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Fostering Entrepreneurship among Finnish Business Students: Antecedents of Entrepreneurial Intent and Implications for Entrepreneurship Education

Ellen A. Drost and Stephen J. J. McGuire

Department of Management College of Business and Economics, California State University, Los Angeles

Abstract. In Finland, the institutional environment is highly conducive to engaging in entrepreneurship, the costs and complexities of starting a business are low, and Finnish Universities play a significant role in educating future entrepreneurs. Nonetheless, the rate of new venture creation, and the innovativeness of new ventures in Finland remains among the lowest in the developed world. Moreover, only a small fraction of the adult population expresses intention to start and/or grow a business. This paper examines what drives Finnish students to want to become entrepreneurs. We examined four possible antecedents of Finnish business students' intent to engage in three different types of entrepreneurship: general, high growth, and "lifestyle" entrepreneurship. We found that four antecedents, namely, entrepreneurship education, entrepreneurship experience, proactive personality, and entrepreneurial self-efficacy predicted the three types of entrepreneurial intent, and the strongest relationship was found between the antecedents and high growth entrepreneurial intent. Additionally, we found that entrepreneurial self-efficacy mediated the relationship between entrepreneurship education, educational experience and proactive personality and the three types of entrepreneurial intent. Implications for entrepreneurship education in Finland and future research are discussed.

Keywords: entrepreneurship, entrepreneurial intent, entrepreneurship education, entrepreneurship experience, proactive personality, entrepreneurial self-efficacy, Finnish entrepreneurs, Finland.

1. Introduction

The increasing acknowledgement of entrepreneurship's positive influence on society has stimulated a substantial amount of research in international entrepreneurship (Kolvereid, 1996a,b; Engle et al., 2008; Guerrero et al., 2006; Linan, 2008; Bosma et al., 2009, Bosma and Levie, 2010; Pruett et al., 2009; Volkman, et al., 2009). In particular, what drives people to become entrepreneurs remains among the most important questions being asked in entrepreneurship research. For example, a 2007 special edition of *Entrepreneurship Theory and Practice* examined the cognitive bases of entrepreneurship and summarized

efforts to further extend the "thinking—doing" link in entrepreneurship research (Mitchell et al., 2007).

In order for "thinking about" entrepreneurship to become "doing" entrepreneurship, an individual must form an intention – the decision to proceed. Research on entrepreneurial intent, therefore, has been given increased attention (e.g., Hisrich et al., 2007).

Following Finland's depression in the 1990s, the country embarked on a number of institutional changes that promote and facilitate entrepreneurship. Finnish universities were called upon to stimulate new technology development and new business ventures to spur national and regional economies (Laukkanen, 2003; Tuunainen, 2004). However, while Finland in general is highly conducive to entrepreneurship, the rate of innovative new venture start-ups has remained rather low. In 2008, only one out of five venture start-ups was highly innovative, the second lowest among the Northern European country averages and behind the averages of other developed nations such as the US and Canada (Bosma et al., 2009). Moreover, early-stage and established entrepreneurs in Finland have very low growth expectations. So, despite the Finnish Government's success in creating a stable and predictable business environment, this environment has not promoted ambitious, growth oriented and innovative entrepreneurs. We therefore are interested in analyzing Finnish university students' cognitive intentions to engage in three types of entrepreneurship: general, high growth, and "lifestyle" entrepreneurship, and identifying what impact, if any, education, experience, proactive personality and self-efficacy may have on the formation of such intentions.

We test 15 hypotheses to identify antecedents of entrepreneurial intent. Further, we examine whether or not entrepreneurial self-efficacy mediates the relationship between the three types of entrepreneurial intent and their proposed antecedents.

We next present our model and hypotheses, followed by an overview of entrepreneurship in Finland. We continue with a description of our sample, methods, measures, and results of hypotheses testing. We conclude with a discussion of our findings and their implications for entrepreneurship education and research.

2. Entrepreneurial Intent

Entrepreneurial intent (EI) is a person's intent to start a business or become self-employed. The intent may be driven by a number of expectations, including potential economic gain, freedom to pursue a project of interest, autonomy, and ambition.

A number of researchers including Bird (1988), Kolvereid (1996), Krueger (1993), Krueger and Brazeal (1994), Krueger et al. (2000), Shapero (1982), and

Tkachev and Kolvereid (1996) have emphasized the important role played by an individual's cognitive intent to start a new business. These earlier studies have identified a wide array of potential antecedents of entrepreneurial intent including personal abilities, characteristics and experiences (Bird, 1988), personal feasibility and social desirability (Shapero 1982) and exogenous factors, such as access to capital, sophistication of capital markets and a regulatory environment to protect private property (Shane, 1992).

More recently, it has been suggested that improvisation (Hmieleski and Corbett, 2006) or role models (Van Auken et al. 2006) independently might be enough to predict entrepreneurial intent. Shane (2003) proposed that the existence of an opportunity, its identification and its conscious exploitation by the entrepreneur are some of the necessary steps in the entrepreneurial process (Engle, 2008). However, Krueger et al. (2000: 411) have argued that at the individual level the entrepreneurial process is likely to be a thoughtful one, and that opportunity identification is based on individual intention. Consequently, at the individual level, the single best predictor that a person actually launches a new venture is his or her prior 'entrepreneurial intent,' that is, the cognitive intent to do so.

We suggest that EI may not be a single construct. While it is certainly feasible to tap into what might be called "general entrepreneurial intent," we believe that some variations should also be considered. We therefore propose that there are three manifestations of EI: General, high growth, and lifestyle. We define general entrepreneurial intent as one's intent to start one's own business or become self-employed, driven by both a desire for autonomy and an expectation of economic gain. A second type of entrepreneurship, high growth, corresponds to one's intention to start or acquire a business and rapidly grow it, perhaps into an industry leader, an international business or a public company through an initial public offering (Hmieleski and Corbett, 2006). We introduce a third type of entrepreneurial intent, which we call lifestyle EI, or the intent to start a business for the purpose of obtaining autonomy and a certain quality of lifestyle. We borrowed the terminology from John Isaacson (personal communication in 2007), the president of an angel investor group, who pointed out that investors tend to shy away from entrepreneurs who seek autonomy and a certain lifestyle – doing what they truly wish to do – without the need for a high return on investment and without a plan for rapid growth. Our concept of the lifestyle entrepreneur may be similar to what Bird (1988) called a "craftsman entrepreneur," people who begin new ventures in order to use their skills autonomously.

3. Proposed Model of Entrepreneurial Intent

Figure 1 represents our conceptual model of the proposed antecedents of entrepreneurial intent. Entrepreneurial intent (EI) is the dependent variable, which we conceptualize and measure in three manifestations or factors: general EI, high growth EI, and lifestyle EI.

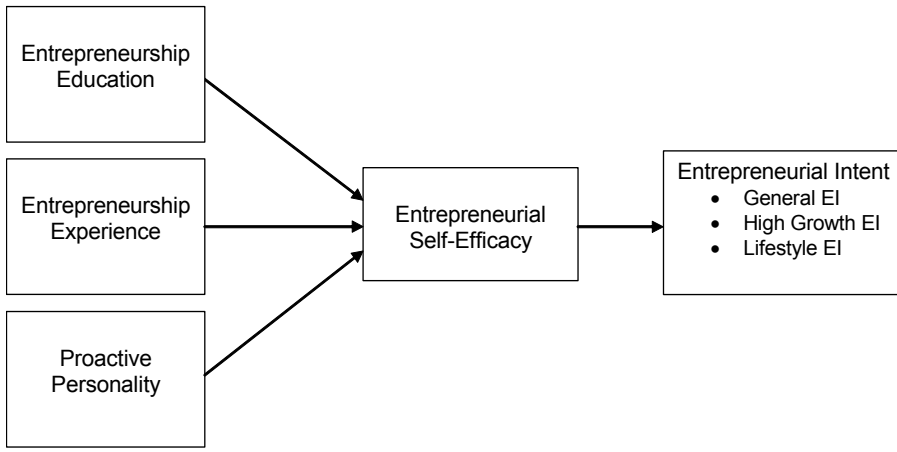
Because we are primarily concerned with the underlying reasons that lead students to manifest the intention to engage in some type of entrepreneurship, the first two antecedents in the model are independent variables largely (but not exclusively) shaped by what an educational institution does: entrepreneurship education and entrepreneurship experience. Education in entrepreneurship and/ or business has been found to increase entrepreneurial intent in several prior studies (e.g., Wilson et al., 2007; Cooper and Lucas, 2006; Souitaris et al., 2007). Student experiences in entrepreneurship (internships, business plan competitions, consulting to start-ups and small businesses, presenting business concepts to potential investors and business executives, having an entrepreneur mentor and the like) have also been found to increase entrepreneurial intentions (Wilson et al., 2007; Zhao et al., 2005).

The third antecedent that we propose is a variable that is *not* easily influenced by education no matter how well crafted the program might be. This variable is proactive personality, a robust construct developed in the personality psychology literature: "A stable disposition to take personal initiative" (Bateman and Crant, 1993: 105). We want to recognize that even if an entrepreneurship program enhances students' skills at identifying and taking advantage of opportunity, not all students will be inclined to do so. Our model therefore posits that students with proactive personalities are more likely to manifest the intention to seize entrepreneurial opportunities. Crant (1996) found that proactive personality predicted variations in entrepreneurial intention among students. Proactive personality enriches our model by allowing consideration of a variable that educators cannot readily change no matter how sophisticated or experiential the entrepreneurship program is.

Gender and age are control variables, since both have been associated with entrepreneurship in earlier studies (Chen et al., 1998; Sexton and Bowman-Upton, 1990; Hsu et al., 2007; Reynolds et al., 2002; Wilson et al., 2007; Kristiansen and Indarti, 2004).

As indicated in Figure 1, entrepreneurial self-efficacy (ESE) is proposed to mediate the relationship between the antecedents and entrepreneurial intent (EI). Each of the proposed antecedents is discussed in turn, next.

Figure 1: Conceptual Model of Antecedents of Entrepreneurial Intent



3.1. Entrepreneurship Education

Finnish universities are seen as key providers of new technologies and business ventures, and as an engine for national and regional development (Laukkanen, 2003; Tuunainen, 2004). As a result, a substantial number of programs promoting entrepreneurship have been implemented in order to stimulate Finland's employment and economic growth (Heinonen and Hytti, 2008).

Traditionally, entrepreneurship in Finland has been an unfamiliar and, to some extent, banned subject in universities (Nurmi and Paasio, 2007). Teaching and research in universities are theoretical by nature and because entrepreneurship has been interpreted as more hands-on and concrete, merging the two has been seen as inappropriate in Finland. Nevertheless, attitudes towards entrepreneurship in Finnish universities have become more positive (Tontilla, 2001) as the government has called upon institutions of higher learning to promote entrepreneurial activity.

Recent studies on entrepreneurial attitudes found that Finnish business students have a more positive attitude towards entrepreneurship than does the Finnish population in general (Maki and Vafidis, 2000; Piipponen, 2006; Saarikivi and Kokkonen, 2006a). Business students valued the independence that entrepreneurship offers most, but rated the insecure income associated with entrepreneurship as the least attractive (Piipponen, 2006). Similarly, Saarikivi and Kokkonen (2006a) reported that business students are generally cautious and even skeptical about entrepreneurship, because the threshold for becoming an entrepreneur is perceived to be quite high.

There is some evidence that suggests that in Finland entrepreneurial intentions and early-stage entrepreneurial activity are considerably higher among those who have received entrepreneurship education and training than those who have not (Bosma et al., 2009). Yet despite the substantial amount of entrepreneurship education and training, highly innovative early-stage activity is still rather low in Finland. Thus, in Finland, entrepreneurship education and training do not necessarily translate into high growth entrepreneurship and innovation; it may not be the quantity of education but instead the quality of education that is a major challenge (Bosma et al. 2009).

Entrepreneurship education can come from a wide variety of different disciplines, courses, and academic experience. Following Zhao et al. (2005), we conceptualized such an education as the degree to which students *perceived* that they had learned about four critical skills needed by entrepreneurs: (1) recognizing opportunities for new business, (2) evaluating opportunities, (3) starting a business, and (4) organizational entrepreneurship. Thus we hypothesized that the higher the perception that these skills were actually learned, the greater should be the entrepreneurial intent:

Hypothesis 1: Education in entrepreneurship is positively associated with entrepreneurial intent.
H1a: Education in entrepreneurship is positively associated with general entrepreneurial intent.
H1b: Education in entrepreneurship is positively associated with high growth entrepreneurial intent.
H1c: Education in entrepreneurship is positively associated with lifestyle entrepreneurial intent.

3.2. Entrepreneurship Experience

Experience with entrepreneurship – successful or not – provides the opportunity to master skills (Minniti and Bygrave, 2001) and to make contacts with positive role models in the person of other entrepreneurs and business owners (Scherer et al., 2005). Both the skills and the exposure to role models are likely to have a positive effect on individuals' plans and intentions concerning new ventures. Both direct work experience and educational experiences (summer internships, consulting projects with new ventures and the like) can enhance students' experiences with new product development, new market penetration, and new venture creation and management. Several studies (Scott and Twomey, 1988; Zhao et al., 2005) have found that previous experience in entrepreneurship predicted future intentions; we therefore hypothesize:

Hypothesis 2: Entrepreneurial experience is positively associated with entrepreneurial intent.
H2a: Entrepreneurial experience is positively associated with general entrepreneurial intent.
H2b: Entrepreneurial experience is positively associated with high growth entrepreneurial intent.
H2c: Entrepreneurial experience is positively associated with lifestyle entrepreneurial intent.

3.3. Proactive Personality

Proactive personality has been the focus of recent research on personality and job success. Proactive personality is a "stable disposition to take personal initiative in a broad range of activities and situations," exhibited by someone "who is relatively unconstrained by situational forces and who effects environmental change" (Bateman and Crant, 1993: 105). Research has found proactive personality to be associated with job performance (Crant, 1995); tolerance for stress in demanding jobs (Parker and Sprigg, 1999); leadership effectiveness (Crant and Bateman, 2000); work team performance (Kirkman and Rosen, 1999); career success, and taking career initiatives (Seibert et al., 1999).

Mitchell et al. (2007) clearly differentiated between the emerging cognitive approach to explaining the reasons behind entrepreneurship and the more traditional trait or demographic approach that predominated the 1980s and 1990s, the latter of which, as they pointed out, has produced equivocal results. It should be noted that many researchers have abandoned research attempting to find personality or other traits associated with entrepreneurship, observing that traits alone can neither explain why people engage in entrepreneurship nor whether they will be successful in doing so. Gartner et al. (1988) questioned whether we could ever find any individual level predictor of entrepreneurship, believing that researchers seeking to do so were asking the wrong question and commented that traits were simply "inadequate to explain the phenomenon of entrepreneurship" (1988: 12).

While we accept that in and of themselves traits are inadequate predictors, we believe that together with other variables (such as education in entrepreneurship), traits such as proactive personality can help explain who feels driven to become an entrepreneur. Specifically, not all individuals perceive opportunity in the same environment, and even among those who perceive an opportunity, not all take advantage of it. We believe that individuals with proactive personalities are more likely seize opportunities once perceived.

Krueger (1993) urged researchers to consider "propensity to act" in their explorations of why and how people choose to become entrepreneurs; "propensity to act" has conceptual similarities with proactive personality. Crant

(1996) found that proactive personality predicted variations in entrepreneurial intention in a study of 181 students, above and beyond variance explained by gender, education, and having an entrepreneur parent. Finally, Becherer and Maurer (1999) found that proactive personality was highest among small company presidents who started their own businesses, followed by presidents who had purchased the business, and then those who had either inherited it or who managed but did not own it. We therefore hypothesize:

Hypothesis 3: Proactive personality is positively associated with entrepreneurial intent.
H 3a: Proactive personality is positively associated with general entrepreneurial intent.
H 3b: Proactive personality is positively associated with high growth entrepreneurial intent.
H 3c: Proactive personality is positively associated with lifestyle entrepreneurial intent.

3.4. Entrepreneurial Self-Efficacy

Self-efficacy has been consistently shown as an explanatory variable for why people pursue given tasks and persist in their efforts to succeed at them (Bandura, 1992, 1997). Entrepreneurial self-efficacy (ESE) can be defined as the strength of an individual's belief that he or she is capable of successfully performing the roles and tasks of an entrepreneur (Boyd and Vozikis, 1994). As per Bandura's (1997) theory, self-efficacy is developed through students' mastery of skills, identification with role models, social persuasion by important others (such as peers, parents, professors, and role models), and judgments about their own physiological states (e.g. entrepreneurship makes me feel exhilarated, rather than frightened).

In the present study, we measure a specific variant of self-efficacy related to the confidence in one's ability to engage in entrepreneurship. Entrepreneurial self-efficacy (ESE) is a measure of confidence in a specific domain. Social cognitive theory (Bandura, 1997) clearly suggests that the development of entrepreneurial self-efficacy should be a powerful force on the development of one or more types of EI. There is empirical evidence that ESE differentiates entrepreneurs from non-entrepreneurs and that ESE predicts EI (e.g., DeNoble et al., 1999; Krueger et al., 2000; Segal et al., 2002; Kickul and D'Intino, 2005). Chen et al. (1998) found that ESE differentiated entrepreneurship students from students of management and psychology, and also differentiated business founders from non-founders. Zhao et al. (2005) found that ESE predicted EI among 265 MBA students. Wilson et al. (2007) found that ESE predicted

entrepreneurial career intentions for a large sample of teens and 933 MBA students. We therefore hypothesize:

Hypothesis 4: ESE is positively associated with entrepreneurial intent.
H 4a: ESE is positively associated with general entrepreneurial intent.
H 4b: ESE is positively associated with high growth entrepreneurial intent.
H 4c: ESE is positively associated with lifestyle entrepreneurial intent.

We expect ESE to be a strong predictor of entrepreneurial intent, and further our model (Figure 1) posits that three types of antecedents affect EI *through* ESE. In other words, both characteristics of the person that cannot be changed by education and others that can be, should determine a student's level of ESE, which in turn should predict one or more of the hypothesized three manifestations of EI (general, high growth, and lifestyle). To advance this hypothesis, we must be confident that education and experience increase self-efficacy. Bandura (1992) suggested that self-confidence in our abilities in any given domain arise from four sources: experiences at mastering a task, modeling, social persuasion, and judgments about one's physiological states. Experiences at mastering a task are directly related to an effective education program; experience may be gained both at work as an entrepreneur and in meaningful internships and apprentices (Wilson et al., 2007). A business or entrepreneurship education may permit students to gain mastery and observe role models (Scherer et al., 2005; Stumpf et al., 1991). Entrepreneurship education has been found to increase self-efficacy (e.g., Wilson et al., 2007; Cooper and Lucas, 2006; Zhao et al., 2005). As noted above, student experiences in entrepreneurship (internships, business plan competitions, consulting, etc.) have been found to increase entrepreneurial intentions (Wilson et al., 2007; Zhao et al., 2005).

We hypothesize that our antecedents do predict EI, but that they do so by affecting self-efficacy. For example, we believe that proactive people are more likely to choose to become entrepreneurs when they are confident that they will be able to do so. From this reasoning, and in line with previous research that ESE predicted EI (Boyd and Vozikis, 1994; DeNoble et al., 1999; Cooper and Lucas, 2006) or mediated other variables' influence on EI (Zhao et al., 2005), we hypothesize:

Hypothesis 5: ESE mediates the relationship between entrepreneurial intent and entrepreneurship education, entrepreneurship experience and proactive personality.
H 5a: ESE mediates the relationship between general entrepreneurial intent and entrepreneurship education, entrepreneurship experience and proactive personality.

H 5b: ESE mediates the relationship between high growth entrepreneurial intent and entrepreneurship education, entrepreneurship experience and proactive personality.
H 5c: ESE mediates the relationship between lifestyle entrepreneurial intent and entrepreneurship education, entrepreneurship experience and proactive personality.

4. Entrepreneurship in Finland

Finland is a highly developed welfare state with national conditions, such as government policy and regulations, financing (private and public), technology transfer, intellectual property protection, business and physical infrastructure, market dynamics, and education that are conducive to entrepreneurship (Bosma et al., 2009). The country's depression in the 1990s, globalization, and developments in the European Union have contributed to the importance of entrepreneurship in both social and policy discussions (Ministry of Trade and Industry, 2004; Bosma and Levie, 2010).

According the Global Entrepreneurship Monitor 2009 Global Report (Bosma and Levie, 2010), 13.7% of the Finnish adult population was involved in one of three types of entrepreneurial activity: nascent entrepreneurship (2.9%), new business ownership (2.3%), and established business ownership (8.5%). The first two categories, nascent and new business, were measured as having occurred within the past 3 ½ years; established businesses were those existing for more than 3 ½ years (Bosma and Levie, 2010).

Even though only 5.2% of the adult Finnish population was involved in starting a new business, 40% was aware of business opportunities, 35% rated themselves skilled enough to start a business, and 45% perceived entrepreneurship as a good career choice (Stenholm, 2010). However, only 4% of the adult population in Finland indicated intentions to start a new business within 3 ½ years (Bosma and Levie, 2010).

Low rates of entrepreneurial intentions were reported for many economies in Europe in 2009, particularly in Denmark (3% intention rate) and Italy, the United Kingdom, and Spain (4% intention rate each). In Germany, Europe's largest economy, the intention rate was only 5%. European countries' low intention rates may have been influenced by the global economic downturn (Bosma and Levie, 2010).

Overall, Finland provides the potential entrepreneur with an institutional environment that is generally conducive to starting a business. Finnish universities have come to promote entrepreneurship education with an eye toward regional and national economic development. In 2008, 40% of Finnish adults received entrepreneurship education or training (Bosma et al., 2009). In spite of all this education, with an early stage entrepreneurial activity in the country of

5.2%, Finland scored below the average of developed nations (6.3%), and below some other EU countries, such as Greece (8.8%), Norway (8.5%), the Netherlands (7.2%) and Switzerland (7.7%), as well as other countries such as the US with 8% (Bosma and Levie, 2010). These early stage entrepreneurial activity rates can vary according to regional economic and socio-cultural contexts and may be composed of entrepreneurs who vary in type and aspiration (Bosma and Levie, 2009). For example, in Norway many entrepreneurs work part-time on their own business, while in the Netherlands, new entrepreneurs increasingly only employ themselves. Finland's high growth entrepreneurship also was low (i.e. innovativeness, growth and internationalization), which is important for creating new jobs and economic development. In 2009, only one out of five early-stage entrepreneurial activities in Finland was highly innovative (e.g. unique products and new markets), which was the second lowest among the Nordic countries and below the average of the countries included in the Global Entrepreneurship Monitor (Stenholm, 2010).

This study examines Finnish students' intentions to engage in three types of entrepreneurship: general, high growth, and lifestyle entrepreneurship, and identifies what impact, if any, education, experience, proactive personality and self-efficacy may have on the formation of such intentions. We next describe our methodology.

5. Research Methodology

5.1. Sample

We asked full-time undergraduate business students who studied at a public university in Finland to participate in our study on entrepreneurial intent. Surveys were collected in the fall of 2008 and 2009. Completion of the surveys was voluntary. However, students who participated did receive extra credit for doing so (1% of the course grade).

Two-hundred and forty three students completed the study's surveys, of which 168 surveys were usable, resulting in an effective response rate of 69%. All students in our sample were born and raised in Finland. Sixty four respondents were male (38%) and 104 (62%) were female. The average age of the respondents was about 21, with an average of 3 years of university education.

5.2. Measures of Dependent Variables

The study's dependent variables were three manifestations of entrepreneurial intent: general entrepreneurial intent (GENEI); high growth EI (HGEI), and

lifestyle EI (Life EI). Researchers have not come to any consensus regarding the period of time in which to measure future intention to engage in entrepreneurship; some ask respondents to indicate whether they will do so within 3 years, others within 5 years, and still others within 10 years. For example, since 2002 the Global Entrepreneurship Monitor (GEM) "has asked about intentions to start a business some time over the next three years" (Bosma et al., 2009, p.18). Researchers assume that a shorter time frame will result in more accurate measurement of intentions, although this has not been established empirically. We used a 5-year period for all measures in the study, which may be applicable to college students and may increase the immediacy of the intention and generate less "wishful thinking" than a 10 year period.

5.2.1. General EI. We measured GENEI with a 4-item Likert scale. We adopted 3 items from Kristiansen and Indarti (2004), which in turn had been adapted from Krueger et al., (2000): "Choose a career as an entrepreneur," "Choose a career as an employee in an organization" [reversed], and one from Van Auken et al. (2005): "Be an entrepreneur rather than an employee in an organization." We added a fourth item, "Own a business within 5 years" in order to establish a uniform time frame for respondents. (1=strongly disagree, 5 = strongly agree, Cronbach's alpha = .871).

5.2.2. High Growth EI. We began with a 7-item 5-point Likert scale from items found in the literature. We used 2 items from Zhao et al. (2005) measuring interest in engaging in prototypical entrepreneurial activities within the next 5 years: "Starting and building a high growth business," and "Acquiring and building a company into a high growth business." We took 5 items from Hmieleski and Corbett (2006), who measured interest in starting a high growth business on a sample of 430 college students: "How interested are you in engaging in the following activities within the next 5 years? Start a business that would grow rapidly; become an industry leader; have multiple locations; be listed on the stock exchange; become known internationally." After conducting a factor analysis, which we discuss below, we eliminated three items, resulting in a 4-item Likert type scale (1= not very interested, 5 = very interested; alpha = .942).

5.2.3. Lifestyle EI. We developed a 3-item Likert type scale (alpha = .860) to measure respondents' interest in lifestyle entrepreneurship: "Start a small business that would provide me with a good lifestyle; Start a business in something proven, with low to moderate risks; Be self-employed, doing something I like to do."

Prior to hypothesis testing, we examined the factor structure of the responses to questions relating to entrepreneurial intent. As we expected, a three-factor structure emerged supporting our notion that general EI, high growth EI, and

lifestyle EI are related but independent constructs. However, of the 14 items we used in this study, three items, "starting a high growth company," "acquiring and building a high growth company," and "starting a business that grows rapidly," loaded highly on all three factors and were eliminated. Table 1 specifies the factor structures of the revised model of entrepreneurial intent with 11 items loading on 3 factors explaining 80.3% of the variance. All analyses in this study were made with the remaining 11 items.

Table 1: Entrepreneurial Intent Factor Analysis*: Rotated Component Matrix (a)

	High Growth EI	**General EI**	**Lifestyle EI**
Start a business that would become known internationally	.935		
Start a business that would be listed on the stock exchange.	.889		
Start a business that would become an industry leader	.861		
Start a business that would have multiple locations	.795		.381
Choose a career as an entrepreneur		.886	
Be an entrepreneur rather than an employee in an organization		.852	
Own a business within 5 years		.778	.334
Choose a career as an employee in an organization. [reversed]		.732	
Start a business in something proven, with low to moderate risks			.854
Be self-employed doing something I like to do			.824
Start a business that would provide me with a good lifestyle	.345		.796
Cronbach's alpha	.942	.871	.860

(a) Revised model after deleting three items; three factors with eigenvalues > 1 explain 80.1% of the variance

* Principal Component Analysis and Varimax Rotation with Kaiser Normalization

5.3. Measures of Independent and Mediating Variables

5.3.1. Entrepreneurship education. We used Zhao et al.'s (2005) 4-item scale to measure respondents' perceptions of their formal learning. Specifically, we asked, "During your education, how much have you learned about the following areas of entrepreneurship? Opportunity recognition; Opportunity evaluation; Starting a business; Corporate (or organizational) entrepreneurship" (1= very little, 5= very much; alpha = .856).

5.3.2. Entrepreneurial experience. Also from Zhao et al. (2005), we used a 3-item scale about respondents' previous entrepreneurial experiences. We asked, "How much experience have you had in the following entrepreneurial activities? New venture start-ups; New market development; New product development" (1= very little, 5 = very much; alpha = .906).

5.3.3. Proactive personality. We used Seibert et al.'s (1999) 10-item version of Bateman and Crant's (1993) proactive personality scale for which the authors presented evidence for the reliability and validity of the unidimensional scale. We employed a 5-point Likert scale whereby respondents indicated the extent to which each statement was an "accurate description of yourself" (1= strongly disagree to 5 = strongly agree, alpha = .866).

5.3.4. Entrepreneurial self-efficacy (ESE). We used Zhao et al.'s (2005) 4-item unidimensional scale to assess ESE. We note that other researchers (e.g. DeNoble, 1999; Barbosa et al., 2007; McGee et al., 2009) have proposed multidimensional ESE measures. For example, McGee et al. (2009) developed a six-factor ESE scale (searching, planning, marshalling, implementing-people, implementing-financial, and attitude toward venturing) in a study with nascent entrepreneurs. In the present paper, we used Zhao's scale since it was parsimonious and applied well to our student sample. Respondents were asked to indicate their degree of confidence on four entrepreneurial tasks: "Identify new business opportunities; Create new products; Think creatively; Commercialize an idea or a new development" (1 = not at all confident, 5 = very confident; alpha = .821).

5.4. Control Variables: Gender and Age

Studies have found that males typically report higher entrepreneurial career intentions than females do (Chen et al., 1998), and that females on average started businesses later than did males (Sexton and Bowman-Upton 1990; Hsu et al., 2007). For instance, in the U.S., males are twice as likely as females to be in the process of starting a new business (Reynolds et al., 2002). Moreover, education in entrepreneurship appears to have a stronger effect on females' aspirations to become entrepreneurs than on males' aspirations (Wilson et al., 2007). Age has in some cases been shown to be associated with entrepreneurship (Hsu et al., 2007) but not in others (Kristiansen and Indarti, 2004), and there appears to be a tendency since the 1950s for people to begin entrepreneurship at an earlier age (Hsu et al., 2007). A t-test of equality of the means indicated that there were no significant differences between male and female students in our sample on general EI, high growth EI, and lifestyle EI. Age did not correlate with the EI measures.

6. Analysis

Our general model is described in terms of mediated effects under the condition of multivariate normality. As per Keh, et al. (2002), we used Baron and Kenny's

(1986) three linear regression models to test our hypotheses of the entrepreneurial intent model. These three models indicate four requirements which must be met for the mediation model to hold (MacKinnon, 2007; Preacher and Hayes, 2004).

First, the total effect of the independent variable on the dependent variable must be significant (*c* in Model 1 below). Second, the path from the independent variable to the mediator must be significant (*a* in Model 2 below). Third, the path from the mediator to the dependent variable must be significant, when both the independent variable and mediating variable are predictors of the dependent variable (c' in Model 3 below). The results from Model 2 were also used to test *H1 (a, b, c), H2 (a, b, c), H3 (a, b, c) and H5 (a, b, c)*. And, fourth—this step is required only for complete mediation—if the independent variable no longer has any effect on the dependent variable when the mediator has been controlled, then complete mediation has occurred (nonsignificant *c*'). The three models are represented in the mathematical format, as follows:

Model 1: $Y = i_1 + cX + e_1$
Model 2: $M = i_3 + aX + e_3$
Model 3: $Y = i_2 + c'X + bM + e_2$

where i_1, i_2 and i_3 are intercepts, Y is the dependent variable, X is the independent variable, M is the mediator, c is the coefficient relating the independent variable to the dependent variable adjusted for the independent variable, a is the coefficient relating the independent variable to the mediator, c' is the coefficient relating the independent variable to the dependent variable adjusted for the mediator, b is the coefficient relating the mediator to the dependent variable adjusted for the independent variable, and e_1, e_2 *and* e_3 are residuals (MacKinnon, et al., 2007; Preacher and Hayes, 2004, p. 717).

If these conditions are met, the introduction of the mediator into the equation would reduce the effect of the independent variables on entrepreneurial intent because all or part of the effect was indirect through the mediator. Full mediation would occur if the independent variable had no significant effect on the dependent variable, implying that the independent variable affects the dependent variable only through the mediating variable. Partial mediation would occur if the effect of the independent variable remains significant, implying that the independent variables affect the dependent variable directly and indirectly via the mediating variable.

Table 2 provides means, standard deviations and correlations coefficients among the variables in the study. These correlations indicate that entrepreneurship education, entrepreneurship experience, proactive personality, and entrepreneurial self-efficacy (ESE) were all positively and significantly related to the three measures of entrepreneurial intent (EI).

Although many of the entrepreneurial intention variables and their antecedents were correlated (the highest correlation of which being .562 between ESE and high growth EI), we found no evidence of the effect of multicollinearity

on the results of our study. According to a study of the effects of multicollinearity on hypotheses testing by Grewal, et al. (2004), Type II error rates tend to be quite small when collinearity levels are between 0.4 and 0.6 and scales are highly reliable (above 0.8). Given that our scale reliabilities ranged between 0.86 or 0.94, as indicated in Table 1, we found no reason for concern that multicollinearity may have substantially affected our results.

Table 2: Means, Standard Deviations, Bivariate Correlations of Antecedents of Entrepreneurial Intent (n=168)

	Mean	SD	Gen EI	HG EI	LS EI	E Edu	E Exp	Pro Pers	ESE
General EI	2.72	1.14	1	.436***	.433***	.444***	.329***	.384***	.416***
High Growth EI	2.90	1.20	.436***	1	.538***	.348***	.254***	.159*	.562***
Lifestyle EI	3.44	1.14	.433***	.538***	1	.297***	.285***	.206**	.382***
Entrepreneurship Education	2.55	.987	.444***	.348***	.297***	1	.506***	.364***	.474***
Entrepreneurial Experience	1.78	1.13	.329***	.254**	.285***	.506***	1	.307***	.429***
Proactive Personality	3.62	.665	.384***	.159*	.206***	.364***	.307***	1	.331***
ESE (4 item scale)	3.34	.894	.416***	.562***	.382***	.474***	.429***	.331***	1

*significant at the 0.5 level ** significant at the 0.01 level *** significant at the 0.001 level

Tables 3, 4 and 5 provide the results of the three regression models to test our hypotheses and the mediating effect of entrepreneurial self-efficacy (ESE), for each of the manifestations of entrepreneurial intent (EI): general EI (Table 3), high growth EI (Table 4), and lifestyle EI (Table 5), respectfully, with controls for age and gender.

Model 1. Tables 3, 4 and 5 indicate collectively that in Model 1 the independent variables explained a statistically significant proportion of the variance in ESE (R^2 = .30, Adjusted R^2 = .28, f = 13.993 with $p < 0.001$). Entrepreneurship education indicated the strongest relationship with ESE (= .289, $p < .001$), followed by entrepreneurship experience (= .244, $p < .01$) and proactive personality (= .153, $p < .05$). These significant relationships in Model 1 satisfied the first condition for the mediation effect of ESE.

Model 2. Tables 3, 4 and 5 indicate that Model 2 was significant at the $p <.001$ for each of the manifestations of EI. As seen in Table 3, the independent variables explained a statistically significant proportion of the variance in general

entrepreneurial intent (R^2 = .275, Adjusted R^2 = .253, f = 12.284 with p <.001). The coefficients for entrepreneurship education (= .289, p < .01) and proactive personality (= .245, p < .001) were also statistically significant. Tables 4 and 5 indicate lower R^2s for high growth (R^2 = .138, Adjusted R^2 = .122, f = 5.208 with

Model 3. Model 3 included entrepreneurial self-efficacy, the independent variables (education, experience and proactive personality) and the control variables (age and gender). p <.001) and life style entrepreneurial intent (R^2 = .120, Adjusted R^2 = .092, f = 4.400 with p <.001), than for general entrepreneurial intent. As reported in Tables 4 and 5, in Model 2 only the coefficients for entrepreneurial education (= .275, p < .01 and = .182, p < .05, respectfully) were significantly related to high growth and lifestyle EI. Thus, we found support for hypotheses H1a, H1b and H1c, and H3a. These significant relationships satisfied the second condition for the mediation effect of ESE. We found no support for H2, the significant relationship between experience and entrepreneurial intent. This may be an artifact of our sample, which consists of young, full-time college students, who have little or no prior experience in entrepreneurship and went to college right after high school.

As indicated in Tables 3, 4 and 5, the independent variables explained 30.2 % (Adjusted R^2 = .276) of the variance of general EI, 32.9 % (Adjusted R^2 = .304) of the variance of high growth EI, and 17.5 % (Adjusted R^2 = .144) of the variance of lifestyle EI, respectfully. We note that the effect sizes we found were fairly low, although the relationships we hypothesized were indeed found.

We hypothesized that entrepreneurship education, entrepreneurial experience, and proactive personality affect EI indirectly through their effect on ESE. To test for mediation, we also had to establish the third condition that the mediator had to affect the dependent variable. As indicated in the first column of Tables 3, 4, and 5, there is a significant, positive relationship between the three types of entrepreneurial intent and entrepreneurial self-efficacy, providing strong support for *H4a, H4b and H4c*, which satisfied the third condition for mediation. As indicated in Tables 3, 4 and 5, the coefficients of entrepreneurship education decreased in magnitude after entering ESE in the regression model, meeting the fourth condition to support a mediated relationship.

As indicated in Table 3, proactive personality also met the first three conditions for mediation for general EI. The coefficient of proactive personality decreased in magnitude after ESE was entered, again meeting the fourth condition to support a mediated relationship.

As did Zhao et al. (2005), we found that ESE fully mediated the relationship between education and EI; in our results full mediation was found for high growth and lifestyle EI, but only partially for general EI. In contrast to Zhao et al. (2005), we did *not* find that ESE mediated the relationship between experience and entrepreneurial intent, likely due to the lack of variability of the experience of the students in our sample.

In sum, we found partial support for *H5a* in that ESE partially mediated the relationship between general EI and entrepreneurship education and proactive personality. We also found partial support for *H5b* in that ESE fully mediated the relationship between high growth EI and education. Partial support was also found for *H5c*, in that ESE fully mediated the relationship between lifestyle EI and education. Finally, we conducted a Sobel test (1982) examining whether the indirect effects of the independent variables, education and experience, on the dependent variable, entrepreneurial intent, via the mediator, entrepreneurial self-efficacy, are significantly different from zero. We used the Preacher and Leonardelli's (n.d.) interactive calculation tool of the Sobel test for mediation tests, which can be found at the following web address: http://www.people.ku.edu/~preacher/sobel/sobel.htm. As indicated in Tables 3, 4 and 5, the partial and full mediating effects were significant at $p < 0.001$. For a detailed discussion of the Sobel test, see Preacher and Haynes (2004).

Control variables were neither related to any of the three manifestations of EI, nor to ESE. Descriptive statistics did not reveal any significant differences between age and gender and the variables in our model. The students in our sample were homogeneous in nature, e.g. they were young, full-time college students who had little or no work experience, and went to college right after high school. Even though the sample was skewed toward female students (62 %), there seemed to be no differences between male and female students in their intentions to become entrepreneurs. When we tested our hypotheses without controlling for age and gender, the results indicated relatively small differences between the R^2s of the controlled and uncontrolled hypotheses tests.

Table 3: Results of Regression for General Entrepreneurial Intent with Age and Gender as Control Variables

	H4a		**Model 1 (y_1)**		**Model 2 (y_2)**		**Model 3 (y_3)**		
	Dependent Variable: General EI		Dependent Variable: ESE		Dependent Variable: General EI		Dependent Variable: General EI		
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	
Entrepreneurship Education			.289 ***	3.649	.289 **	3.579	.233 **	2.809	Partial Mediation[1]
Entrepreneurship Experience			.244 **	3.136	0.118	1.485	0.070	0.869	
Proactive Personality			0.153 *	2.137	.245 ***	3.367	.215 **	2.961	Partial Mediation[2]
Age	-0.023	-0.319	0.093	1.392	-0.062	-0.919	-0.054	-0.813	
Gender	0.084	1.183	-0.041	-0.613	0.106	1.569	0.088	1.314	
Entrepreneurial Self-Efficacy	.407 ***	5.728					.196 *	2.489	Mediator
F statistic	12.025 **		13.992 ***		12.284 ***		12.284 ***		
R^2	0.180		0.302		0.275		0.302		
Adjusted R^2	0.165		0.280		0.253		0.276		

*significant at the 0.5 level ** significant at the 0.01 level *** significant at the 0.001 level

1. Sobel test statistic: 3.02909455, $p = 0.0025$
2. Sobel test statistic: 2.89628262, $p = 0.0038$

Table 4: Regression Results for High Growth EI with Age and Gender as Controls

	H4b		**Model 1(y_1)**		**Model 2 (y_2)**		**Model 3 (y_3)**		
	Dependent Variable: High Growth EI		Dependent Variable: ESE		Dependent Variable: High Growth EI		Dependent Variable: High Growth EI		
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	
Entrepreneurship Education			.289 ***	3.649	.275 **	3.121	0.124	1.524	Full Mediation[3]
Entrepreneurship Experience			.244 **	3.136	0.155	1.331	-0.013	-0.159	
Proactive Personality			0.153 *	2.137	0.026	0.325	-0.054	-0.759	
Age	-0.024	-0.366	0.093	1.392	-0.046	-0.626	-0.025	-0.382	
Gender	0.047	0.714	-0.041	-0.613	0.088	1.191	0.040	0.602	
Entrepreneurial Self-Efficacy	.557 ***	8.596					.523 ***	6.771	Mediator
F statistic	25.534 ***		13.992 ***		5.208 ***		13.182 ***		
R^2	0.318		0.302		0.138		0.329		
Adjusted R^2	0.306		0.280		0.112		0.304		

*significant at the 0.5 level ** significant at the 0.01 level *** significant at the 0.001 level

3. Sobel test statistic: 3.29380357, $p = 0.0009$

Table 5: Regression Results for Lifestyle EI with Age and Gender as Controls

			Model 1		**Model 2**		**Model 3**		
	H4c		**Model 1(y_1)**		**Model 2 (y_2)**		**Model 3 (y_3)**		
	Dependent Variable: Lifestyle EI		Dependent Variable: ESE		Dependent Variable: Lifestyle EI		Dependent Variable: Lifestyle EI		
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	
Entrepreneurship Education			.289 ***	3.649	.182 *	2.047	0.101	1.121	Full Mediation[4]
Entrepreneurship Experience			.244 **	3.136	0.165	1.893	0.097	1.107	
Proactive Personality			0.153 *	2.137	0.09	1.129	0.048	0.603	
Age	0.015	0.209	0.093	1.392	-0.014	-0.183	-0.002	-0.03	
Gender	-0.05	-0.682	-0.041	-0.613	-0.017	-0.222	-0.043	-0.584	
Entrepreneurial Self-Efficacy	.387 ***	5.355					.281 **	3.283	Mediator
F statistic	9.513 ***		13.992 ***		4.400 ***		5.685 ***		
R^2	0.148		0.302		0.12		0.175		
Adjusted R^2	0.133		0.280		0.092		0.144		

*significant at the 0.5 level ** significant at the 0.01 level *** significant at the 0.001 level

4. Sobel test statistic: 2.97260645, $p = 0.0029$

Next, we will summarize our results and discuss their implications for future research and education.

7. Discussion and Implications

This paper examined intent of Finnish business students to become entrepreneurs, with the understanding that cognitive intent is a powerful predictor of future behavior. Our research, however, was not about the drivers of *successful* entrepreneurship, but about what drives Finnish business students to become entrepreneurs.

We believe we make a contribution to the field of entrepreneurship by presenting and testing a model of some of the characteristics of entrepreneurial intent that may be influenced to some degree by education and other developmental experiences, and one that may not - personality.

First, our results suggest that Entrepreneurial Intent (EI) may not be a single construct, and we presented evidence of three manifestations (or factors) of EI: general EI, high growth EI, and lifestyle EI. Second, our results indicate that for our Finnish sample, entrepreneurship education, entrepreneurship experience, proactive personality, and entrepreneurial self-efficacy predicted all of the three manifestations of EI.

Third, our results provide further evidence of the mediating effect of entrepreneurial self-efficacy (ESE) between EI and entrepreneurship education. This mediating effect suggests that there are implications for policy makers and educators regarding ESE's malleable aspects. Moreover, our results suggest that ESE is a much stronger predictor of EI than is education and that ESE mediates the effect of education on high growth and lifestyle EI (see Tables 4 and 5). This finding is important for policy makers and educators in Finland, and strongly supports the importance of well-designed education programs in expanding students' intentions to become high growth entrepreneurs (i.e. innovativeness, growth and internationalization), which is relatively low in Finland (Bosma, 2009).

Fourth, our results provide evidence of the mediating effect of ESE between EI and proactive personality. This implies that helping proactive people develop ESE may lead to an increase in high growth entrepreneurial activity, so that when proactive people are confident that they can start and grow their businesses, they may decide to do so instead of seeking alternative outlets for their "take charge" behavior.

One of the key aspects of self-efficacy is that it is malleable (Hollenbeck and Hall, 2004) and that it is domain and task specific (Wilson et al., 2007). In Finland's case, even though individuals may be highly confident that they have the required skills to become entrepreneurs, they may not have what is needed to become high growth, innovative entrepreneurs. Relevant education and training is the solution to increasing self-efficacy in those areas where needed (Bandura, 1992).

In sum, given the important role of ESE, it is important to identify the variables which enhance ESE, in particular specific practical and educational experiences that lead to increased exposure to role models, persuasion to increase

students' confidence in themselves, and assistance in coming to terms with students' anxiety when they are, in fact, actively involved in the excitement of entrepreneurship.

7.1. Implications for Entrepreneurship Education

Our study addressed whether exposure to entrepreneurship education and/or experience stimulates intent to start a new business. The positive relationship between education in entrepreneurship and EI has direct implications for the design of curriculum in Finnish universities and business schools. Moreover, we found that the relationship between education and intent was mediated by entrepreneurial self-efficacy. Recall that we measured entrepreneurship education as respondents' perceived learning about opportunity recognition, opportunity evaluation, starting a new business, and organizational entrepreneurship. The obvious implication of this finding is that educational programs in which students learn about those four areas of entrepreneurship positively affect students' confidence that they are truly able to start their own businesses within five years. Thus, ESE and through it EI can be developed by the use of educational techniques and developmental experiences that provide students with role models and expose them to social persuasion – examples may include the use of case studies, case research by students on entrepreneurs, and guest entrepreneurs who share their experiences.

Our results also suggest that an experiential component to education will increase entrepreneurial intent. Mastery of skills should be sought both in the classroom and in work, including internships. As Heinonen and Poikkijoki (2006) and others have emphasized, concrete experience gained from active participation is a must in the art and science of teaching entrepreneurship. Mastery of skills is critical to students' building self-efficacy. Van Auken et al. (2005) found that students' in-depth discussions with entrepreneurs were associated with entrepreneurial intent. Therefore, to the degree that educational programs include hands-on practicums, internships, discussions with entrepreneurs/ mentoring arrangements, writing case studies on entrepreneurs, and consulting projects with start-ups or in corporate entrepreneurship with established firms, they should increase students' self-efficacy and ultimately their intentions to start new ventures.

Not all individuals exposed to entrepreneurship education are likely to start new ventures within five years; many never will, even though they possess what Scott and Twomey (1988) called "pre-disposing factors" to entrepreneurship. However, those individuals with a proactive personality who do get the opportunity to learn entrepreneurship and increase their entrepreneurial self-efficacy - though education and hands-on experience - are more likely to decide to become entrepreneurs.

From a policy perspective, our results suggest that providing access to entrepreneurship education is particularly important in increasing the supply of aspiring entrepreneurs, because of the robust role education plays in raising levels of self-efficacy, and ultimately students' interest in starting new ventures. Our findings are consistent with earlier research suggesting that entrepreneurship education in Finland has had a positive impact on employment as well as on encouraging entrepreneurship in general (Varvikko and Siikavuo, 2003). While access to education and training in entrepreneurship is important, it may not be enough. Students need to perceive that entrepreneurial competencies have been acquired (Kreuger, 1993). The key issue in Finland is the effectiveness of entrepreneurship education in raising levels of self-efficacy, in particular, as it relates to high growth entrepreneurship and innovation. We recognize that designing entrepreneurship programs that actually enhance ESE is complex (Wilson et al., 2007). For example, in a study conducted by Cox et al. (2002), a negative relationship was observed between self-efficacy and education. The authors suggested that the reasons students scored lower on self-efficacy after completing an entrepreneurship program might be that they became aware of the complexities of starting a business through completion of the program. We believe that designing programs with a holistic perspective, with an emphasis on sequential educational experiences in entrepreneurship, might provide a solution to the "shock" or "develop" approach to building self-confidence (Wilson et al., 2007). For instance, McNaughton and Armitage (2010) suggested that business programs should adapt to a more innovative, hands-on model of experiential learning, a so-called "knowing-doing" curriculum that simulates the commercialization process and provides students with a nurturing environment in which they can test their ideas, develop networks and gain self-confidence (p.29).

7.2. Implications for Future Research

While our focus has been on entrepreneurial intent among Finnish students, we believe our model, perhaps with modifications, would apply to samples in other countries as well. Future research should confirm the existence of the different types of entrepreneurship in different countries, validate their distinctiveness, identify the unique predictors of each type, and hone in on the educational experiences that may enhance ESE and through it, EI.

We also believe that the concept of entrepreneurial education and experience as predictors of ESE and EI can be expanded upon. Future research should focus on the pedagogical aspects in entrepreneurship education that cultivate ESE. For instance, how significant are mastery of skills, discussion of case studies, creative thinking exercises, writing business plans, business plan competitions, guest speakers, interviewing successful entrepreneurs, having an entrepreneur mentor, and others in increasing entrepreneurial self-efficacy?

Future research should also include refining the measures used, conducting additional tests of construct validity and examining variable interactions—preferably with a larger and maybe an international sample—using some of the analytical methods increasingly used in entrepreneurship research, notably confirmatory factor analysis and structural equation modeling (Dean et al., 2007). As with all EI research, longitudinal studies are necessary to discover the extent to which intent actually translates into behavior.

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Appendix

Survey

Entrepreneurial Intent (13-items)
How Interested Are You? How interested are you in engaging in the following activities within the next five (5) years? (1 = not very interested, 5 = very interested)
Starting a business.
Acquiring a small business.
Starting and building a high growth business.
Acquiring and building a company into a high growth business.
Start a business that would grow rapidly.
Start a business that would become an industry leader.
Start a business that would have multiple locations.
Start a business that would be listed on the stock exchange.
Start a business that would become known internationally.
Start a small business that would provide me with a good lifestyle.
Starting a business in something proven, with low to moderate risks.
Be self-employed doing something I like to do.
Starting two or more new businesses.

Entrepreneurship Education (4-item scale)
During your education, how much have you learned about the following areas of entrepreneurship? (1=very little, 5=very much)
Opportunity recognition.
Opportunity evaluation.
Starting a business.
Corporate or organizational entrepreneurship.

Entrepreneurship Experience (3-item scale)
How much experience have you had in the following entrepreneurial activities? (1=very little, 5=very much)
New venture start-ups.
New market development.
New product development.

Proactive Personality Scale (10-item scale)
To what extent do you agree that the following statements accurately describe you?
(1= strongly disagree to 5= strongly agree)
1. I am constantly on the lookout for new ways to improve my life.
2. Wherever I have been, I have been a powerful force for constructive change.
3. Nothing is more exciting than seeing my ideas turn into reality.
4. If I see something I don't like, I fix it.
5. No matter what the odds, if I believe in something I will make it happen.
6. I love being a champion for my ideas, even against others' opposition.
7. I excel at identifying opportunities.
8. I am always looking for better ways to do things.
9. If I believe in an idea, no obstacle will prevent me from making it happen.
10. I can spot a good opportunity long before others can.

Entrepreneurial Self-Efficacy (4-item scale)
How Confident Are You? How confident are you that you can successfully perform the following roles and tasks? (1=not at all confident, 5=very confident)
Identify new business opportunities.
Create new products.
Think creatively.
Commercialize an idea or a new development.