



JÖNKÖPING INTERNATIONAL BUSINESS SCHOOL
JÖNKÖPING UNIVERSITY

Do Work Values Add to the Prediction of Entrepreneurial Intent Above and Beyond Personality?

Master Thesis in Business Administration

Authors: Arash Pooya

Supervisor: Prof Kim-Yin Chan

Co-supervisor: Prof Cecilia Bjursell

Credits: 30 ECTS

Jönköping November 2011

ABSTRACT

This study examined the importance of the Big-Five personality traits and work values for the prediction of entrepreneurial intent. Data were collected from a sample of 261 undergraduate students at Nanyang Technological University in Singapore. Results of a hierarchical regression analysis revealed that none of the Big-Five personality factors predicted entrepreneurial intent; however, the importance individuals attached to achievement and social-affective work values accounted for 9% of the variance in entrepreneurial intent, above and beyond personality. The results lend support to the argument that entrepreneurship is a cultural phenomenon and that entrepreneurs are ‘made’ as opposed to ‘born’. Consequently, the implications of culture and gender characterization are discussed in relation to entrepreneurial intentions. Finally, a dynamic model of entrepreneurial emergence is proposed and suggestions for future research are discussed.

Key Words: Entrepreneurial Intent; Big Five Personality Factors; Work Values; Multiple Regression Analysis

The research reported herein is part of ongoing research conducted at Nanyang Technological University as part of a collaborative effort between Nanyang Business School and the School of Humanities & Social Sciences. One of the goals of research conducted within these schools is to examine the relationship between individual differences in personality, values and traits, with predictors for leadership and entrepreneurship. A secondary but related interest of this research effort is to validate the enhanced biographical measure of leadership experience in a student sample, and more importantly, to develop additional biodata measures of leadership and entrepreneurial experience that may be used with University student samples.

Introduction

Entrepreneurial activity is currently at an all time high. In the United States alone, the rate of new business start-ups between 1995 and 2005 increased by 13.1% (U.S. SBA, 2007). Furthermore, the importance of entrepreneurship as an economic driving force is also reflected in the increasing volume of entrepreneurship research. For example, the Entrepreneurship Division of the Academy of Management grew by more than 155% (from 917 affiliated Academy of Management members to 2370) during the period 1999 to 2009, (Crook, Shook, Morris, & Madden, 2009). As the volume of entrepreneurship research continues to expand, it would be useful to examine whether the knowledge, research trends, and methodologies have kept pace with this growing field.

In an early analysis of entrepreneurship research, Low and MacMillan (1988) urged for the pursuit of causal relationships and called for more advanced multivariate research techniques. More recently, Chandler and Lyon (2001) conducted a follow-up study to determine whether improvements in research methods have been made since the time of Low and MacMillan's work. They evaluated the entrepreneurship research design and construct measurements practices of 416 studies conducted between 1989 and 1999. Their findings demonstrated that out of the 291 articles (70%) which were empirical in nature, only 29% utilized multiple regression analysis, 20% used correlations, and 17% used factor analysis. In addition, of the 145 studies that had employed questionnaires, only 58 (40%) had used multiple item scales and reported reliability measures such as Cronbach alphas. On the basis of their findings, Chandler and Lyon concluded that the majority of the "work done in the mainstream entrepreneurship literature remains relatively unsophisticated" (Chandler & Lyon, 2001, p. 110).

The challenges faced by entrepreneurial researchers can be partially attributed to the complex and multidimensional nature of their field. Unlike other disciplines, entrepreneurship is quite unique in the sense that its roots stem from economics and behavioral sciences such as psychology and sociology (Cogliser and Brigham, 2004). This ‘tri-fusion’ has caused turbulence in previous research as each school of thought has explained the phenomenon from their own perspective rather than taking an integrated approach. The behavioral theorists argue that research on entrepreneurship should focus on the entrepreneur’s *actions* rather than their individual characteristics. This approach treats the organization as the focal point and the individual is viewed in terms of the actions taken to launch a new venture (Baron, 2002; Gartner, 1988; Davidson, Low, Murray, and Wright, 2001). Conversely, proponents of the trait approach view the entrepreneur as a ‘special’ person whose achievements are attributed to innate qualities or traits. In this respect, the entrepreneur's traits and characteristics are the key to explaining entrepreneurship as a phenomenon, since the entrepreneur "causes" entrepreneurship. Some entrepreneurship researchers have questioned the value of research concerning the entrepreneur and his/her characteristics, behavior, and motives (Baron, 2002; Zhao, Seibert, and Lumpkin, 2009). For instance, Gartner (1988) strongly criticizes the trait approach and contends that the “traits and personality characteristics of entrepreneurs will neither lead us to a definition of the entrepreneur nor help us to understand the phenomenon of entrepreneurship” (pg.48). As a result, the research spotlight has shifted from investigating the role of the entrepreneur in new venture creation to the impact of economic variables, such as market conditions and availability of venture capital, on the entrepreneurial process (Baron, 2002).

As the field continues to develop and mature, researchers are beginning to take a multi-faceted approach to the study of entrepreneurship, and are now acknowledging the vital

role of the individual entrepreneur. As a result, there has been renewed interest in understanding how individual difference variables such as personality, values, and skills contribute in the entrepreneurial process, and why certain individuals and not others choose to become entrepreneurs (Baron, 2002; Collins, Hanges and Locke, 2004). In recent years, several studies have reported relations between personality and entrepreneurship. For instance, Stewart and Roth (2001) found that entrepreneurs were significantly higher in risk propensity than other groups (for example, managers), while Collins, *et al.* (2004) found that entrepreneurs were significantly higher in achievement motivation. The most notable of these studies was a meta-analysis performed by Zhao, *et al.* (2009) which focused on the relationship between the Big-Five personality dimensions and entrepreneurial intentions. Zhao *et al.* (2009) reviewed a total of 60 studies with 66 independent samples, with an overall sample size of 15,423 individuals. Their results showed that, all Big Five personality dimensions were predictive of entrepreneurial intention, with the highest beta obtaining for Openness to Experience (beta = 0.22), followed by Conscientiousness (beta = 0.18), Emotional Stability (beta = 0.14), Extraversion (beta = 0.11) and agreeableness (-0.9) (all *ps* < 0.01). These personality dimensions collectively accounted for 13% of the variance in entrepreneurial intention, and this leads one to ponder which other factors account for the remaining 87% of the variance in entrepreneurial intention.

In accordance with career choice (e.g. Holland, 1997) and person-environment fit (e.g. Kristof-Brown, Zimmerman, and Johnson, 2005) theories, substantial empirical evidence has shown that individuals select careers and work environments that match their personality, values, beliefs, and interests (Zhao, *et al.*, 2009). As indicated earlier, a great deal of research has already been conducted in the field of entrepreneurship to investigate the relationship between personality and entrepreneurial intent. In light of this large number of

studies, it is surprising that very little research attention has been devoted to the role of values, particularly ‘work values’, in the entrepreneurial process. In contrast to personality traits, which have a biological basis and are influenced to a great extent by genetic predispositions, (work) values are acquired through “socialization” in a socio-cultural context. A number of authors have concluded that work values are important elements in an individual’s frame of reference which motivate them to choose a certain profession or career (Chu, 2008; Elizur, 1984; Elizur, Borg, Hunt, and Beck, 1991; Roe and Ester, 1999). However, it is not clear whether, and to what extent, work values predict entrepreneurial intentions after the Big Five dimensions have been taken into account, since research in this field has tended to neglect such analyses. Thus, the focus of the present study is to provide a stringent test of the role of work values in predicting entrepreneurial emergence. Hence, the primary research question is: *Do work values add to the prediction of entrepreneurial intent (EI) above and beyond personality?*

The present study aims to make a number of contributions to the current literature in the field of entrepreneurship: First, an examination of whether values predict EI above and beyond personality will afford a strict test of the role of values in explaining entrepreneurship; in turn, this will enable a better understanding of the importance of cultural factors in entrepreneurship. Second, the present study aims to address calls for more advanced multivariate research designs (Low and MacMillan, 1988; Chandler and Lyons, 2001) and, in so doing, will propose a new model for the prediction and explanation of entrepreneurial emergence and effectiveness. Developing an understanding of how personality and work values relate to entrepreneurial intention may be of great value to educational institutions with respect to career counseling and training purposes (Zhao et al., 2009).

Theory

Entrepreneurial Intent

A number of authors have contended that an individual's decision to become an entrepreneur—that is, someone who is the “founder, owner, and manager of a business” (Zhao et al., 2009, pg. 3)—is a voluntary and conscious decision (Bird, 1988; Baron, 2002; Erikson, 1999; Krueger, Reill, and Carsrud, 2000; Thompson, 2009; Zhao, *et al.*, 2009). As such, one's ‘intent’ to launch a new venture should be an important step in taking entrepreneurial actions. Indeed, intention is considered to be the single best predictor of behavior (Linan and Chen, 2009, Ajzen, 1991), and empirical analyses of individual entrepreneurial intent, both as an dependent and independent variable, has become a focal point in entrepreneurial research (Chen, Greene and Crick, 1998; Peterman and Kennedy, 2003; Fayolle, Gailly, and Lassas-Clerc, 2006; Francis and Banning, 2001; Frank and Luthje, 2004; Hmieleski and Corbett, 2006; Kickul and Zaper, 2000; Krueger, Reilly, and Carsrud, 2000). However, the lack of a consistent and universally accepted definition of “entrepreneurial intent” has inhibited the advancement of research on the cognitive processes of budding entrepreneurs during the pre-launch stages of new venture creation. The term ‘entrepreneurial intent’ has been laxly used as an umbrella to cover a spectrum of intuitively related, but in fact differing, concepts such as being self-employed (Singh and DeNoble, 2003), nascent entrepreneurs (Chrisman, 1999; Mueller, 2006), and one's desire to manage a business (Jenkins and Johnson, 1997): For instance, the intention to own a business or to become self-employed is attainable without any actual entrepreneurial efforts—an individual who wants to own a business can simply purchase an existing one and then overlook the day-to-day operations or perhaps even hire managers to perform the task. Similarly, self-employment can be achieved by becoming a franchisee or working as a sole proprietor in a

service industry such as consulting. In sum, self-employment, nascent entrepreneurship, and the desire to manage a business do not necessarily require entrepreneurial intent.

Another concept that has been used to describe individuals who possess entrepreneurial intent is ‘nascent entrepreneurs’. Nascent entrepreneurs are individuals whose initial, conscious intentions to launch a new business venture have advanced to the stage where deliberate actions have been taken towards its launch (Thompson, 2009). The distinguishing characteristic between nascent entrepreneurs and those who only possess entrepreneurial intent is that of concrete *action*—for example, legal registration of the business, raising capital, and hiring employees—towards new venture creation. Despite this clear conceptual distinction between nascent entrepreneurship and entrepreneurial intent, a number of authors (Honig & Karlsson, 2004; Korunka, Frank, Lueger, and Mugler, 2003; Rotefoss & Kolvereid, 2005) continue to label individuals who have simply expressed interest in starting/owning their own venture, but have yet to take any affirmative action towards its launch, as nascent entrepreneurs. It is essential to define entrepreneurial intent in a manner that clearly distinguishes it from the concept of nascent entrepreneurs in order that the findings obtained from studies in this area are valid. Thus, the present study defines entrepreneurial intent as “*self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future*” (Thompson, 2009, pg. 676).

The Big Five Personality Dimensions

Historically, a long-standing assumption has been that entrepreneurs differ from other individuals with respect to personality (Baron, 2002, Zhao et al., 2009). Personality refers to one’s relatively stable behavior patterns in response to various environmental factors and is

often viewed in terms of traits (Daft, 2008). Researchers have examined thousands of traits over the years and have identified five general dimensions that can be used to describe an individual's personality (e.g. Golberg, 1992). These personality dimensions (the "Big Five") are extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. These factors represent a continuum, in that a person may score low, moderate, or high on each dimension.

Extraversion

Extraversion refers to the degree to which an individual is outgoing, assertive, and sociable. These persons usually exhibit high levels of self-confidence and are comfortable meeting and interacting with new people. Extroverts also exhibit higher degrees of dominance and seek out positions of authority where they are in control and have influence over others. An entrepreneurial career brings with it greater levels of uncertainty and challenge in comparison to traditional careers paths, which may appeal to extroverts who might view this lifestyle as more exciting. Furthermore, some authors have gone as far to state that entrepreneurship is simply leadership in a specific context, and that entrepreneurs can be seen as the leaders of their new venture (Vecchio, 2003). On the basis of the above evidence, it is anticipated that extraversion will be positively associated with entrepreneurial intention, such that the more extrovert an individual is, the stronger is their entrepreneurial intention.

Agreeableness

Agreeableness refers to the degree to which one is trusting, cooperative, compassionate, and able to get along with others. An individual who scores high on this dimension is characterized as being warm, caring, and approachable, whereas a person who

scores low on this dimension is characterized as being insensitive, selfish, and manipulative (Daft, 2008; Zhao, *et al.*, 2009). Individuals who are highly agreeable have a much easier time forging new relationships and tend to have a larger social network. Entrepreneurs do not work in isolation; a large component of running a business is interaction with others. As such, the livelihood of an entrepreneur's business depends greatly upon their relationship with customers, suppliers, and employees. It is doubtful that anyone would dispute the fact that individuals are more willing to do something for someone or use their products/services if the person being approached is warm, easy to get along with, and compassionate. Therefore, entrepreneurs can contribute to the success of their business if they are friendly, express a genuine desire to understand others, and make others feel positive about themselves (Daft, 2008). For these reasons, it is predicted that agreeableness will be positively associated with entrepreneurial intent, such that as levels of agreeableness increase, so too do entrepreneurial intentions.

Conscientiousness

Conscientiousness refers to the degree to which an individual is responsible, achievement-oriented, and dependable (Daft, 2008). Conscientious individuals have been shown to possess high levels of achievement motivation and resilience to pursue their goals until their attainment. Certain traits related to the conscientiousness dimension, such as perseverance and persistence, have also been associated with the entrepreneur role (Zhao *et al.*, 2009). Since entrepreneurship requires hard work, persistence, and resilience in the face of challenges and uncertainty, it is expected that higher levels of conscientiousness will be associated with higher levels of entrepreneurial intent.

Emotional Stability

Emotionally stability refers to the degree to which an individual is calm, secure, and even-tempered under various circumstances. Persons who are emotionally stable have been shown to handle stress and criticism more effectively, and tend not to take mistakes and setbacks personally. In contrast, those who have a low degree of emotional stability feel vulnerable under stress and are likely to become tense, anxious, or depressed. They also generally have lower self-confidence and may explode in emotional outbursts when stressed or confronted with negative feedback (Baron, 2009; Daft, 2008; Locke, 2000).

The start-up phase of a new venture can often be a very turbulent period and laden with stressors in the form of long working hours, critical decision making under pressure, and considerable financial risks. Despite these psychological and physical burdens, entrepreneurs must forge ahead steadily where others would likely be discouraged by such challenges and obstacles. As such, it is predicted that emotional stability will be positively associated with entrepreneurial intent.

Openness to Experience

Openness to Experience refers to the degree to which a person is imaginative, creative, has a broad range of interests, and is open to new ideas. These individuals are intellectually curious and constantly seek out new ways of performing tasks. Those who score low on this dimension tend to have a narrower range of interests and prefer to resort to tried and tested methods (Daft, 2008).

One of the key characteristics of entrepreneurial ventures is innovation, not only at the level of the firm and its products/services but also on the part of the entrepreneur. Work by Mumford, Scott, Gaddis, and Strange (2002) found that the entrepreneur's creativity and new

idea generation were essential factors in a firm's success, particularly during the early stages of a new venture. This does not come as a surprise; entrepreneurs are often times regarded as change agents who bring about "creative destruction" through novel and innovative products and services (Schumpeter, 1942). Thus, it is anticipated that higher levels of openness to experience will be associated with higher levels of entrepreneurial intent.

Work Values

In addition to personality, persons differ in another class of individual differences called *values*. A review of the literature on values reveals a number of definitions by various authors. For instance, one of the most widely cited and commonly accepted definitions is by Rokeach (1973, pg. 5) who defines values as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence." Hofstede (1984, pg.18) defines values as "a broad tendency to prefer certain states of affairs over others." A more comprehensive definition is given by Schwartz (1992, pg. 2), who defines values as "desirable states, objects, goals, or behaviors, transcending specific situations and applied as normative standards to judge and to choose among alternative modes of behavior." A key strength of this last definition by Schwartz is that it makes a point of differentiating values from 'attitudes' and 'interests' by noting the non-specific and all-encompassing nature of values. *Attitudes* are one's beliefs about specific objects and situations and are ranked lower with respect to an individual's hierarchy of beliefs (Rokeach, 1973; Roe & Ester, 1999). *Interests*, on the other hand, are somewhat of a hybrid of the two in that they are more specific than values but not quite as definitive as attitudes (Dawis, 1991). Despite the varying definitions amongst authors, they all highlight the importance of values as normative standards which impact an individual's perception and, most importantly, drive their behavior (Elizur, 1984; Fritzsche,

1995; Daft, 2008). Individuals differ in the order in which they prioritize their values, which accounts for the tremendous variation observed amongst people and their behaviors. A large part of this difference can be attributed to culture, which has a strong influence on the value systems within a population. For instance, independence is highly valued in the United States and is reinforced by many institutions, including schools, religious organizations, and businesses.

Unlike personality traits, which have a biological basis and can be inherited, values are a social/learned phenomena. The lack of a genetic component in the development of work values was investigated by Keller, Bouchard, Arvey, Segal and Dawis (1992), who administered a Work Values Questionnaire to 23 monozygotic and 20 dizygotic pairs of twins who had been separated at birth and raised apart. Their findings indicated that much of the measured variation in work values was environmentally based and not genetic in origin. Instead, values become incorporated into a person's thinking early in life, primarily shaped by the individual's family background, and are fairly established by early adulthood. Values have the potential to change throughout one's lifetime, albeit this can be difficult. Repeated failure of a value-related behavior to produce positive outcomes may initiate such a change.

Since the early 1980's, there has been a growing interest in research devoted to investigating the role of values in relation to work and career development. The impetus behind this increasing trend can be attributed to the multi-dimensional and important impact that work has in our lives. Aside from serving as a primary source of income, one's choice of career plays a pivotal role in other facets of life such as social status, health, and relationships with others.

Despite the increase in literature on work values, a formal or widely accepted definition of work values still remains to be established (Chu, 2008). Feather (1982) defined

work values as normative standards which underlie one's actions with respect to career development. Brown (2002) described work values as the end goals one seeks to attain by means of pursuing a particular vocation or occupation. The present study defines *work values as important elements in an individual's frame of reference which motivate them to choose a particular profession or career.*

Early research in this field categorized the nature of work values as being either intrinsic (that is, autonomous) and extrinsic (that is, non-autonomous and external). However, a number of researchers raised concerns regarding the intrinsic-extrinsic dichotomy, and questioned whether they represented separate constructs, facets of a single concept, or perhaps elements of a single facet. Dov Elizur (1984), one of the pioneer researchers on work values, analyzed the contents of the domain and constructed a facet definition of work values. A comprehensive literature review on the topic revealed that the work values domain is composed of two basic facets: *modality of outcome* and *relation to task performance* (Elizur, 1984).

'Modality' refers to the nature of a particular work outcome and is composed of three categories: instrumental, affective, and cognitive. Work outcomes are instrumental in the sense that they are concrete and of practical use (Elizur, 1984). Instrumental outcomes can be either directly applied (for example, pay) or have direct practical implications (for example, benefits and work hours), and are the most common outcomes. Work outcomes are *affective* when they relate to interpersonal relations between people such as colleagues and superiors. Finally, the third class of outcomes--*cognitive*--includes elements such as responsibility, interest, and achievement.

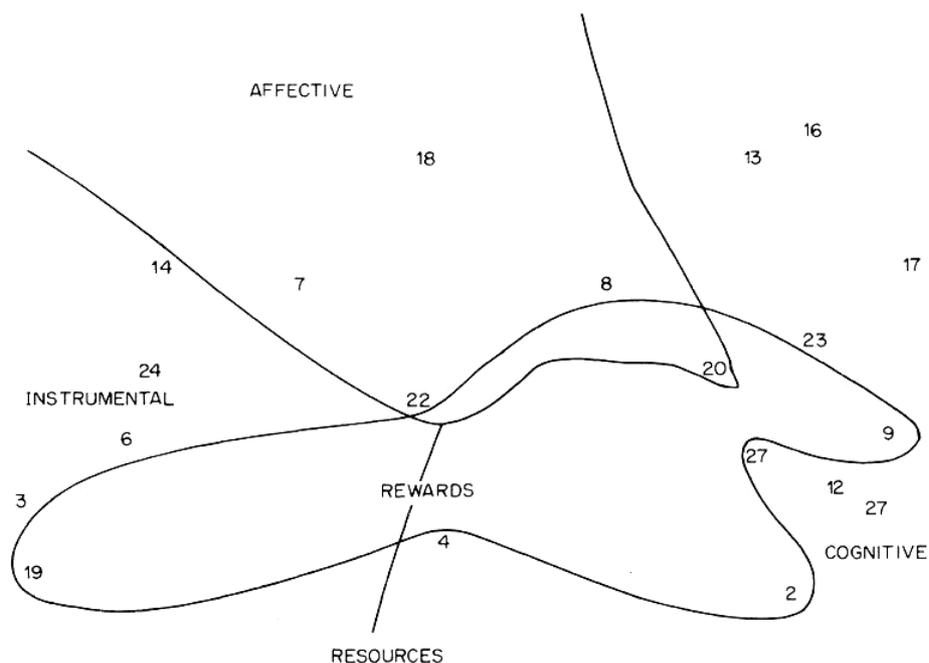
The second facet of work values, 'relation to task performance', deals with the relationship between outcomes and task performance. For instance, many organizations attempt to attract new employees and motivate them to attend to their duties through various incentives (for example, benefits plans and subsidized meals), which are not dependent on task performance or outcome. Elizur (1984) referred to these rewards, which are provided simply as a result of being part of the organization, as *resources*. Finally, certain rewards are contingent on one's task performance, such as recognition, promotion, and bonuses; Elizur refers to these outcomes simply as *rewards*.

In order to confirm his faceted definition of work values, Elizur (1984) sampled two representative groups of the urban adult Jewish Israeli population and then performed structural analysis upon the empirical data. One sample—consisting of 489 subjects—was interviewed in 1979, and the second—consisting of 546 subjects—was interviewed in 1980. Two sets of questionnaires were used to assess work values: one was an 11-item scale and classified the items according to the facets, which lead to the categorization of pay, hours of work, security as *instrumental*; co-workers and supervisors as *affective*; and advancement, type of work, and status as *cognitive*. Pay, advancement, and status were categorized as *rewards*, and the remaining values were categorized as *resources*. The second questionnaire, which consisted of 21 items, had an increased number of response categories to enable a wider range of responses, particularly for the affective, cognitive, and reward items.

The structural hypothesis was tested using a multidimensional scaling technique called Smallest Space Analysis (SSA). SSA enables the contents of a construct to be viewed as an entity having a physical expansion in a space. SSA depicts this space in map form and represents the observational items (e.g. questionnaire items representing achievement

components) as points in this space (Elizur, 1994). The relationship between these items, as determined using correlation coefficients, is inversely related to the distances between these points. When the correlation between two items is high, the distance between the points representing them would be relatively small. In contrast, when the correlation between the items is low, the distance between the points would be relatively large. Once the arrangement of the points in the geometric space is defined, the structural hypothesis can be tested by observing whether it is possible to divide the space into regions that reflect the elements of the defined facets. The nearer a point is to the center of the configuration, the stronger its average relationship with other points (Figure 1). Analysis of the results indicated that essentially the same structure was obtained in the two independent sample populations, thus supporting the faceted definition of work values that was originally proposed.

Figure 1. The structures of work values. The Israel sample. 2 Dimensional SSA (coef. of alienation = 0.26)



To test the universality of the facet approach to work values, Elizur, Borg, Hunt, and Beck (1991) performed a follow-up study where they investigated the structure of work values for respondents in different cultural environments. Data were collected from a sample of 2280 managers, employees, and students in eight countries: China, Korea, Taiwan, Germany, United States, Holland, Hungary, and Israel. Interestingly, aside from minor differences in the relative importance of work values amongst the different sample groups, Elizur, *et al.* (1991) found there to be a much broader pattern of structural similarity. The fact that essentially the same structure was observed in the eight independent samples substantiates the faceted definitional framework suggested for work values and supports the hypothesis that the structure of the domain is similar for respondents across various cultures.

Study Aims

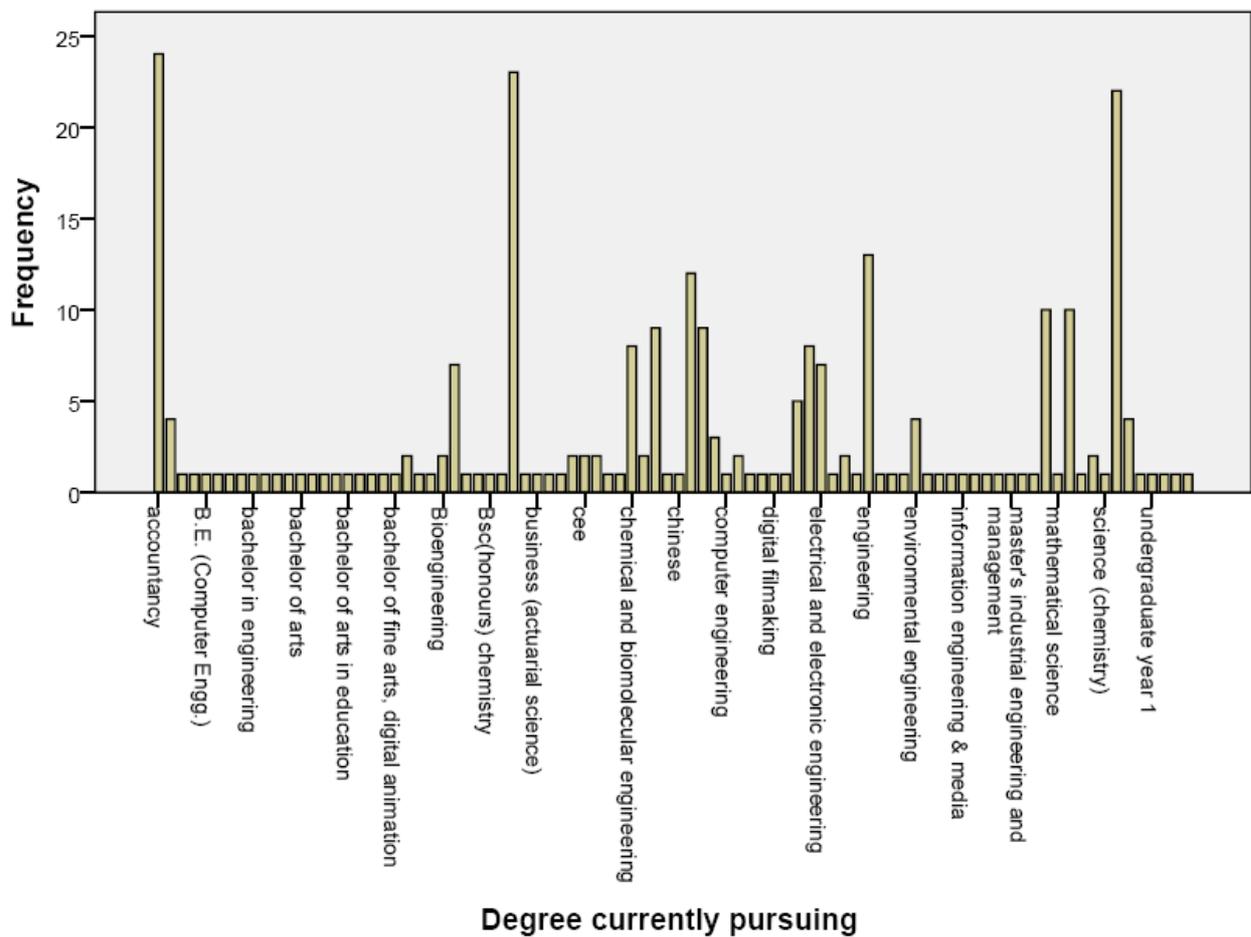
In summary, the aim of the present study is to examine the predictive capacity of work values and the Big Five personality dimensions for entrepreneurial intentions. It is predicted that each of the Big Five factors will be positively associated with entrepreneurial intention; specifically, higher scores on extraversion, agreeableness, conscientiousness, openness to experience, and emotional stability will predict stronger entrepreneurial intentions. It is also predicted that higher scores on the facets of work values will be associated with stronger entrepreneurial intentions.

Method

Sample

In relation to studying entrepreneurial intent as a dependent variable, a number of authors (for example, Baron, 2002; Linan and Chen, 2009; Zhao, *et al.*, 2009) have highlighted the importance of collecting data from a sample that is composed only of individuals who have yet to launch their own venture, such as students. Accordingly, a total of 261 students (153 females and 108 males) at Nanyang Technological University in Singapore voluntarily participated in this study. This study was conducted as part of a collaborative effort between Nanyang Business School (NBS) and the School of Humanities & Social Sciences (HSS) at NTU, which sought to examine the relationship between individual differences and the motivation for leadership versus entrepreneurial intentions. All of the participants were sampled from two psychology courses: Introduction to Psychology (HP101) and Coping with Culture Transition (HP804). Students enrolled in these two courses were required to participate in a total of four studies throughout the semester for course credit. Sign-ups were conducted through Nanyang University's web portal, where students randomly selected which survey session to attend, without any prior knowledge of what the study was about. The average age of the participants was 21.2 years and their ethnic breakdown was as follows: 81.2% Chinese, 3.1% Malay, 8.8% Indian and, of the 6.1% who listed their ethnicity as 'Other', 1.5% were Japanese and 1.1% Swedish. Forty two and a half per cent of the students were from the faculty of engineering, 24.6% from business, 20.2% from arts and social sciences, and 12.7% from sciences (refer to Figure. 2 for the specific breakdown of the study programs).

Figure 2. Choice of Major of the Students in the Sample Population



Procedure

The data collection sessions were conducted and supervised by the author and one other Research Assistant from the Division of Psychology at the NTU. The measures used for this study were grouped together with scales from another study that was being conducted in parallel by the HSS. The entire questionnaire consisted of two parts; the measures pertaining to the present study were all placed in the first section (refer to Appendix A). The questionnaires were administered during 1-hour sessions, and no more than 20 students were present at each session. Attendance was registered as soon as students entered the testing room, and students were requested to sign an informed consent (refer to Appendix B) prior to

receiving the questionnaire. Once participants had signed and returned the informed consent, they were given Part 1 of the study and instructed to notify one of the administrators when they had completed that section. Once students had completed Part 1, they were given a small refreshment while their paper was scanned for missing data. Once questionnaires had been screened for any missing or incomplete sections/questions, participants received Part 2 of the questionnaire. Students were instructed not to speak with each other throughout the duration of the session. Furthermore, the experimenters were not allowed to assist any of the students with interpreting any questions on the questionnaire. All students (with the exception of one) completed both sections of the survey within the allotted 1 hour time frame. At the end of the session, attendance was registered once again and each participant was given a debrief sheet which explained the purpose of the studies and provided contact information for any further questions.

Analysis Techniques

Once the information was collected and entered into a spreadsheet, a statistical software program called SPSS was used to analyze the data. SPSS enables users to carry out a variety of statistical analyses with a series of pull-down menus. A key feature of the software is that it allows one to save frequently used procedures as programs that can be modified and used repeatedly, which is quite time saving when organizing and analyzing data. Those programs also can be modified to run different statistical models, examine different variables, or access different data files. The following are an overview of the analysis techniques utilized in this study.

Pearson Correlation

Correlation analysis is a common statistical measure used to determine whether the values of two variables are associated. Pearson's correlation coefficient (r) is a number between -1 and 1, which signifies the degree to which two variables change correspondingly. A positive correlation (r -value closer to 1) indicates that the two variables in question have a direct relationship whereby increases in one variable are accompanied by increases in the other variable. For example, income and number of working hours are positively correlated. Conversely, a negative correlation (r -value closer to -1) indicates that the two variables have an inverse relationship, such that increases in one variable are accompanied by decreases in the other. For instance, the number of hours spent exercising is inversely correlated with body weight. A correlation coefficient of 1 means that the two variables are perfectly correlated: an increase in one results in an increase of equal magnitude in the other. A correlation coefficient of -1 means that the numbers are perfectly inversely correlated: the increase in one is a negative multiple of the increase in the other. A correlation coefficient of zero indicates that the two variables are unrelated.

When working with correlations, it is necessary to take into account another statistic, the p value. The p value is the probability of obtaining the current result if the correlation coefficient were in fact zero (null hypothesis) and ranges from 0 to 1. In other words, it is the probability that the values obtained for a study's variables are the same and that the observed discrepancy between the values is merely due to chance. If this probability is lower than 5% ($p < 0.05$), the correlation coefficient is considered significant and the null hypothesis is rejected.

It is important to point out that correlation should not be confused with causation. When two variables are correlated, this association can be indirect and not necessarily a

causal relationship. Correlation can only be interpreted in terms of causation if the variables under investigation provide a logical basis for such interpretation.

Factor Analysis

Factor analysis is a statistical method used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors). It begins with a large number of variables and attempts to reduce the interrelationships among the variables to a number of clusters or factors with a minimum loss of information (Hair, Anderson and Tatham, 1995). This is performed by examining the pattern of correlations between the observed measures. Measures that are highly correlated (either positively or negatively) are likely influenced by the same factors, while those that are relatively uncorrelated are likely influenced by different factors.

Factor analysis is usually performed in two stages. Initially, one set of loadings is calculated, which yields theoretical variances (and covariances) that fit the observed ones as closely as possible. These loadings, however, may not agree with prior expectations, or may not be appropriate for interpretation. Therefore, the second stage involves 'rotating' the first loadings in order to obtain another set of loadings that equally capture the essence of all of the data but are more consistent with prior expectations or more easily interpretable.

Principle Axis Factoring (PAF) analyzes only the variance in the items that are shared with other items. Thus, the communality will be less than 1 (they represent the proportion of variance in an item explained by the other items). PAF is generally considered best for exploring the underlying factors for theoretical purposes. For instance, PAF is useful when attempting to identify the number of factors, what those factors are, and the relationship between them (Hair, Anderson and Tatham, 1995).

Cronbach's Alpha

Cronbach's alpha is a commonly used measure of internal consistency. Internal consistency refers to the degree of interrelatedness among items that are purported to assess the same construct. Technically, Cronbach's alpha is not a statistical test; it is a coefficient of reliability (or consistency).

When items are used to form a scale, internal consistency is crucial. The items should all measure the same construct, so they should be moderately to highly correlated with one another. A high alpha value is often used (along with valid arguments and other statistical measures) as evidence that the items measure an underlying (or latent) construct. In order to be considered acceptable, the alpha coefficient needs to be 0.70 or higher. Generally, the alpha value will increase as the correlations between items increases.

Measures

Entrepreneurial Intention Questionnaire (EIQ)

The measure of entrepreneurial intent for this study was obtained using the Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2009). The EIQ was developed by integrating theories from psychology, namely the *Theory of Planned Behavior* (TPB) with theories from the entrepreneurship literature and empirical findings from previous research. The TPB was originally developed by Icek Ajzen in 1985 and has since become one of the most popular and well-validated theories of human social behavior (Ajzen, 1991; Linan and Chen, 2009). A central concept in the TPB is the individual's *intention* to carry out a particular behavior. Intentions are a measure the degree of effort individuals are willing to put forth in order to perform a certain behavior (Ajzen, 1991). In

the context of entrepreneurship, the TPB posits that an individual's entrepreneurial intentions are a good predictor of their entrepreneurial behavior; the stronger the intention, the greater the likelihood that the person will perform that behavior.

Entrepreneurial Intention was assessed using the Entrepreneurial Intent Questionnaire (Linan and Chen, 2009). The EIQ was selected for this study (instead of other measures of entrepreneurial intent, such as those used by Chen, Greene, and Crick [2008] and Zhao, Hills, and Siebert [2005]), because it is a pure intention-based scale. Research by Armitage and Conner (2001) identified three types of intention measures: *desire* ("I want to..."), *self-prediction* ("How likely is it...") and *behavioral intention* ("I intend to..."), but demonstrated that the last, pure intention, measure is associated with optimal behavioral prediction. However, Chen, *et al.* (2008) used a combination of self-prediction and pure-intention items, and Zhao, *et al.* (2005) used only *interest* measures such as "How interested are you in..." (Linan and Chen, 2009). The EIQ is a 6-item scale used to assess entrepreneurial intent with response options range from 1 (Total Disagreement) to 7 (Total Agreement). Sample items include "I am ready to do anything to be an entrepreneur", "I will make every effort to start and run my own business", and "I have a very low intention of ever starting my own business" (reverse scored). The six items map on closely to the conceptualization of the intention construct in the (well-validated) Theory of Planned Behavior (Ajzen, 1991). To test the reliability of the scale, a Cronbach alpha analysis was performed, resulting in an alpha value of 0.90. Since the threshold level is 0.7, the scale may be considered reliable.

Big-Five Personality Dimensions

The Big Five dimensions were measured using Golberg's (1992) 35-item 'Mini Markers' scale.. This scale consists of five 7-item bipolar subscales measuring the traits that comprise each of the Big Five Factors (extraversion, agreeableness, conscientiousness,

emotional stability, and openness to experience). Principal-axis factoring of the 35 items in the data set revealed that several items loaded on an inappropriate factor, or lower than the threshold of 0.3 within their corresponding subscale. As a result, items 4 (“Selfish/Unselfish”) and 6 (“Distrustful/Trustful”) for Agreeableness, and items 3 (“Neglect/Conscientious”) and 7 (“Extravagant/Thrifty”) for Conscientiousness, were removed. To test the reliability of the five subscales, a Cronbach alpha analysis was performed and the results showed that all five subscales exhibited high internal consistency, with alpha values ranging from 0.825 to 0.870 (see Table 2).

Work Values

To measure the various aspects of work values, Dov Elizur’s 24 item Work Values Questionnaire (WVQ) was used, which encompasses many of the key aspects of motivation theories (for example, Maslow’s Hierarchy of Needs; McClelland’s Achievement theory) (Elizur et al., 1991). The scale contains four sub-scales representing different types of work value: Intrinsic-self (e.g., meaningful work; independence in work); Achievement-Influence (e.g., influence in work; job status; achievement in work); Instrumental-Material (for example, pay; convenient hours; job security) and Social-Affective (for example, supervisor is a fair and considerate boss; recognition for doing a good job). Respondents are asked to indicate the extent to which each item is important to them, with response options ranging from 1 (“Very Unimportant”) to 6 (Very Important). Thus, higher scores on each item represent greater perceived importance of the work value. In an international study, Elizur, *et al.* (1991) administered the WVQ and collected data from a total of 2280 respondents in eight countries: U.S.A, China, Korea, Taiwan, Germany, Holland, Hungary, and Israel. Analysis of the results indicated that with the exception of a few minor deviations, the structure of the

eight independent samples was essentially the same. This finding strongly supports the universality of the conceptual framework outlined by work values (Elizur et al., 1991).

Principal-axis factoring was performed on the 24 items in the data set and revealed that a number of the items loaded on inappropriate factors, or lower than the threshold of 0.3 within their corresponding subscale. As a result, items 6 (“Esteem that you are valued as a person”), 16 (“Opportunity to meet people and interact with them”), and 24 (“Work conditions comfortable and clean”) were removed. The analysis was then repeated and the results showed that the items loaded onto four distinct factors; these were classified as *Intrinsic-Self* (9 items), *Achievement-Influential* (5 items), *Instrumental* (4 items), and *Social-Affective* (3 items). The Intrinsic-Self factor included items such as 13 (“Meaningful work”), 9 (“Contribution to society”), and 5 (“Independence in work”). The Achievement-Influential factor included items such as 17 (“Achievement in work”), 15 (“Job status”), and 2 (“Advancement changes for promotion”). The Instrumental factor included items such as 21 (“Pay, the amount of money you receive”), 10 (“Job security, permanent job”), and 1 (“Convenient hours of work”). The Social-Affective factor included items 22 (“Supervisor is a fair and considerate boss”), 19 (“Recognition for doing a good job”), and 3 (“Co-workers, fellow workers who are pleasant and agreeable”). To test the reliability of these four subscales, Cronbachs alpha analyses were performed and the resulting alpha values ranged from 0.60 to 0.82.

Results

Descriptives

The means and standard deviations for all study variables are presented in Table 1. These descriptives indicate that, in general, participants’ entrepreneurial intentions were weak to moderate, with a mean score on the entrepreneurial intent scale of 3.94. With regard to personality, participants generally reported that they were moderately conscientious,

moderately open, moderately emotionally stable and moderately agreeable, but that they were neither extravert nor introvert. The standard deviations indicate that there was little variability around the means with respect to all Big Five factors.

With regard to work values, scores were above the mid-point on all sub-scales, with the highest mean obtaining for Social-Affective, followed by Intrinsic-Self, Instrumental-Material, and Achievement-Influential. The means displayed in Table 1 indicate that the study participants generally attached the highest value to good interpersonal relations with colleagues and superiors (Social-Affective mean = 5.16), followed by independence in work and work tasks that are meaningful (Intrinsic-Self mean = 4.93), and good pay, job security, and convenient working hours (Instrumental-Material mean = 4.81). Participants generally attached the lowest value to being influential in one's work and opportunities for promotion, although the mean score on the relevant sub-scale was again above the mid-point (Achievement-Influential mean = 4.75). The standard deviations (see Table 1) indicate that there was, in general, considerable consensus among participants concerning the importance of the four work values.

The inter-correlations for the study variables are also shown in Table 1. With respect to personality, the results show that two of the Big Five factors are associated with entrepreneurial intent: Specifically, Openness to Experience and Extraversion are positively associated with Entrepreneurial Intent ($r_s = 0.15$ and 0.14 , respectively; both $p_s < .05$). These findings indicate that increases in extraversion and openness to experience are associated with a strengthening of Entrepreneurial Intent. None of the remaining Big Five factors are associated with Entrepreneurial Intent.

With regard to work values, Table 1 shows that the Intrinsic-Self and Achievement-Influential values are positively associated with entrepreneurial intent ($r_s = 0.15$ and 0.20 , respectively). These findings indicate that the more important are people's perceived values

of intrinsic motivation and achievement in work, the stronger are their entrepreneurial intentions. Instrumental and Social-Affective values were not associated with entrepreneurial intent ($r_s = -0.08$ and -0.10 , ns, respectively). Of the 261 students that participated in the study, only 45% (117 subjects) indicated that they had 'ever seriously considered becoming an entrepreneur' (question E07 in the survey), of which 57% were males (versus 43% females).

Table 1. Means, Standard Deviations and Intercorrelations for Entrepreneurial Intent, Personality, and Work Values

Variable	1	2	3	4	5	6	7	8	9	10
Entrepreneurial Intent	1.00									
Conscientiousness	.05	1.00								
Openness	.15*	.32**	1.00							
Emotional Stability	.06	.23	.26	1.00						
Extraversion	.14*	.26**	.48**	.22	1.00					
Agreeableness	.05	.41**	.33**	.31	.25**	1.00				
Intrinsic Achievement-Influence	.15*	.30**	.28**	.06	.26**	.28**	1.00			
Instrumental-Material	.20**	.24**	.17**	-.08	.27**	.12	.58**	1.00		
Social-Affective	-.08	.09	-.02	-.15	.02	-.01	.25**	.30**	1.00	
<i>Mean</i>	3.94	6.38	6.64	6.33	5.77	6.76	4.93	4.75	4.81	5.16
<i>SD</i>	1.31	1.26	0.93	1.15	1.27	1.02	0.54	0.64	0.63	0.57

*** $p < .001$ ** $p < .01$ * $p < .05$

Predictors of Entrepreneurial Intent

In order to determine the overall influence of each construct on entrepreneurial intent, a multiple regression analysis was performed. In order to provide a stringent test of the predictive capacity of work values above and beyond the Big Five, a two-step hierarchical regression analysis was conducted: Each factor from the Big Five entered the equation on the first step, and the four work values entered the equation on the second step. The results of this analysis are shown in Table 2.

Table 2. Hierarchical Regression of Entrepreneurial Intent upon Personality and Work Values

<i>Predictor</i>	<i>Step 1 Beta</i>	<i>Step 2 Beta</i>
Conscientiousness	.00	-.03
Openness	.11	.09
Emotional Stability	.02	.04
Extraversion	.09	.03
Agreeableness	.01	-.01
Intrinsic-Self Value	--	.12
Achievement Value	--	.26*
Instrumental Vale	--	-.07
Social-Affective Value	--	-.25*
R^2	.03	.12***
Model F	1.99	3.88***
R^2 Change	1.49	6.44**

*** $p < .001$ ** $p < .01$ * $p < .05$

The findings in Table 2 show that, on the first step of the equation, none of the Big Five dimensions were significant predictors of entrepreneurial intent, $F(5, 255) = 1.99$, *ns*; however, entering the four work values (Intrinsic Self, Achievement-Influence, Instrumental-Material, and Social-Affective) on the second step of the equation led to a significant increment in the variance explained in entrepreneurial intent of 9% ($F[9, 251] = 3.88$, $p < .001$). The final model explained 12% of the variance explained in entrepreneurial intent,

with the work values of Achievement-Influence and Social-Affective emerging as the only significant predictors (betas = .26 and - .25, respectively; both $ps < .05$). The sign of the beta for Achievement-Influence indicates that as the importance that an individual attaches to being influential in, and achieving at, work increases, their intention to be an entrepreneur also increases; the sign of the beta for Social-Affective indicates that as the importance that an individual attaches to good interpersonal relations with colleagues and superiors increases, their intention to be an entrepreneur decreases.

Discussion

The aim of the present study was to examine the relative predictive capacity of the Big Five personality factors and work values in relation to entrepreneurial intent. While the bivariate correlations showed that extraversion and openness to experience were both positively associated with entrepreneurial intent, none of the Big Five factors were significant predictors of entrepreneurial intent when entered in a hierarchical regression analysis; rather, the intention to become an entrepreneur was solely predicted by two work values, namely Achievement-Influence and Social-Affective. These two variables jointly accounted for 12% of the variance in entrepreneurial intent.

Personality and Entrepreneurial Intent

The present findings relating to the non-significance of the Big Five for entrepreneurial intent are discordant with the findings obtained by Zhao et al. (2009) in their meta-analytic review. These researchers found that all of the Big Five dimensions were significantly associated with the intention to be an entrepreneur, with the highest betas obtaining for Conscientiousness (beta = 0.18, $p < .01$) and Openness to Experience (beta = 0.22, $p < .01$). There are, however, some notable differences between the present study and

the study of Zhao and colleagues that may help to explain these discrepant results: First, the sample size of the two studies varied greatly. Zhao et al.'s (2009) sample size of 15,423 individuals was based on 66 independent samples from a total of 60 studies throughout the period of 1979 to 2006, in comparison to the 261 that were surveyed in the present study. However, the sample upon which the present findings are based were comprised entirely of students, whereas Zhao and colleagues likely based their analysis upon a much broader-based sample, likely comprising diverse groups (albeit their article did not include a breakdown of their sample characteristics). Future research might profitably explore the importance of individual differences for entrepreneurial intent among student versus non-student samples. The second plausible explanation for the differences in findings obtained in the present study and that of Zhao and colleagues concerns the scales employed to measure the Big Five personality factors and entrepreneurial intent. Unfortunately, Zhao et al. (2009) did not explicitly state which measures were utilized in the studies they had referenced for their investigation; however, in light of the fact that their study was a meta-analysis of all of the studies conducted within the field, it is likely that there was considerable heterogeneity on the measure of entrepreneurial intent. Similarly, the way in which personality has been measured in previous studies also varies widely. For example, in some studies, the Conscientiousness dimension has been defined as a measure of an individual's level of responsibility, organization, and planning whereas other studies have assessed conscientiousness in terms of the extent of one's achievement motivation (Roberts, Chernyshenko, Stark & Goldberg, 2005). As a result, a respondent's answer may not have the same interpretation depending on the definition used, which may help to explain the dissimilarity in the *r*-value for the Conscientiousness dimension in the two studies. It would be useful to conduct further meta-analytic studies in this area which include an examination of the potential moderating role played by measurement in the relationship between personality and entrepreneurial intent.

Work Values and Entrepreneurial Intent

With respect to the original research question proposed at the beginning of this study, the results provide evidence that work values do in fact add to the prediction of entrepreneurial intent over personality. In particular, the results indicated that Achievement-Influence (beta = 0.26, $p < .05$) and Social-Affective values (beta = - 0.25, $p < .05$) significantly predicted entrepreneurial intent. These two variables solely, and jointly, accounted for 12% of the variance in entrepreneurial intention. The Achievement-Influence dimension refers to the class of values that embody vocational factors such as the degree of one's influence in the organization and on the outcome of work-related tasks, as well as the level of achievement within one's line of work. It is, perhaps, not surprising that individuals who seek out working environments where their input is valued and who have influence in the decisions of the firm, are drawn to entrepreneurship. Initially, budding entrepreneurs almost entirely shoulder the responsibility for the livelihood of their ventures, often assuming the role of founder and Chief Executive Officer (CEO) right from the onset. The higher level decision making and strategy implementation associated with such roles would not be accessible to others who serve as employees for a corporation. While the risks and failure rates for new startups are quite high, the entrepreneurs who do succeed are rewarded with a great sense of achievement, which may serve as another motivating factor for someone who is contemplating to become an entrepreneur.

The Social-Affective facet of work values was significantly negatively associated with entrepreneurial intention, above and beyond the Big Five personality factors. This finding indicates that a fair and considerate boss, recognition for doing one's job well, and working with colleagues who are pleasant and agreeable have a negative impact upon entrepreneurial intent. One likely explanation for this finding is that people who attach high importance to the social-affective facet of work values attempt to avoid confrontation and

competition with colleagues (instead attaching importance to pleasant and agreeable relationships with co-workers and colleagues); however, entrepreneurial intention and success depend, in large part, upon dominance and competitiveness (Sagie and Elizur, 1999)—elements which are in opposition to the values of Social-Affective individuals. It is also important to note that the social-affective facet was given the highest rating of all work values in the present study (mean = 5.16), demonstrating that the participants in the present study attached more importance to this value than any other work value. This finding, along with the finding that participants generally expressed weak-to-moderate intentions to become entrepreneurs, further helps to explain the significant negative relation observed here between social-affective values and entrepreneurial intent.

A further possible reason for the significant negative relationship obtained here between Social-Affective values and entrepreneurial intent relates to the fact that all participants included in the study were university students. This environment necessitates good interpersonal relationships with others (for example, for group presentations where individual performance depends in large part upon the performance of the group as a whole). Similarly, students have considerable experience of receiving feedback (on their assessed work) and their motivation may much depend upon recognition for their achievements. Sagie, Elizur and Koslowsky (1996) argue that environmental situations influence the importance of work values for entrepreneurial intent and success, such that work values become less important in situations where workers know what is expected of them, and reward contingencies are made explicit (such as the University environment of the student). This may explain why, in the present study, only two of the work values examined significantly impacted upon entrepreneurial intent, and why a considerable amount of the variance remained unexplained. It will be important for further research to systematically

examine the importance of work values within a variety of structured versus unstructured working environments.

Implications of culture and gender on entrepreneurial intent

Perhaps the most important implication of this study is that it lends support for the argument that entrepreneurship is more of a cultural phenomenon and that entrepreneurs may in fact be ‘made’ and not ‘born’. As previously discussed, work values are a product of one’s environment and acquired throughout our stages of development from various influential sources such as family and educational institutions. The Theory of Planned Behavior model holds that shared values within a culture impact upon entrepreneurial intentions through the Social Norm (SN) antecedent. As such, citizens belonging to a society that encourages entrepreneurial behavior (e.g. individualistic nations) would experience a higher degree of social pressure to be entrepreneurial. The converse also holds true; individuals who are part of a culture that is less supportive of entrepreneurial behavior (e.g. collectivist nations) would be less inclined to launch new ventures.

Another interesting finding of this study was that of the 117 students who indicated that they have ‘seriously considered becoming an entrepreneur’ (question E07 in the survey), the majority (57%) were males. In recent years, the relationship between gender differences and entrepreneurial emergence has been investigated by a number of authors (Ahl, 2006; De Bruin, Brush, and Welter, 2006; Gupta, Turban, Wasti, and Sikdar, 2009). The empirical data obtained in these studies have indicated that despite the increase in the numbers of women entrepreneurs in the past decade, the rate of entrepreneurial emergence remains far higher among men. A recent study by Gupta et al. (2009) examined the relationship between gender characterization, in the form of gender stereotypes, and the entrepreneurial intentions of men and women from three countries (United States, India, and Turkey). The results of their

investigation indicated that men and women from all three samples associated entrepreneurship with characteristics that are stereotypically masculine. Furthermore, their analysis revealed that identification with such masculine traits, instead of biological sex, was positively correlated with entrepreneurial intentions. Their findings are in line with those obtained in other studies which have evidenced that business is generally portrayed as a male dominated domain and that the traits required for success (for example, ambition and tenacity) are associated stereotypical masculine qualities. Similarly, entrepreneurship appears to suffer from the same misrepresentation, which is further accentuated by the glorification of predominantly male successful entrepreneurs in the mass media. Gender stereotypes are a by-product of societal values and socialization practices, which are closely linked with personal and work values; for example, as a result of socialization practices, women attach more importance to affective work values (Elizur, 1994). If entrepreneurship is in fact a social phenomenon, it will be important for future research to investigate the role of social barriers that act as deterrents for certain groups of individuals (e.g. minorities, females, etc) in attaining entrepreneurial success.

Towards a Dynamic Model of Entrepreneurial Emergence

The findings from the present study demonstrated that work values accounted for only 12% of the variance in Entrepreneurial Intent. This relatively low variance raises the question of whether there may exist additional antecedents of entrepreneurial intent. To investigate this further, it would be helpful to refer to the leadership literature.

Leadership and entrepreneurship are two concepts that seem intuitively related and thus easily confused with each other. In 2003, Vecchio went as far as to question “the continued treatment of entrepreneurship as a separate area of study that is distinct from other domains (e.g. leadership and interpersonal influence)” (p. 303). In another review, Cogliser

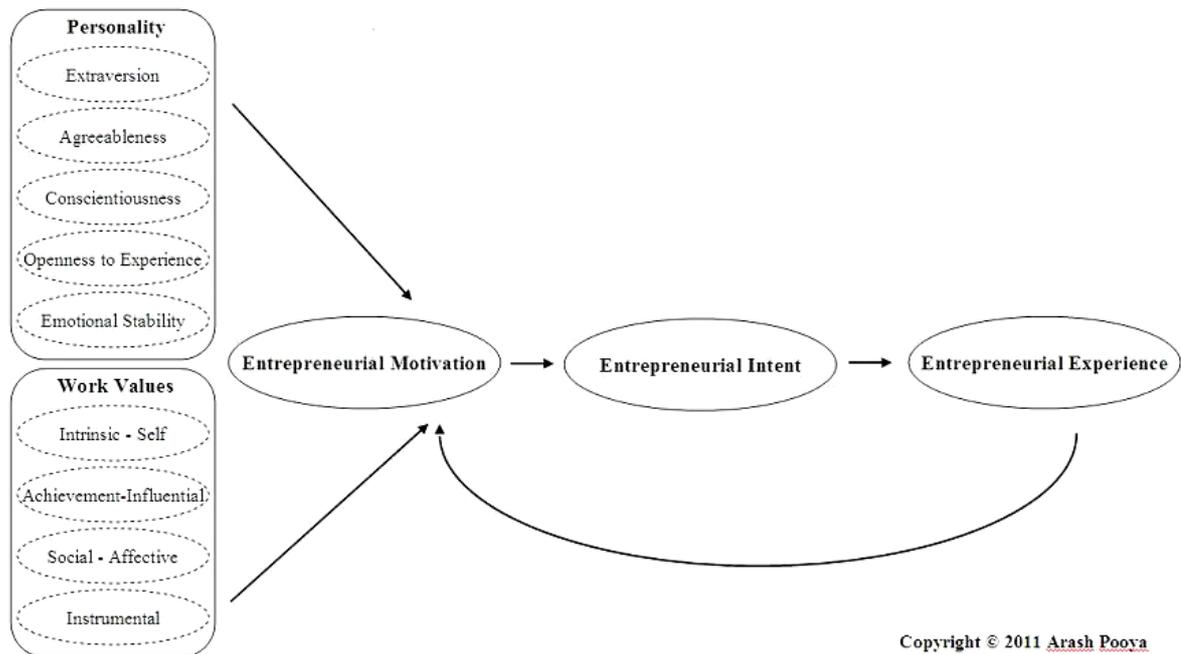
& Brigham (2004) also noted many similar issues in the study of leadership and entrepreneurship, and they suggested that the “path taken by leadership research can inform entrepreneurship and possibly lessen this young field’s growing pains” (p. 771).

Recently in the study of leadership, attempts have been made to go beyond establishing statistical “predictive” relationships between individual differences and leadership to proposing the testing of theories of how and why individual differences (e.g. personality, values, and experience) may predict leadership. For example, Chan and Drasgow (1999) proposed a theoretical framework linking individual differences with leadership criteria such as emergence and effectiveness, mediated via a new construct called the Motivation to Lead (MTL), and with leadership self-efficacy (LSE). Borrowing from leadership research, the study of entrepreneurship can also be enhanced by developing a similar theory that may explain how and why individual differences (e.g. personality and work values) may influence entrepreneurial intent and experience through an intermediary construct, entrepreneurial motivation (EM). Before further discussing this new model, it is important to distinguish between entrepreneurial intent and motivation. As previously defined, entrepreneurial intention (EI) is the “self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future” (Thompson, 2009, pg. 676). Preceding EI is entrepreneurial motivation (EM), which is viewed as the “objectives or goals that entrepreneurs seek to achieve through business ownership” (Robichaud, McGraw, & Roger, 2001, pg. 189). As depicted in Figure 4, this new theory proposes that entrepreneurial emergence is a dynamic cycle, influenced not only by individual differences but entrepreneurial experience as well. One may justly question, ‘How can this model be applied to a budding entrepreneur, one who doesn’t have any actual entrepreneurial experience?’ To avoid ambiguity, further studies must clearly define whether the nature of this experience is direct (e.g. the individual’s personal

experience) or vicarious (e.g. based on the observed experience of other entrepreneurs) or perhaps both.

To illustrate the cyclical nature of this model, we shall assume that the subject is an aspiring entrepreneur who has yet to launch their first venture. The model begins by proposing that individual differences (personality and work values) influence one's entrepreneurial motivation. Drawing on the results of this study and those of others (for example, Linan and Chen, 2009, Zhao et al, 2009), one could hypothesize that the personality and work value domains most associated with EI would also have a similar relationship with EM. One's entrepreneurial motivation levels would then influence the individual's entrepreneurial intent and whether conscious efforts towards launching a new venture would be made. Assuming that the individual has the intent to launch a new business, they will then take the steps required to do so (for example, writing up a business plan, raising seed capital, etc.) The preceding steps leading up to this point can be labeled as Entrepreneurial Emergence. Post-launch, the outcome of the individual's (entrepreneurial) experience would then be the point of interest. There are essentially two scenarios that may unfold. Firstly, the individual successfully reaches a particular milestone with their venture (e.g. reaches x amount of sales within the first 6 months). This positive outcome would reinforce the individual's entrepreneurial motivation, whereby further action would be taken in regards to the venture. On the other hand, if the nature of the experience is negative (e.g. the venture fails to make any sales), this may reduce their entrepreneurial motivation and deter them from pursuing the venture any further or other ventures in the future for that matter.

Figure 4. A theoretical framework for understanding the role of individual differences in entrepreneurial emergence.



Entrepreneurs, like any other individuals, are naturally inclined to constantly process input from their environment and act accordingly. Seldom do the domains in the social sciences adhere to a linear pattern of relationships between their antecedents and, as such, it is unlikely that entrepreneurship is any different. The aforementioned cyclical model provides a more comprehensive approach to the study of entrepreneurial emergence by taking into account individual differences as well as the influence of entrepreneurial experience.

Limitations and Implications for Future Research

The primary limitation of the present study is that the results are limited to the sample population, which was comprised of Singaporean undergraduate students. Singapore, along with other many other countries in central Asia, have a collectivist culture and set of work values, whereas western nations are classified as individualistic (Chan & Drasgow, 2001; Tiessen, 1997). Individualism and collectivism are two variables which together form the

dimensions of a nation's culture. Individualistic cultures, such as the US (ranked first on the Individualism Index) tend to support values and actions which promote independence and competition amongst its individual members (Tiessen, 1997). From a vocational standpoint, individuals in such cultures emphasize their success/achievements in relation to their careers and levels of monetary wealth. In addition, professional relationships in such cultures are viewed as calculative connections that an individual may leverage for their own benefit.

In contrast, individuals in collectivist cultures (for example, Singapore) view themselves as interdependent members of what Tiessen (1997) calls an 'in-group'. This group is comprised of individuals who share common characteristics, such as family ties, race, religion, or nationality, and tend to act according to the best interest of the group (Tiessen, 1997). In stark contrast to individualists, collectivists place great value on unity and harmony within group dynamics, and less value on competition. Such collectivist values are reflected in the present study's finding that the Singaporean participants attached the greatest importance to Social-Affective values. Success is evaluated at the group level, whereby the wealth of the firm as a whole is far more important than that of the individual. Research by Geert Hofstede (1997) on organizational culture found that Singapore ranked 39th out of 41 countries on the individualism scale. Hence, it is important to highlight this fact and how it may have influenced the findings obtained in the present study.

Research on individualist-collectivist nations (Sagie, Elizure & Yamaguchi, 1996) has shown the former to be more open and supportive of entrepreneurial behavior. It is not surprising to find that highly individualistic societies, the United States being the frontrunner, are home to some, if not *the* most successful entrepreneurs in the world (e.g. Steve Jobs, Bill Gates, Mark Zuckerberg, and Pierre Omidyar). As a result, the relationship between work values and entrepreneurship may differ in various cultural environments. Future research

might compare the importance of different work values among individualistic versus collectivist samples.

Finally, it should be noted that the findings from the present study were based solely upon data obtained from Singaporean students from a diverse range of disciplines. Sagie and Elizur (1999) found significant differences in the entrepreneurial orientations of students from differing disciplines, with small business students scoring higher than their business economics colleagues on entrepreneurial intent and achievement-influence orientation (the latter being a strong predictor of entrepreneurial intent). The sample size of the present study precluded a meaningful cross-discipline examination of the importance of work values for entrepreneurial intent; thus, this also represents an area that is worthy of examination in further research.

Conclusion

In the current post-recession era, entrepreneurship serves as an important stimulus for the global economic recovery, perhaps more so than any other period in the past half century. Therefore, a clearer understanding of the factors that influence entrepreneurial emergence amongst populations would serve to benefit aspiring entrepreneurs and educators, which may in turn increase the success rates of newly launched ventures. The results of this study attempted to contribute to this body of knowledge and provided evidence to support the notion that entrepreneurial emergence is a cultural phenomenon, more so than an inheritable one. However, further research is required to validate these findings among different cultures and sample populations.

References

- Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory & Practice*, 30: 595–622.
- Ajzen, Icek. 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*. 50:179-211.
- Armitage, C.J. & Conner, M. (2001). Efficacy of the Theory of Planned Behavior: A Meta-Analytic review. *British Journal of Social Psychology*, 40, 471–499.
- Baron, Robert A. 2002. OB and Entrepreneurship: The reciprocal benefits of closer conceptual links. *Research in Organizational Behavior*. (24), 225-269.
- Bird, B. (1988). Implementing entrepreneurial ideas - The case for intention. *Academy of Management Review*, 13(3), 442–453.
- Brown, D. (2002). The role of work and cultural values in occupational choice, satisfaction, and success: A theoretical statement. *Journal of Counseling and Development*, 80, 48–55.
- Carland, J.W., Hoy, F., & Carland, J.A. 1988. “Who is an entrepreneur?” is a question worth asking. *Entrepreneurship Theory and Practice*, 33-39.
- Chan, K., & Drasgow, F. (2001). Toward a theory of individual differences and leadership: Understanding the motivation to lead. *Journal of Applied Psychology*, 86(3), 481-498.
- Chandler, G.N. & Lyon, D.W. (2001). Issues or Research Design and Construct Measurement in Entrepreneurship Research: The Past Decade. *Entrepreneurship Theory and Practice*, 101-113.
- Chen, C.C., Greene, P.G., & Crick, A. (1998). Does Entrepreneurial Self-efficacy Distinguish Entrepreneurs From Managers? *Journal of Business Venturing*, 13(4), 295–316.
- Chrisman, J.J. (1999). The influence of outsider-generated knowledge resources on venture creation. *Journal of Management*, 42-58.
- Chu, K.H. (2008). A Factorial Validation of Work Value Structure: Second-order Confirmatory Factor Analysis and its Implications. *Tourism Management*, 29, 320-330.
- Collins, C.J., Hanges, P., & Locke, E.A. (2004). The Relationship of Need for Achievement and Entrepreneurship: a Meta-Analysis. *Human Performance*, 17: 95-117.
- Cogliser, C.C., & Brigham, K.H. (2004). The intersection of leadership and entrepreneurship: Mutual lessons to be learned. *The Leadership Quarterly*, 15, 771-799.
- Crook, T. R., Shook, C. L., Morris, M. L., & Madden, T. M. (2009). Are we there yet? An

Assessment of Research Design and Construct Measurement Practices in Entrepreneurship Research. *Organizational Research Methods*, 12(1): 69 – 112.

- Daft, R.L. (2008). *The Leadership Experience*. Mason: South-Western
- Davidsson, P. Low, Murray B., Wright, Mike. 2001. Low and MacMillan Ten Years On: Achievements and Future Directions for Entrepreneurship Research. *Entrepreneurship Theory and Practice*, 5-15.
- Dawis, R.V. (1991). Vocational Interests, Values and Preferences. *Handbook of Industrial and Organizational Psychology*. Vol. 2, 833-872.
- De Bruin, A., Brush, C.G., & Welter, F. (2006). Introduction to the special issue: Towards building cumulative knowledge on women's entrepreneurship. *Entrepreneurship Theory & Practice*, 30: 585– 592.
- Elizur, D. (1984). Facets of Work Values: A Structural Analysis of Work Outcomes. *Journal of Applied Psychology*, Vol. 69, No. 3, 379-389.
- Elizur, D., Borg, I., Hunt, R., & Beck, I.M. (1991). The Structure of Work Values: a Cross Cultural Comparison. *Journal of Organizational Behavior*, Vol. 12, No. 1, 21-38.
- Erikson, T. (1999). A study of entrepreneurial career choices among MBAs - The extended Bird model. *Journal of Enterprising Culture*, 7(1), 1–17.
- Fayolle, A., Gailly, B., & Lassas-Clerc, N. (2006). Assessing the impact of entrepreneurship education programmes: A new methodology. *Journal of European Industrial Training*, 30(9), 701–720.
- Feather, N.T. (1990). The Effects of Unemployment on Work Values and Motivation. *Work Motivation*, 201-229.
- Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. New York: Addison-Wesley.
- Francis, D.H. & Banning, K. (2001). Who wants to be an entrepreneur? *Journal of Academy of Business Education*, 1(2), 5-11.
- Frank, N. & Luthje, C. (2004). Entrepreneurial intentions of business students – a benchmarking study. *International Journal of Innovation and Technology Management*, 1(3), 269-288.
- Fritzche D., J.(1995). Personal Values: Potential Keys to Ethical Decision Making. *Journal of Business Ethics*, 14(11), 909–922.
- Furman, Adrian. (2005). *The Psychology of behaviour at work: the individual in the organization*. New York: Routledge Press Inc.
- Gartner, W. B. 1988. Who is an entrepreneur? is the wrong question. *Entrepreneurship Theory and Practice*, 13(4): 47-68.

- Goldberg, L.R. (1992). The development of markers for the Big Five factor structure. *Psychological Assessment*, 4, 26-42.
- Gupta, V.K., Turban, D.B., Wasti, S.A., & Sikdar, A. (2009). The Roles of Stereotypes in Perceptions of Entrepreneurs and Intentions to Become an Entrepreneur. *Entrepreneurship Theory and Practice*, 33: 397-417.
- Hair, J.E. Jr. Anderson, R.E., & Tatham, R.L. 1995. *Multivariate Data Analysis*. 4th Edition New York, NY: MacMillan
- Hemingway, C.A. (2005). Personal Values as a Catalyst for Corporate Social Entrepreneurship. *Journal of Business Ethics*, 60, 233–249.
- Hmieleski, K.M. & Corbett, A.C. (2006). Proclivity for improvisation as a predictor of entrepreneurial intentions. *Journal of Small Business Management*, 45-63.
- Hofstede, G. (1983). The Cultural Relativity of the Quality of Life Concept. *Academy of Management Review*, 389-398.
- Hofstede, G. (1997). *Cultures and Organizations: Software of the Mind*. New York: McGraw Hill.
- Holland, J.L. (1997). *Making Vocational Choices*. Odessa, Florida: Psychological Assessment Resources.
- Hunt, J. G., & Dodge, G. E. (2000). Leadership deja vu all over again. *The Leadership Quarterly*, 11(4), 435–458.
- Jenkins, M. & Johnson, G. (1997). Entrepreneurial intentions and outcomes: a comparative causal mapping study. *Journal of Management Studies*, 895-920.
- Kanfer, R. (1990). Motivation theory and industrial and organizational psychology. In M.D. Dunnette & L.M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., vol. 1, pp. 75-170). Palo Alto, CA: Consulting Psychologists Press.
- Keller, L. M., Bouchard, T. J. Jr., Arvey, R. D., Segal, N. L. and Dawis, R. V. (1992). Work values: Genetic and environmental influences. *Journal of Applied Psychology*, 77, 79-88.
- Kickul, J. & Zaper, J.A. (2000). Untying the knot: Do personal and organizational determinants influence entrepreneurial intentions? *Journal of Small Business and Entrepreneurship*, 57–77.
- Korunka, C., Frank, H., Lueger, M., & Mugler, J. (2003). The Entrepreneurial personality in the context of resources, environment, and the startup process – a configurational approach. *Entrepreneurship Theory and Practice*, 23-42.
- Kristof-Brown, A.L., Zimmerman, R.D., & Johnson, E.D. (2005). Consequences of

- Individuals' Fit at Work: a Meta-analysis of Person-job, Person-group, and Person-supervisor Fit. *Personnel Psychology*, 58: 281-342.
- Krueger, N.F., Reilly, M.D., & Carsrud, A.L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15, 411–432.
- Liñán, F. & Chen, Y.W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, 33(3), 593-617.
- Lindeman, M. & Verkasalo, M. (2005). Measuring values with the short Schwartz's value Survey. *Journal of Personality Assessment*. *Journal of Personality Assessment*, 85, 170-178.
- Locke, E.A. (2000). *The Prime Movers: Traits of Great Wealth Creators*. New York: AMACOM.
- Low, M.B., & MacMillan, I.C. (1988). Entrepreneurship: Past research and future challenges. *Journal of Management*, 14, 139-161.
- McGee, J.E., Peterson, M., Mueller, S.L., & Sequeira J.M. (2009). Entrepreneurial self-efficacy: Refining the measure. *Entrepreneurship Theory & Practice*, 33(4), 965-988.
- Mueller, S. L., & Thomas, A. S. (2001). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing*, 15, 51-76
- Mueller, P. (2006). Entrepreneurship in the region: breeding ground for nascent entrepreneurs? *Small Business Economics*, 41-58.
- Mumford, M.D., Schultz, R.A., & Osburn, H.K. (2002). Leading Creative People: Orchestrating Expertise and Relationships. *The Leadership*, 6.
- Peterman, N.E. & Kennedy, J. (2003). Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship Theory and Practice*, 28(2), 129–144.
- Roberts, B.W., Chernyshenko, O., Stark, S., & Goldberg, L. 2005. The structure of conscientiousness: an empirical investigation based on seven major personality questionnaires. *Personality Psychology*, 58: 103-139.
- Rochichaud, Y., McGraw, E., & Roger, A. 2001. Toward the Development of a Instrument for Entrepreneurial Motivation. *Journal of Developmental Entrepreneurship*. (6)2: 189-201.
- Roe, R.A., & Ester, P. (1999). Values and Work: Empirical Findings and Theoretical Perspective. *Applied Psychology: an International Review*, 48(1), 1-21.
- Rokeach, M. (1973). *The Nature of Human Values*. New York: The Free Press.
- Rotfoss, B. & Kolvereid, L. (2005). Aspiring, nascent, and fledging entrepreneurs: an

- investigation of the business startup process. *Entrepreneurship and Regional Development*, 109-127.
- Sagie, A., Elizur, D. and Yamauchi, H. (1996). The structure and strength of achievement motivation: A cross cultural comparison. *Journal of Organizational Behavior*, 17, 431-444.
- Schwartz, S.H., & Bilsky, W. (1987). Toward a psychological structure of human values. *Journal of Personality and Social Psychology*, 50, 550 – 562.
- Schwartz, S.H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. *Advances in Experimental Social Psychology*, 1-65.
- Schumpeter, J.A. (1942). *Capitalism, socialism, and democracy*. New York: Harper & Brothers.
- Schumpeter, J. (1947). The Creative Response in Economic History. *Journal of Economic History*, 7: 149-159.
- Stewart, W.H., & Roth, P.L. (2001). Risk Propensity Differences Between Entrepreneurs and Managers: a Meta-analysis. *Journal of Applied Psychology*, 86: 145-153.
- Tiessen, J.H. (1997). Individualism, Collectivism, and Entrepreneurship: a Framework for International Comparative Research. *Journal of Business Venturing*, 12, 367-384.
- Thompson, E. R. (2009). Individual entrepreneurial intent: construct clarification and development of an internationally reliable metric. *Entrepreneurship: Theory and Practice*, 33(3), 669-649.
- U.S. Small Business Administration (2007). *The Small Business Economy for Data Year 2006*. Washington, D.C.: United States Government Printing Office.
- Vecchio, R. P. (2003). Entrepreneurship and leadership: Common trends and common threads. *Human Resource Management Review*, 13(2), 303–328.
- Zhao, H., Hills, G.E., & Siebert, S.E. (2005). The Mediating Role of Self-efficacy in the Development of Entrepreneurial Intentions. *Journal of Applied Psychology*, 90(6), 1265- 1272.
- Zhao, H. & Seibert, S.E. (2006). The big five personality dimensions and entrepreneurial status: A meta-analytical review. *Journal of Personality and Social Psychology*, 91(2), 259–271.
- Zhao, H., Seibert, S.E., & Lumpkin, G.T. 2009. The Relationship of Personality to Entrepreneurial Intentions and Performance: A Meta-Analytic Review. *Journal of Management*.

APPENDIX A: Scales/Measures

PART 1 OF STUDY

Participant no: _____

Date: _____

Section B. What best describes you?

Instructions: Please use this list of common human traits to describe yourself as accurately as possible. Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly your same age. Please circle the number how accurately the trait describes.

	Very	Moderately	Neither	Moderately	Very	
Introversion-Extroversion						
introverted	1	2	3	4	5	6 7 8 9 extroverted
unenergetic	1	2	3	4	5	6 7 8 9 energetic
silent	1	2	3	4	5	6 7 8 9 talkative
timid	1	2	3	4	5	6 7 8 9 bold
inactive	1	2	3	4	5	6 7 8 9 active
unassertive	1	2	3	4	5	6 7 8 9 assertive
unadventurous	1	2	3	4	5	6 7 8 9 adventurous

	Very	Moderately	Neither	Moderately	Very	
Pleasantness or Agreeableness						
cold	1	2	3	4	5	6 7 8 9 warm
unkind	1	2	3	4	5	6 7 8 9 kind
uncooperative	1	2	3	4	5	6 7 8 9 cooperative
selfish	1	2	3	4	5	6 7 8 9 unselfish
disagreeable	1	2	3	4	5	6 7 8 9 agreeable
distrustful	1	2	3	4	5	6 7 8 9 trustful
stingy	1	2	3	4	5	6 7 8 9 generous

	Very	Moderately	Neither	Moderately	Very	
Conscientiousness or Dependability						
disorganized	1	2	3	4	5	6 7 8 9 organized
irresponsible	1	2	3	4	5	6 7 8 9 responsible
neglect	1	2	3	4	5	6 7 8 9 conscientious
impractical	1	2	3	4	5	6 7 8 9 practical
careless	1	2	3	4	5	6 7 8 9 thorough
lazy	1	2	3	4	5	6 7 8 9 hardworking
extravagant	1	2	3	4	5	6 7 8 9 thrifty

	Very	Moderately	Neither	Moderately	Very	
Emotional Stability						
angry	1	2	3	4	5	6 7 8 9 calm
tense	1	2	3	4	5	6 7 8 9 relaxed
nervous	1	2	3	4	5	6 7 8 9 at ease
envious	1	2	3	4	5	6 7 8 9 not envious
unstable	1	2	3	4	5	6 7 8 9 stable
discontented	1	2	3	4	5	6 7 8 9 contented
emotional	1	2	3	4	5	6 7 8 9 unemotional

	Very	Moderately	Neither	Moderately	Very	
Intellect or Sophistication						
unintelligent	1	2	3	4	5	6 7 8 9 intelligent
unanalytical	1	2	3	4	5	6 7 8 9 analytical
unreflective	1	2	3	4	5	6 7 8 9 reflective
uninquisitive	1	2	3	4	5	6 7 8 9 curious
unimaginative	1	2	3	4	5	6 7 8 9 imaginative
uncreative	1	2	3	4	5	6 7 8 9 creative
unsophisticated	1	2	3	4	5	6 7 8 9 sophisticated

Section C. How well do the following statements describe how you feel?

Instructions: Imagine a typical work or school situation where you are working in a group or team, and the question is raised if someone should be appointed as a group leader. Assume for now that everyone in the group has roughly the same level of training, knowledge and experience on the job. Please read each statement carefully and choose the one answer that best describes your agreement or disagreement using the scale below. There are no right or wrong answers. Please answer honestly and frankly. Indicate your answer on the right of each statement.

Scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

1	I am the type of person who is not interested to lead others.	1	2	3	4	5
2	I am only interested to lead a group if there are clear advantages for me.	1	2	3	4	5
3	I feel that I have a duty to lead others if I am asked.	1	2	3	4	5
4	Most of the time, I prefer being a leader than a follower when working in a group.	1	2	3	4	5
5	I will never agree to lead if I cannot see any benefits from accepting that role.	1	2	3	4	5
6	I agree to lead whenever I am asked or nominated by the other members.	1	2	3	4	5
7	I am definitely not a leader by nature.	1	2	3	4	5
8	I would only agree to be a group leader if I know I can benefit from that role.	1	2	3	4	5
9	I was taught in the value of leading others.	1	2	3	4	5
10	I am the type of person who likes to be in charge of others.	1	2	3	4	5
11	I would agree to lead others even if there are no special rewards or benefits with that role.	1	2	3	4	5
12	It is appropriate for people to accept leadership roles or positions when they are asked.	1	2	3	4	5
13	I believe I can contribute more to a group if I am a follower rather than a leader.	1	2	3	4	5
14	I would want to know what's in it for me if I am going to agree to lead a group.	1	2	3	4	5
15	I have been taught that I should always volunteer to lead others if I can.	1	2	3	4	5

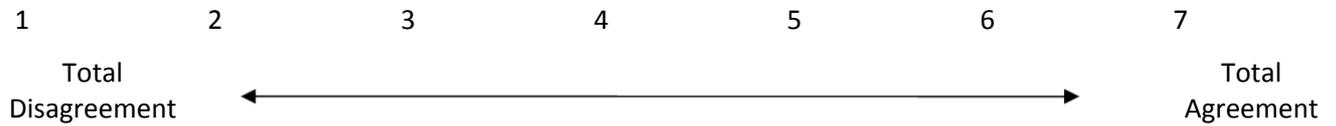
Scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

16	I usually want to be the leader in the groups that I work in.	1	2	3	4	5
17	I never expect to get more privileges if I agree to lead a group.	1	2	3	4	5
18	It is not right to decline leadership roles.	1	2	3	4	5
19	I am the type who would actively support a leader but prefers not to be appointed as leader.	1	2	3	4	5
20	If I agree to lead a group I would never expect any advantages or special benefits.	1	2	3	4	5
21	It is an honor and privilege to be asked to lead.	1	2	3	4	5
22	I have a tendency to take charge in most groups or teams that I work in.	1	2	3	4	5
23	I have more of my own problems to worry about than to be concerned about the rest of the group.	1	2	3	4	5
24	People should volunteer to lead rather than wait for others to ask or vote for them.	1	2	3	4	5
25	I am seldom reluctant to be the leader of a group.	1	2	3	4	5
26	Leading others is a waste of one's personal time and effort.	1	2	3	4	5
27	I would never agree to lead just because others voted for me.	1	2	3	4	5

Section D. Entrepreneurship or “starting/doing business”

Instructions: In the questionnaire below, some statements are positive while others are negative. For each statement, you are asked to indicate your level of agreement with it, (1) representing total disagreement, and (7) representing total agreement. Please respond to the items by marking what you consider to be the appropriate answer. Choose **only one answer** to each statement.



Instruction: Indicate your level of agreement with the following statements about **Entrepreneurial Activity** from 1 (total disagreement) to 7 (total agreement).

D01.	Starting a firm and keeping it viable would be easy for me	1	2	3	4	5	6	7
D02.	A career as an entrepreneur is totally unattractive to me	1	2	3	4	5	6	7
D03.	My friends would approve of my decision to start a business	1	2	3	4	5	6	7
D04.	I am ready to do anything to be an entrepreneur	1	2	3	4	5	6	7
D05.	I believe I would be completely unable to start a business	1	2	3	4	5	6	7
D06.	I will make every effort to start and run my own business	1	2	3	4	5	6	7
D07.	I am able to control the creation process of a new business	1	2	3	4	5	6	7
D08.	My immediate family would approve of my decision to start a business	1	2	3	4	5	6	7
D09.	I have serious doubts about ever starting my own business	1	2	3	4	5	6	7
D10.	If I had the opportunity and resources, I would love to start a business	1	2	3	4	5	6	7
D11.	My colleagues would approve of my decision to start a business	1	2	3	4	5	6	7
D12.	Amongst various options, I would rather be anything but an entrepreneur	1	2	3	4	5	6	7
D13.	I am determined to create a business venture in the future	1	2	3	4	5	6	7
D14.	If I tried to start a business, I would have a high chance of being successful	1	2	3	4	5	6	7
D15.	Being an entrepreneur would give me great satisfaction	1	2	3	4	5	6	7
D16.	It would be very difficult for me to develop a business idea	1	2	3	4	5	6	7
D17.	My professional goal is to be an entrepreneur	1	2	3	4	5	6	7
D18.	Being an entrepreneur implies more advantages than disadvantages to me	1	2	3	4	5	6	7
D19.	I have a very low intention of ever starting a business	1	2	3	4	5	6	7
D20.	I know all about the practical details needed to start a business	1	2	3	4	5	6	7

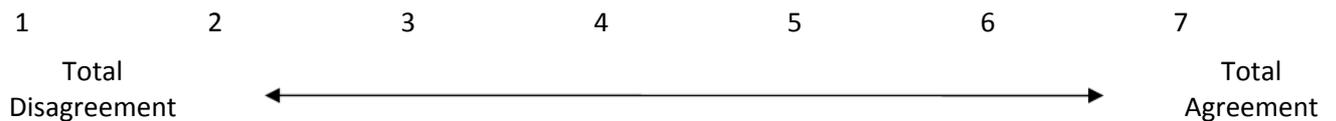
Instructions: Considering all advantages and disadvantages (economic, personal, social recognition, job stability, etc.), indicate your level of **attraction towards** each of the **following work options** from 1 (minimum attraction) to 7 (maximum attraction).



D21. Employee 1 2 3 4 5 6 7

D22. Entrepreneur 1 2 3 4 5 6 7

Instructions: Indicate your level of agreement with the following sentences about the **values society puts on entrepreneurship** from 1 (total disagreement) to 7 (total agreement).



D23. My immediate family values entrepreneurial activity above other activities and careers 1 2 3 4 5 6 7

D25. The culture in my country is highly favourable towards entrepreneurial activity 1 2 3 4 5 6 7

D25. The entrepreneur's role in the economy is generally **undervalued** in my country 1 2 3 4 5 6 7

D26. My friends value entrepreneurial activity above other activities and careers 1 2 3 4 5 6 7

D27. Most people in my country consider it **unacceptable** to be an entrepreneur 1 2 3 4 5 6 7

D28. In my country, entrepreneurial activity is considered to be worthwhile, despite the risks 1 2 3 4 5 6 7

D29. My colleagues value entrepreneurial activity above other activities and careers 1 2 3 4 5 6 7

D30. It is commonly thought in my country that entrepreneurs **take advantage** of others 1 2 3 4 5 6 7

Section F. What is Important to You (in your life)?

Instructions: Rate the importance of each of the following as life-guiding principles (circle one number for each) using this scale:

Opposed to my principles	Not important			Important			Of supreme importance
-1	0	1	2	3	4	5	

F1. **Power** -1 0 1 2 3 4 5
 - social power, authority, wealth

F2. **Achievement** -1 0 1 2 3 4 5
 - success, capability, ambition, influence on people and events

F3. **Hedonism** -1 0 1 2 3 4 5
 - gratification of desires, enjoyment in life, self-indulgence

F4. **Stimulation** -1 0 1 2 3 4 5
 - daring, a varied and challenging life, an exciting life

F5. **Self-direction** -1 0 1 2 3 4 5
 - creativity, freedom, curiosity, independence, choosing one's own goals

F6. **Universalism** -1 0 1 2 3 4 5
 - broadmindedness, beauty of nature and arts, social justice, a world at peace,
 - equality, wisdom, unity with nature, environmental protection

F7. **Benevolence** -1 0 1 2 3 4 5
 - helpfulness, honesty, forgiveness, loyalty, responsibility

F8. **Tradition** -1 0 1 2 3 4 5
 - respect for tradition, humbleness, accepting one's position in life,
 - devotion, modesty

F9. **Conformity** -1 0 1 2 3 4 5
 - obedience, honouring parents and elders, self-discipline, politeness

F10. **Security** -1 0 1 2 3 4 5

- national security, family security, social order, cleanliness,
- reciprocation of favours

Section G. What is Important (for You) at Work

Instructions: Please indicate for each of the following items how important it is to you to feel well and be content with your future life at work (e.g., beyond your University studies). Please answer the questions by choosing one of the following possible answers:

1	2	3	4	5	6
Very unimportant	Unimportant	Somewhat unimportant	Somewhat important	Important	Very Important

G1. Convenient hours of work	1	2	3	4	5	6
G2. Advancement, changes for promotion	1	2	3	4	5	6
G3. Co-workers, fellow workers who are pleasant and agreeable	1	2	3	4	5	6
G4. Benefits, vacation, sick leave, pension, insurance, etc	1	2	3	4	5	6
G5. Independence in work	1	2	3	4	5	6
G6. Esteem, that you are valued as a person	1	2	3	4	5	6
G7. Company, to be employed by a company for which you are proud to work	1	2	3	4	5	6
G8. Influence in the organization	1	2	3	4	5	6
G9. Contribution to society	1	2	3	4	5	6
G10. Job security, permanent job	1	2	3	4	5	6
G11. Feedback concerning the results of your work	1	2	3	4	5	6
G12. Opportunity for personal growth	1	2	3	4	5	6
G13. Meaningful work	1	2	3	4	5	6
G14. Responsibility	1	2	3	4	5	6
G15. Job status	1	2	3	4	5	6
G16. Opportunity to meet people and interact with them	1	2	3	4	5	6
G17. Achievement in work	1	2	3	4	5	6
G18. Job interest, to do work which is interesting to you	1	2	3	4	5	6
G19. Recognition for doing a good job	1	2	3	4	5	6
G20. Use of ability and knowledge in your work	1	2	3	4	5	6
G21. Pay, the amount of money you receive	1	2	3	4	5	6

G22. Supervisor, a fair and considerate boss	1	2	3	4	5	6
G23. Influence in work	1	2	3	4	5	6
G24. Work conditions, comfortable and clean	1	2	3	4	5	6

Section H. How confident are you in these abilities...

Instructions: Please use the scale below and rate how confident you are in the following aspects of leadership. You may use your past leadership experience to guide your response.

1	2	3	4	5	6	7
Not at all confident			Somewhat confident			Extremely confident

H01. Planning ability	1	2	3	4	5	6	7
H02. Setting direction	1	2	3	4	5	6	7
H03. Delegating and assigning tasks	1	2	3	4	5	6	7
H04. Coordinating tasks	1	2	3	4	5	6	7
H05. Ability to communicate well	1	2	3	4	5	6	7
H06. Leading by example	1	2	3	4	5	6	7
H07. Ability to motivate others	1	2	3	4	5	6	7
H08. Building team spirit	1	2	3	4	5	6	7
H09. Using rewards and punishments	1	2	3	4	5	6	7
H10. Confidence to lead a team	1	2	3	4	5	6	7
H11. Learning new skills needed to complete tasks	1	2	3	4	5	6	7
H12. Ability to deal with stress	1	2	3	4	5	6	7
H13. Ability to deal with unpredictable situations	1	2	3	4	5	6	7

Thank you for completing Part 1.

Please notify the experimenter for further instructions.

PART 2 OF STUDY

Participant no*: _____

Date: _____

***same number as "Part 1".**

Section I. Past Leadership Experience Questionnaire

Instruction: We would like to know about your past classroom and school leadership experiences. Specifically, we would like to know which CCAs (co-curricular activities) and other similar activities you have participated in and whether you have held any leadership-related positions. Please fill out the following sections about your Primary School, Secondary School, Junior College (JC)/Centralized Institute (CI)/Polytechnic, National Service (NS), and University leadership experiences.

Leave a section blank and move on to the next set of questions if you do not have an experience in a particular category.

Primary School

i1. How many years were you a School Prefect? _____ (Write number from 0-6 years)

i2. How many years were you a Class Monitor? _____ (Write number from 0-6 years)

Secondary School

i3. How many years were you a Class Chairman/Monitor? _____ (Write number from 0-5 years)

i4. How many years were you a Class Treasurer/Secretary? _____ (Write number from 0-5 years)

i5. How many years were you a Subject Representative? _____ (Write number from 0-5 years)

i6a. School Level Involvement (E.g. Student Council, House Committee, Prefect)

CCA name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i6b. Uniformed Groups (e.g. NPCC)

CCA name	Highest Rank Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i6c. Sports Related Clubs (E.g. Soccer)

CCA name	Highest Rank Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i6d. Cultural based/Performing Arts Clubs (E.g. Chinese Society, Symphonic Band)

CCA name	Highest Rank Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i6e. Community Based/Religious Clubs (E.g. Environment Club, Catholic Club)

CCA name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i6f. Other Clubs and Societies

CCA name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

Junior College (JC)/Centralized Institute (CI)/Polytechnic

i7. How many years were you a Class Representative? _____ (Write number from 0-3 years)

i8. How many years were you a Class Treasurer/Secretary? _____ (Write number from 0-3 years)

i9. How many years were you a Subject Representative? _____ (Write number from 0-3 years)

i10. Were you a Team Leader for a classroom based project? Circle: No / Yes

11a. School Level Involvement (E.g. Student Council, House Committee, Prefect)

CCA Name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i11b. Uniformed Groups (e.g. NPCC)

CCA name	Highest Rank Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i11c. Sports Related Clubs (E.g. Soccer)

CCA name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i11d. Cultural based/Performing Arts Clubs (E.g. Chinese Society, Symphonic Band)

CCA name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i11e. Community Based/Religious Clubs (E.g. Environment Club, Catholic Club)

CCA name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i11f. Other Clubs and Societies

CCA name	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

National Service (skip Q12 to Q14 if you are a female)

i12. Please write your highest rank attained during your National Service: _____

i13. How long did you hold a command position? (write "0" if not applicable) _____ months

i14. How many men were directly under your supervision? (None/ _____ men)

University

i15. Are/were you a Team Leader for a course project in NTU? Circle: No / Yes

i16a. University Level Clubs

(E.g. Student Union, School Club (E.g. EEE Club), Hall/Junior Common Room Committee)

CCA / Committee	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i16b. Sports Related Clubs (E.g. Sports Club, Soccer, Outdoor Adventure Club)

CCA / Committee	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i16c. Cultural Based/Performing Arts Clubs (E.g. Cultural Activities Club, Chinese Society)

CCA / Committee	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i16d. Community Based/Religious Clubs (E.g. Welfare Services Club, Earthlink, Campus Crusade)

CCA / Committee	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i16e. Other Clubs and Societies

CCA / Committee	Highest Appointment/ Position Held	How much does this role contribute to your development to be a leader?			
		Not at all	Very little	Moderate	Very much
		Not at all	Very little	Moderate	Very much

i17. Write down your **CCA Points** for each academic year (including 09/10) awarded by Students Affairs Office (SAO) under the Hall Allocation Scheme (HAO). Indicate N/A if you have not yet been allocated points for that year.

Year 1	Year 2	Year 3	Year 4

i18. Did you stay in Hall for each of your academic years? Indicate Yes or No for the years you have attended NTU so far. Indicate N/A if you have not yet attended the year.

Year 1	Year 2	Year 3	Year 4

i19. Looking at your work and school life during different periods of your life, how would you rate the **amount of leadership experience** you had as compared to your peers (i.e., people of the same batch as you)? Circle your response.

	None	Very Little	Average	Above Average	A lot
Primary School	1	2	3	4	5
Secondary School	1	2	3	4	5
Junior College/Centralized Institute/Polytechnic	1	2	3	4	5
National Service (skip if not applicable)	1	2	3	4	5

University	1	2	3	4	5
------------	---	---	---	---	---

Section J. What best describes you?

Instructions: This section of the questionnaire asks you to respond to a series of statements describing how you typically think, feel, or act. It is very important that you respond to the statements honestly.

Read each statement carefully and decide the extent to which you agree or disagree.

Work at a fairly rapid pace.

	Strongly disagree	Disagree	Agree	Strongly Agree
1 I rarely tell others what to do.	1	2	3	4
2 I am usually not very quick in my thinking, but I have strengths in other areas.	1	2	3	4
3 If I found money lying around, I would try to figure out to whom it belongs or I would turn it in to the authorities.	1	2	3	4
4 I do not trust others and do not expect others to trust me.	1	2	3	4
5 I hate to miss a party.	1	2	3	4
6 I often ask for feedback from my friends and teachers.	1	2	3	4
7 When I was in school, I used to break rules quite regularly.	1	2	3	4
8 I believe deep or serious discussions about relationships are a waste of time.	1	2	3	4
9 I love giving and receiving hugs.	1	2	3	4
10 I like most people I meet.	1	2	3	4
11 I am known for my bad manners and rough language.	1	2	3	4
12 On a few occasions, I have been rewarded for the originality in my work.	1	2	3	4
13 I don't like listening to other people's problems, so my friends rarely, if ever, come to me for comfort.	1	2	3	4
14 I am quiet around people that I don't know well.	1	2	3	4
15 I can adapt to a new environment pretty easily.	1	2	3	4
16 I have a hard time sharing my feelings with others.	1	2	3	4
17 Even if I knew how to get around rules without breaking them, I would not do it.	1	2	3	4
18 As long as I can remember, I have enjoyed exercising.	1	2	3	4
19 I do not intend to follow every little rule that others make up.	1	2	3	4
20 When visiting new places, I try local foods, if asked to do so, but I really prefer eating what I'm used to.	1	2	3	4
21 Even under time pressure, I would rather take my time to think about my answer to a question than to say the first thing that comes to mind.	1	2	3	4
22 I can be friends with people even if they have opposing political views.	1	2	3	4
23 I don't consider being late for an appointment a big deal.	1	2	3	4
24 Most people would say that I am a loving and forgiving person.	1	2	3	4

		Strongly disagree	Disagree	Agree	Strongly Agree
25	I see the beauty in art even when others do not.	1	2	3	4
26	I enjoy supervising others.	1	2	3	4
27	When my friends are low on cash, I have no problem with lending them money.	1	2	3	4
28	One of the main goals in life should be understanding its meaning.	1	2	3	4
29	I like browsing old pictures with friends or family members.	1	2	3	4
30	As long as I pass a test, I don't care what I have learned.	1	2	3	4
31	Being new and original comes quite naturally to me.	1	2	3	4
32	I like to hear different views on important political issues.	1	2	3	4
33	I have trouble meeting and talking with new people.	1	2	3	4
34	For me, personal growth is more important than success	1	2	3	4
35	It's not the rule, but I have lost my temper, on occasion, during a bitter argument.	1	2	3	4
36	I have a talent for words and am able to explain things to people no matter how little they know.	1	2	3	4
37	I avoid going places where I don't know anyone.	1	2	3	4
38	It is important for me to work in a profession where I can help others.	1	2	3	4
39	I am definitely more organized than most people.	1	2	3	4
40	Compared to other people, I don't think I am very creative.	1	2	3	4
41	After joining a group, I usually end up becoming the leader.	1	2	3	4
42	I hate holidays and birthdays because I feel obligated to buy presents for others, even though I'd prefer not to.	1	2	3	4
43	At parties, I usually only talk to my friends.	1	2	3	4
44	I would ask a friend for help on a take-home exam if I knew it would improve my grade.	1	2	3	4
45	I tend to have almost no clutter on my work desk or in my home.	1	2	3	4
46	I work out even when I am sick.	1	2	3	4
47	I find it difficult to create new things.	1	2	3	4
48	Even when I am interested in something I'll rarely look into it.	1	2	3	4
49	It takes a lot more to get me depressed than most people.	1	2	3	4
50	I enjoy learning about and experiencing different religions.	1	2	3	4

51	I am very quick at processing information.	1	2	3	4
52	I am on good terms with nearly everyone.	1	2	3	4
53	I don't get distracted easily.	1	2	3	4
54	I'll talk to anyone.	1	2	3	4
55	I'd rather be called unrefined and shallow than waste my time reading a book about effective communication strategies for fulfilling personal relationships.	1	2	3	4
56	People say that I am quick-witted.	1	2	3	4
57	To me, all rules and regulations should be followed exactly.	1	2	3	4
58	I feel that an opportunity to learn about the culture of others is something to be treasured.	1	2	3	4
59	Given the choice, I'd rather watch a sporting event than participate in one.	1	2	3	4
60	I would not go to a performing arts show even if I got free tickets.	1	2	3	4
61	Most people who know me would say that I am very responsible and dependable.	1	2	3	4
62	I try to find reasons not to go to parties, because I just don't enjoy them.	1	2	3	4
63	I go out partying more than most people my age.	1	2	3	4
64	I've been told that I need to be more assertive.	1	2	3	4
65	I can't help that I am always late; it is just my nature.	1	2	3	4
66	Getting average grades is enough for me.	1	2	3	4
67	I get into trouble because I act on impulse rather than reason.	1	2	3	4
68	I often need people to explain things to me.	1	2	3	4
69	I have high standards and work toward them.	1	2	3	4
70	My hobbies tend to be physical in nature (e.g., sports, hiking, working out).	1	2	3	4
71	In the past, I have spread rumors about close friends even though they were unlikely to be true.	1	2	3	4
72	I am deeply moved by others' misfortunes and would go out of my way to comfort them.	1	2	3	4
73	I often act on the spur of the moment.	1	2	3	4
74	I have a hard time finding positive things to say about myself.	1	2	3	4
75	Because I constantly worry about things, it is hard for me to relax.	1	2	3	4
76	My friends and family would say that I'm not very affectionate.	1	2	3	4

Strongly disagree Disagree Agree Strongly Agree

77	I enjoy stories that are full of symbolism and lessons about life.	1	2	3	4
78	I get confused easily by tasks that require a lot of thinking.	1	2	3	4
79	I can go from calm to boiling mad when my buttons are pushed.	1	2	3	4
80	On most of my projects, I do an "average" job.	1	2	3	4
81	I get really nervous when asked to give an unplanned presentation or speech.	1	2	3	4
82	I don't like lending money even to my best friends.	1	2	3	4
83	I like trying things that other people don't dare to do.	1	2	3	4
84	Being a leader is not that important to me.	1	2	3	4
85	I get impatient walking behind slow people.	1	2	3	4
86	When it comes to working out, I push myself about as hard as most people.	1	2	3	4
87	At parties I tend to be pretty loud and lively.	1	2	3	4
88	I like coming up with imaginative plans.	1	2	3	4
89	I would die of boredom if I had to spend an afternoon in an art gallery.	1	2	3	4
90	I'm very competitive, so I try to finish first even when no one else is really competing.	1	2	3	4
91	I continually strive to uncover information about topics that are new to me.	1	2	3	4
92	I don't always take my duties quite as seriously as I probably should.	1	2	3	4
93	I am quiet and withdrawn around strangers.	1	2	3	4
94	I don't consider myself to be an athletic person.	1	2	3	4
95	After all the things that have happened in my life, I can't help but feel short-changed.	1	2	3	4
96	If a cashier forgot to charge me for an item, I would let him or her know.	1	2	3	4
97	I worry a lot more than others.	1	2	3	4
98	Others always tell me to clean up my work area.	1	2	3	4
99	I learn a great deal from people with differing beliefs.	1	2	3	4
100	There is no use in doing things for people, because they never really appreciate your efforts.	1	2	3	4
101	I get along with almost everyone I meet.	1	2	3	4
102	I rarely visit art galleries, because I don't find them very interesting.	1	2	3	4
103	On most days, I don't have even a single worry.	1	2	3	4

		Strongly disagree	Disagree	Agree	Strongly Agree
104	In my opinion, all laws should be strictly enforced.	1	2	3	4
105	I am easily talked into doing silly things.	1	2	3	4
106	I could be insincere and dishonest if a situation required it.	1	2	3	4
107	Parties are just a waste of time and energy.	1	2	3	4
108	I try to be the best at anything I do.	1	2	3	4
109	I often rush into action without thinking about the consequences.	1	2	3	4
110	I go above and beyond what is required of me.	1	2	3	4
111	I am very generous with my time and money.	1	2	3	4
112	I'm passionate about theater and serious cinema.	1	2	3	4
113	Most of the time I honor my commitments, but when unable to do so, I inform people right away.	1	2	3	4
114	I have a constant desire to learn more.	1	2	3	4
115	Every item in my room and on my desk has a designated place.	1	2	3	4
116	I grasp scientific theories easily.	1	2	3	4
117	I often think about my actions and how I can improve myself.	1	2	3	4
118	I seldom seek new opportunities to extend my knowledge.	1	2	3	4
119	I'm nice to others even when I don't have to be.	1	2	3	4
120	I have a positive outlook on life.	1	2	3	4
121	I wouldn't be comfortable in a position of power.	1	2	3	4
122	I don't think you can get along with everyone you meet, so I don't even try.	1	2	3	4
123	I am interested in learning about almost everything.	1	2	3	4
124	I avoid situations where I might have to come up with new ideas.	1	2	3	4
125	I am not the most responsible person among my friends.	1	2	3	4
126	I never give money to charities or children's funds, because I don't believe they really help the needy.	1	2	3	4
127	Staying fit is very important to me.	1	2	3	4
128	I am a slow learner.	1	2	3	4
129	I firmly believe that under no circumstances is it okay to lie.	1	2	3	4
130	I am not known for looking on the bright side of a situation.	1	2	3	4

		Strongly disagree	Disagree	Agree	Strongly Agree
131	I have fewer worries and fears than most people.	1	2	3	4

132	I don't care if people think I am impolite.	1	2	3	4
133	In my view, authorities are right to censor or control the flow of information for the benefit of a larger society.	1	2	3	4
134	If I run late for an appointment, I may just skip it and not even bother to call.	1	2	3	4
135	I appreciate the paintings of well-known artists.	1	2	3	4
136	I don't have as many happy moments in my life as others have.	1	2	3	4
137	Immigrants should forget their customs and adapt to the local culture.	1	2	3	4
138	I demand the highest quality in everything I do.	1	2	3	4
139	I would rather get a bad grade in a class than copy someone else's work and turn it in as my own.	1	2	3	4
140	I often have no idea where my important papers and records are.	1	2	3	4
141	Even during a particularly heated argument, I keep my emotions under control.	1	2	3	4
142	For me, there is nothing better than taking the time to think deeply about something.	1	2	3	4
143	Most people would say I have a hot temper.	1	2	3	4
144	I'm an adventure seeker so I do lots of things others would probably find a bit risky or wild.	1	2	3	4
145	I am known to make quick, hot-headed decisions.	1	2	3	4
146	I take advantage of almost every opportunity to experience and learn about other cultures.	1	2	3	4
147	I rarely get angry enough so that it's obvious to others.	1	2	3	4
148	On most days, I feel extremely good about myself.	1	2	3	4
149	I can't imagine being in a personal development group where people constantly talk about their problems and feelings.	1	2	3	4
150	Being neat is not exactly my strength.	1	2	3	4
151	Interesting questions always intrigue me.	1	2	3	4
152	I'm just about the most outgoing person there is.	1	2	3	4
153	I believe most rules and laws are meant only to serve as a guide and are not to be followed exactly.	1	2	3	4
154	I feel comfortable even in very disorganized settings.	1	2	3	4
155	When I hear people whispering, I can't help but think that they are saying something bad about me.	1	2	3	4
156	My friends say that I am bossy.	1	2	3	4

APPENDIX B: Informed Consent Form

I understand that the study in which I will be participating primarily concerns understanding the relationship between individual differences (traits) and motivational measurements. I will be given 2 sets of questionnaires about personality and motivational measurements and demographic information, with a break in between. I have been told that in total, the entire study will take about 60 minutes, and I will be awarded 2 RP credits upon completion of the entire study.

I am aware that the researchers do not foresee any risk to me for participating in this study, nor do they expect that I will experience any discomfort or stress. I am aware that all the data collected for this study will remain strictly confidential. That is, my responses to items on the questionnaires will only be handled by those involved in the research project. This consent form will be kept separate from both questionnaires and other data collected as part of the study. Also, I understand that my responses will not be associated with my name; instead my name will be converted to a code number when the researchers store the data.

I am aware that I can terminate my participation at any time during the study or refrain from answering any questions that make me feel uncomfortable with no penalty.

The researcher will answer any questions about the research whenever needed during the course of the research. If I have any other questions or concerns, I can address them to the investigators or to the ethics committee chair (see below).

<p><u>Principal Investigator:</u> Moon-Ho Ringo Ho, PhD Associate Professor Division of Psychology School of Humanities & Social Sciences, NTU</p> <p>Office: HSS-04-07 Telephone: 6316-8944 Email: homh@ntu.edu.sg</p>	<p><u>Principal Investigator:</u> Kim-Yin Chan, PhD Associate Professor Division of Strategy, Management and Organisation Nanyang Business School, NTU</p> <p>Office: Block S3, S3-01B-62 Email: akychan@ntu.edu.sg</p>
<p><u>Co-Investigator:</u></p> <p>Olexander Chernyshenko, PhD Associate Professor Division of Strategy, Management and Organisation Nanyang Business School, NTU</p> <p>Office: Block S3, B2B-58 Email: Chernyshenko@ntu.edu.sg</p>	
<p><u>Chair of the Ethics Committee:</u> Michael Patterson, PhD Assistant Professor, Division of Psychology, School of Humanities & Social Sciences, Nanyang Technological University, Nanyang Avenue, Singapore 639798 Office: HSS-04-13 Telephone: 6316-8935 Fax: 6794-6303 Email: mdpatterson@ntu.edu.sg; Web: http://www.ntu.edu.sg/hss/psychology/research/code.htm</p>	

I, _____, have read and understood the above conditions, and I consent to participate in this study.

Date

Signature of Participant