Using Social Cognitive Career Theory to Predict Self-Employment Goals

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Dan Boriga
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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 prior to being an employee working for someone else. Entrepreneurs accept 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 aversive career choice where one is faced with everyday life and work situations that are fraught with increased uncertainty, incompleteness, 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 (Krueger, 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 Dacin 2002; Praag 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 (Krueger and Carsrud 1993; Krueger et al. 2000) has continued on models using perceived feasibility and perceived desirability to predict entrepreneurial activity. This research found support for models developed by Ajzen (1991, 1985) and Schaper (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.
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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 environment, [B = (PO E)]. Lent et al. (1994) extrapolated a model of social cognitive theory and proposed a framework that emphasizes three social cognitive mechanisms that seem particularly relevant for entrepreneurial 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 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 presents 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

alternative behaviors by considering which behavior will lead to the most desirable outcome. Outcome expectations take a more active role in understanding and predicting behaviors toward goals. Outcome expectations include several types of beliefs about response outcomes, such as beliefs about external influences that may impact performance (e.g., receiving a promotion), performance outcomes (e.g., receiving a raise), and self-efficacy beliefs (e.g., the belief that one can perform the necessary behaviors to reach a goal).

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 career path, it is the individual’s goals that drive their behavior. Goals may be defined in a number of ways, and a variety of terms have been used to describe goals. Some researchers have focused on the personal and environmental factors that influence goal-setting, while others have emphasized the cognitive processes involved in goal-setting.

(self-efficacy, outcome expectations, and goals) which affect an individual's expectations for outcomes as well as their intentions toward performance. Outcome expectations, which affects their future performance or goals; and, ultimately, their goals toward self-employment. In accordance with SCCT, the concept of goals is broadly defined in this article to include plans, aspirations, or intentions.

The purpose of the current study is to: (1) bring the well-established SCCT (Lent, Brown, and Hackett 1994, 1996) model to a forum of entrepreneurship researchers and practitioners, (2) explain why it should yield strong predic- tive power to explain situational factors and goals, and (3) perform an exploratory test of the model, using a sample of business students.

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 theories, particularly career development and selection process; however, the empirical evidence remains sketchy. Hackett and Lent (1992) suggested that the field would benefit from building efforts that (a) bring together conceptually related constructs (e.g., self-concept, self-efficacy), (b) more fully explain outcomes that are associated with career theories (e.g., satisfac- tion, stability), and (c) account for the relations among seemingly diverse constructs (e.g., self-efficacy, interests, abilities, values) within 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 affects their future performance or goals; and, ultimately, their goals toward self-employment. In accordance with SCCT, the concept of goals is broadly defined in this article to include plans, aspirations, or intentions.

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Gore and Leuwerke 2000; Smith and Fouad 1999; Swanson and Gore 2000). However, the application of the SCCT model in the field of career development-making has not been explored. Yet, use of an established model of career interests and goals such as SCCT may facilitate the development of useful predictions regarding interest and goals for an entrepreneur as a career choice.

The entrepreneurial literature has explored a wide variety of theories and models to answer, “What motivates an individual to become an entrepreneur?” To date, SCCT has not been discussed in the entrepreneurship literature. Yet, the careers literature includes a large number of studies examining its theoretical underpinnings and establishing the value of social cognitive theory to career selection (Belot and Hackett 1981; Krumboltz, Mitchell, and Jones 1976; Lent and Hackett 1987; Smith 2002). Because the decision to become self-employed is essentially a career decision, this important theory deserves the attention of entrepreneurship practitioners and researchers.

Entrepreneurship researchers (Jelinek and Litterer 1994; Maidique and Kartz 1992) have called for frameworks grounded in well-established theory. Zahra and Dess (2001) emphasized the benefits of drawing from many social science disciplines and the need to improve entrepreneurship theory building. The purpose of the current study is to: (1) bring the well-established SCCT (Lent, Brown, and Hackett 1994, 1996) model to a forum of entrepreneurship researchers and practitioners, (2) explain why it should yield strong predic- tive power to explain situational factors and goals, and (3) perform an exploratory test of the model, using a sample of business students.

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(2000) compared the predictive ability of two entrepreneur-ial intention models to predict entrepreneurial activity. They report that entrepreneurship 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 characteristics, 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 outcome expectations for entrepreneurial activity 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 southeast-ern 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 of 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 dependent variable “entrepreneurial goals.”

A second variable in the model that functions both as a dependent and an independent variable is the “outcome expectations” index. A review of the entrepreneurship liter-ature disclosed several desired outcomes explaining the decision to become self-employed. Five outcomes fre-quently mentioned in the literature included (1) monetary rewards, (2) financial security, (3) independence, (4) sense of achievement, and (5) escape from corporate bureau-cracy. The researchers multiplied the importance of each out-come 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 out-come 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

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Impact on Reliability (Alpha) of Removing Outcome Measures for Inclusion in Constructing the Outcome Expectations Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of Item</td>
<td>Scale Mean Variance if Item Deleted</td>
</tr>
<tr>
<td>Money</td>
<td>63.2174</td>
</tr>
<tr>
<td>Security</td>
<td>61.6696</td>
</tr>
<tr>
<td>Independence</td>
<td>59.4435</td>
</tr>
<tr>
<td>Achievement</td>
<td>58.5826</td>
</tr>
<tr>
<td>Bureaucracy</td>
<td>63.9351</td>
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</tbody>
</table>

Goals:

“How likely are you to become an entrepreneur?”

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<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
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<tbody>
<tr>
<td>O—20%</td>
<td>21—40%</td>
<td>41—60%</td>
<td>61—80%</td>
<td>81—100%</td>
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Entrepreneurial Self-Efficacy:

“How confident are you that you have all the necessary knowledge, skills, and abilities to perform the tasks and activities necessary to become an entrepreneur?”

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<tr>
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<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at All</td>
<td>Very Little</td>
<td>Somewhat</td>
<td>Very</td>
<td>Completely</td>
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<tr>
<td>Important</td>
<td>Important</td>
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Global Outcomes Expectations: Sum the products of the following two questions in each of the four areas.

1. Earning Lots of Money

“How important is it for you to make a lot of money?”

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<th>5</th>
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<tbody>
<tr>
<td>Not at All</td>
<td>Important</td>
<td>Extremely</td>
<td>Important</td>
<td>Important</td>
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</tbody>
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“How do you think is the probability of making money by being self-employed?”

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2. Financial Security

“How important is it for you to have financial security?”

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<th>5</th>
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<td>Important</td>
<td>Somewhat</td>
<td>Important</td>
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</tbody>
</table>

“What do you think is the probability of having financial security by being self-employed?”

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3. Independence

“How important is it for you to be independent?”

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<td>Important</td>
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“What do you think is the probability of being independent if you are self-employed?”

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4. Need for Achievement

“How important is your need for achievement?”

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“What do you think is the probability of satisfying your need for achievement if you are self-employed?”

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Figure 2. Survey instrument measures
dependent variable. The model predicts that outcome expectations are related to goals. Furthermore, the model predicts that self-efficacy affects goals both directly and also indirectly through their effect on outcome expectations.

Model Results

The SCCT model results are presented in Figure 3 and Table 2. Figure 3 shows significant and complete support for the SCCT model. The Adjusted $R^2$ for the regression was .509 (p < .001). Table 2 presents the findings of each of the three model hypotheses follows.

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

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. For this model was .509; such strong explanatory power is rare in the literature explaining entrepreneurial behavior. Krueger et al. (2000) found R2 of .350 for the Ajzen. A discussion of the findings of each of the model hypotheses follows.

Table 2 Model Results

<table>
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<tr>
<td>Goals</td>
<td>669*</td>
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<td>$a = 0.001 $</td>
<td>$.392*</td>
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Table 2 Model Results: Pearson Correlation Coefficients

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. 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 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 outcome expectations. Higher entrepreneurial self-efficacy was associated with a higher likelihood to become an entrepreneur with a significant Pearson correlation coefficient of 0.506 (p < .001). In addition, the model’s link between outcome expectations and goals possessed significant explanatory power, with a t-statistic of 4.027 (p < .001), demonstrating that higher outcome expectations led to higher aspirations toward entrepreneurial activity.

Discussion

The four positive outcomes pulling people toward entrepreneurship are: (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. For this model was .509: such strong explanatory power is rare in the literature explaining entrepreneurial behavior. Krueger et al. (2000) found R2 of .350 for the Ajzen. A discussion of the findings of each of the model hypotheses follows.

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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 outcome expectations. Higher expected outcomes from engaging in entrepreneurship were associated with a higher likelihood to become an entrepreneur with a significant Pearson correlation coefficient of 0.506 (p < .001). In addition, the model’s link between outcome expectations and goals possessed significant explanatory power, with a t-statistic of 4.027 (p < .001), demonstrating that higher outcome expectations led to higher aspirations toward entrepreneurial activity.

Implications

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. Furthermore, understanding why people make goals to become entrepreneurs is becoming increasingly important for educators and policy-makers. 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.

Educators, policy-makers, and others wishing to enhance entrepreneurial activity should focus on enhancing entrepreneurial self-efficacy, motivation, and outcome expectations.

According to Bandura (1986), self-efficacy in an activity such as entrepreneurship develops through four processes: (1) enactive mastery or repeated performance of activities in which one is efficacious, (2) vicarious experience or modeling, (3) verbal persuasion, and (4) autonomic or physiological arousal. People may also enhance student’s entrepreneurial activity outcomes 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 (Kirchoff 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 entrepreneurship, 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.
References
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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.

Encouraging Technology-Based Ventures: Entrepreneurship Education and Engineering Graduates

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 Harnion 1997; Hood and Young 1995; McMullan and Vesper 1987; Timmons 1999; Wyckham and Wedley 1990; Young 1997). Specifically, in relation to engineers, Blais (1997) cites multiple advantages for providing engineering students with courses in entrepreneurship. 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 1995).

Because technology-based start-ups and ventures have considerable payoff at the personal, regional, and national level, 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

Table 3 shows the incidence and type of entrepreneurship courses that are offered in engineering faculties in Canada. The venturing rate of engineering graduates from one faculty of engineering is also explored. Findings have implications for educators and administrators and for policy-makers interested in encouraging economic growth.