strategic vision, roles that are traditionally reserved for top managers. In addition, CEOs are also the corporate venture champion by "enablers" corporate entrepreneurship "through the building of an entrepreneurial organizational environment and human resource management practices that support the birth of new ideas, new projects, and new initiatives" (Braziel and Herbert 1999: 41). By doing these things, the CEO enhances the firm's ability to "instigate renewal or innovation within that organization and the requisite competencies that may be useful in the process of corporate entrepreneurship" (Venkataraman et al.: New England Journal of Entrepreneurship, Fall 2002).

CEO Change and Corporate Entrepreneurship

Research has found that firms often replace their CEOs and undertake new strategic initiatives following a decline in performance, although this research has largely ignored the role that individuals have in sustaining firm performance (Wiersma and Batels 1993). The popular press also offers anecdotal evidence that organizations may hire new CEOs to foster corporate entrepreneurship (MacIvory 1984; Sager 1994). However, both empirical and theoretical research offers differing views on the effect that CEO change may have on corporate entrepreneurship.

New CEOs Are Needed

Theoretical arguments that support a change in CEOs as a prelude to corporate entrepreneurship are grounded largely in the organizational theory literature, which suggests that new CEOs are more likely than current CEOs to bring to the firm "new causal knowledge" that allows them to develop "new interpretations" of how the firm should "interact with its environment" (Fond and Baucus 1987; Starbuck et al. 1978). Second, the new CEO is more likely to make changes in the organization because he or she has prior experience with the involvement in the organization and is not tied to the organization's "dominant logic" that may lead to such counterproductive behaviors (Bengtsson and Seger 1991; Brockner 1992; Ford and Baucus, 1987; Prahalad and Bettis 1986; Staw 1981; Tushman and Uzzi 1985: 55). These arguments suggest that executive succession changes the knowledge base and skill levels of the firm's CEO, which can lead to an improved ability to recognize and respond to the firm's changing environmental conditions. While the old knowledge base may have been suitable for the old environment, the firm's new environment suggests the need for a new knowledge base. Thus, executive succession may be especially important for improving firm performance following periods of environmental turbulence (Virany et al. 1992).

While this view is theoretically grounded and intuitively appealing, the acquisition of a new knowledge base through a new CEO is not without cost. Some have argued that new managers incur "losses of newness" and need time to adjust. In addition, new CEOs (Wiersema and Bantel 1993) and CEOs with new expertise (Braziel and Herbert 1999: 41) may have a key role in corporate entrepreneurship in part because of his or her knowledge of the firm's resources and his or her "ability to understand and exploit social dynamics within the firm" (Floyd and Woolridge 1999).

CEO Change and New CEOs

Some organization theorists have argued that executive succession may actually have a negative impact on organizational outcomes. These researchers suggest that current CEOs are more likely to succeed in organizational situations that provide an opportunity to "ercise" change an organization (Amburgey et al 1993; Sutton et al. 1986; Virany et al. 1992). For example, Alchian and Demsetz (1972: 793) argued that there is a cost associated with replacing a CEO (or else they implicitly assume that new CEOs are always able to compensate for these costs). There are at least two costs associated with replacing a CEO. First is the loss of knowledge about the organization, its resources, and its competition (Castanias and Helfat 1991). CEOs possess three types of skills: generic, industry-related, and firm specific (Castanias and Helfat 1991). Generic skills are those that can be easily transferred across firms. While these skills may be used to create value, this value is not likely to be long lasting because other firms can easily acquire CEOs who also have these skills. Industry-related skills are those that can be transferred among firms within an industry. Industry-related skills may also be used to create value but this value is also not likely to be long lasting because it is specific to the industry, not the CEO, and is specific to the firm with which these skills are associated with these skills (although the pool of CEOs who possess these skills will not be as large as the pool of CEOs with generic skills). CEOs also have firm-specific skills because other firms in the industry may also acquire CEOs who have the firm-specific skills or the tacit knowledge that the current CEO had, which may be valuable to the process of corporate entrepreneurship. If it may be obvious that "prior competencies have been rendered obsolete, it may not be clear what the new requisite competencies might be" (Virany et al. 1992: 76).

Current CEOs Are Valuable

Some organization theorists have argued that executive succession may actually have a negative impact on organizational outcomes. These researchers suggest that current CEOs are more likely to succeed in organizational situations that provide an opportunity to "exercise" change an organization (Amburgey et al 1993; Sutton et al. 1986; Virany et al. 1992). For example, Alchian and Demsetz (1972: 793) argued that there is a cost associated with replacing a CEO (or else they implicitly assume that new CEOs are always able to compensate for these costs). There are at least two costs associated with replacing a CEO. First is the loss of knowledge about the organization, its resources, and its competition (Castanias and Helfat 1991). CEOs possess three types of skills: generic, industry-related, and firm specific (Castanias and Helfat 1991). Generic skills are those that can be easily transferred across firms. While these skills may be used to create value, this value is not likely to be long lasting because other firms can easily acquire CEOs who also have these skills. Industry-related skills are those that can be transferred among firms within an industry. Industry-related skills may also be used to create value but this value is also not likely to be long lasting because it is specific to the industry, not the CEO, and is specific to the firm with which these skills are associated with these skills (although the pool of CEOs who possess these skills will not be as large as the pool of CEOs with generic skills). CEOs also have firm-specific skills because other firms in the industry may also acquire CEOs who have the firm-specific skills or the tacit knowledge that the current CEO had, which may be valuable to the process of corporate entrepreneurship.

The second cost associated with CEO change is the loss of valuable relationships or "social complexities" that the current CEO may have developed (Barney 1986). Besides personal networking (e.g., information about knowledge, life experiences), corporate entrepreneurship is also influenced by complex social interactions among individuals within and between organizations (Floyd and Woolridge 1999). Group composition, leadership, team dynamics, and group cohesiveness (e.g., communication patterns that maintain information flows and that may be useful in the process of corporate entrepreneurship) are all influenced by the social relationships that exist within the firm. These relationships are sometimes referred to as "social capital" and are an individual's ability to use his or her personal networking resources (and knowledge of them) from the outside" (Alchian and Demsetz 1972: 793). It seems clear that there are costs associated with replacing a CEO (or else they implicitly assume that new CEOs are always able to compensate for these costs). There are at least two costs associated with replacing a CEO. First is the loss of knowledge about the organization, its resources, and its competition (Castanias and Helfat 1991). CEOs possess three types of skills: generic, industry-related, and firm specific (Castanias and Helfat 1991). Generic skills are those that can be easily transferred across firms. While these skills may be used to create value, this value is not likely to be long lasting because other firms can easily acquire CEOs who also have these skills. Industry-related skills are those that can be transferred among firms within an industry. Industry-related skills may also be used to create value but this value is also not likely to be long lasting because it is specific to the industry, not the CEO, and is specific to the firm with which these skills are associated with these skills (although the pool of CEOs who possess these skills will not be as large as the pool of CEOs with generic skills). CEOs also have firm-specific skills because other firms in the industry may also acquire CEOs who have the firm-specific skills or the tacit knowledge that the current CEO had, which may be valuable to the process of corporate entrepreneurship.
The literature is grounded in agency theory, which suggests that the interests of the parties in an agency relationship may be such that firms may benefit from paying attention to long-term goals (e.g., rewards) are needed to realign these interests (Fama and Jensen 1983). Even if CEOs are the owners of the firm, the benefits of outside investors may incite incentives in the form of executive compensation to actually do so.

Wiseman (1997) noted that while researchers have a long history of seeking to identify a relationship between executive pay and firm performance, there is very little empirical evidence that this relationship actually exists (Jensen and Murphey 1994). Henderson and Fredrickson (1996) also noted the nonexistence (or weak relationship) between CEO pay and firm performance and called for research that focuses on the relationship between the substantive nature of the CEO's job and his or her compensation. Carpenter (2000) argued that CEO pay may be a critical component of how firms engage in strategic change and others do not. He argued that a modification of the CEO's pay is needed to encourage a CEO to pursue strategic change. Others have suggested that strategic change is risky from the CEO's perspective and that CEOs should be compensated to avoid the additional risk, along with the additional complexity that managing this change will bring (Henderson and Fredrickson 1996; Sanders and Carpenter 1998).

This study also placed the issue of CEO compensation in an action-based framework by focusing on the desired behavior of the CEO, specifically the desired actions taken by the firm. This is consistent with the view that one role of executive compensation is to encourage departures from the status quo (Gomez-Mejia and Wiseman 1997) and implies that changes in CEO compensation are reflected in some action taken in an effort to improve firm performance (in this case, corporate entrepreneurship).

Hypothesis 1: CEO change will have a negative effect on corporate entrepreneurship.

Corporate Governance and Corporate Entrepreneurship

Clearly there are contextual factors within an organization that may act to enhance or constrain corporate entrepreneurship and firms may use these contextual factors to encourage innovation. The organization’s reward system is one contextual factor that may influence the creative behavior of individuals (Woodman and Reed 1993). Changing the reward system to encourage corporate entrepreneurship is consistent with much of the strategy implementation literature. Specifically, the importance of managerial incentives as a means of controlling CEO actions (Baysinger and Hoskisson 1990; Goodstein and Boeker 1991; Hoskisson, Hill, Turk, and Tyler 1989). This hypothetical relationship is grounded in agency theory, which suggests that the interests of the parties in an agency relationship may be such that firms may benefit from paying attention to long-term goals.

Hypothesis 2: Changes in the CEO's cash compensation will be inversely related to corporate entrepreneurship.

Methods

This section examines the outcomes from a sample of 100 single-product manufacturing firms. The results suggest that decreases to the CEO's compensation are most likely to engage in corporate entrepreneurship.
Changes in the CEO's cash compensation are operationalized as power (Mone, McKinley, and Barker 1998). However, if corporate entrepreneurship is viewed as the outcome of social interaction that occurs within groups, then a powerful CEO may actually stifle corporate entrepreneurship. Because it is easy to believe that CEO power could have an effect on corporate entrepreneurship, which is consistent with Venkataraman and his colleagues who viewed corporate entrepreneurship as a process, "it is useful to differentiate between events that are immediate to the firm and its competitive environment, were provided to an expert panel for coding. The use of a panel to subjectively rate the quality of managerial behaviors (e.g., corporate entrepreneurship) seems an appropriate methodology because "behavior criteria normally involve subjective assessments about executive behaviors" (Gomez-Mejia and Wiseman 1997: 321). The panel was asked to identify those announcements regarding new products, product lines, and services (1999: 36). The natural log of a firm’s total assets during the year of decline (t) was used to control for firm size because firm size has been argued to affect the ability of a firm to change (Thompson 1967). The source for these data was COMPSTAT.

CEO power is the ability to get others to do what you would want them to do. If a single individual is powerful and creative, then CEO power should have a positive effect on corporate entrepreneurship (Mone, McKinley, and Barker 1998). However, if corporate entrepreneurship is viewed as the outcome of social interaction that occurs within groups, then a powerful CEO may actually stifle corporate entrepreneurship. Because it is easy to believe that CEO power could have an effect on corporate entrepreneurship, which is consistent with Venkataraman and his colleagues who viewed corporate entrepreneurship as a process, "it is useful to differentiate between events that are immediate to the firm and its competitive environment, were provided to an expert panel for coding. The use of a panel to subjectively rate the quality of managerial behaviors (e.g., corporate entrepreneurship) seems an appropriate methodology because "behavior criteria normally involve subjective assessments about executive behaviors" (Gomez-Mejia and Wiseman 1997: 321). The panel was asked to identify those announcements regarding new products, product lines, and services (1999: 36). The natural log of a firm’s total assets during the year of decline (t) was used to control for firm size because firm size has been argued to affect the ability of a firm to change (Thompson 1967). The source for these data was COMPSTAT.

The panel was asked to identify those announcements most likely to be perceived by the firm’s investors (or potential investors) as causal new product, product markets, processes, or technologies. They were also asked to consider whether this value would be difficult for competing firms to imitate within one year. The dependent variable, corporate entrepreneurship (CE), was dummy coded (1,0) for the presence or absence of a valuable announcement regarding new products, product markets, processes, or technologies that should be difficult to imitate within one year. Cronbach’s alpha was used to test for interrater reliability and it exceeded .70 in all cases. Changes in the CEO’s cash compensation are operationalized as power (Mone, McKinley, and Barker 1998). However, if corporate entrepreneurship is viewed as the outcome of social interaction that occurs within groups, then a powerful CEO may actually stifle corporate entrepreneurship. Because it is easy to believe that CEO power could have an effect on corporate entrepreneurship, which is consistent with Venkataraman and his colleagues who viewed corporate entrepreneurship as a process, "it is useful to differentiate between events that are immediate to the firm and its competitive environment, were provided to an expert panel for coding. The use of a panel to subjectively rate the quality of managerial behaviors (e.g., corporate entrepreneurship) seems an appropriate methodology because "behavior criteria normally involve subjective assessments about executive behaviors" (Gomez-Mejia and Wiseman 1997: 321). The panel was asked to identify those announcements regarding new products, product lines, and services (1999: 36). The natural log of a firm’s total assets during the year of decline (t) was used to control for firm size because firm size has been argued to affect the ability of a firm to change (Thompson 1967). The source for these data was COMPSTAT.

**Table 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Means</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Corporate entrepreneurship</td>
<td>100</td>
<td>0.17</td>
<td>0.371</td>
</tr>
<tr>
<td>2. CEO change</td>
<td>100</td>
<td>0.110</td>
<td>0.314</td>
</tr>
<tr>
<td>3. Cash compensation</td>
<td>100</td>
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<td>100</td>
<td>0.393</td>
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<tr>
<td>5. Slack</td>
<td>100</td>
<td>0.405</td>
<td>0.269</td>
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a. p < .10  
b. p < .05  
c. p < .01  
d. p < .001

**Table 2**

Results of Logistic Regression Analysis and Significance Tests: Corporate Entrepreneurship

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter Estimate</th>
<th>Chi-Sq</th>
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<tr>
<td>Intercept</td>
<td>3.524</td>
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announcements are truly indicative of corporate entrepreneurship, then they would be expected to have a positive effect on firm performance. Ordinary least squares regression was used to estimate a model to test the influence of these announcements on firm performance (operationalized as the firm’s return on investment [ROI] in time t+1). ROI has been suggested as an appropriate performance measure to assess the success of corporate ventures (Elder and Shimanski 1987). After controlling for ROI in

**Table 1**

Means, Standard Deviations, and Pearson Correlation Coefficients

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**Table 2**

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time $t$, the announcements that were coded by the panel had a positive effect on ROI in time $t+1$ ($p<0.05$), which suggests the announcements that were subtracted from the panel as entrepreneurial events had a positive effect on ROI. The finding from this post-hoc analysis provides additional evidence of construct validity for the coding methodology used in this study.

Finally, logistic regression allows the computation of probabilities for the presence of corporate entrepreneurship (CE=1). The coefficients are interpreted the same as in ordinary least squares regression except that they refer to the probability of the dependent variable being present, rather than to the level of the dependent variable (Alldrick and Nelson 1984). Using equation 2, values for the variables can be substituted and then multiplied by the coefficients from Table 2 to arrive at the probability of corporate entrepreneurship under various conditions (Mendenhall and Sincich 1989). This analysis provides a clearer picture of the effects of changes in the independent variables on the probability of CE=1.

**Probability CE=1 =**

\[
\frac{1 + e^{-(b_0 + b_1(\text{CASHCOMP}) + b_2(\text{NEWCEO}) + b_3(\text{CEOCHANGE}) } \}
\]

**Table 3**

<table>
<thead>
<tr>
<th>Percentage change in the CEO's cash compensation</th>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>-25%</td>
<td>61</td>
<td>80</td>
</tr>
<tr>
<td>-0%</td>
<td>53</td>
<td>78</td>
</tr>
<tr>
<td>+11%</td>
<td>48</td>
<td>75</td>
</tr>
<tr>
<td>+47%</td>
<td>20</td>
<td>72</td>
</tr>
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The mean change in cash compensation for CEOs in the sample was an increase of 11 percent with a standard deviation of 36. Table 3 presents the probabilities of corporate entrepreneurship under the conditions of CEO change and no CEO change, when the percentage change in cash compensation is zero, is decreased by one standard deviation above the mean (+47%). When CEO change, the probability of corporate entrepreneurship increases as cash compensation is decreased. This analysis provides an additional support for hypothesis 3 that changes in CEO's cash compensation will have an inverse relationship with corporate entrepreneurship. Also note from Table 3 that the probability of corporate entrepreneurship when there is no change in the CEO's cash compensation is 78 percent when the current CEO is left in place but only 53 percent if the firm hires a new CEO. This analysis provides an additional support for hypothesis 3, which predicts that CEO change will have a negative effect on corporate entrepreneurship. Consistent with the theoretical arguments, the probability of corporate entrepreneurship following a decline in firm performance is increased by retaining the current CEO and decreasing his or her cash compensation, while the probability of corporate entrepreneurship is minimized by hiring a new CEO.

**Discussion**

Most studies of CEO change have focused on the effect of executive change on subsequent firm performance (Kesner and Sebora 1994). However, these new CEOs must first “do something” before firm performance can be affected and relatively few studies have focused on the effect that CEO change has on these other “intermediate” organizational outcomes (Friedman and Saul 1991; Greiner and Bhamri 1989; Miller 1993; Welch and Dechler 1988). If corporate entrepreneurship, such as innovation and creativity, is the basis for competition among organizations (Penrose 1959; Rumelt 1984; Schumpeter 1942), and if organizations often experience CEO change, then understanding the effect that CEO change has on corporate entrepreneurship is important implications for both research and practice.

The theoretical arguments offered in this article for the important role that existing CEOs play in corporate entrepreneurship are grounded in the belief that corporate entrepreneurship is the result of people working together in a social context and that disruptions to this social context (e.g., CEO change) are likely to disrupt the corporate entrepreneurship. This view, and the supporting empirical results, are consistent with a narrow perspective that social complexities within the organization play an important role in corporate entrepreneurship (Floyd and Woolridge 1999; Greene et al. 1999), perhaps a more important role than specific knowledge of the firm’s resources base (Castanias and Helfat 1991). New CEOs are less likely to be valuable because they incur liabilities of newness (Amburgey et al. 1993) and need time to understand the firm’s resources, its environment, and the social relationships that are necessary for corporate entrepreneurship.

Firms that change CEOs might reduce their liabilities of newness by selecting an insider to succeed the current CEO. Insiders would possess firm-specific skills that could be useful in corporate entrepreneurship. However, even though an “insider CEO” would have presumably been a member of the top management team and the social complexities associated with the old CEO are disrupted or destroyed. Selecting an insider to lead the firm does little to attenuate the loss of social complexities within the firm, particularly for members of the top management team may feel compelled to leave the firm to make way for a new team (Keck and Tushman 1993). CEO succession, then, is likely to disrupt organizational dynamic and alter the context and conditions under which the top management team operates (Keck and Tushman 1963; Miller 1993). The data in this study also seem to support these arguments.

Among the 100 firms in the sample, 17 exhibited corporate entrepreneurship and only 5 of these changed CEOs. Of these 5 new CEOs, 4 were insiders and 1 was a related outsider. In all, 11 firms in the sample hired new CEOs and 5 of these demonstrated corporate entrepreneurship. Of the 6 firms with new CEOs that failed to demonstrate corporate entrepreneurship, 4 were insiders and 2 were related outsiders. This suggests the announcements that were coded by the panel as entrepreneurial events had a positive effect on ROI. The findings from this post-hoc analysis provides additional evidence of construct validity for the coding methodology used in this study.

**Conclusions**

This research has explored the effect of CEO change on corporate entrepreneurship following a year of poor firm performance. Given the frequency of CEO change within organizations and the role of corporate entrepreneurship in gaining and sustaining a competitive advantage, the findings from this study have interesting implications for both academic researchers and management practitioners. Conventional wisdom suggests that if CEO performance suffers, firms often need new CEOs. However, this research found that CEO turnover does not have a negative effect on corporate entrepreneurship, perhaps because of the loss of firm-specific skills and the disruption of social complexities within the firm. Clearly there are cases when new CEOs are needed to lead an organization. However, replacing a CEO simply because a firm has experienced a decline in performance may be analogous to replacing a bus driver just because he or she made once a wrong turn and became lost. By changing CEOs, firms may be eliminating the one person who not only may know where the firm took a wrong turn, but may also know how to lead the organization back on the road to recovery.

**Acknowledgments**

An earlier version of this article was presented at the 1999 annual meeting of the Academy of Management, Chicago, Illinois. The author wishes to thank Alen Amason, Richard Woodruff, Mason Carpenter, and Jim Bloodgood for their assistance on earlier drafts of this manuscript.
Endnotes

1. The CEO’s employment contract may be structured so that cash compensation is automatically reduced when performance suffers without any additional action by the firm’s board of directors. This suggests that the board may be fulfilling its fiduciary oversight role on behalf of the firm’s shareholders, in part, through the incentives provided in the CEO’s employment contract.

2. For a detailed explanation on the calculation of Jensen’s alpha, see Hoskisson et al., 1994, p. 1221.

References


Ethnic Entrepreneurship: Do Values Matter?

Michael Morris
Minet Schindehutte
Jack Lesser

Entrepreneurship is the driving force in economic development throughout the world. Yet, some have argued that entrepreneurship is fundamentally a values-driven activity (Berger 1991; Lipsht 2000). Kilby (1993) notes that values are instrumental in advancing constructive understanding of human behavior and consequent change. Thus, it would seem that personal values should have important implications not only for the decision to pursue entrepreneurship, but the way in which the entrepreneur approaches a venture (Gasse 1977; Bird 1989; Bryan 1999).

A notable lack of attention has been devoted to the role of values in successful entrepreneurial endeavors. Typically, such Western values as individualism, competitiveness, wealth generation, and growth, may be more consistent with Western cultures, and may conflict with closely held values within various ethnic subcultures the world over. This article examines the values of entrepreneurs in two ethnic subcultures within South Africa. Findings are reported from interviews with cross-sectional samples of black and colored entrepreneurs. The results indicate entrepreneurs tend to embrace common values regardless of their individual ethnic heritage, but with different underlying patterns. In addition, the entrepreneurial path itself gives rise to certain shared values; and the overarching country culture has a strong influence on value orientations. Implications are drawn from the results, and suggestions made for ongoing research.

The Nature of Values

Value is “a broad tendency to prefer certain states of affairs over others” (Hofstede 2001, 5). Rokeach (1972, 159) explains that “to have a value” is to maintain an enduring belief that a specific mode of conduct or end-state of existence is preferable to the alternatives. Schwartz (1992, 4) characterizes values as: (1) concepts or beliefs that (2) pertain to desirable end-states or behaviors and (3) transcend specific situations in (4) guiding selection or evaluation of behavior and events, and (5) are ordered by relative importance. Values are related to but different from personality. A common approach to personality is trait theory, and this has been applied extensively in the entrepreneurship research. Thus, entrepreneurial behavior has been associated with having an internal locus of control, being a calculated risk-taker, and having a higher tolerance of ambiguity, among other traits (e.g., Bird 1989). A trait is a
characteristic or typical pattern of individual behavior, where combinations of traits are often used to distinguish personality types (Eysenck and Rapaport 1965). Unlike values, traits can be inherited as well as learned. However, many traits imply the development of certain values. For instance, if a person has or her sense of self-responsibility for events, a person with a strong internal locus of control might be expected to have higher value importance.

There is also a close relationship between values and motivations. Motivation has received considerable attention in the entrepreneurship literature, ranging from McClelland’s (1961) work on the central role of achievement motivation to the importance of “rational” factors in triggering the pursuit of self-employment (Morris 1998). A motive leads one to act. All motivation involves valuing, at least implicitly, but only certain motives are consciously felt. The experience one has in carrying out a motive is what tends to produce conceived values, or values of which a person is aware and that impact his or her behavior. Rokeach (1967) argues that values provide regulatory focus for motivated or goal-directed action. When a person has certain values (e.g., life excellence, social conformance), he or she strives to be internally consistent through their motives and actions, and uses values to guide these motives and actions.

Values are learned predispositions. They represent learned mechanisms for bringing about positive consequences or avoiding negative ones with respect to the surrounding environment (Hofstede 2001). Moreover, values are held by individuals as well as by collectives (Kilby 1993; Kluckhohn 1951). Where a collective is a entrepreneurial context, where a value associated with economic incentives or individual success is inconsistent with the conventional traditions of a culture, the entrepreneur is likely to be frowned upon or even hated by others belonging to the cultural group (Lipsot 2000).

Values exist at multiple levels, from broad macrocultures to subcultures. Values can be preferred modes of conduct (instrumental), or they can be desirable end-states of existence (terminal) (Rokeach 1967). For instance, honesty might be a value for open-mindedness affected the tendency to innovation. Other than Gasse’s (1977) finding that minority female entrepreneurs differed from other entrepreneurs. Gasse (1977) uncovered a tendency for English–Canadian entrepreneurs to value open-mindedness, whereas minority entrepreneurs placed a greater emphasis on values of achievement, support, and community. It would seem that an individual’s values affect not only his or her decision to pursue entrepreneurship, but the nature of viable and sustainable enterprises. In the United States, for example, small businesses are known to include not only the types of ventures pursued but also the manner in which the entrepreneur approaches the venture creation process. Other than Gasse’s (1977) finding that minority female entrepreneurs differed from other entrepreneurs. Gasse (1977) uncovered a tendency for English–Canadian entrepreneurs to value open-mindedness, whereas minority entrepreneurs placed a greater emphasis on values of achievement, support, and community. It would seem that an individual’s values affect not only his or her decision to pursue entrepreneurship, but the nature of viable and sustainable enterprises. In the United States, for example, small businesses are known to include not only the types of ventures pursued but also the manner in which the entrepreneur approaches the venture creation process. Other than Gasse’s (1977) finding that minority female entrepreneurs differed from other entrepreneurs. Gasse (1977) uncovered a tendency for English–Canadian entrepreneurs to value open-mindedness, whereas minority entrepreneurs placed a greater emphasis on values of achievement, support, and community. It would seem that an individual’s values affect not only his or her decision to pursue entrepreneurship, but the nature of viable and sustainable enterprises. In the United States, for example, small businesses are known to include not only the types of ventures pursued but also the manner in which the entrepreneur approaches the venture creation process. Other than Gasse’s (1977) finding that minority female entrepreneurs differed from other entrepreneurs. Gasse (1977) uncovered a tendency for English–Canadian entrepreneurs to value open-mindedness, whereas minority entrepreneurs placed a greater emphasis on values of achievement, support, and community.
critical need arises for richer insights into cultural values and their implications for the successful pursuit of entrepreneurship.

To assess the nature of value structures of entrepreneurs from different subcultures, an exploratory study was conducted with six entrepreneurs from each of the two ethnic communities. Cross-sectional survey research was conducted with six entrepreneurs not included in the final samples. Interviews were conducted at the entrepreneur’s place of business.

Findings

The study employed two separate convenience samples of black and colored entrepreneurs based in townships within South Africa. A total of 37 black and 62 colored entrepreneurs agreed to participate in the study and produced useable responses.

General Descriptors

The average respondent in the study was 41 years of age, married (68%), and had completed high school (75%), with 34% earning a technikon/college diploma or university degree. The business had been in operation for 8 years, had 10 employees, of which 8 were nonfamily employees, with an annual turnover of just under R 2 million (the rand-dollar exchange rate was 7.1 at the time of the research). The typical business was started with R 10000, although there was considerable variance in this figure. A diverse mix of industry categories was represented, with services and retail businesses the most prevalent, and no manufacturing firms.

The samples were fairly similar in terms of these descriptors, with some exceptions. No statistically significant differences were identified for education levels, gender, marital status, number of years in operation, annual turnover, number of nonfamily employees, or start-up funds used. In addition to native language and region of origin, the two groups differed in terms of respondent age, with black entrepreneurs being older (t = 9.85, p = .002). Two of the three value orientations and motives have also received considerable attention in the entrepreneurship literature (Godbail 1991). Moreover, the main justification for starting a business has tended to be creation of employment, with the majority of black-owned small businesses found in the informal sector.

The colored population is one that has long been caught in between, as reflected in the observation, “under apartheid, we were not white enough, today we are not black enough” (The Economist 2001). Many of the forbearers of the mixed race and colored communities were brought to South Africa as servants or slaves. It is a community that evolved from the melding of peoples imported from Madagascar, Ceylon, Bengal, and the East Indies, together with the local Khoisan people and transplanted Europeans. A strong sense of identification with their community exists among the 3.8 million colored South Africans. It is a group that remains geographically concentrated in the Western Cape Province. Religion especially resonates in the colored community, where association with the Muslim faith features prominently. Sport also resonates within this community, with great pride taken in colored athletes who succeed professionally or on national teams. In a commercial context, there is significant small business activity, much of it in the formal sector, and a significant ethnic economy. Members of the colored population are more likely than blacks to rely on networks within their community in building their businesses.

In a very real sense, then, each of these groups lives in a different world, each with its own distinctive array of attitudes and perceptions, opportunities, and constraints. While it is not unusual for entrepreneurs from different cultural groups to prioritize the 5 values with which they most closely identify, these values were selected to reflect an equal mix of values associated with African culture (e.g., achievement, individualism, freedom, hard work, competitiveness, wealth) (Godbail 1991; Hebert and Link 1917; German 1981; McClelland 1961). In each of these two areas, the values chosen were those receiving the most mentions in the extant research.

1. perspectives on personal and citizen responsibilities.
2. motives for starting the business.
3. values associated with “good” and “bad” businesses.
4. perspectives on personal and citizen responsibilities.

Motives for starting the business were included as various researchers have stressed the linkage between values and motives, while motives have also received considerable attention in the entrepreneurship literature (Heider 1958; Higgins 2000; McClelland 1961). Perspectives on personal and citizen responsibilities help in ascertaining the larger purpose of the venture from a value perspective.

Measurement of these variables was accomplished using a structured-format questionnaire consisting mostly of open-ended questions, with response categories created after the fact based on similarity of answers. The approach is consistent with Kiby’s (1993) recommended reliance on sensitive interviewing when attempting to measure real values and the respondent’s strength of commitment, especially with subjects having varying levels of literacy and familiarity with survey instruments.

To measure value orientations, a hybrid approach was additionally used, asking respondents to identify for each of the 5 values, how they considered or defined in practice. The business value priorities of black versus colored entrepreneurs generated through referrals from community agencies and organizations devoted to the development of entrepreneurship among historically disadvantaged groups. To be included in the final sample, respondents had to be entrepreneurs originally from South Africa with their established businesses in operation for a minimum of two years. In general, in order to be considered an entrepreneur, one had to be the founder of so business, and the business had to be the entrepreneur’s primary occupation.

Critical Descriptors

The average respondent in the study was 41 years of age, married (68%), and had completed high school (75%), with 34% earning a technikon/college diploma or university degree. The business had been in operation for 8 years, had 10 employees, of which 8 were nonfamily employees, with an annual turnover of just under R 2 million (the rand-dollar exchange rate was 7.1 at the time of the research). The typical business was started with R 10000, although there was considerable variance in this figure. A diverse mix of industry categories was represented, with services and retail businesses the most prevalent, and no manufacturing firms.

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The most commonly mentioned core values for their businesses were customer friendliness/relations, service/product excellence, honesty, and proper treatment of employees. When asked for a single word describing what their business stands for, leading answers were community development, service, customer satisfaction, and professionalism. In the elapsed time since they started their own businesses five years from now would be growth in revenues, improved facilities, new products, and more employees.

- For colored entrepreneurs, leading motives for going into business included ambition/desire to create something, independence, service to the community, and building personal wealth. Responding to an open-ended question, the most important things in life for these entrepreneurs in order of importance were family, religion, happiness, their business, and money/wealth. When provided with a list of personal values, hard work, war relationships, individualism, tolerance (of others), and being well-respected were prioritized. With regard to citizen responsibilities, this sample placed greatest emphasis on job creation, community upliftment, and relationship building.

- Core business values mentioned most frequently were customer service/product excellence, customer relationships, reliability/hard work, treatment of employees, and honesty. Words that best describe what respondent businesses stood for included excellence, success, service, and community responsibility. Values that have become more important since starting the business were family, customer service, growth, and good management; less important values included money, family, and desire for success. When hiring new employees, attributes of greatest importance were honesty/personal/communication skills, willingness to work hard, and job skills/qualifications. Colored entrepreneurs were less apt to share their business with the community. Rather, they believed the business itself was responsible for creating value for the community by creating jobs, producing goods, and so forth. In considering what would be signs or evidence of business success five years hence, the most commonly cited responses were improved products and facilities, enhanced profitability, growth and diversification, and improvement of staff.

- Both sets of entrepreneurs got into business for the same reasons, although the relative emphasis on achievement was greater for colored entrepreneurs, and serving their community was more prevalent among black entrepreneurs. The two samples did not differ significantly in terms of their perceived responsibilities as citizens. When hiring employees the samples differed marginally, with black

- Comparing the Samples

<table>
<thead>
<tr>
<th>Single greatest responsibility as a citizen (open-ended question)</th>
<th>Job creation</th>
<th>Community upliftment</th>
<th>Relationship building</th>
<th>Role model</th>
<th>Support family</th>
<th>Education</th>
<th>Generosity</th>
<th>Gratitude</th>
<th>Wealth/power</th>
<th>Excellence</th>
<th>Dignity/honor</th>
<th>Respect for earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colored Sample</td>
<td>21</td>
<td>12</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>10</td>
<td>9</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Black Sample</td>
<td>14</td>
<td>10</td>
<td>11</td>
<td>14</td>
<td>15</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

- Sample of Colored Entrepreneurs

For colored entrepreneurs, leading motives for going into business included ambition/desire to create something, independence, service to the community, and building personal wealth. Responding to an open-ended question, the most important things in life for these entrepreneurs in order of importance were family, religion, happiness, their business, and money/wealth. When provided with a list of personal values, hard work, war relationships, individualism, tolerance (of others), and being well-respected were prioritized. With regard to citizen responsibilities, this sample placed greatest emphasis on job creation, community upliftment, and relationship building.

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- Comparing the Samples

| Table 1 Comparing the Samples in Terms of Key Values |
|---|---|
| | Number of Mentions |
| Colored Sample | Black Sample |
| Most important things personally in life (open-ended question) | Family (31) | Family (21) |
| | Religion/spiritual life (28) | Quality of life (20) |
| | Happiness (23) | My business (16) |
| | Hard work (22) | My health (16) |
| | Community (9) | Happiness (8) |
| | Hard work (22) | Money/wealth (6) |
| | Family (10) | Hard work (17) |
| | Individualism (21) | Community responsibility (17) |
| Tolerance/others (16) | Discipline (15) |
| | Race (16) | Achievement (14) |
| Human rights (14) | Community (11) |
| | Achievement (14) | Human rights (11) |
| Human rights (14) | Personal security (9) |
| Human rights (14) | Humanity (9) |
| Achievement (14) | Being respected (9) |
| Fun/enjoyment (14) | Excellence (7) |
| Single greatest responsibility as a citizen (open-ended question) | Job creation (21) | Job creation (14) |
| | Community upliftment (12) | Community upliftment (9) |
| | Relationship building (9) | Relationship building (2) |
| | Role model (8) | Support family (2) |
| | Support family (6) | Education (5) |
| | Education (4) | Role model (2) |
| | Generosity (12) | Relationship building (2) |
| | Gratitude (12) | Support family (2) |
| | Wealth/power (10) | Freedom (7) |
| | Excellence (9) | Dignity/honor (6) |
| | Dignity/honor (9) | Wealth/power (6) |
| | Extended family (7) | Ancestors/rituals (4) |
| | | Tolerance of others (3) |
| | | Respect for earth (2) |

- Table 2 Examples of Specific Practices that Illustrate Key Values of the Business

<table>
<thead>
<tr>
<th>Examples of Specific Practices that Illustrate Key Values of the Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Selection of staff; someone who can fit with company values.</td>
</tr>
<tr>
<td>2. Fixed prices for all clients irrespective of who they are.</td>
</tr>
<tr>
<td>3. Producing consistently good quality products.</td>
</tr>
<tr>
<td>4. I respect my customers; I have a polite way of dealing with my customers; I always smile.</td>
</tr>
<tr>
<td>5. I know my customers’ names.</td>
</tr>
<tr>
<td>6. Hospitality; I transport an old lady who is a customer to her house; If people have not been in for a while I make inquiries.</td>
</tr>
<tr>
<td>7. I treat customers with honesty at all times, no matter what.</td>
</tr>
<tr>
<td>8. Success is important to me, and I am very selective in choosing staff so as to ensure business success.</td>
</tr>
<tr>
<td>9. I work alongside my workers; I’m not a “big boss”; I spend time with them and talk with them; If they make mistakes I help them learn how to do it right.</td>
</tr>
<tr>
<td>10. I get involved with the community, including not just providing good service, but helping to develop youngsters are putting up an internet facility for them.</td>
</tr>
<tr>
<td>11. I render extra service for the community, such as chopping up a beast for a funeral.</td>
</tr>
<tr>
<td>12. We clean up our premises before we open for business; We set up the shelves neatly, for good appearance.</td>
</tr>
<tr>
<td>13. We do tests such as blood pressure for free, give free advice even if people are not buying, look at a long-term relationship.</td>
</tr>
<tr>
<td>14. We help the créche and old people’s home by supplying vegetables for free.</td>
</tr>
<tr>
<td>15. Honesty—return money from client’s pockets; lead by example.</td>
</tr>
<tr>
<td>16. Open door policy to ensure people get fair treatment.</td>
</tr>
<tr>
<td>17. The way I talk to my customers.</td>
</tr>
<tr>
<td>18. We do free medical checks such as blood pressure for free, give free advice even if people are not buying, look at a long-term relationship.</td>
</tr>
<tr>
<td>19. We help the créche and old people’s home by supplying vegetables for free.</td>
</tr>
<tr>
<td>20. Fixed prices for all clients irrespective of who they are.</td>
</tr>
<tr>
<td>21. We clean up our premises before we open for business; We set up the shelves neatly, for good appearance.</td>
</tr>
<tr>
<td>22. High professional standards.</td>
</tr>
<tr>
<td>23. Appearance is important and my staff and I always look smart and our environments shows this.</td>
</tr>
</tbody>
</table>
residents placing more emphasis on reliability, and col-
ored residents placing more emphasis on hard work
and skillfulness (chi sq. = 12.7, p < .004). Black entrepre-
neurs were more likely to perceive a greater obli-
gation for the business to give back to the community
(chi sq. = 12.4, p < .003). With regard to measures of future
success, black respondents put more emphasis on rev-
enues while colored respondents placed greater weight on
profitability (chi sq. = 12.3, p < .004).

The values and priorities of respondents’ personal lives
demonstrate some interesting patterns, with clear differ-
cences between the two samples (see Table 1). In terms of
the three most important things in their lives (open-ended
response), both samples emphasized similar things, but
with different priorities. Family was stressed by both sam-
iples more than any other factor. Both samples placed the
same relative emphasis on happiness, health, and wealth.
However, the colored sample placed significantly more
emphasis on religion/spiritual life, while the black sample
was more concerned with quality of life (as reflected in
security, education, etc.) and they placed a higher priority
on the business itself.

In the area of business values, significant differences
were not identified between the two samples, with the
exception that hard work received greater priority among
colored entrepreneurs (chi sq. = 12.5, p < .003). Changes in
the saliency of different values since starting their ventures
were strikingly similar between the two samples. Also
interesting are the ways in which the entrepreneurs
attempted to manifest these values in the operations of
their businesses. Twenty-three examples of specific busi-
ness practices that illustrate core business values are
summarized in Table 2. Differences between the samples,
as assessed by paired t-tests, were significant only to the
extent that a person feels it to be a worthy way of spend-
ing their life and is dedicated to that form of work. At the
same time, the data indicate that both groups of entrepre-
neurs placed much emphasis on wealth generation.

Alternatively, such African or South African values as
work ethic, hard work, respect, and personal security
were important to both samples, indicating that the
overarching culture does play a significant role. An
examination of the ways in which values are manifested in
the businesses reinforces this conclusion, as many examples
were observed where both groups were friendly, warm, and
fair towards customers, suppliers, and other employees.

The results suggest that the value structure for black
entrepreneurs appears to be rooted in social relatedness, or
a desire for community. While consistent with the African
concept of ubuntu, or humaneness (Mangaliso 2001), the
fact that hard work and economic achievement were
highly valued suggests that Maslow’s social needs rather
than being a genuine motivator of entrepre-
nuership. The second factor associated with these
entrepreneurs consisted of socio-political concerns, such
as human rights, respect for earth, and democracy. Yet,
human rights and the environment may not feel respected or express enjoyment. This conclusion is
consistent with Godsell’s (1991) findings that entrepre-
nuership is given low status within black communities.

Economies are more complex. The ability to influence
entrepreneurial efforts in any substantial way requires
understanding the dynamics that drive entrepreneurs to
succeed. The findings of this study suggest that differ-
cent cultural values can be important drivers of entrepre-
nuership. As economies the world over become more
opportunistic, entrepreneurship will become increasingly
important as a stimulus for economic development.

African entrepreneurship is given low status within
black communities. Combining the legacy of apartheid, a lack of respect
and discrimination, coupled with a lack of a positive
integrated sense of well-being and esteem, make it difficult
for black entrepreneurs to express enjoyment. Additionally, the
entrepreneurs of South Africa are tena-
cious individuals. Their ability to
achieve success, black entrepreneurs
in South Africa were tenu-
cious in their efforts. The
entrepreneur is very
much on his own. He
must do it alone, but
he also knows that the
contribution to the
community is viewed as a
means of elevating their state and gaining respect.

Further, the contemporary South African environment finds
many new social and community expectations placed on
successful black entrepreneurs. This conclusion suggests that a growing global emphasis on
entrepreneurship in black communities does not necessarily represent an
outside influence that undermines or markedly changes
cultural groups.

Entrepreneurs, suppliers, customers, public officials, and others would be well served to consider their interactions
with ethnic entrepreneurs in light of these findings. Understanding the entrepreneur’s values is a critical
beginning point in building trust-based relationships. The ability to support positive outcomes when selling to, neta-
izing, and working with, or otherwise trying to influence ethnic entrepreneurs is likely to be enhanced if one recognizes (1) the shared values they hold as entre-
preneurs, and (2) their unique values based on their cultural
identity. Thus, the strong emphasis both groups place on family, hard work, product quality, and achievement is

Table 3

<table>
<thead>
<tr>
<th>Colored Entrepreneurs</th>
<th>Black Entrepreneurs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Collective Work Ethic</strong></td>
<td><strong>Factor 1: Social Relatedness</strong></td>
</tr>
<tr>
<td>hard work</td>
<td>community responsibility</td>
</tr>
<tr>
<td>discipline</td>
<td>extended family</td>
</tr>
<tr>
<td>individualism</td>
<td>warm relationships</td>
</tr>
<tr>
<td>(negative)</td>
<td>(negative)</td>
</tr>
<tr>
<td><strong>Factor 2: Positive Sense of Well-being</strong></td>
<td><strong>Factor 2: Collective Needs and Rights</strong></td>
</tr>
<tr>
<td>warm relationships</td>
<td>desire for human rights</td>
</tr>
<tr>
<td>excellence</td>
<td>respect for earth</td>
</tr>
<tr>
<td>freedom</td>
<td>concern for democracy</td>
</tr>
<tr>
<td><strong>Factor 3: Self-actualization</strong></td>
<td><strong>Factor 3: Materialism</strong></td>
</tr>
<tr>
<td>personal growth</td>
<td>material achievement</td>
</tr>
<tr>
<td></td>
<td>(highly)</td>
</tr>
</tbody>
</table>

Table 3 Differences Between Ethnic Groups Based on Factor Analysis of 26 Values

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an important beginning point in formulating sales approaches, communication efforts, negotiation strategies, and educational programs. Perhaps of greater importance is the need to rely on tactics that reinforce, or at least do not conflict with, such ethnically distinct values as social relatedness, among blacks, or religion and personal fulfillment among coloreds.

These findings also provide direction in terms of future research priorities. The current study has identified patterns of values as they relate to ethnic subcultures and entrepreneurship. However, additional work is needed to determine the relative importance of cultural values, subcultural values, and values related to other aspects of life (e.g., institutions with which one has been affiliated such as schools, labor unions, civic organizations, prisons) as they relate to entrepreneurial activity. Further work should also address the relationship between personal values, business values, and the manifestation of values in the workplace. In this study, there was no clear relationship between the personal values of the entrepreneurs and the values they ascribed to their businesses, but the inability to uncover such a relationship was limited by the open-ended structure of the questions. In a related vein, additional insights are needed into the relationship between values and personal aspects of entrepreneurship, such as the entrepreneur's resource acquisition strategy, financial structuring of the venture, growth strategy of the firm, and so forth. A shortcoming of the current research is that it did not consider entrepreneurs who failed. To the extent that values play a role in success or failure, it is important to include unsuccessful entrepreneurs in future studies. Moreover, failure itself may well affect the entrepreneur's values, determining not only whether he or she pursues subsequent ventures, but the way in which those ventures are approached.

Finally, any interpretation of the research results should consider the methodological limitations inherent in the current study. Most prominent among these is the process of reporting values to researchers. Values have saliency not only for the individual, but within larger cultural contexts. As such, it is possible that respondents might indicate certain values are more important simply because those values are thought to be politically correct or are more salient in the larger social milieu. In addition, the samples were limited both in terms of size and the selection process. The representativeness of the sample is also constrained by the lack of dependable data regarding the total number of ventures in the region studied that are owned by black and colored entrepreneurs, especially with the large number of informal sector businesses, and because the current government discourages reporting of racial identifiers.

References


267–296.


Using Social Cognitive Career Theory to Predict Self-Employment Goals

Gerry Segal
Dan Borgia
Jerry Schoenfeld

Social Cognitive Career Theory (SCCT; Lent, Brown, and Hackett 1994, 1996) proposes that career interests, goals, and choices are related to self-efficacy beliefs and outcome expectations. It suggests that people’s self-efficacy beliefs and outcome expectations with regard to self-employment would predict their goals to become self-employed. This study explores the ability of SCCT to predict goals for self-employment in a sample of 115 undergraduate business students. Results indicated that students with higher entrepreneurial self-efficacy and higher self-employment outcome expectations had higher intentions to become self-employed. These findings imply that educators and policy-makers may boost student entrepreneurial intentions by (1) enhancing students’ confidence to succeed in an entrepreneurial career and (2) enhancing students’ expectations of strong positive outcomes resulting from an entrepreneurial career.

Being an entrepreneur, one who is self-employed and who starts, organizes, manages, and assumes responsibility for a business, offers a personal challenge that many individuals prefer over being an employee working for someone else. Entrepreneurs accept the personal financial risks that go with owning a business but also benefit directly from the success of the business. As career choices go, becoming an entrepreneur is one of the most risky and unstructured choices an individual can make (Campbell 1992). Being an entrepreneur is often viewed as an averse career choice where one is faced with everyday life and work situations that are fraught with increased uncertainty, impediments, failures, and frustrations associated with the process of new firm creation. It seems, therefore, unlikely that an individual would make a goal for an entrepreneurial career if he or she did not feel confident to perform the necessary tasks associated with forming and developing his or her own business. What is it about certain people that drives them to take on the risk, uncertainty and independent structure of business ownership?

Stevenson and Jarillo (1990) suggested that research exploring entrepreneurial behavior could be divided into three categories: (1) how entrepreneurs act (i.e., what they do), (2) what happens when entrepreneurs act (i.e., what are the outcomes of their actions), and (3) why people choose to act as entrepreneurs (i.e., what motivates them). The research presented in this article focuses on the third category, and explores the use of a well-accepted model from the careers literature, Social Cognitive Career Theory (SCCT), to shed light on the motivation to become an entrepreneur.

Although many studies of entrepreneurial motivation have examined personality traits of entrepreneurs, the results of these studies are mixed and inconclusive (Herron and Sapienza 1992; Shaver and Scott 1991; Kreiser, Marino, and Weaver 2002). Recent research (Roy and Elango 2000) has begun to focus on other characteristics of entrepreneurs, such as cognitive make-up as a potential indicator of success. Entrepreneurship research has also attempted to identify the situational and environmental factors that predict entrepreneurial activity, such as job displacement, previous work experience, availability of various resources, and governmental influences. However, these empirical studies of contextual factors have also found low explanatory power and predictive ability (Kueger, Reilly, and Carsrud 2000).

Most of the entrepreneurship motivation models advanced in recent years are process-oriented models, based on either economic or social psychological theory. Several researchers (Campbell 1992; Levesque, Shepherd, and Dukas 2002; Prag and Cramer 2001) have proposed models using economic perspectives to predict self-employment. These economic models suggest that the decision to become self-employed is based on maximizing the net usefulness, utility, or desirability of an entrepreneurial career.

In a theoretical discussion of the psychology of new venture creation, Shaver and Scott (1991) emphasized that new ventures emerge because of deliberate choices made by individuals. They then examined the immediate antecedents of choice: (1) Can I make a difference? (i.e., feasibility) and (2) Do I want to? (i.e., desirability). Research (Kueger and Carsrud 1993; Kueger et al. 2000) has continued on models using perceived feasibility and perceived desirability to predict entrepreneurship. This research found support for models developed by Alpern (1991, 1985) and Shapiro (1982), which used perceived feasibility and desirability to predict entrepreneurial intentions. While these process-oriented models of motivation to become an entrepreneur have some promise, one area of potential beneficial research that is ripe to be applied to the field of entrepreneurship is the careers literature and models of career choice.

SCCT (Lent, Brown, and Hackett 1994) is one of the most accepted and validated models discussed in the careers literature to understand career interests and goals
The SCCT Model of Career Choice

The career development process is affected by a variety of personal, environmental, and situational factors that interact and change over the course of time. A number of social cognitive career development and selection processes; however, the empirical evidence remains sketchy. Hackett and Lent (1992) suggested that the field would profit from further investigation efforts that “(a) bring together conceptually related constructs (e.g., self-concept, self-efficacy), (b) more fully explain outcomes that are explained by other career theories (e.g., satification, stability), and (c) account for the relations among seemingly diverse constructs (e.g., self-efficacy, interests, abilities, personality).” Such a theoretical framework that attempted to explain central, dynamic processes and mechanisms through which career and academic interests develop, career-relevant choices are forged and enacted, and performance outcomes are achieved. The model is anchored in social cognitive theory and highlights the importance of self-beliefs and self-thought in fostering an individual’s motivation and subsequently guiding their behavior. This article illustrates the specific interrelatedness of the three main variables of the SCCT model, which affects the choice of career. These core variables are self-efficacy, which affects an individual’s expectations for outcomes as well as their intentions toward performance; outcome expectations, which affect their future performance or goals; and, ultimately, their goals toward self-employment. According to SCCT, the concept of goals is broadly defined in this article to include plans, aspirations, or intentions.

**Figure 1. SCCT model**

Career selection literature looks at different motivating factors and influences involved in the basic career selection and development process. Much of the research on social cognitive career selection is based on the earlier works of social cognitive theory (Bandura 1986). Bandura advocated a model of triadic reciprocality, which illustrates the interacting influences between people and their behavior and environment. Bandura posited that a person’s behavior results from the interaction of person and environment, [B = f (P, E)]. Lent et al. (1994) extrapolated a model of social cognitive theory and proposed a framework that emphasized three social cognitive mechanisms that seem particularly relevant to career development: (1) self-efficacy beliefs, (2) outcome expectations, and (3) goal. This career development theory may be particularly relevant for entrepreneurs. Krueger et al. (2000) compared models of entrepreneurial intentions to the ultimate choice of becoming an entrepreneur. They suggested that intentions have been proven to be the best predictor of planned behavior, particularly when that behavior is rare, hard to observe, or involves unpredictable time lags. Thus, social cognitive theory as utilized in the SCCT model may be ideally suited to the study of entrepreneurs and new businesses.

This article provides a more detailed examination of the roles that self-efficacy, outcome expectations, and goals play in the role of self-selection as an entrepreneur. The core SCCT model from the research of Lent, Brown, and Hackett (1994), which has been the basis for a growing and now established body of research in the career field (Foold and Smith 1997; Hackett and Lent 1992; Lapan, Spangler, and Boggs 1996; Lent et al. 1994; Lent et al. 1996; Lopez, et al. 1997; Smith 2002; Smith and Fouad 1999), is presented to better identify and explain the significance of the factors that encourage a person to choose entrepreneurship over a traditional employee role.

**Self-Efficacy**

Self-efficacy theory involves individuals interacting with their environment and having a desire to acquire the cognitive, social, and behavioral skills necessary to develop performance domains and that interact complexly with other persons, behavior, and environmental factors (Lent and Brown 1996). Self-efficacy is concerned with an individual’s thoughts of whether he or she is capable of succeeding at a particular endeavor. Unrelated to measurable, objective indices of ability or skills, self-efficacy relates to a series of self-beliefs about the abilities one needs to succeed at a particular task. This aspect of self-efficacy is viewed as the most vital and all-encompassing explanation of personal agency (Bandura 1989). The probability of initiating an activity may be partially explained by the extent to which an individual believes he or she can effectively perform the activity (Bandura 1977, 1986). Hackett and Betz (1981) wrote the seminal article that set the stage for the development literature focusing on the role of self-efficacy beliefs on the career selection process. Since that time, their work has been well supported by others and meta-analysis (Lent et al. 1987) found that self-efficacy beliefs strongly predicted career interests.

Self-efficacy not only contributes to interests and goals directly, but also through its effect on outcome expectations. This effect may be explained by the fact that people tend to expect more desirable outcomes in activities and careers in which they anticipate desirable outcomes. The decision between a career of self-employment or working for others may be viewed as a cognitive process in which individuals compare the relative desirability of each option. As noted by Bandura (1989), this cognitive process also encapsulates important affective reflections when making an employment decision. If an individual believes self-employment provides more than what he is working for others may lead to valued outcomes, then he or she is more likely to be drawn to self-employment.

**Goals**

Bagozzi, Baumgartner, and Yi (1989) found that goals are the single best predictor of planned behavior. While environmental factors and personal experiences help to shape one’s goals, the reality is that people make choices about their goals. The process of goal-directed behavior involves an individual to organize and direct their behavior in a sustained manner and increase the likelihood that desired intentions will be achieved. Goals are an element of many career choice and decision-making theories although many terms have been utilized including career plans, career decisions, and career aspirations. Bandura’s (1986) model suggests goals are a key element of many career choice and decision-making theories. The model suggests the ability to predict entrepreneurial activity. Krueger et al. (1994) point out that the differences among the various goals for careers are generally minor. Theoretical distinction of specificity and proximity to actual goal implementation. For purposes of this article, goals will be defined broadly and follow Bandura’s (1986) definition as being the determination to engage in a particular activity or to effect a particular future outcome.

**Outcomes Expectations**

Outcome beliefs form as a result of an individual’s expectations about the consequences of his or her behavior. Whereas self-efficacy is concerned with, “Will I be able to do this?” outcome expectations are concerned with, “If I do this, then what will be the outcome?” Outcome expectations were originally defined by Vroom (1964) in his efforts at introducing expectancy theory to organizational behavior. According to Vroom, an individual will choose among alternative behaviors by considering which behavior will lead to the most desirable goal. Outcome expectations play an important role in goal setting. Outcome expectations include several types of beliefs about response outcomes, such as beliefs about external rewards (e.g., pay, recognition for successful performance), self-directed consequences (e.g., pride in oneself for mastering a challenging task), and outcomes derived from performing a given activity (e.g., absorption in the task itself) (Lent et al. 1994). Bandura (1986) suggested several different classes of outcome expectations, such as the anticipation of physical (e.g., financial gains), social (e.g., status), and self-evaluative (e.g., pride) outcomes, that may affect career choice and decision-making. According to Bandura’s (1986) model, goals are influenced by the effects of self-efficacy to have an impact on the individual as to whether they are able to do it and if they value the perceived outcomes resulting from their actions.
(2000) compared the predictive ability of two entrepreneur-
ial intention models to predict entrepreneurial activity. They report that entrepreneurial intention is planned; therefore, it is
intentional behavior. Planned behavior may be best pre-
dicted by observing goals toward that behavior, not by observing and measuring attitudes, beliefs, personality characters-
tistics, or demographic variables.

Based on the preceding discussion, the following hypotheses are drawn:

Hypothesis 1: There is a positive relationship between an individual's entrepreneurial self-efficacy and his or her outcome expectations for entrepreneurial activity.

Hypothesis 2: There is a positive relationship between an individual's entrepreneurial self-efficacy and his or her goals to become entrepreneurs.

Hypothesis 3: There is a positive relationship between an individual's outcome expectations for entrepreneurial activity and his or her goals to become entrepreneurs.

Methodology

This section examines the sample data and variables employed in this study.

Sample Data

The study surveyed 115 junior and senior undergraduate business students at an AACSB (American Assembly of Collegiate Schools of Business) accredited south-
eastern university in January 2001. Surveys were complet-
ed anonymously during regular class time, with a response rate of 100 percent.

Dependent Variables

(A detailed listing of the questions and potential responses used to develop the variables for this study can be found in Figure 2). As previously discussed, the primary depend-
ent variable in the SCCT model is entrepreneurial goals or intentions (used here as interchangeable terms). The sur-
vey instrument defined entrepreneurship as "being self-
employed in your own business" and asked, "How likely
are you to become an entrepreneur?" to measure the outcome variable in the SCCT model. The researchers multiplied the importance of each outcome by the self-reported confidence that the respondent could achieve the outcome through self-employment. The product of the responses to these two questions for each outcome resulted in five outcome expectations variables: money, financial security, independence, achievement, and bureaucracy. The researchers' initial intention was to sum the responses to these five variables into an outcome expectations index. They used Cronbach Alpha to determine internal consistency among the outcome vari-
ables. Crano and Brewer (1986) suggest that the degree of internal consistency is considered acceptable if the Alpha coefficient is 0.75 or better. The analysis of internal consistency (see Table 1) indicated that the bureaucracy outcome variable was not internally consistent with the other outcome variables. As a result, the bureaucracy outcome variable was not included in the computation of the outcome expectations index. Removing this item increased Alpha to an acceptable value of .7755.

Independent Variables

The SCCT model includes two independent variables. The first independent variable is entrepreneurial self-efficacy, which was measured by one question designed to assess an individual's self-confidence in his or her ability to per-
form the tasks and activities necessary to become an entrepreneur. The second independent variable was the outcome expectations index, which as mentioned above, also functions as a dependent variable.

Research Design. After identifying and computing vari-
ables necessary for evaluating the efficacy of the SCCT model, the researchers tested the model, as previously described in Figure 1. They used regression analysis to assess the ability of the SCCT model to explain self-employment goals, the
Hypothesis 1: There is a positive relationship between an individual’s entrepreneurial self-efficacy and his or her outcome expectations for entrepreneurial activity.

It is apparent from Table 2 that the dependent variable outcome expectations was significantly positively correlated with the independent variable self-efficacy with a significant (.001) Pearson correlation coefficient of 0.392. Higher entrepreneurial self-efficacy was associated with higher expected outcomes resulting from entrepreneur activity. In addition, the model’s link between self-efficacy and outcome expectations possessed significant explanatory power, with a t-statistic of 4.533 (p < .001), demonstrating that higher self-efficacy led to higher outcome expectations.

Hypothesis 3: There is a positive relationship between an individual’s outcome expectations for entrepreneurial activity and his or her goals to become an entrepreneur.

An individual’s goals to become an entrepreneur were significantly positively correlated with the independent variable self-efficacy. Higher entrepreneurial self-efficacy was associated with a higher likelihood to become an entrepreneur with a significant Pearson correlation coefficient of 0.669 (p < .001). Higher entrepreneurial self-efficacy was associated with higher expected outcomes resulting from entrepreneurship activity. In addition, the model’s link between self-efficacy and goals possessed significant explanatory power, with a t-statistic of 7.793 (p < .001), demonstrating that higher self-efficacy led to higher aspirations toward entrepreneurial activity.

Discussion

The four positive outcomes pulling people toward entrepreneurship were career-related, as identified by the four expectations construct: (1) monetary rewards, (2) financial security, (3) independence, and (4) sense of achievement. On the other hand, the negative outcome, escape from corporate bureaucracy, did not correlate with the others. Perhaps this is an indication that people become entrepreneurs because they are attracted by the positive outcomes of entrepreneurship, rather than because they are repelled by the negative outcomes of working for others. Another possibility is that these students have not yet had enough direct experience dealing with corporate bureaucracy to perceive that it is something they wish to avoid.

As hypothesized, respondents in this study formed entrepreneurial goals if they considered themselves to be efficacious and they anticipated positive outcomes from entrepreneurship. As posited, outcome expectations were partly explained by self-efficacy. As Bandura (1986) suggested, respondents expected to attain desired outcomes in activities in which they saw themselves to be efficacious. 

Educators, policy-makers, and others wishing to enhance entrepreneurial activity should focus on enhance entrepreneurial self-efficacy. According to Bandura (1986), self-efficacy in an activity such as entrepreneurship develops through four processes: (1) enactive mastery or repeated performance accomplishments, (2) vicarious experience or modeling, (3) verbal persuasion, and (4) autonomic or physiological arousal. These factors may also influence student’s entrepreneur outcome expectations. A common misconception is that the vast majority of small businesses fail within their first few years. This has a chilling effect on perceptions of outcome expectations. Yet, a large-scale study of the eight-year destiny of small firms (Kirchhoff 1994) found that only 16 percent of all new venture initiatives resulted in business failures with losses to creditors. In contrast, 28 percent survived under their original ownership and another 26 percent continued under ownership changes. To stimulate entrepreneurial self-efficacy, educators should remind students of the high earnings potential an entrepreneurial career makes possible. The best-selling book The Millionaire Next Door (Stanley 1999) reported that two-thirds of America’s 3.5 million millionaires were self-employed.

Many educational practices may be modified to increase entrepreneurial self-efficacy, outcome expectations, and goals. Further research is planned to recommend specific pedagogical methods and interventions, based on SCCT, that entrepreneurship educators may use to stimulate entrepreneurial goals.

Figure 3. Results for the SCCT model

Hypothesis 2: There is a positive relationship between an individual’s entrepreneurial self-efficacy and his or her goals to become an entrepreneur.

An individual’s goals to become an entrepreneur were significantly positively correlated with the independent variable self-efficacy. Higher entrepreneurial self-efficacy was associated with a higher likelihood to become an entrepreneur with a significant Pearson correlation coefficient of 0.669 (p < .001). Higher entrepreneurial self-efficacy was associated with higher expected outcomes resulting from entrepreneurial activity. In addition, the model’s link between self-efficacy and goals possessed significant explanatory power, with a t-statistic of 4.027 (p < .001), demonstrating that higher self-efficacy led to higher expectations toward entrepreneurial activity.

Table 2 Model Results

<table>
<thead>
<tr>
<th>Goals</th>
<th>Self-efficacy</th>
<th>Outcome Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>669*</td>
<td>.392</td>
<td>.506</td>
</tr>
<tr>
<td>t = 4.533 (p &lt; .001)</td>
<td>a = p &lt; 0.001.</td>
<td></td>
</tr>
</tbody>
</table>

Overall regression statistics: Goals Adjusted R-squared = .509 (P< .001)

Limitations

The sample consisted entirely of undergraduate business students. However, other research (Audet 2000; Krueger et al. 2000) has also relied on student surveys to measure entrepreneurial intentions. The primary goal of the current research was to better understand these students’ decisions to become self-employed or work for others. This study was not a simulation using students to predict the behavior of managers or other nonstudent populations. Rather, it was a study of people actually beginning to face career decisions. However, there are students whose intentions are not durable and clear. Also, the findings may not be generalizable to nonstudent populations.

Although cross-sectional research designs are frequently used and considered acceptable in this type of research (Ajzen 1987), the cross-sectional rather than longitudinal design of the study raises the usual caveats regarding lack of causal evidence.

Finally, the use of single-item measures of intentions and self-efficacy raises issues of measurement accuracy. Future research will use multiple-item measures of key constructs to increase validity.

Implications

This research addressed only a portion of the SCCT model. SCCT goes on to predict that intentions/goals will lead to career-related behaviors, such as activity selections and performance attainments. According to Timmons (1999), America has created more than 34 million jobs since an average Fortune 500 lost more than 5 million jobs. Timmons further reported that, since 1980, entrepreneurs have created over 95 percent of the wealth that exists in America today. The success of entrepreneurial activities has resulted in many large firms placing greater emphasis on establishing structures and systems that foster entrepreneurial orientation among managers as a response to declining competitiveness (Lewis, Goodman, and Fandt 2001; Vale and Addonizio 2002). Furthermore, poor performance leads to the perception that people make goals to become entrepreneurs is becoming increasingly important for educators and policy-makers.
References

Entrepreneurship Education and Engineering Graduates

Teresa V. Menzies
Joseph C. Paradi

This article examines entrepreneurship courses offered by engineering faculties in Canada. The venturing rate of engineering students, whether the venturing rate increases if students have taken a course in entrepreneurship, and the type of ventures created are also explored. A recent census and an empirical study of two groups of engineering graduates from a Canadian university were utilized. Findings have implications for educators and administrators and for policy-makers interested in encouraging economic growth.

Graduates from university faculties of engineering are perhaps the most promising cohort from which we would expect high-technology start-ups. Apart from their exceptional academic skills, these graduates have an in-depth knowledge of technology in a specific area and have worked on practical projects throughout their degree studies. They may also, on graduation, work for a technology-related company and thus be accumulating the skills, knowledge, and personal readiness (e.g., financial, networking) for launching their own business. In addition, some of these engineering graduates may have taken courses in entrepreneurship during their engineering degree studies. Entrepreneurship education has been touted as valuable in encouraging venturing and with increasing the success of ventures (Gillin and Powe 1994; Gorman and Hanlon 1997; Hood and Young 1993; McMullan and Vesper 1987; Timmons 1999; Wyckham and Wedley 1990; Young 1997). Specifically, in relation to engineers, Blais (1997) cites multiple advantages for providing entrepreneurship courses to engineering students. These include nurturing a sociological perspective within engineering students including teamwork and joint initiatives, creativity, innovation, and practical applications as well as teaching them the specifics of new venture creation. Entrepreneurship education is also valuable for graduates who pursue a position within a larger corporation (Hood and Young 1993).

Because technology-based start-ups and ventures have considerable payoff at the personal, regional, and national levels, it is appropriate to study how they are nurtured. This article looks at what faculties of engineering are doing to encourage students to pursue a career as an entrepreneur. It also explores the venturing rate and type of ventures started by graduates of one faculty of engineering. The research questions posed in this article are:

1. Do faculties of engineering provide entrepreneurship education? What is the breadth and depth of these offerings?
2. Do engineering graduates venture at a rate above the population in general?
3. Is there a difference in venturing rates according to whether graduates have taken an entrepreneurship course during their undergraduate degree?
4. Do engineering graduates start technology-related ventures?

Previous Literature

Surveys of the incidence and type of entrepreneurship courses have been conducted (Blais 1997; Duke 1996; Gartner and Vesper 1994; McMullan and Vesper 1987; Menzies and Gasse 1999; Vesper 1985, 1993; Vesper and Gartner 1997, 1999; Vesper and McMullan, 1988). Vesper and Gartner are the most well known for their surveys of entrepreneurship education worldwide. As would be expected, their surveys show a tremendous growth over the last 20 years in entrepreneurship education at universities. Looking at Canada in particular, a Canadian Academy of Engineering 1996 survey showed 33 (79%) engineering schools in Canada that either offered, or were intending to offer, undergraduate courses on entrepreneurship and closely related subjects (Blais 1997). In their census of entrepreneurship education offered by universities in Canada, Menzies and Gasse (1999) found that 52 (98%) universities offer entrepreneurship education, mostly within their faculties of business, and that undergraduate entrepreneurship courses were offered in only 16 (48%) faculties of engineering (see Table 1). In some universities, engineering students can take entrepreneurship courses offered by the faculty of business, however, unless there is a formalized program, this may not be easy for students to schedule into their course load. Very few entrepreneurship courses are offered to engineering students at the graduate level.

Range of Entrepreneurship Courses

Table 2 shows the types of courses offered in the engineering schools. The norm is to offer one or two courses. These courses are most commonly an introduction to the field of entrepreneurship, with some orientation toward technology start-ups. The second most common type of course deals with business planning and start-up activities. Additional courses are offered on management of a
Propensity to Venture

Surveys of entrepreneurship provide information on the availability of entrepreneurship education. However, there is a distinct lack of research into the propensity of university graduates to venture. Only a handful of universities (Calgary, Laval, McGill, New Brunswick, and Toronto) offer breadth and depth of entrepreneurship courses. Engineering students at these universities are served well by the range of entrepreneurship courses available and the degree minor that they can obtain in entrepreneurship. Canada was surveyed. Two little is known about the outcomes (e.g., venture starts by graduates) in relation to these courses.

National Entrepreneurial Activity Rates

Reynolds, Hay, Bygrave, Camp, and Aulio (2000) found that entrepreneurial activity varies considerably between countries. They report that 12.3 percent of 18- to 64-year-olds in Brazil, 12.7 percent of the U.S. population, 7.9 percent of Canadians, 4.7 percent of Germans, 1.3 percent of Japanese, and 1.2 percent of Irish adults were in the process of starting a new business. They believe that national differences are based on opportunity structure in the society, motivation and skill to capitalize on the opportunity, infrastructure that nurtures new ventures, demography of the population including age and gender, education level of the population, and the culture within the country and perceptions toward business ownership.

In this research, a 15-year cohort of engineering graduates from a major university in Canada was surveyed. Two groups were utilized. The first group had taken one course in entrepreneurship during their undergraduate studies (EG). The response rate was 99 percent for all students who could be contacted (46 percent). The second group included a stratified random sample control group of engineering graduates from the same university, matched according to year of graduation, engineering program, and whether engineering graduates start technology-related ventures.

Methodology

In this research, a 15-year cohort of engineering graduates from a major university in Canada was surveyed. Two groups were utilized. The first group had taken one course in entrepreneurship during their undergraduate studies (EG). The response rate was 99 percent for all students who could be contacted (46 percent). The second group included a stratified random sample control group of engineering graduates from the same university, matched according to year of graduation, engineering program, and gender (CG). The response rate for this group was 12 percent. This research is part of a longitudinal study in which engineering students who have taken either one or a block of three courses in entrepreneurship. This article reports on only those who took one course.

Time from Graduation to Business Start

An important concept about venturing and university graduates relates to the number of years between graduation and start-up. Results of this study suggest that graduates who have entrepreneurship education tend to venture sooner after graduation. As noted in Table 1, almost a third (32%) of the EG graduates started a business within two years of their BASc graduation, compared with only 19 percent of CG graduates. Prior to graduation, about a fifth (20%) of the EG respondents were current business owners, compared with a fifth (20%) of the CG (see Table 3). There is a significant difference between these two groups ($\chi^2 (1, N = 286) = 7.503, p < .05$). When examining business ownership over the long term, nearly half of the EG group (48%) was found to have been a business owner at some time since graduation, which is significantly different from the control group in which only 26 percent had ever owned a business ($\chi^2 (1, N = 286) = 14.377, p < .05$). There was also a significant difference between the groups according to serial entrepreneurship: that is, owning more than one business concurrently or sequentially ($\chi^2 (1, N = 286) = 4.27, p < .05$). The EG graduates were more likely to own more than one business and to have started several businesses in sequence.
31.3%) started their ventures three to seven years from graduation. Overall, the difference in the time to venture appears to be mainly within the first two years from graduation.

**Business Characteristics**

A third of both groups (EG and CG) had consulting business, mostly free-lancing, and about a fifth owned information technology businesses (see Figure 1). Businesses also included manufacturing, services, real estate, financial services, construction, restaurant, and education services. There were no statistically significant differences between the two groups for type of business or any business characteristics. About 80 percent of both groups started their businesses from scratch, with very few purchasing or joining an existing or family business. More than half of the owners in both groups worked full time in their ventures (EG 68%, CG 53%). The size of the businesses, when measured by number of employees and sales revenue, indicated a wide range (see Table 4). There were many small businesses, with almost half the ventures for both groups having four or fewer employees. Of the EG group, 32 percent of businesses had sales less than $100,000 (CG 38%), but more than a third in each group had sales between $500,000 to in excess of $10 million. The majority of businesses were profitable.

**Discussion**

Based on the results presented above, this section addresses the questions posed earlier in this article.

**Do faculties of engineering provide entrepreneurship education and what is the breadth and depth of these offerings?**

From an examination of the literature, which contains a spread commitment on the part of faculties of engineering, the researchers concluded that there is no wide-spread dilution of the technical material that must be taught or over-load students with additional course requirements. Scheduling problems may be used as an excuse or perhaps the lack of available faculty to teach entrepreneurship courses. Faculties of engineering that have one or more entrepreneurship course(s) available for students always have a "senior champion" (Menzies and Gasse of an engineering degree (e.g., University of Calgary); electives to required courses in entrepreneurship. There are many small businesses, with almost half the ventures for both groups having four or fewer employees. Of the EG group, 32 percent of businesses had sales less than $100,000 (CG 38%), but more than a third in each group had sales between $500,000 to in excess of $10 million. The majority of businesses were profitable.

**Characteristics of Current Businesses Owned by Graduates**

<table>
<thead>
<tr>
<th>Business Characteristics</th>
<th>EG Group</th>
<th>CG Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin: Started from scratch</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Purchase</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Join a family business</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Join an existing firm</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
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<td>Financial Services</td>
<td>3</td>
<td>5</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Restaurant Business</td>
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<tr>
<td>Manufacturing</td>
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<td>7</td>
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<td>Education services</td>
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<td>Information technology</td>
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<td>Retail</td>
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<tr>
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<td>52</td>
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<tr>
<td>Part time</td>
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<td>49</td>
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<td>Profitability: Profitable</td>
<td>41</td>
<td>89</td>
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<tr>
<td>Break-even</td>
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<td>21</td>
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<tr>
<td>No. Employees</td>
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<td>34</td>
</tr>
<tr>
<td>3-4</td>
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<tr>
<td>5-6</td>
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<td>9-19</td>
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<td>1</td>
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<tr>
<td>20-30</td>
<td>2</td>
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<td>31-50</td>
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<td>&gt;50</td>
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<td>Sales: $100,000-$250,000</td>
<td>17</td>
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<td>13</td>
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<tr>
<td>&gt;$1 million-$2.5 million</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>&gt;$2.5 million-$5 million</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>&gt;$5 million-$10 million</td>
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<tr>
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**Do engineering graduates venture at a rate above the population in general?**

The results show that engineering graduates, in general, have a higher venturing rate than the general population. Nineteen percent of the control group were business owners; moreover, at some time 26 percent had owned a business. The most recent numbers available from the Canadian Census show that only 16 percent of the Canadian population are self-employed. Given that the survey respondents are still relatively young in terms of career expectancy, it can be assumed that there will be an increased rate of venturing as the cohort ages.

Recent research has found that technical training and experience enhanced the likelihood of venturing (Fiet and Samuels 1997) and that a single course in entrepreneurship is an effective means of increasing the venturing rate of engineering graduates. Further study shows that opportunities created in the first two years of the engineering program for students to become familiar with the professional development components of the course that are most effective.

**Is there a difference in venturing rates according to whether graduates have taken an entrepreneurship course?**

The results in relation to business ownership show statistically significant differences between graduates who have taken a course in entrepreneurship and those who have not. Those who have taken a course in entrepreneurship have a higher tendency to start their own business and to do so more quickly after graduation. Of those who had taken an entrepreneurship course, 34 percent (CG 19%) were current business owners and 48 percent (CG 26%) had been an entrepreneur at some time since graduation. These findings raise interesting questions to be addressed in future research regarding motivation to start a business. Do students elect to take the course because they feel pulled into entrepreneurship (Amit and Mueller 1994)? Do these graduates then choose a particular career path that will facilitate venturing at some time in the future? For example, when they have acquired the necessary "chunks of venturing knowledge" (Timmons 1998).

Clearly the course in entrepreneurship produced effective outcomes. It provided venture awareness and venture readiness skills and knowledge. Future research should address these questions. Does the course introduce or reinforce a different way of thinking that enables graduates to recognize and act on venture opportunities? Do networks develop during, and after the course, facilitate venturing, as has been reported in the literature (Atchir and Zimmer 1986)? Does the presence of a mentor who is venturing experienced and technically expert, in the form of the course instructor, contribute to an increased venturing rate? (Mentoring starts during the course but continues through the venture creation and growth stages.)

Do engineering graduates start technology-related ventures? The results show that engineering graduates start a range of businesses. Most businesses they start are related to engineering (e.g., consulting, information technology, manufacturing). However, some businesses are not what would be generally considered technology-based. Restaurants, landscape gardening, and a tutoring service are among the "low-tech" start-ups. Further research is required into how the businesses started by graduates are related to their engineering degree. This study shows that many engineering graduates create technology-based start-ups, which are leveraged on their engineering skills and knowledge. The small businesses that are created are sustained through the venture creation and growth stages.)

**Technology-intensive new ventures have greatly enhanced outcomes if there is extensive use of networking by the lead entrepreneur (Zhao and Aram 1994). One of the major advantages of taking a course in entrepreneur-ship is the training in network creation and mainte-nance. The opportunity to capitalize on existing and new networks. The mentoring role of the course instructor may also be useful for nurturing technology-related ventures. Further study is needed to determine the type of venture. In subsequent stages of the longitudinal study of engineering graduates, the opportuni-
Implications for Theory, Practice, and Policy

Findings from this study contribute to the growing literature on whether entrepreneurship can be taught. Results from this study indicate that entrepreneurship education is an effective way to increase the venturing rate of engineering graduates. The study provides results that have quantified the venturing rates for two groups of engineering graduates. Furthermore, it has provided business characteristics and performance data. This research is useful for advancing the debate on the value of entrepreneurship education. These findings show that further research is necessary to advance theories on the importance of push and pull factors, networking, and the cognitive disposition to venture. The study provides a model to critique and replicate in an attempt to build theory around a range of questions relating to venturing.

This research is valuable for educators who are currently teaching entrepreneurship. Knowledge regarding the high venturing rate may have an influence on the scope and content of course material. Knowing that almost a third of graduates may start a business within two years of graduation, indicates that practical application is an important part of course content. Educators and trainers in a range of organizations will find that the venturing rates reported here provide a benchmark for measuring the success rate of their courses. Furthermore, the time frame within which graduates venture and the performance data on business ownership allows for comparisons with other cohorts in universities. There are two arguments against this perspective. First, it is important to include a course in entrepreneurship within an undergraduate program to relay venturing awareness as well as readiness skills following graduation, when they have more work experience. There are two arguments against this perspective. Second, as engineering graduates are venturing relatively soon after graduation, it is important to provide venturing readiness skills and knowledge during their undergraduate education.

Conclusions

This article has addressed four research questions. It would appear that engineering graduates are a prime group for starting technology-related businesses at rates above the general population. Among those who elect to take some entrepreneurship education, there are an astonishingly high number of ventures started after graduation (48% business owner at some time, 34% current business owner). Further research is required to establish whether it is a natural inclination that leads to the higher venturing rate, or whether raising awareness of entrepreneurship as a viable career and teaching some readiness skills can nurture technology start-ups among engineering undergraduates. What is clear, however, is that so far in Canada, too few faculties of engineering provide entrepreneurship education courses for engineering undergraduates. Perhaps it can be argued that students can look elsewhere for this training. Alternatively, students can acquire these skills following graduation, when they have more work experience. There are two arguments against this perspective. First, it is important to include a course in entrepreneurship within an undergraduate program to relay venturing awareness as well as readiness skills and knowledge. Second, as engineering graduates are venturing relatively soon after graduation, it is important to provide venturing readiness skills and knowledge during their undergraduate education.

Endnote

1. Contact the authors for a copy of the questionnaire.

References


Acknowledgments

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Preliminary results of the initial stages of this longitudinal study of engineering graduates were presented at the Canadian Council for Small Business and Entrepreneurship Annual Meeting in Banff, Alberta, in November 1999. A paper based on the current sample and dealing with satisfaction with entrepreneurship education and career path was presented at the 2001 Canadian Conference on Engineering Education (C2E2) in Victoria, British Columbia, in August 2001.

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