

# Entrepreneurial Potential: An Exploratory Study of Business Students in the U.S. and Germany

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*Developed economies have experienced decreasing entrepreneurial activity. The literature on entrepreneurs has identified psychological attributes that are related to entrepreneurial potential. This study investigates the presence of such psychological attributes in graduate business students in the U.S. and Germany and explores whether differences by country in such attributes exist. The findings demonstrate that the development of some entrepreneurial characteristics for German respondents was significantly lower than for American respondents. Implications of the findings are discussed.*

According to the Schumpeterian view, the essence of capitalism is the process of “creative destruction” – the perpetual cycle of destroying the old and less efficient product or service and replacing it with new, more efficient ones (Schumpeter, 1934). Hence, Schumpeter sees the entrepreneur as an innovator who disrupts the economic equilibrium and thus initiates economic development. The entrepreneur is the “creative destructor” who initiates and implements changes that are necessary for economic advancement and success.

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Analysts have noted that many industrialized countries seem to be losing momentum in their economic development. Specifically, this appears to be true for Western European countries. U.S. politicians and mass media suggest that insufficient entrepreneurial activity is one of the major factors responsible for the negative development, and stress the need for innovative entrepreneurship (Minniti & Bygrave, 2004; Sternberg, Bergmann, & Lückgen, 2003; Wärneryd, 1988).

Nearly all supporters of the capitalistic system would argue that the encouragement of successful innovation and entrepreneurship is beneficial to society (Hull, Bosley, & Udell, 1980). In his earlier work, Schumpeter (1934) described innovation and entrepreneurship as the driving force of economic growth in a capitalistic society. Similarly, Sexton and Bowman (1985) consider innovative entrepreneurship a catalyst for transforming and improving the economy. Sternberg, Otten, and Tamásy (2000) conclude that it is the engine of growth and prosperity. Countries' future success and competitiveness in a global market depends on their ability to be innovative and on the dynamics of entrepreneurial thinking and acting.

Early research on factors that may enhance entrepreneurship focused on economic and legal conditions. More recently, psychological characteristics have been recognized as being of great importance in understanding and fostering entrepreneurship and assessing entrepreneurial potential.

This study focuses on business students in the U.S. and Germany, two leading economies. Through their education, business students acquire the technical tools for founding and running a business and have been and will be a primary source for entrepreneurial activity. This study explores the extent to which business students in the U.S. and Germany possess entrepreneurial attributes and entrepreneurial potential. Entrepreneurial potential is the extent to which an individual possesses the characteristics that are associated with successful entrepreneurs.

Although exploratory in nature, this study's contribution is unique for several reasons. First, most of the studies on entrepreneurial attributes have been carried out on individuals who are already entrepreneurs, whereas this study focuses on business students and entrepreneurial potential. Second, very few studies have taken a cross-cultural approach. Third, the results may show how cultural differences are reflected in entrepreneurial characteristics. Finally, this study integrates the German and American literature on this topic.

## Background

### *Entrepreneurial Attributes and Entrepreneurial Potential*

Individuals that engage in entrepreneurial activities have unique characteristics that distinguish them from individuals that are not interested and/or unable to engage in such activities. Definitions of "entrepreneur" seem to be coalescing around three dimensions: innovation, proactive behavior, and risk taking (e.g., Covin & Slevin, 1989). Hence, for the purpose of this study, we define entrepreneurs as individuals who are motivated to be innovative and can manage the innovation transfer process from idea to market.

The founding of enterprises proceeds in keeping with the interaction of various

determining factors (Müller, 1999). In addition to political, economic and social conditions, (the tax loopholes, opportunities for advancement, financing opportunities, market structure, and fundamental societal structure), psychological factors are consistently emphasized. Research on entrepreneurship has historically been centered on the individual. This continues to be the case even with a recent shift of focus towards the entrepreneurial process (Hansemark, 2003).

With the inherent focus on the entrepreneur as a person, questions related to the inner nature of entrepreneurship have been of great interest for entrepreneurship research. Opinions vary as to whether entrepreneurs are born or developed (Bonnet & Furnham, 1991). The "attribute approach" with its focus on personal characteristics has dominated attempts to determine why some individuals become entrepreneurs and others do not, and whether the strengths of individuals' characteristics could predict entrepreneurial behavior (e.g., Brockhaus, 1975; Hornaday & Aboud, 1971; Low & MacMillan, 1988; McClelland, 1961, 1987; Shaver & Scott, 1991; Singh, 1989; Gartner, 1988).

Entrepreneurship is characterized by a large degree of indefiniteness with regard to goals, a lack of structure in the area of tasks, complexity, interconnection in the field of action, lack of transparency, and a limited amount of resources. Successful action under such conditions clearly depends on certain personality characteristics.

There are numerous points of view regarding what kind of characteristics entrepreneurial personalities exhibit (e.g., Brandstätter, 1997; Brockhaus, 1982; Gibb, 1987; Hull et al., 1980; Low & MacMillan, 1988; McClelland, 1987; Miner, 1997b; Sexton & Bowman, 1985; Winslow & Solomon, 1989). Some personality characteristics have been shown to be relatively stable predictors of entrepreneurial behavior. King's (1985) and Müller's (2002) comprehensive research is based on previous work and focuses on need for achievement, locus of control, propensity to take risks, problem solving, willingness to assert oneself (willingness to follow through), tolerance of ambiguity, and emotional stability. These seven characteristics will be the focus in this study. They are briefly described in the following sections.

### *Achievement motivation*

There is no other entrepreneurial attribute that rivals achievement motivation or need for achievement in the number and quality of empirical studies dealing with it, including a large number of experimental psychological studies. Murray (1938) was the first to systematically describe achievement motivation. Characteristics of it are, among others, to master, manipulate or organize objects, human beings or ideas, to overcome obstacles and attain a high standard, to excel one's self, to rival and surpass others, and to increase self esteem by the successful exercise of talent (Murray, 1938). McClelland and Winter (1969) conducted the first studies, which were then followed by numerous others (King, 1985; Langham-Fox & Roth, 1995; McClelland, 1987; Miner, 1997a; 1997b; Müller, 1999; 2002). Achievement motivation is an intrinsically motivated desire for preferably interesting and challenging tasks. It is, therefore, primarily the task itself that the person desires and not necessarily the financial or concomitant societal success that may attach to it. The financial success mainly serves as a gauge for measuring one's effort. Achievement motivation is aroused through

activity involving engagement with goods and performance standards.

According to McClelland (1961; 1978; 1987), there is a relationship between the development of achievement motivation and the desire to take up entrepreneurial activity. This notion has been explored on several occasions (Johnson, 1990; Lynn, 1969; Müller, 1999; Nandy, 1973; Sagie & Elizur, 1999; Waine & Rubin, 1969). Within the canon of the numerous personality characteristics that have been studied, achievement motivation belongs also interculturally (e.g., Ahmed, 1985; Bellu, Davidsson, & Goldfarb, 1990; McClelland & Winter 1969), to the most stable of predictors. In conclusion, current research on achievement motivation provides two primary insights: 1.) The founders of enterprises are significantly more performance oriented than the average person; 2.) Among founders of enterprises, those who possess an especially large degree of achievement motivation tend to be more successful.

### *Internal locus of control*

According to Liles (1975), the actual conditions that are present are less responsible for inducing someone to entrepreneurial action than the subjective perception of the situation. An essential prerequisite of entrepreneurial potential is therefore that there is the subjective conviction and the intention to carry through and survive (Brockhaus, 1982).

This insight directs attention to the concept of "locus of control." Rotter (1966) made a distinction between those who were more internally-controlled and those who were more externally-controlled. Individuals with greater internal control orientation represent their own interests more successfully, and preside themselves over important occurrences in life. They are in a position to better regulate social interactions and in general are less dependent on other people. A high internal control orientation goes hand in hand with pronounced feelings of self-efficacy (Bandura, 1982). Furthermore, internally-oriented individuals are more cognitively active in that they make more use of information (Phares, 1968). They seek out complex information on their own initiative and work with this information more efficiently (Wolk & DuCette, 1974). The gathering of information is important to determining an outcome and increases the probability of success for that outcome. Internally-oriented individuals display greater learning and adaptive abilities (Wichman & Oyasato, 1983). Internal expectancy also reflects a propensity to influence one's environment (Lefcourt, 1972). Internally-controlled people tend to set their own goals and determine how they will achieve them. They proceed more adequately with less restrictive work conditions and with role ambiguity (Spector, 1982).

With regard to founding enterprises, locus of control indicates to what extent professional success as well as start-up activity will be assessed as controllable and workable, or to what extent it will be assessed to depend more on external influences like work atmosphere, economic situation, competition, or even just on chance (Furnham, 1986).

Overall, there seems to be support for the notion that entrepreneurs are more internally-controlled (Dailey & Morgan, 1978; Panday & Tewary, 1979). Empirical research supports this suggested relationship, at least for successful entrepreneurs (e.g., Bonnett & Furnham, 1991; Brockhaus, 1982). In a longitudinal study, Brockhaus

(1987) compared the internal orientation of founders of enterprises at the beginning of their endeavors, and then 13 years later. Successful entrepreneurs, whose companies survived, were more internally focused than unsuccessful founders who had to give up their companies.

### ***Risk-taking propensity***

The personality attribute of risk-taking propensity indicates how individuals cope with risky decision situations (Begley & Boyd, 1987). Generally, risk-taking propensity can be defined as dealing with risk and uncertainty and the degree of readiness to bear it. Individuals with a pronounced taste for taking risks are likely to choose alternatives that have less of a chance to produce the expected advantageous results than alternatives with better chances but less advantageous expected results. Furthermore, they are more willing to make decisions in uncertain situations.

Willingness to take risks is a prerequisite of entrepreneurial thinking and acting. Since, as a rule, the start-up initiatives, or the steps of professional self-employment, are fraught with risk. Entrepreneurs have to deal with uncertainty (Matthews & Scott, 1995). Entrepreneurs do not only risk capital; they also risk career chances, family relationships, and even reputation and prestige.

Entrepreneurial potential requires an optimum degree of risk orientation. A number of studies (Ahmed, 1985; Meyer, Walker, & Litwin, 1961; Liles, 1975; Broehl, 1978) reported that entrepreneurs take moderate or higher risks as compared to non-entrepreneurs.

### ***Problem-solving ability***

Entrepreneurial thinking also demands a high degree of problem solving propensity. Individuals who are more oriented toward solving problems will always view difficult, unfamiliar, and poorly-structured work tasks as solvable (Müller, 2002). The non-routine tasks that entrepreneurial activity consists of are viewed as an enrichment of professional life by individuals with a high propensity for problem solving. Individuals with greater problem solving propensity prefer to work without the constant help of others (King, 1985) and possess a sophisticated perceptive capacity, ability to comprehend, and rapid information processing. They operate according to goal directed problem solving strategies and are often in the position of finding creative solutions to problems. Originality, sensibility, and the ability to define things anew enable flexible and successful problem solving strategies within unstructured work environments.

### ***Willingness to assert oneself***

In the start-up phase of an enterprise, and thereafter, in competition with regard to customers, market share, business partners and financiers, entrepreneurs need a dominant, and to some extent also an uncompromising manner. Similar to the propensity for taking risks, the optimal level of this attribute falls in the midrange. On one hand, it is hard to imagine that a person would set up a business and run it successfully if he or she were highly dependent on other people (Brandstätter, 1997). On the other hand, entrepreneurial success often depends on the readiness to

cooperate with customers or coworkers. The lack of willingness to enter into compromises would seriously endanger the success of an enterprise. Successful entrepreneurs therefore have to be “mildly sociopathic” (Winslow & Solomon, 1987). Pronounced biases and over-developed striving for harmony in interpersonal relationships are just as disadvantageous as overly dominant behavior (Müller, 2000).

### *Tolerance of ambiguous situations (Ambiguity tolerance)*

The personality characteristic “ambiguity tolerance” (Frenkel-Brunswik, 1949) influences the manner in which one organizes information about unstructured and vague situations. Ambiguity tolerance is the ability to exist in complex situations, to endure contradiction, and to tirelessly work at surmounting complex problems. High ambiguity tolerance seems to be a unique component of the entrepreneurial personality (Sexton & Bowman, 1985).

Ambiguity tolerance can be viewed as a continuum (Sexton & Bowman, 1985). At one extreme, ambiguity is perceived as undesirable, stressful, and threatening. Intolerance of ambiguity is a tendency to perceive or interpret information marked by vague, incomplete, fragmented, multiple, probable, unstructured, uncertain, inconsistent, contrary, or unclear meanings as actual or potential sources of psychological discomfort or threat (Norton, 1975). If intolerant people are confronted by such situations, they react defensively and in a maladjusted manner (Müller, 2000). The intolerant individual may respond before adequate information is available for the most appropriate response (Smock, 1958). Under conditions of uncertainty the decision maker who finds ambiguity undesirable approaches problem solving with less than adequate information. Scheré (1982) found entrepreneurs to be significantly more tolerant than managers. Sexton and Bowman (1984) found potential entrepreneurs significantly more tolerant of ambiguity than potential managers.

### *Emotional stability*

Anyone who is easily upset and worries a lot or is tormented by fear of failure would be in an extremely difficult position when forming a company. Emotional stability has a positive effect on professional performance, especially with regard to stressful tasks (Digman, 1990). Individuals with high emotional stability are self-assured, balanced, think positively, are satisfied with their lives, and are rarely truly disheartened. Individuals who have low emotional stability are anxiety prone, apprehensive, melancholy, and moody. High emotional stability is an advantage for the founders of enterprises.

In addition to this core set of psychological attributes, this study includes three characteristics that have been proposed most recently as predictors of entrepreneurial potential – empathy, customer orientation, and team ability. Each is described below.

### *Empathy*

Empathy is a social quality (a non-professional faculty) which enables understanding the activity of, and relating in an appropriate manner with, colleagues, customers, financiers, etc. (Lowman & Leeman, 1988). Empathy indicates the ability to recognize and understand other people's thoughts, feelings, motives, goals, and

intentions, as long as these factors manifest behaviorally in a perceivable and expressive manner. Empathy involves not only some minimal recognition and understanding of another's emotional state, but also the affective experience of the other person's actual or inferred emotional state (Eisenberg, 2000).

Empathy implies careful observation and attentive listening. The actual ability consists of spontaneously and imaginatively entering oneself into another person's point of view (Davis, 1983). According to Zaccaro et al. (1991) the ability to take on roles enhances the behavioral flexibility of managers with high leadership ability and is inextricably related to the ability to change perspectives. Perspective-taking ability and empathy allows an individual to anticipate the behavior and reactions of others, therefore facilitating smoother and more rewarding relationships. High empathy therefore enables one to control others. It is associated with better social functioning (Davis, 1983) and therefore facilitates successful entrepreneurial thinking and performing.

### *Customer orientation*

Customer orientation as a professional attribute is one of the most important factors for long-term survival in a field of competition (Whiteley, 1991). This applies in general to companies who want to bind their customers to them, in times when markets are stagnating. When customer standards are differentiated, when there are individual customer wishes, and when there is a decrease in prices there is intense innovation competition. This is an especially important task for entrepreneurs, since a customer base has yet to be established. Gaining new customers is more challenging than maintaining a customer base.

Customer-oriented enterprises are able to position themselves relatively quickly, in order to rapidly and effectively react to market opportunities, because early on they have been able to orient themselves toward new customer needs via customer-specific concepts. Customer orientation means concentrating the entirety of operational thought and action on the customer, i.e., on the customer's needs, wishes, expectations, and problems. "It's the business seen from the point of view of its final result, that is, from the customer's point of view." (Drucker, 1954).

### *Team ability*

To offset judgment errors, cooperation in teams makes sense if abilities that complement or support each other are needed because of the complexity and the need for multi-faceted creativity as in the founding of a company. Competitive behavior is dysfunctional in such situations because each person can only win at the cost of another (Blau, 1954; Deutsch, 1949).

Certain aspects of direct teamwork amongst team members are central to team ability: The norms, the rules of the game, the formation of roles and relationships, the specific leadership tasks, the significance of mutually shouldered tasks, and the way of dealing with diversity and conflict. Team ability is the competence that allows for taking each of these aspects and bringing them together in such a way that performance goals are fulfilled.

These ten attributes can be seen as indicators of entrepreneurial potential. They have been found to uniquely describe individuals interested in and able to engage in

entrepreneurial activities. Hence, individuals who possess these attributes may be predisposed or more likely to engage in entrepreneurial activities.

### **Culture and Entrepreneurial Activity in Germany and the U.S.**

The cross-cultural literature has generally stressed a strong connection between culture and leadership styles (House, Wright, & Aditya, 1997; House et al, 2002) as well as other managerial aspects. There are indications that specific cultural traditions, values, ideologies, norms and societal practices (e.g. the way abortive founders are treated) influence the disposition to entrepreneurship. These factors can either form a spirit of entrepreneurship or quench it (e.g., McClelland, 1961). McClelland (1961) hypothesized that some societies produce more entrepreneurs because of a socialization process that creates a greater need for achievement. Winfield (1984) notes that a number of researchers have found that only if the social and economic culture was supportive of entrepreneurial ideas, individuals with certain personality factors were able to flourish. Socialization is also likely to influence the development of empathy-related responding (Eisenberg, 2000).

In the context of the GLOBE project, sixty-one countries were compared in relation to several cultural variables. The comparison of the U.S. with Germany yielded the following results (see Javidan & House, 2001; Szabo et al., 2002): The U.S. is among the highest ranked countries on “assertiveness” (the extent to which a society encourages individuals to be tough, confrontational, assertive and competitive) and on “performance orientation” (the degree, to which a society encourages and rewards members for performance improvement and excellence).

Germany is among the highest ranked countries on “assertiveness” and “uncertainty avoidance” (the extent to which members of a society seek orderliness, consistency, structure, and formalized procedures to alleviate the unpredictability of future events). Germany therefore is characterized by practices with a stronger tendency for standardization and rules (Szabo et al., 2002). These findings correspond with Hofstede’s (1980, 2001) results, which demonstrated high uncertainty avoidance for Germany. Furthermore, in the U.S. there is a stronger tolerance of ambiguity and uncertainty, compared to Germany (Javidan & House, 2001).

These cultural differences were also impressively confirmed via the results of the Global Entrepreneurship Monitor (GEM) (Neck et al., 2003). The “start-up climate” in different countries was studied. The “start-up climate” included the attitudes of the population toward the founding of enterprises as well as the general conditions within thirty-seven countries. The GEM included countries that represented 62% of world population. The GEM assumes that start-up activities depend on the existence of start-up chances and start-up potentials (individual capacities and motivation). Both factors are developed in Germany and the U.S. to a very different extent. The analysis of start-up activities in Germany for the year 2005, revealed that Germany was in the bottom third (Minniti, Bygrave & Autio, 2006), whereas the U.S. remains a global entrepreneurial leader among the G7 economies, ranking 6th among the 35 countries (Germany: 22nd). In the U.S., start-up chances were also much more positively perceived than in Germany (Sternberg et al, 2000).



Furthermore, there are substantial differences among countries regarding the image of founders of enterprises and of start-ups. The acceptance of the successful and the respect shown failed entrepreneurs is a central indicator of a "culture of self reliance." The national culture determines the extent to which existing social and cultural norms encourage or discourage individual actions that may lead to new ways of conducting business or economic activities. The United States ranks first in culture of self-reliance, which is indicative of the country's distinct entrepreneurial orientation (Neck et al., 2003). Germany ranks 8th in the assessment of whether cultural and social norms encourage or discourage entrepreneurship and this is below the average. The values and norms dominant in Germany are more limiting and are more of a hindrance to the cause of becoming self-employed. A primary reason for this is rooted in the ever-present problem with a societal mentality that possesses a pronounced security orientation and aversion to risk (Sternberg et al., 2000). Thus the anxiety regarding failing in a start-up is held by about 48% in Germany, and in the U.S. is only 21%. In the U.S., entrepreneurs enjoy a high profile and one views the founding of an enterprise to a large extent as a suitable way to achieve social advancement. In Germany, there seems to exist considerable biases regarding failed entrepreneurs. Entrepreneurs who are unsuccessful in Germany often do not receive a second chance and are socially and economically discriminated against. If they are successful, envy rather than admiration dominates.

In summary, there are considerable differences in relation to start-up activity, the perception of start-up chances, as well as with regard to social start-up culture between the U.S. and Germany. The culture of the U.S. is one of seeking opportunity, pursuing adventure, and taking risks. German culture is one of security and avoidance of risk. Given the differences in cultural characteristics between the U.S. and Germany, we propose that: The psychological attributes of entrepreneurial potential are significantly more pronounced in American business students than in German business students.

## Method

### *Sample*

The study sample consists of 264 business students in Germany, and 225 business students from the U.S. The data was collected between March and May 2003 in the context of lectures of the first semester at the Ludwigshafen University of Applied Sciences in Germany and in the U.S. at the University of North Carolina in Greensboro, the University of Nevada, Reno, and at the University of South Alabama, Mobile.

### *Measures*

In order to determine the presence of psychological attributes related to entrepreneurial potential, an instrument based on the work of King (1985) was developed and implemented by Müller (2001; 2002). Müller's (2002) revised and expanded form comprises the attributes "need for achievement," "internal locus of control," "emotional stability," "problem solving," "tolerance of ambiguity," "propensity to take risks," and "willingness to follow through". The attributes of "empathy," "team orientation," and "customer orientation" were also measured.

The measurement instrument consists of 50 items. Each psychological attribute is measured by five items. The individual items are in a forced-choice-format. Short statements typical of each attribute are accompanied by 3 alternative responses, asking the respondent to indicate the most appropriate response. The response alternatives are formulated such that in each case only one is most typical for the given personality attribute. The other two alternatives are neutral with regard to the attributes. The lowest value per attribute is 0 and the highest value is 5. The higher the given value, the more pronounced the corresponding attribute is.

A value for the total entrepreneurial potential is computed as the sum of the scores on the individual attributes. The range of value of the total entrepreneurial potential is between 0 and 50. The theoretical test values are satisfactory with regard to the reliability and validity of the individual scales (Müller, 2001; 2002).

Relevant data regarding demographic characteristics (gender, age, nationality) were collected, as well as motivation to become self-employed after having studied, and family background in relation to self-employment.

## Results

T-tests for independent samples were employed to evaluate variation between American and German respondents concerning the psychological attributes of entrepreneurial potential.

Table 1 summarizes the sample statistics. On average, the German students are somewhat older than the American students (Mean = 22.68 years vs. Mean = 20.04 years, respectively). This age difference results from two factors. The first is that students in Germany receive their high school diploma one year later than American students. The second is that men in Germany have to serve a year of military or civil service when they are 18 years old.

Concerning entrepreneurial self-employment in the family or circle of friends, there is no difference between the American and German students. In contrast, American students have a significantly higher propensity to become self-employed after their studies than German students (Chi-square = 38.135,  $df = 3$ ,  $p < .001$ ).

Table 2 provides descriptive statistics by country (Germany vs. U.S.) and t-statistics for the mean comparisons.

The results revealed that American students possessed significantly higher values in only three attributes of entrepreneurial potential at the  $p = .001$  level; internal locus of control, emotional stability, and empathy. For need for achievement and team orientation, German students displayed significantly higher values. No significant difference was identified between the two groups regarding the attributes of problem solving, tolerance of ambiguity, propensity to take risk willingness to assert one self or follow through and customer orientation. Overall, the two groups did not differ significantly with respect to entrepreneurial potential.

**Table 1: Sample**

	<b>Total</b>		<b>Germany</b>		<b>U.S.</b>	
<b>Age</b>	464	(100.0%)	262	(100.0%)	223	(100.0%)
17 to 21	277	(59.7%)	103	(39.3%)	186	(83.4%)
22 to 29	176	(37.9%)	154	(58.8%)	30	(13.8%)
30 and over	11	(2.4%)	5	(1.9%)	7	(2.8)
<b>Gender</b>	465	(100.0%)	262	(100.0%)	225	(100.0%)
Male	220	(47.3%)	123	(46.9%)	108	(48.2%)
Female	245	(52.7%)	139	(53.1%)	116	(51.8%)
<b>Self-Employed Family or Friends</b>	465	(100.0%)	262	(100.0%)	225	(100.0%)
Father	126	(27.1%)	67	(25.4%)	67	(29.0%)
Mother	72	(15.5%)	37	(14.0%)	39	(17.3%)
At least one grandparent	117	(25.2%)	58	(22.0%)	64	(28.4%)
At least one of the other relatives	175	(37.6%)	93	(35.2%)	89	(39.6%)
At least one of the closer friends	156	(33.5%)	91	(34.5%)	69	(30.7%)
None	101	(21.7%)	61	(23.1%)	53	(23.6%)
<b>Self-employment after studies</b>	458	(100.0%)	264	(100.0%)	225	(100.0%)
Yes	298	(65.0%)	142	(53.8%)	169	(76.8%)
No	110	(24.0%)	71	(26.9%)	45	(20.5%)
Already self- employed	11	(2.4%)	8	(3.0%)	4	(1.8%)
Only under certain circumstances	39	(8.6%)	37	(14.0%)	2	(0.9%)
Note: Totals differ as complete information was not always provided						

**Table 2: Descriptive Statistics And T-Tests (Countries)**

	Germany			U.S.			T-Test	
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	t-value	Sig. (1-tailed)
Need for achievement	264	2.349	1.316	225	1.991	1.035	3.353	.001
Internal locus of control	264	2.144	1.199	225	2.502	1.094	-3.427	.001
Emotional stability	264	.693	1.013	225	1.080	1.135	-3.980	.000
Problem solving ability	264	2.094	1.072	225	2.165	1.174	-.686	.483
Tolerance of ambiguity	264	1.398	.958	225	1.467	1.176	-.703	.483
Propensity to take risk	264	2.708	1.055	225	2.573	.993	1.449	.148
Willingness to assert one self or follow through	264	1.004	.985	225	1.071	1.015	-.743	.458
Empathy	264	2.958	1.197	225	3.316	1.240	-2.235	.001
Team orientation	264	3.413	1.282	225	3.747	1.069	2.504	.013
Customer orientation	264	3.117	.974	225	3.271	1.922	-1.782	.075
Total entrepreneurial potential	264	21.88	4.220	225	22.58	4.649	-1.753	.080
Note: Totals differ as complete information was not always provided								

## Discussion

This study focused on business students and their entrepreneurial attributes and potential in two western industrialized countries, the U.S. and Germany. Although differences with respect to specific entrepreneurial attributes exist, the expectation that American students possess more entrepreneurial potential overall and stronger entrepreneurial attributes is not confirmed.

Concerning the cross-national comparison, no significant difference between the students in the two countries could be found in problem solving ability, tolerance of ambiguity, propensity to take risk, willingness to follow through and customer orientation. In previous studies, the stated instances of greater development of tolerance of ambiguity and propensity to take risks in the U.S. may be due to the fact that the respondents were older and more experienced. In the context of those studies managers and entrepreneurs were surveyed rather than business students.

In this study differences in four of the ten characteristics between need for

achievement was higher for German than for American students. The German educational system is much more demanding and challenging for college-bound students than high school in the United States. German students who want to advance to higher education have to develop an achievement orientation to a larger degree than American students to succeed in their studies. Furthermore, the German culture values education to a very high degree. Social class membership is based on educational achievement.

Americans scored higher on internal locus of control than Germans. Americans are highly individualistic, more than Germans, and are expected to be self-reliant, hence more likely to depend on themselves. Germany is characterized by an expansive social net that protects citizens from kinds of potential harm and by a higher degree of government involvement in business. As a result, Germans perceive more impact of the environment on their lives than Americans do.

Americans score higher on emotional stability. Again, self-reliance, confidence, individualism of the American culture may be related to that result. Americans are known to take charge and are expected to be reliable. Similarly, Americans scored higher in empathy and customer orientation. In a broad "emotional intelligence sense," empathy could be considered a component of emotional stability, hence more pronounced among Americans. Also, the lower uncertainty avoidance and power distance of the American culture makes it easier for individuals to openly interact and try to understand each other.

German respondents scored higher in team orientation which is surprising to some degree since Americans put so much emphasis on teaching students teamwork early on. However, that emphasis competes against the strong cultural value of individualism and independence. Germany is slightly more collectivistic than the U.S., hence the higher team orientation makes sense. In addition, the higher uncertainty avoidance of Germany in combination with a socially framed view of the market economy implies an emphasis on "participation" and groups.

That there is no significant difference in the overall entrepreneurial potential is truly surprising. It appears that since German students scored higher in some attributes and Americans in others, the overall scores across all attributes are comparable. With regard to the attributes of need for achievement and team orientation, German students possessed higher levels. On the other hand American students possess significantly higher values for the attributes emotional stability, internal locus of control, and empathy. These results imply that in the two countries a difference in the encouragement and cultivation of the respective attributes exist.

This study is exploratory in nature and has clear limitations. Differences in educational systems are not explicitly considered in the study but may, however, be relevant to the interpretation of the results. Finally, the concept of "entrepreneurial potential" needs to be further explored and refined.

Despite these caveats, the study has important theoretical and practical implications. Further research with a focus on developing measures for entrepreneurial potential is needed. Also, it needs to be explored whether the success of entrepreneurial activity depends on the same attributes in different countries or whether different attributes are relevant in different countries. A longitudinal study is needed to explore

if these entrepreneurial potential attributes change in business students over the course of their studies. From a practical perspective, the implications are clear. American and German students do not differ with respect to entrepreneurial potential, however, they differ with respect to where their strengths are. Educators and policy-makers need to consider such strengths and weaknesses in program design decisions.

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