Entrepreneurial Orientation, Entrepreneurial Intent and New Venture Creation: Test of a Framework in a Chinese Context

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Dissertation submitted to the Faculty of
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirement for the degree of

Doctor of Philosophy

in

Business, Management

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July 9, 2009

Blacksburg, Virginia

Keywords: Entrepreneurial orientation, Entrepreneurial intent, Opportunity recognition, Context, China.

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(ABSTRACT)

The empirical evidence is rather weak and sometimes inconsistent as to what predicts an individual's decision to start a business. Among many possible causes, this study attempts to disentangle the effects of individual differences and context. I propose to use a framework involving an individual's entrepreneurial intent, entrepreneurial orientation and four individual difference factors as a means to isolate individual difference determinants of entrepreneurial intent. These are captured in new construct called entrepreneurial orientation. Samples of entrepreneurs and college students from the United States and China were used to test the relationships. The empirical results show that entrepreneurial orientation is positively related to individual differences factors and entrepreneurial intent. Even more, it fully or partially mediates the relationships between the individual differences and entrepreneurial intent. Among the four individual differences listed, opportunity recognition seems to be the best predictor of an individual's entrepreneurial orientation and entrepreneurial intent. Future research should further examine opportunity recognition and entrepreneurial orientation. It appears that attempting to isolate effects of individual differences from context can be a viable strategy for studying determinants of new venture creation.

ACKNOWLEDGEMENT

I started my Ph.D. program in August 23rd, 2005 and defended my dissertation on July 9, 2009. I wish to thank all those people who have helped to make this happen.

First of all, I owe gratitude to my dissertation committee members. Without their help, I wouldn't have been able to finish this huge project within four years. Dr. Carlson, my dissertation chair, has been most instrumental in this process. From the preparation of the COMPS to teaching, job search and every aspect of my dissertation, Dr. Carlson spent numerous hours helping me almost EVERY week for the past two years. Whenever I submitted something, Dr. Carlson always got it back to me within less than 48 hours. I am impressed with his effectiveness and efficiency! Dr. Carlson, I cannot thank you enough.

Dr. Hatfield has also been very supportive. In addition to his academic support, Dr. Hatfield has been very patient to listen to me venting my frustration. Dr. Hatfield, thanks for being friends with me! Dr. Gove, as a first-year faculty here, has been willing to share with me his experience and provide valuable advice. Thanks Steve! I also wish to thank Dr. Lang and Dr. Murrmann for being willing to serve on my committee. Your expert advice on research and life will be forever valued.

Besides my committee, my family has especially supportive. My wife Xiaojun, my sons Xiaoxiao and Chingching have been gracious enough to put up with me for the past 1,430 days and nights. For my first two years in the States, my wife was taking care of Xiaoxiao in China while working on a full-time job. During the first year of my Ph.D. program in Blacksburg, my wife was finishing up her Master's degree AND was pregnant with Chingching in North Carolina. I could only drive back once a week to help a little bit. My wife has been single-

handedly responsible for raising the two kids. She took Xiaoxiao to classes of taekwondo, swimming, choir group, soccer, skateboarding, piano, birthday parties. She also has to deal with Chingching 24-7, making him such an adorable boy. When I went home yesterday after defending my dissertation, Chingching was able to say in English “Dr. Wu”. Three of you, I owe you the rest of my life.

My parents, who are still working on the farm in China now, have been always there for me, even though they don’t understand what I am doing and why I am doing this. They were sleepless the night before I defended, hoping all would go smoothly for me. They helped me to become one of those 5% of the population in China who could go to college over 20 years ago. Their love and the value they instilled in me have sustained my life till this day.

My fellow doctoral students here have also been constant source of support for the past years. Each has shown their support in different manners. Felice, Manisha, Fiona, Gretchen, Kevin, Robert, Kristen, Xiaoping, Hanko, all of you. I will remember your friendship!

Finally, I wish to thank Dr. Fox from Appalachian State University. Dr. Fox have offered me emotional, financial, and academic support since my days in Boone. Dr. Fox is a real mentor and friend. Thanks for all your help, Dr. Fox!

Table of Contents

LIST OF TABLES

LIST OF FIGURES

CHAPTER I. INTRODUCTION

Overview

The importance of entrepreneurship cannot be overemphasized. It increases people's standards of living through the creation of new firms which generate value for themselves and their customers by identifying and selling new and more useful products and services. Entrepreneurship spurs business expansion, technological progress, and wealth creation (Lumpkin & Dess, 1996). As a major engine of economic growth, entrepreneurship accounts for the majority of new business development and job creation in the U.S. (Business Week, 1993). During the last recession in the US, while large corporations downsized millions of jobs, entrepreneurs started new companies, which helped keep unemployment at record-low levels (Baron & Shane, 2005). Entrepreneurial activity increases employment (Kirchhoff & Phillips, 1988), impacting the economy at the regional level (Carree & Thurik, 2003; Acs & Storey, 2004) and national levels (van Stel, Carree, & Thurik, 2005).

Along with the practical importance of entrepreneurship comes the interest of academia. The amount of research on entrepreneurship has grown dramatically over the past two decades, with the recognition of new ventures as major contributors to job creation and economic growth (Amit et al., 1995). This interest is reflected in a rising number of researchers, an increasing number of conferences and journals in the field, and the establishment of many entrepreneurship research centers (Landström, Frank & Veciana, 1997; Ireland et al., 2005). The study of the

entrepreneur, probably one of most important parts of entrepreneurship, has been recognized not only as a critical source of information about the various activities associated with a new venture, but also as a more general source of information about innovation and creativity within organizations (Greenberger & Sexton, 1988).

Individual differences of entrepreneurs and the contexts which provide favorable or unfavorable environments for entrepreneurial activities have been of particular interest in past research (e.g., Brockhaus, 1982; Pennings, 1980, 1982a, 1982b). The study of individual differences attempts to identify those individuals who are or could become entrepreneurs. Individual differences include psychological traits (e.g., need for achievement, risk-taking propensity) and non-psychological traits (e.g., marital status, education level). Both psychological and non-psychological traits have been used in attempts to differentiate entrepreneurs from non-entrepreneurs (e.g., Brockhaus, 1982). Contextual factors refer to features of environments which, if favorable enough, will contribute to the creation of the new businesses, or if not, will impede the development of new businesses.

Unfortunately, predicting who is likely to create new ventures or the circumstances under which this is more likely to occur has proven difficult. The empirical evidence from research on both individual differences and contextual factors has produced weak and inconsistent findings. Two obstacles to studying the factors that influence entrepreneurial activities are the low base-rate of new venture creation activity and difficulties associated with attempts to study the joint influence of context and individual difference predictors. While many businesses are started each year, in any sample of individuals only a few will actually start their own business. Because

the decision to start a new venture is a dichotomous act, the low base rate of new ventures makes identifying predictors of new venture creation activity using correlation methods more difficult.

In addition, existing research often examines profiles of individual differences in attempts to predict new venture creation activities. As new venture creation itself is a context-dependent activity, using individual factors such as psychological traits alone without understanding context is unlikely to be very effective. As Gartner (1985) indicated, all sorts of individual factors have been used, but few have been shown to have predictive validity. On the other hand, context itself is so complicated that it too has plagued generations of researchers. But studying context without knowing whether the individuals studied are predisposed to starting their own business also hampers results. Using context and individual factors together only adds to the complexity as out of all the permutations of individual differences and contexts that are possible, only certain combinations (i.e., right individuals and right contexts) are likely to contribute to the start-up of a new business.

There are many individual difference factors and many context factors that may be relevant to new venture creation. But to identify the context factors that are most likely to be relevant, we need to study them on individuals that are predisposed to be entrepreneurs (those that if the conditions were right, would become entrepreneurs). To study individual differences, we need to be able to do that in contexts we know are conducive to starting new ventures. Studying what individual differences lead to new venture creation in the presence of negative context factors makes it hard to identify relevant individual differences. Likewise, studying context factors using individuals that are not predisposed to becoming entrepreneurs is also difficult.

To address the issues of low base-rate of new venture formation and confounding of individual differences and contexts in research designs, this study will build on the theory of planned behavior (Ajzen, 1980) and utilize entrepreneurial intent, which is a continuous and less context-dependent antecedent of entrepreneurial action, and introduce entrepreneurial orientation, an individual difference—an attitude—that is antecedent to both entrepreneurial intent and entrepreneurial action and conceptualized as context-free and continuous. Introducing the entrepreneurial orientation into the study of new venture creation can overcome many of the problems associated with identifying meaningful individual difference and context drivers of new venture creation by permitting the study of individual differences to be separated from the study of context factors. By using entrepreneurial orientation to isolate the effects of relevant individual difference factors, it will become easier to identify the "right" individuals--those predisposed to start new ventures. These individuals could then be identified and used in research designs to study the relevant context factors, and especially avoid the complexities of designs that try to disentangle context-individual difference combinations.

Major Terms in this Study

This section will discuss the major terms used in this study. These term definitions are obtained or derived from the literature on the related topics.

Entrepreneurship

According to Hebert and Link (1988), the term "entrepreneur" first appeared in the writings of Richard Cantillon in 1755 who used the term to describe "someone who exercises

business judgment in the face of uncertainty." Drucker (1985) defines entrepreneurship as an act of innovation that involves endowing existing resources with new wealth-producing capacity. Leibenstein (1968) describes the entrepreneur as one who marshals all resources necessary to produce and market a product that answers a market deficiency. Schumpeter (1934) views the entrepreneur as a leader and a contributor to the process of creative destruction. Kirzner (1985) considered the entrepreneur one who perceived profit opportunities and initiated action to fill currently unsatisfied needs or to improve inefficiencies. Knight (1921) saw the entrepreneur as an individual with an unusually low level of uncertainty aversion.

More recent discussions of the definition of entrepreneurship are even more plural. Lumpkin and Dess (1996) see it as a new entry into an industry. Low and MacMillan (1988) define it as the creation of a new enterprise. Gartner (1988) defines it as the creation of new organizations. Cole (1949) considers it a purposeful activity to initiate, maintain and aggrandize a profit-oriented business. Wiklund (1999) views it as taking advantage of opportunity by novel combinations of resources in ways which have impact on the market. Stevenson and Jarillo (1990) have it as the process by which individuals—either on their own or inside organizations—pursue opportunities without regard to the resources they currently control. Hisrich and Peters (1991) define it as the process of creating something different with value by devoting the necessary time and effort; assuming the accompanying financial, psychological, and social risks; and receiving the resulting rewards of monetary and personal satisfaction.

Given the myriad of definitions of entrepreneurship, the search for a single definition of what constitutes an entrepreneur may be futile (Gartner, 1988; Fiet, 2002). However, it does appear that the entrepreneurship phenomenon can vary dramatically across contexts, therefore

defining how the term entrepreneurship is used in each study is critical. Therefore, I adopt new venture creation as the definition of entrepreneurship used in this study. I believe this makes the most sense for both academics and practitioners. From the practitioners' point of view, creation of new ventures can increase employment and lead to economic development. From the academic's perspective, entrepreneurship as the new venture creation is consistent with the vast majority of existing entrepreneurship research.

Entrepreneurial Intent

Entrepreneurial intent is defined as an individual's intention to create a new venture in the near future.

Entrepreneurial Orientation

Entrepreneurial orientation is defined as an individual's attitude towards engaging in entrepreneurial activities, be it within an existing firm or creating a new venture. This attitude could be either favorable or unfavorable.

CHAPTER II. LITERATURE REVIEW

A substantial amount of literature has been accumulated on entrepreneurship, its impact and its predictors. I begin this chapter with a discussion of the general role of entrepreneurship in society. Then the discussion will extend to a specific context, China, where historically business was not encouraged, but changing philosophies and the current emergence of entrepreneurship is critically important. Next entrepreneurship and its many definitions are examined and I offer a framing of entrepreneurship research. I choose to focus on one aspect of entrepreneurship research (i.e., identifying the individual who creates the new venture) and review previous literature. I note the relatively weak empirical evidence and discuss possible explanations for the inconsistencies in research evidence. Finally, I will offer a way out – by introducing entrepreneurial orientation – and discuss its implications for future research.

Role of Entrepreneurship in Society

Why should entrepreneurship be studied at all? In entrepreneurship research, data are difficult to obtain, theory and paradigms are less or underdeveloped, and many findings to date are the same as those obtained in other areas of business (Low & MacMillan, 1988; Wortman, 1987; Ireland et al., 2005). However, there seems to be a passion for entrepreneurship research, evidenced by a growing number of active researchers, increasing numbers of conferences and journals devoted to the field, and the establishment of many entrepreneurship research centers

(Landström, Frank & Veciana, 1997; Ireland et al., 2005). Many scholars believe that the absence of entrepreneurship from our collective theories of markets, firms, organizations, and change makes our understanding of the business landscape incomplete. Baumol (1968:66) even remarked that the study of business without an understanding of entrepreneurship is like the study of Shakespeare in which "the Prince of Denmark has been expunged from the discussion of Hamlet."

Some researchers in the field (e.g., Shane & Venkataraman, 2001) cite the following reasons for studying the topic. First, much technical information is ultimately embodied in products and services (Arrow, 1962) and entrepreneurship is a mechanism by which society converts technical information into these products and services. Second, entrepreneurship is a mechanism through which temporal and spatial inefficiencies in an economy are discovered and mitigated (Kirzner, 1997). Finally, of the different sources of change in a capitalist society, Schumpeter (1934) isolated entrepreneurially driven innovation in products and processes as the crucial engine driving the change process. Innovation is the function of a sociological type of individual known as the entrepreneur (Sweezy, 1943). Schumpeter (1939) described the key process in the economic force of change as the introduction of innovation and the cultural innovator to him is the entrepreneur. Schumpeter (1936) defined innovation as the setting up of a new production function, which included five specific cases leading to a new production function: (1) the introduction of a new good, (2) the introduction of a new method of production, (3) the opening of a new market, (4) the conquest of a new source of supply of new materials, and (5) the carrying out of a new organization of any industry.

More recently, McDaniel et al., (2002) explored the central role played by entrepreneurship in the American economy. They portray entrepreneurial activity as *the* critical factor driving economic growth and raising a nation's standard of living. According to Baumol (2002), the small firm, home of the independent entrepreneur and the independent inventor, has been the primary source of the technical ideas and innovations that serve as the foundation for the unprecedented growth performance of the world's industrial economies. Timmons (1994) reported that small entrepreneurial firms are responsible for 67 percent of all innovation in the U.S., and 95 percent of radical innovations since World War II.

In addition to academics who are convinced that entrepreneurship spurs business expansion, technological progress, and wealth creation (Lumpkin & Dess, 1996), the popular press and government statistics also document the importance of entrepreneurship to the employment, economic development and eventually better standard of living of the people. Entrepreneurial activity represents one of the major engines of economic growth and accounts for the majority of new business development and job creation in the US (Business Week, 1993). Each year, more than 600,000 new businesses are launched in the United States alone, and this number has almost doubled in the past two decades (Dun & Bradstreet, 1999). During the 1990s, large corporations in the United States downsized more than six million jobs out of existence, yet unemployment was at record-low levels, mainly as a result of new companies started by entrepreneurs (Baron & Shane, 2005). At the end of the 20th century, more than 10 million individuals were self-employed in the United States (U.S. SBA., 1998)—about one in eight adults. While the number of new business started each year has increased steadily, the number started by women and minorities has risen even more dramatically. For instance, the number of

companies owned by minorities increased 168 percent between 1987 and 1997, to a total of 3.25 million businesses, which, together, employ more than four million persons and generate $495 billion in revenues (U.S. SBA, 1999). In 2004, the most recent year the data is available, small businesses had a net gain of 1.86 million new jobs, while large firms had a net loss of 181,000 jobs (US Department of Commerce). All the numbers above suggest that the activities of entrepreneurs have a significant impact on the economies of the society.

Entrepreneurship in China

As the most populous nation and the largest developing country, China has been faced with many political and economic challenges. Successful entrepreneurship in China will help lift at least 20 percent of the world population out of poverty and hopefully also help solve some of the social and political problems that have existed for a long time.

Entrepreneurship in Chinese History

Culturally and historically, entrepreneurship has not been encouraged and acknowledged in China. Before 1949, the year when the current regime of China was founded, China was an agricultural self-subsistence country where business people were ranked at the bottom of the social ladder after scholars, government officials, and everybody else. Between 1949 and 1976, the period when Chair Mao Zedong was in power, China practiced a rigid Soviet style planned economy under which the government made all decisions for all enterprises, for instance what products to make, how much to sell them for, and how to sell them and meanwhile business people remained at the bottom of the social ladder after factory workers, farmers and everybody

else. One explanation as to why business people had been at the bottom of the social ladder is that the government wanted to keep everything under their control and people with entrepreneurial minds or those engaged in entrepreneurial actions would only make the government lose power eventually.

In 1979, Deng Xiaoping visited the United States and the Chinese government adopted a new policy, which opened its long-closed door to the outside world and helped China to break out of its Maoist mold of state control. Deng Xiaoping and the government realized that the nation's long-dormant entrepreneurial spirit had to be encouraged, not inhibited, and that the capitalist nature of some of the needed changes had to be openly accepted—whatever the political fallout. Starting 1979, China experienced a revolutionary transformation from a central-command planned economy to a market-led economy. Urban industrial reform was initiated. The government began to realize some of the problems associated with the planning system and to loosen its control over the economy by reducing mandatory plans and using more guidance plans. The non-state sector and foreign-funded enterprises emerged during this period. In 1992, the Chinese Communist Party (CPC) formally approved the “Socialist Market Economy”, signaling that the government finally abandoned the Marxist economic theory for the free market economy. This at least on paper says that government is to be separate from the control of enterprises. Since there have been no such prior models, probably very few Chinese really know what this term “Socialist Market Economy” exactly means. However, not until 2003 was the first law to formally acknowledge and protect the entrepreneurship firms enacted by the Chinese government, which signaled that entrepreneurs are no longer to be despised by any individuals or any government agency.

Economic Miracle and Entrepreneurship

Leading China down the capitalist path (even though it was called the Socialist Market Economy), Deng Xiaoping and his colleagues relaxed all manner of economic controls and launched Special Economic Zones (i.e., free-trade enclaves that demonstrated the prosperous potential of a liberalized economy) along the east coast of China. These and other initiatives helped transport millions of Chinese out of poverty and in just a few decades transformed China into a global manufacturing behemoth; and heralded the country's arrival on the world stage as a major geopolitical and financial player (TIME Magazine, 2006).

The rise of China from a poor, stagnant country to a major economic power within a time span of only 29 years is often described by analysts as one of the greatest economic success stories in modern times and provides a good topic for research. From 1979 (when economic reforms were first introduced) to 2006, China's real gross domestic product (GDP) grew at an average annual rate of 9.7%, the size of its economy increased over 11-fold, its real per capita GDP grew over eight-fold, and its world ranking for total trade rose from 27th to 3rd (Congressional Research Service, 2007). By some measures, China has become the world's second largest economy, and it could be the largest within a decade. China's economic rise has led to a substantial growth in U.S.-China economic relations. China's purchases of U.S. Treasury securities have funded federal deficits and helped keep U.S. interest rates relatively low (Congressional Research Service, 2007). The Chinese share of the US global trade deficit over the past ten years rose from 24 percent to 32 percent. China is the US's third largest export market – and if combined with Hong Kong, US exports reached $85.4 billion in 2007. Moreover, China is the fastest growing of the United States' major export markets (see Figure 1). US

exports to China grew 18 percent in 2007, and have grown 301 percent since 2000, the year before China entered the World Trade Organization and began dismantling market barriers keeping out US products. Also, China has a mountain of reserves. Joining the World Trade Organization (WTO) in 2001 contributed to rapid growth in imports, but exports also expanded at a fast pace, while FDI inflows exceeded US$60 billion a year by 2004-2006. In October 2006, China's foreign exchange reserves exceeded USD1 trillion for the first time. By the end of June 2008, the reserves approached USD 1.9 trillion, equal to over USD 1,500 per head for the entire population of China (State Administration of Foreign Exchange of China, 2008).

How did the "miracle" happen? In his recent book, *Capitalism with Chinese Characteristics,* Huang (2008) suggests that the consensus view among economists is that China has grown by relying on unique, context-specific policies rather than conventional mechanisms of growth, such as private ownership, property rights security, financial liberalization, and political reforms. Based on detailed archival and quantitative evidence spanning three decades of reforms, Huang (2008) offers an alternative view arguing private entrepreneurship, facilitated by financial liberalization and microeconomic flexibility, was at the center of the true economic miracle in China.

But how can this be? Private entrepreneurship? China didn't formally approve entrepreneurship until it passed a small and medium enterprise law in 2003. Against such strong adversity (e.g., when they people around and the government did not acknowledge their value), how was it that the entrepreneurs could still achieve such a feat.

Entrepreneurship as a Solution to a Social Problem

Despite China's strong and sustained economic growth, poverty is still widespread, especially in remote rural areas. The prosperity people see nowadays in China actually reflects the activities of only about 20 per cent of the country's citizens. Home to one-fifth of the world's population but only seven percent of the world's farm land, China is mainly an agricultural country. About 900 million people are still farmers and close to 50 percent of the total population lives off of less than US $2 a day with around 150 million people living on less than US $1.00 a day, accounting for 18 percent of the global poor (World Bank, 2007). The majority of the poor are rural residents living in inland China. Income inequalities between eastern and western China have risen, and the income gap between rural and urban residents has widened considerably since the late 1970s. This phenomenon of poverty probably results because early reforms were primarily targeted at improving economic efficiency. This prompted resource flows to coastal provinces and non-farming sectors. This market-driven mechanism of factor allocation has undoubtedly contributed to the remarkable growth in China, particularly in the relatively affluent areas and urban China, leading to an enlarged urban–rural gap and a growing regional inequality. From this perspective, the rich have gained more than the poor from reforms in China.

Poverty, together with inequity, has caused a great deal of social instability. Rising inequality could lead to social upheaval and threaten China's future. The reality is that there are already signs of increased social unrest. In 2005 the number of officially recorded protests involving more than 15 people was 87,000, involving more than 3.5 million people. Group protests increased six-fold between 1994 and 2003 from 10,000 to 60,000. The number of people who attend group protests has also increased by 12 per cent yearly, from 730,000 in 1994 to 3,070,000 in 2003. Protests with over 100 people increased five-fold from 1,400 to 7,000 (Epoch

Times Oct. 16th, 2006). The government and the ruling party (i.e., Chinese Communist Party) thus feel threatened, and took drastic measures such as increasing the military expenditure, which to the outside world may look very confusing and sometimes intimidating. Is there a solution to the problem mentioned above? Lifting more people out of poverty, especially those farmers in the rural areas, may be an effective solution. However, as the urbanization process continues in China, a great many farmers have lost or will lose their land they have relied on to make a living. Finding or creating employment for them seems to be the way out. Therefore, entrepreneurial activities such as creating new ventures will likely be critical for helping these farmers and other people who need employment.

Need for Entrepreneurship Research in China

A growing body of research emphasizes the role of entrepreneurs and the development of a vibrant small and medium enterprise sector in the process of economic development (World Bank, 2003). Entrepreneurship research started booming in the United States less than twenty years ago, as evidenced by the publications on premier academic journals. There exists a large amount of literature on entrepreneurship in the management literature devoted mostly to advanced industrialized countries. However, entrepreneurship research in Chinese contexts is scarce, even though China is the largest emerging economy in the world and perceived by many to be the world's major growth engine for the coming decades.

As entrepreneurship is only emerging in transition economies (and it is very unequally developed in developing countries), researchers are able to observe "out-of-steady-state" phenomena and glimpse at the development of entrepreneurship. From this perspective, the study of entrepreneurship in China might be more revealing than if it were to be conducted in advanced

industrialized countries where the development of entrepreneurship has generally been more successful, is more in steady state and exhibits less variation.

Similar to other disciplines of management, entrepreneurship research in emerging economies like China is still in its infancy. Entrepreneurship theory and empirical evidence are mostly derived using data from North America and the Europe. Previous research, especially that most cited (e.g., Shane & Venkataraman, 2000; Covin & Slevin, 1991; Lumpkin & Dess, 1996 etc.) was conducted in the context of American firms. There are also similar topics using European samples (Lahteenmaki et al. 1998). Studying samples from China will likely improve the generalizability of previous entrepreneurship and may offer unique insights. Of the few pieces in the context of China, they are either about the State-owned enterprises (Child, 1995) or on the comparison between Chinese firms and Western firms (Ahlstrom et al., 2005; Ding et al., 1997; Lu & Bjorkman, 1997; Goodall & Warner, 1997). Zheng (2006) is probably one of the few using small and medium enterprises as samples. Moreover, national culture might moderate some effects, the impact of human resource management on firm performance for instance. Previous research (Schuler & Rogovsky, 1998) has already indicated this.

Other issues such as property rights and missing institutional features may also impact entrepreneurship in China. In China, the property rights have been held by the state and individuals could only use but not own the assets. Missing institutional features (for instance, shortages of skilled labor, thin capital markets, infrastructure problems) as well as political and economic instability and public suspicion of foreign firms have deterred inward foreign direct investment (FDI). The primary impediment of business (entrepreneurial activities in this case) appears to be the lack of well-defined property rights that convey exclusivity, transferability, and

quality of title (Devlin, Grafton, & Rowlands, 1998). Lack of strong legal frameworks has allowed a large increase in opportunism, rent shifting, bribery, and corruption (Nelson, Tilley, & Walker, 1998). These problems have particularly affected the ability to enforce property rights even where legislation has been enacted (Estrin & Wright, 1999). Given that Chinese national culture is so different from western cultures, where the main stream research has been done, it seems to be even more useful to conduct more entrepreneurship research in China.

All this suggests that proper use and modification of theory is often necessary when a management theory devised and tested in the U.S. or Europe is applied in an emerging economy like China. For instance, institutional theory is probably more applicable in the early stages of the market emergence, because government and societal influences are stronger in these emerging economies than in developed economies. Institutional theory emphasizes the influences of the systems surrounding organizations that shape social and organizational behavior (Scott, 1995). Peng and Heath (1996) argued that the internal growth of firms in transition economies is limited by institutional constraints; as a result, a network-based growth strategy was expected to be more viable in emerging economies. Peng (1997) analyzed three large enterprises in China and confirmed this explanation. In addition, Child and Lu (1996) argued that the economic reform of large state-owned enterprises was moving very slowly because of material, relational, and cultural constraints. At the individual level, Lau (1998) suggested that political and market pressures were the institutional constraints faced by chief executives in Chinese enterprises. Thus, it is probably safe to say that many firms in emerging economy are influenced by existing institutional realities.

On the other hand, transaction cost economics has been primarily applied to developed market economies characterized by strong legal regimes and binding social norms, less is known about governance structures for transactions in emerging economies (Hoskisson et al., 2000). This is probably because in emerging economy like China, transaction cost economics are not ready to be applied. Opportunistic behavior, normally reduced by contract law, trust, or reputation, is also much more likely under such circumstances.

Entrepreneurship as New Venture Creation

There have been many definitions for entrepreneurship, and each of them seems to stress different aspects of entrepreneurship. In this study, I focus on new venture creation due to its relevancy and importance to the well being of people, regions, and countries.

Three Phases of New Venture Creation

Research on new ventures can be organized into the following three categories/phases: (1) creating or finding entrepreneurs, (2) creating or establishing the new venture and (3) making the new venture successful. These three phases are temporally linked as indicated in Figure 2. In order to create new ventures created, we first need to either find or create individuals who are willing and able to accomplish this task. Research in this area emphasizes the individual differences environmental differences that lead individuals to create new ventures. Once these individuals are identified, the second phase is the new venture creation process. Research here has focused on factors that lead to the actual starting of a new business, and doing so in a way that sets the venture up for future success. This process may consist of many different factors

depending on the nature of the new venture. The third phase is concerned with the performance of the new venture, in other words, how to make the new venture successful. Research in this domain examines what needs to be done once the new venture opens to assure that it grows and remains viable. Successful new ventures that lead to more employment, economic development and better standards of living for the people require success in all three phases.

My dissertation will focus on the first phase, the finding/making of the entrepreneurs. Specifically, following the Theory of Planned Behavior (Ajzen, 1991), this study will focus on an individual's intent to create a new venture and predictors of the intent to start a new venture.

Major Predictors of New Venture Creation

Previous research has examined individual differences between entrepreneurs and non-entrepreneurs, which include psychological and non-psychological factors (e.g., Brockhaus, 1982), and factors in the environments that support or deter new venture creation (e.g., Pennings, 1980, 1982a, 1982b) to predict new venture creation activity. However each is only part of the bigger picture. New venture creation, initially proposed by Gartner (1985), is a multi-element process. It emphasizes the individual aptitudes and expertise as a key element of the new venture creation process along with environment – new ventures must seek out resources and compete in the market place.

Research Evidence of Predicting New Venture Creation

Features of individual profiles have been used in a lot of studies to predict new venture creation activity (Gartner, 1985). However, in general, the findings of this research are generally weak and mixed for given predictors.

Non-psychological factors

Low Income Researchers have used both psychological and non-psychological traits to predict new venture creation activities. For instance, among the non-psychological differences identified, the data suggests that people with higher income are less likely to start a new venture, all other things being equal. While none of the studies reviewed report the zero-order correlations between key variables, results of multiple regression analysis using individual income to predict new venture creation reach a uniform finding (i.e., all have negative regression coefficients), even though some are statistically significant, while some are not. For example, Amit et al. (1995) examined data on 55,434 people from the 1988-1990 Labor Market Activity Survey in Canada, which include people between the ages of 16 and 69. They found a negative, but statistically significant, regression coefficient ($\beta = -0.11$). Evans and Leighton (1989) examined data on 2,731 white men from the U.S. National Longitudinal Survey. The results showed overall negative regression coefficients (e.g., $\beta = -0.51$, $\beta = -0.26$), generally found to be statistically significant, but in some instances findings were non-significant, depending on what other variables were controlled for. Mesch and Czamanski (1997) used data including Russian immigrants to Israel. Their results produced a negative coefficient, but results differed across subgroups (i.e., $\beta = -0.499$ for those who make less than $600, and $\beta = -0.199$ for those who made $600- $1500, but neither showed statistically significant results). Johansson (2000) examined Finnish data for 103,482 people aged 18 to 65 for the time period 1987 to 1994. This study also produced a negative coefficient between income and entrepreneurial activity, $\beta = -0.042$, which was not statistically significant.

Lack of or Under-employment Unemployed people are more likely than employed people to start new ventures according to some (e.g., Mesch & Czamanski, 1997 had negative regression coefficient $\beta = -0.194$, not significant), but it does not seem to hold for others (e.g., Dahlqvist, 2000, using contingency tables and chi-square test of significance, found insignificant results). Evans and Leighton (1989) found mixed findings. For their data for the period of 1980-1981, their results showed a positive statistically significant regression coefficient $\beta = 0.047$. For the period of 1978-1980, however, they found a negative but non-significant regression coefficient of $\beta = -0.02$. For the period of 1976-1978, they produced a small non-significant positive regression coefficient $\beta = 0\ .003$.

Being Married Being married increases the likelihood that a person starts his own venture according to some studies. For instance, Bogan and Darity (2008), for instance, noted that marital status overall produced a positive statistically significant regression coefficient $\beta = 0.18$. However, for males the results were somewhat different producing a statistically significant negative regression coefficient $\beta = -0.06$.

Education Level The level of education of entrepreneurs increases the likelihood of new venture creation according to some studies, but results are mixed. For instance, Kim, Aldrich and Keister (2003) showed that education has a positive coefficient with new venture creation depending on the level of education (i.e., technical/vocation shows a coefficient of $\beta = 0.06$, not statistically significant, college education $\beta = 0.42$, statistically significant, post college $\beta = 0.53$, not significant). Reynolds (1997) stated that the relationship between the level of education and entrepreneurship is positive, but reported finding statistically significant and non-significant results without reporting specific findings. Borjas and Bronars (1989), on the other hand, showed

that for those with education of 12 years or less, more education is not always better (education at all levels are all negative, $\beta = -0.074$ for whites, $\beta = -0.039$ for blacks, $\beta = -0.11$ for Hispanics, $\beta = -0.01$ for Asians, all statistically non-significant). But for those with education of 16 years of more, the regression coefficients are all positive (i.e., $\beta = 0.14$ for whites, $\beta = 0.18$ for blacks, $\beta = 0.15$ for Hispanics, $\beta = 0.07$ for Asian, with only results for whites statistically significant). Cooper and Dunkelberg (1986) used L - Statistics and showed statistically significant results that education was not associated with new venture creation activity.

Career Experience Cooper (1981) argues, without providing empirical support, that people with more career experience will be more likely to create a new venture than people with less career experience. Shane and Khurana (2001) show that career experience increases the likelihood that an individual will create a new venture, though the magnitude of effect while statistically significant is relatively weak (i.e., $\beta = 0.01$). Bogan and Darity (2007) showed a similar trend, with work experience associated with new venture creation (regression coefficients being $b = 0.71$ for managerial experience, $b = 0.21$ for service provider, $b = 0.23$ for laborer, $b = 0.36$ for craftsman, all statistically significant). Kim, Aldrich and Keister (2003) produced mixed findings (i.e., $b = 0.38$ for general work experience, statistically significant, but $b = -0.04$ for managerial experience, statistically non-significant). Again, none of these studies reported zero-order correlation for the focal relationships.

Psychological Factors

The empirical evidence for the psychologically-based individual difference factors is similar to that for non-psychological factors. Researchers in the entrepreneurship field have identified many psychological traits which may be positively related to the new venture creation

activity. Some of them such as extroversion (Wooten et al., 1999; Roberts, 1991a), need for achievement (Begley & Boyd, 1986; Hornaday & Bunker, 1970), risk-taking (Begley, 1995), desire for independence (Cromie, 1987; Boswell, 1973), internal locus of control (Shapero, 1975; Caird, 1991), self efficacy (Baron & Markman, 1999a; Robinson et al., 1991), and overconfidence (Gartner & Thomas, 1989; Cooper et al., 1988) are argued to be positively related to the likelihood of new venture creation, whereas agreeableness (Brodsky, 1993) is argued to be negatively related to the likelihood of new venture creation. Of these factors, only need for achievement, risk-taking propensity, and locus of control of the individual in question seem to be the most salient traits that are used to distinguish entrepreneurs from non-entrepreneurs (Shane, 2003) and might have some validity (Gartner, 1985). However, empirical evidence has been far from very convincing.

Risk-taking Propensity Begley and Boyd (1987), Hull, Bosley, and Udell (1980) determined that organization founders exhibit a stronger risk-taking propensity than non-entrepreneurial individuals based on results of a comparison of means that showed statistically significant results. No correlation matrix or regression coefficient between the two variables was provided. Forlani and Mullins (2000) found a positive relationship between risk propensity and new venture choices, reporting a regression coefficient of $b = 0.26$ that was statistically significant). However, they also found that entrepreneurs tend to choose ventures with low degrees of variability, while being more willing to accept downside risk ($\chi 2 = 34.67$, $p < 0.01$). Simon, Houghton and Aquino (1999), on the other hand, found that enterprising individuals start ventures not because they knowingly accept high levels of risk, but because they do not accurately perceive the risk involved in venture creations. This study, unlike most others,

provides the correlation matrix, regression analysis and statistical significant results. The correlation between risk propensity and the decision to start a new venture is r = 0.07 (statistically non-significant). The correlation between risk propensity and risk perception is r = -0.07(statistically non-significant). The correlation between the decision to start a new venture and risk perception though is r = -0.58 (statistically significant). In their regression results, they report b = -0.58 for risk perception (statistically significant) and b = 0.04 for risk propensity (statistically non-significant).

Need for Achievement Just like risk-taking propensity, need for achievement also has produced varying findings from the entrepreneurship research. Begley and Boyd (1987), Hornaday and Aboud (1971), DeCarlo and Lyons (1979) compared entrepreneurs to non-entrepreneurs and the results of the difference of means, which showed statistically significant results, and thus determined that organization founders exhibit a stronger need for achievement than non-entrepreneurial individuals. The respective results of data for each study are M = 21.52 (SD = 2.41), M = 14.4 (SD = 4.8), M = 13.59 (SD = 3.95). Hull, Bosley, and Udell (1980), however, did not find statistically significant differences in mean scores and therefore concluded that need for achievement was a weak predictor of prospective entrepreneurs. Roberts (1989) used TAT scores to decode the subjects' score on need for achievement and found that not all technological entrepreneurs have high need-for-achievement, despite common assumptions of this particular drive. As a matter of fact, his data suggest that the median technical entrepreneur has only moderate need for achievement. Collins, Hanges, and Locke (2004) used meta-analysis to test whether need for achievement is associated with entrepreneurial behavior. They found that the zero-order correlation between the two is r = 0.21, but statistically non-significant, therefore

concluding that an individual's need for achievement has nothing to do with entrepreneurial behavior.

Locus of Control The literature seems to agree that locus of control does not distinguish an entrepreneur from a non-entrepreneur (Shane et al., 2003), even though most of the results rely on the statistical significance test. For example, Begley and Boyd (1987) compared means across groups and concluded based on a statistically non-significant effect size, that locus of control does not differentiate between entrepreneurs and non-entrepreneurs. Likewise, Hansemark (2003) shows an individual's locus of control does not predict her decision to start a new business, as evidenced by the negative regression coefficient b = -0.11 (non-significant). These studies do not report data for zero-order correlations between the locus of control and measures of new venture creation.

Why the Weak and Inconsistent Findings

A high level overview of the findings of prior research for both psychological and non-psychological factors based on statistical significance indicates results across studies for nearly all variables studied in this domain are inconsistent. While many of these studies were published during a period when reporting of zero order relationships was not common, the data reported above show that most effect sizes appear to be small. While the residual relationships for regression coefficients are sometimes more substantial, these are inconsistent and without data on the correlations they are difficult to interpret. As a result, given the magnitudes of most relationships, differences in sampling error alone could be responsible for the inconsistencies in

statistical significance across studies. But what is consistent across studies is the generally weak findings for individual difference factors as explanations for new venture creation.

Several factors have been identified that might cause weak prediction, For example, Ireland (2003) cites low paradigm development as the problem. Wortman (1987) believes too many definitions of entrepreneurship and the misuse of methodology are the culprits. However, the low base-rate for the dichotomous decision to create a new venture and the issues caused by the confounding of context and individual difference factors are two additional methodological issues in this type of research that have not been addressed in prior research that can meaningfully reduce the magnitudes of findings in previous research.

Low Base-rate Nature of New Venture Creation

According to the most recent Federal Reserve Bank report (Cagetti & Nardi, 2006), 7.6 percent of the U.S. population are self-employed business owners. This is probably a reasonable (perhaps also the highest possible) estimate of entrepreneurs among the total U.S. population given so many different definitions of entrepreneurship. The low percentage of entrepreneurs among the population may contribute to the weak findings in the entrepreneurship literature.

According to Schmidt (1999), when studying dichotomous dependent variables, whenever there is an extreme departure from a 50/50 split, there is increasingly some attenuation of the observed relationship. Low base rates, or extreme departures from a 50 percent new venture creation rate in samples of individuals used for research, make it very difficult to identified appropriate predictors. Small percentages of new venture creators in these samples lead to very attenuated correlations between predictors and new venture creation. The U.S. new venture creation rate of less than 7.6 percent obviously fits into the category of low base-rate.

The following formula from Hunter and Schmidt (1990: 274) can be used to correct a point-biserial correlation for the amount of attenuation that occurs when the sample is not split 50/50 on the dichotomous variable. The formula is:

$$r_c = ar \Big/ \sqrt{\left[\left(a^2 - 1\right)r^2 + 1\right]}$$

Where r_c is the corrected correlation, r is the original raw correlation, $a = \sqrt{[.25 / pq]}$, p is the proportion of one activity, q = 1-p. In the U.S. new creation case, p = 0.076, q = 1 – 0.076 = 0.924. If the original observed correlation 0.2 is used in the formula, the corrected correlation would be 0.36, which is an increase of 80 percent. The more split differs from 50/50 the more the observed correlation is mathematically attenuated. Thus low base-rate potentially distorts the real picture by potentially underestimating the magnitude of effect sizes.

Thus, using the act of creating a new venture (i.e., entrepreneurial action) creates difficult problems for identifying individual difference factors that are associated with new venture creation. Two alternative solutions to the base-rate problem exit. The first is to develop research samples that over-select individuals that start new ventures. An alternative is to select an alternative variable that captures the same data, but offers a higher base rate. In a significant proportion of research, the alternative variable selected is the intent to start a new venture (i.e., entrepreneurial intent).

Role of Context

People do not make decisions to exploit entrepreneurial opportunities in a vacuum, but instead are influenced by the context in which they operate. Perhaps the most provocative thesis about the effect of institutional environment on entrepreneurial activity has been Baumol's (1999) argument that the number of enterprising individuals and valuable opportunities is constant over

time and place, with only the distribution between productive and unproductive forms varying across these dimensions. The concept of context suggests that individual behavior is embedded in circumstances that are external to them. The absence of context in research not only leads to inadequate explanations for individual attitudes and behavior but also makes it more difficult to develop a common paradigm for micro- and macro-organizational research (Cappelli & Sherer, 1991; Schneider et al., 2003; Gerhart, 2005). A growing body of research suggests the importance of contextual influences on entrepreneurial behavior (e.g., Shepherd et al., 2000; Covin & Slevin 1991). These contextual influences can be broadly divided into internal factors (e.g., organizational structure, culture, and systems) and external factors (e.g., industry globalization, product/market life cycle stage, and governmental regulations). There are also other ways of categorizing environment. For instance, some categorize environment into economic environment, political environment, and socio-cultural environment. There are still others (e.g., Bruno & Tyebjee, 1982) found different factors that they judged stimulated entrepreneurship: venture capital availability, presence of experienced entrepreneurs, technically skilled labor force, accessibility of suppliers, accessibility of customers or new markets, governmental influences, proximity of universities, availability of land or facilities, accessibility of transportation, attitude of the area population, availability of supporting services, and living conditions.

Empirical Evidence for Role of Context

Research in the area of entrepreneurship so far made a great many arguments on how contexts impact the individuals' entrepreneurial behaviors. Political environment and socio-culture environment, just like economic environment, contribute to the entrepreneurial activities.

For example, political freedom (Hayek, 1995), property rights and centralization of power (Harper, 1997) have been thought to associated with new venture creation. However, probably due to the unavailability of relevant data, there has not been much convincing empirical evidence of these relationships. Researchers in the area (e.g., Shane, 2003) sometimes use anecdotal evidence to support their arguments. For instance, to prove his point that most societies experiencing hyperinflation and economic instability will also see a dramatic reduction in new firm formation and other entrepreneurial activity, Shane (2003) borrows from a Latin America newspaper report which states that in 1970s and 1980s, the number of people founding new companies in Brazil and Argentina dropped dramatically from the level that they had experienced in more stable periods.

Here too, the few available scientific studies often rely on low level evidence (e.g., weak statistical significant effects) to prove their points and results are often mixed. For example, McMillan and Woodruff (2002) and Highfield and Smiley (1987) argue that economic stability predicts entrepreneurial activity because the result is statistically significant. Penning (1982a) shows that capital availability is associated with entrepreneurial activity (regression efficient β = 0.37, and statistically significant). However, for the same relationship, Dobbin and Dowd (1997) report a regression coefficient of $b = -1.54$, non-significant.

For other aspects of economic environment, research so far has not been convincing in their predictions of entrepreneurial activities either. Audretsch and Acs (1994) examined new firm start-up activity in 117 industries at four points in time between 1976 and 1986 and found that new firm formation was higher when the growth rate of the gross national product was higher. However, the four regression coefficients 0.052, 0.053, 0.052, and 0.054, while

statistically significant, are small. Grant (1996) examined the annual percentage change in new business incorporations in the 48 contiguous states from 1970 to 1985 and the evidence suggests that recovery and recession might have similar effect on new firm formation. The regression coefficients for the three recovery periods are b = 0.13 (statistically significant), b = 0.17 (statistically significant), b = -0.16 (statistically significant) while the regression coefficients for the two recession periods are b = -0.02 (non-significant), b = -0.16 (statistically significant). Mezias and Mezias (2000) did a studied the American feature film industry between 1912 and 1929 and found a negative relationship (r = -0.21, statistically significant) between entrepreneurial activities and GNP growth for United States.

Researchers have argued that higher marginal tax rates reduce opportunity exploitation, because they make people less willing to accept variable earnings (Hubbard, 1998), and reduce people's perceptions of the profitability of exploiting opportunities (Harper, 1997), thus decreasing the likelihood of self employment. Gentry and Hubbard (2000) is probably one of the very few that provide empirical evidence for this relationship. Their findings provide some support for the above prediction. The regression coefficient is b = -0.00017, and is statistically significant.

There is little evidence for a social-cultural impact on entrepreneurial activity. Sanders and Nee (1996) showed that some ethic groups are more likely to start their own businesses than others. In their study they found mixed results for the relationship of race with new venture formation (i.e., Koreans b = 0.15, statistically significant, Mexicans, b = -0.05, non-significant, Cubans, b = 0.56, significant, Chinese, b = 0.55, non-significant, Filipinos, b = -0.17, non-significant, and Puerto Ricans, b = -0.42, non-significant).

Population density is another context variable that might make a difference in impacting the entrepreneurial behaviors. The literature seems to show mixed findings for its association with entrepreneurial activity. For example, population density had a positive effect on entrepreneurial activity in Germany (Audretsch & Fritsch, 1994, b = 0.11, statistically significant), but had a negative effect in the United States (Reynolds, 1994, b = -0.15, statistically significant).

Confounding of Individual Differences and Context

Why is the predictive capacity of so many proposed factors examined in the previous literature so low? Generally, it takes both "the right individuals", those who have the characteristics of an entrepreneur, and "the right context", a situation where all necessary resources are available and all necessary conditions are met, for entrepreneurial activities to take place. However, as reflected in the entrepreneurship literature, researchers frequently attempt to address both factors at the same time. In other words, practitioners as well as researchers seem to believe that the presence of either entrepreneurial individuals or favorable context will lead to entrepreneurial behaviors. Specifically, as indicated in Figure 3, there are four scenarios for matching or mismatching the individual factors and contexts in studies of new venture creation. Three of them might be expected to not produce new ventures -- combining the wrong individuals and the wrong context, the wrong individuals with the right context, and the right individuals with the wrong context. Only the combination of the right individuals with the right context should be expected to lead consistently to entrepreneurial behavior, with all other things being equal. This confounding of individual and context factors may offer a partial explanation for the low predictive power found in this literature.

Policy makers interested in increasing the number of new ventures traditionally use manipulations of context, through various incentives and reductions in restrictions, to enhance new venture formation. However, learning which context factors are more salient assumes that each incentive is likely to be equally potent for all individuals. If that is not necessarily the case, identifying those most important context factors is difficult. When we combine this with the generally low base rate for new venture creation in most populations, the combination creates an environment where identifying those factors most strongly associated with new venture creation—either individual differences or context—is extremely difficult.

The Way Out

In order to understand more clearly what individual difference and context factors lead to decisions to start new ventures, this study proposes a divide and conquer strategy. An optimal research design for examining the impact of context factors would use a sample of individuals that are predisposed to start new ventures. On the other hand, an optimal research design for studying which individual differences predispose individuals to start new ventures would include contexts that are optimally favorable for new venture formation. By focusing on either individual differences or context, it might be possible to begin to disentangle the complex relationship between individual differences, context and entrepreneurial behavior.

Contexts are important, but to disentangle their features to identify which aspects are really important is a difficult challenge. However, before starting to tackle the daunting task of eventually understanding what combinations or permutations of individual profile and context predicts entrepreneurial activities, it may be more helpful to first identify which individuals are

more likely to start new ventures. Previous research has identified a great many individual differences (e.g., high need for achievement, risk-taking propensity etc.) that have been argued to be associated with entrepreneurial activities. However, studying individual differences as antecedents of entrepreneurial behavior offers three significant advantages. First, the body of research on individual differences is slightly more fully developed. Second, research designs are potentially simpler because one need not supply complex scenarios or test individuals in situations as would be needed to examine the effects of context. Instead, self report surveys can be used to begin to gain insight into factors that predispose individuals to entrepreneurial activity. Third, by focusing on individuals, it is possible to move away from new venture formation as a dependent variable—and its low base rate—and move toward outcomes that are less influenced by context and more directly sensitive to the individual perceptions that drive decision making. Thus, I choose to focus on individual differences that predispose individuals to entrepreneurial activity. Having data on those individuals that predispose them to take entrepreneurial actions would then be very valuable in developing research designs to identify which factors create the strongest contextual drivers of new venture formation.

Therefore, two key features of this study will be attempting to minimize the influence of context and to avoid using a dichotomous outcome associated with a low base rate. Two variables that meet these criteria are intent to engage in entrepreneurial behavior and entrepreneurial orientation. Intent to start a new venture has been used in previous research; however, entrepreneurial orientation is a new construct that will be introduced in this study. Both are less context-dependent than entrepreneurial behavior, and continuous.

Intent is the best predictor of behavior (Azjen, 1980). The intent to engage in entrepreneurial activities applies to both new venture creation and within existing teams. Entrepreneurial orientation is defined as an individual's attitude towards entrepreneurial activities in this study. Like entrepreneurial intent, entrepreneurial orientation is continuous. But it is even less context-dependent. It is supposed to be a common theme of the individual's predictors.

Previous literature in entrepreneurship has documented the debate with varying opinions about whether an entrepreneur is born or made and how much of entrepreneurial success can be attributed to nature versus nurture. Researchers as well as entrepreneurs themselves often question whether one is more accurate than the other, nature versus nurture. A review of relevant literature identifies studies that attempt to list factors and attributes that contribute to entrepreneurial success (e.g., Rogoff, et al., 2004; Sahlman, 1990; Sapienza, 1991; Timmons, 1994; Zacharakis, 1999). Authors have searched to define the common personality traits of entrepreneurs in an attempt to show that entrepreneurs are intrinsically different from other business managers (e.g., McClelland, 1961; Smith-Hunter, 2003). Of course those who claim intrinsic entrepreneurial traits also state that no amount of training will make an entrepreneur.

On one hand, some researchers believe that entrepreneurs are born and not made, echoed by entrepreneurs themselves (e.g. Bo Peabody, an internet entrepreneurial multi-millionaire, according to Farrell, G. [2005], stated, "One does not decide to be an entrepreneur. One is an entrepreneur. Those who decide to be entrepreneurs are making the first in a long line of bad business decisions.") On the other hand, there are others represented by Shefsky (1996), who conducted research of more than 200 entrepreneurs, concluding that successful entrepreneurs are

made and not born. Many other authors (e.g., Aldridge, 1999; Begley & Boyd, 1987; Gartner, 1988; Johnson, 1990; Mueller & Thomas, 2001; Shaver, 1995; Spangler, 1992; Baron, 1998; Douglas & Shepherd, 2000; Simon et al, 2000) seem to have contributed to this stream of thought. Finally, there are those who believe that successful entrepreneurs have a combination of innate character traits and training. Watkinson (2004), who studied examples of successful entrepreneurs including Herb Kelleher, former CEO of Southwest Airlines, is a representative of this group.

Using the concept of entrepreneurial orientation, the made or born debate will seem to be less relevant. It does not matter so much whether an entrepreneur is made or born. As long as he or she possesses the entrepreneurial orientation, he or she is likely to have the entrepreneurial intent and entrepreneurial behavior. However, identifying which individual differences are most predictive of entrepreneurial orientation can provide insight into the extent to which entrepreneurial behavior is more strongly determined by fixed dispositions (meaning entrepreneurs are born) or dynamic or learnable states (meaning entrepreneurs can be made).

CHAPTER III. HYPOTHESES

The weak prediction of the individual factors is attributed to the contingency of context and low base rate nature of the new venture creation in previous studies. In this study, my goal is to disentangle individual differences and context by focusing solely on individual difference factors that predict entrepreneurial behaviors. But in order to remove the influence of context, I intend to use predictions from the theory of reasoned action (Ajzen, 1975) to move away from entrepreneurial action to intention, which is somewhat, though less, tied to context, and ultimately to entrepreneurial orientation, which I hypothesize is even more context free than entrepreneurial intent.

This section will first list the model for the study, and then review the relevant literature for the concepts (i.e., individual factors, entrepreneurial orientation, intent and behavior of being entrepreneurial) and their relationship listed in the model in Figure 4. The lynchpin of all these concepts will be entrepreneurial orientation, which is conceptualized as context free and continuous. Entrepreneurial orientation is assumed to be predicted by the four elements of individual factors mentioned above, but at the same time will predict entrepreneurial intent. It is hoped that the introduction and use of the concept will boost the predicting power of individual factors. Following this, new hypotheses will be proposed after the literature review of the concepts.

Model for This Study

Entrepreneurship behavior is the outcome of interest in this model. However, as it is context-dependent, the intent of an individual to engage in entrepreneurial behavior is brought in, as it is less context-dependent. Entrepreneurial behavior in this study will consist of the entrepreneurial activity in the existing firm and the behavior of new venture creation. The concept of entrepreneurial orientation has been examined in previous literature at the organizational level (Lumpkin & Dess, 1996). This study will conceptualize it at the individual level. Entrepreneurial orientation is defined as context-free and mediates the relationship between all individual factors and an individual's intent to be engaged in entrepreneurial behaviors.

Previous research has covered all kinds of predictors (e.g., individual differences and environments) of new venture creation activities. This study will focus on psychological individual differences. Non-psychological individual differences are not incorporated because they represent specific contextual influences on the individual. Of all those individual differences studied, only three of the individual differences (need for achievement, locus of control and risk-taking propensity) may have some validity according to Gartner (1985). Also the entrepreneurship literature (e.g., Shane and Venkataraman, 2000) seems to suggest that opportunity recognition skills constitute the core of entrepreneurship. Therefore, this study will use four individual factors to predict the intent to be entrepreneurial. As the "proactiveness" is necessary for internal locus of control, which previous literature suggests likely leads to entrepreneurship behavior, and also because "proactiveness" is part of the organizational-level

entrepreneurship orientation, this study will include opportunity recognition, proactiveness, need for achievement, and risk-taking propensity in the individual factors. These relationships are depicted in Figure 4.

Entrepreneurial Orientation

Entrepreneurial orientation has been examined empirically in studies that have defined this construct at the firm level. It is probably Miller (1983) that has provided a useful starting point for the concept of entrepreneurial orientation. He suggested that an entrepreneurial firm is one that "engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch" (1983: 771). Accordingly, he used words "innovativeness," "risk taking," and "proactiveness" to characterize a firm that is entrepreneurial. Later-coming researchers have adopted an approach based on Miller's (1983) original conceptualization (e.g., Covin & Slevin, 1989; Ginsberg, 1985; Morris & Paul, 1987; Naman & Slevin, 1993; Schafer, 1990). For example, the frequently-cited piece by Covin and Slevin (1989) investigated the entrepreneurial firms' performance in hostile and benign environments. In their study, the concept of "entrepreneurial strategic posture" was measured using a scale that ranked firms as entrepreneurial if they were innovative, risk taking, and proactive.

More recently, Lumpkin and Dess (1996) added another two characteristics to the original concept proposed by Miller (1983)—autonomy and competitive aggressiveness. Autonomy refers to an individual or a team's independent action to bring forth an idea or a vision and carry it through to completion. Competitive aggressiveness refers to a firm's

propensity to directly and intensely challenge and outperform industry rivals in the marketplace. Due to its “liability of newness” (Stinchcombe, 1965), many researchers (e.g., MacMillan, 1982; Porter, 1985) argued that an aggressive stance and intense competition are critical to the survival and success of new entrants.

According to Lumpkin and Dess (1996), at the firm level, entrepreneurial orientation refers to the processes, practices, and decision-making activities that lead to new entry, involves the intentions and actions of key players functioning in a dynamic generative process aimed at new-venture creation. The five characteristics of entrepreneurial orientation are a propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities.

The strategy literature (e.g., Andrews, 1971; Chandler, 1962; Schendel & Hofer, 1979) has acknowledged the importance of entrepreneurial orientation to a firm’s performance. A strong entrepreneurial orientation has been assumed to be necessary for a firm’s high performance (Collins & Moore, 1970; Covin & Slevin, 1991; Peters & Waterman, 1982; Schollhammer, 1982; Zahra, 1993). However, the assumption still remains to be tested. Zahra (1993) found that there is "a paucity of empirical documentation of the effect of entrepreneurship on company financial performance." As the previous research attempted to use entrepreneurial orientation to predict firm performance, their use of a multi-dimensional construct is confusing. First of all, all the five dimensions of entrepreneurial orientation are not distinct. Many researchers in this area did not give explicit explanation of the differences between one dimension “competitive aggressiveness” and “proactiveness” when discussing the issue. Second, nobody gives a clear answer on the issue whether the five dimensions should or should not

strongly correlate with each other. Also, who is to say that there should be three or five dimensions for the construct "entrepreneurial orientation"? It has changed over time. Third, the authors on this topic have obviously employed a formative model suggested by Edwards and Bogazzi (2000), which has important implications for appropriate interpretations of research findings. While previous research has used entrepreneurial orientation at the firm level, in this research I re-conceptualize entrepreneurial orientation as an individual difference construct.

For the purpose of this study, entrepreneurial orientation (EO) is defined as an individual's attitude toward entrepreneurial behaviors. Compared with the entrepreneurial orientation in the main stream entrepreneurship literature, the entrepreneurial orientation in this study is distinctly different. First of all, the level of analysis is different. The one predominantly used in the literature (e.g., Lumpkin & Dess, 1996) is at the organizational level, but the one currently adopted in this study is at the individual level. Second, the level of dimension is different. The organizational-level EO is multi-dimensional (i.e., It has three to five dimensions depending on which one you talk about), while the current EO is uni-dimensional. However, it is not true that the two EO have nothing to do with each other. The dimensions of the original EO now are presumed to predict the current EO.

As Ajzen (1980) indicated that attitude is a major antecedent of intent, in this study, entrepreneurial orientation, which is an individual's attitude towards entrepreneurship, will be proposed to predict the intent to be entrepreneurial. This intent, depending on the context, could be categorized into entrepreneurial intent and intrapreneurial intent. The existing literature indicates the entrepreneurial intent as the intent to create a new venture. Intrapreneurial intent refers to the intent to engage in entrepreneurial activities in an existing firm.

Entrepreneurial Intent

Intent is a state of mind directing a person's attention (and therefore experience and action) toward a specific object or a path in order to achieve something (Bird, 1988). A number of researchers have examined the concept of intention. James (1950) construed it as an independent faculty of the mind, operating through a person's attention (holding the intended image in the mind) and consent (inner dialog or self-talk which says, "Let it be so"). Zeigamik (1927, cited in McClelland, 1985) addressed the tension aspects of intent and showed that a person's intentions sustain value or effort despite interruptions. Bugental (1980) and May (1975) have found that the process involves persistence, perseverance, and courage. Miller, Galanter, and Pribram (1960) include intentional control over those mental images and values which guide behavior as a factor in their cybernetic model of behavior. Searle (1970) have focused on processes that build or define intention, suggesting that how individuals express promises and goals is important.

"Since much of human behavior appears to be under volitional control, . . . the best single predictor of an individual's behavior will be a measure of his intention to perform that behavior" (Fishbein & Ajzen, 1975, p. 369). Since this study concerns the individual’s intent to engage in entrepreneurial behavior, which is aimed at creating a new venture or participating any entrepreneurial activity in an existing firm, the argument by Fishbein & Ajzen (1975) and Rokeach (1960) seem to be also very relevant. They have demonstrated the importance that intentional elements, such as expectation, attention, and belief, have on behavioral outcomes. Understanding intentions proves particularly valuable where the focal phenomenon is rare, obscure, or involves unpredictable time lags—a focal phenomenon such as entrepreneurship (MacMillan & Katz 1992).

Entrepreneurial intent is the state of mind that directs and guides the actions of the entrepreneur toward the development and the implementation of new business concepts (Erikson, 1998). Personal profile such as experience, characteristics, personality and social context such as government deregulation of industries or redundancies may contribute in the formation of entrepreneurial intent (Bird, 1992).

Krueger et al (2000) considered the decision to become an entrepreneur as voluntary and conscious. Therefore, entrepreneurship may be viewed as a process that occurs over time (Gartner et al, 1994; Kyrö & Carrier, 2005). In this sense, entrepreneurial intent would be a necessary step in the evolving and –sometimes- long-term process of venture creation (Lee & Wong, 2004). The intent to start up, then, would be a previous and determinant element towards performing entrepreneurial behaviors (Kolvereid, 1996; Fayolle & Gailly, 2004).

Katz and Gartner (1986) believed that intent includes a dimension of location: the entrepreneur's intention (internal locus) and intentions of other stakeholders, markets, and so forth (external locus). Bird (1988) proposed another dimension of entrepreneurial intention: that of rationality versus intuition. According to Bird (1988), entrepreneurial intent determines the form and direction of an organization at its inception, when everything is still in its formative stage, when the influences of external stakeholders, corporate structure, politics, image, and culture have not yet been established. Subsequent organizational success, development, growth, and change are based on these intents, which are either modified, elaborated, embodied, or transformed. Thus, intent affects a venture's success, which is often defined as the firm's survival and growth. Besides offering the significant predictive validity (Sheppard et al., 1988), intentions toward a behavior are absolutely critical to understanding other antecedents (e.g., situational role

beliefs), subsequent moderators (e.g., availability of critical resources) and the final consequences of that behavior (e.g., new venture initiation) (Krueger & Carsrud, 1993).

Previous research including Gartner (1985, 1989) and Robinson et al (1991) have used traits and demographic variables differentiating entrepreneurs from non entrepreneurs. Both lines of analysis have identified relationships between certain traits or demographic characteristics of the individual, and the entrepreneurial behaviors. However, their predictive capacity has been very limited (Reynolds, 1997). Many authors have criticized those approaches (Gartner, 1989; Robinson et al., 1991; Baron, 1998; Veciana et al., 2005) for their methodological and conceptual limitations as cause for their low explanatory capacity. As discussed above, this study argues that context plays an important role in the low-power predictions and considers moving on to variables which are less context-dependent.

As suggested by Ajzen and Fishbein's Theory of Planned Behavior (1980), entrepreneurial intent is intent, and can be predicted by entrepreneurial orientation, which indicates an individual's attitude towards an entrepreneurial behavior. Therefore, I offer the following hypothesis:

Hypothesis 1: *Entrepreneurial orientation is positively related to entrepreneurial intent.*

Integrating the individual differences, the five elements of organizational entrepreneurial orientation summarized by Lumpkin and Dess (1996) will be modified to four new individual differences: opportunity recognition, proactiveness, need for achievement and risk-taking propensity. They are used as predictors of entrepreneurial orientation. I replace "competitive aggressiveness" and "innovativeness" with "opportunity recognition" and "need for achievement" because the former apply more after the new venture is in place. The four new predictors

selected in this study have been used to predict new venture creation behavior (e.g., Gartner, 1985) and entrepreneurial intent (e.g., Krueger et al., 1993). As an individual's entrepreneurial orientation is presumed to capture the commonality of individual factors, the four individual factors chosen in this study should also predict one's entrepreneurial orientation well, probably more strongly than they predict the new venture creation behavior and entrepreneurial intent, because the there is less noise (i.e., context factor) related to entrepreneurial orientation than the other two. This section will review the relevant literature concerning the four predictors: opportunity recognition, proactiveness, need for achievement, and risk-taking propensity.

Opportunity recognition

Much of the previous research (e.g., Kirzner, 1979; Timmons, Muzyka, Stevenson, & Bygrave, 1987) consider opportunity recognition to be the core of entrepreneurship. Entrepreneurs are often characterized by their ability to recognize opportunities (Bygrave & Hofer, 1991) and the most basic entrepreneurial actions involve the pursuit of opportunity (Stevenson & Jarillo, 1990). However, opportunity recognition has been an under-researched area of entrepreneurship (Venkataraman, 1997).

There exist many definitions of the term opportunity, but most cite references to the capacity to generate profit, new product, service, or technology that did not exist previously. Some studies (e.g., Timmons, 1994) describes opportunities in terms of "fit" among three key elements of entrepreneurship —the entrepreneur, available resources, and the opportunity (or business concept) itself. Others (e.g., Gaglio & Taub, 1992; Long & McMullan, 1984) investigate the characteristics of entrepreneurs and how their background and know-how

influence the process. There are also those (e.g., Hills et al., 1997) suggesting that the stages of Wallas' (1926) model of creativity provides the necessary steps for modeling opportunity recognition and focusing primarily on the creative aspects of the opportunity recognition process. Wallas's (1926) original model includes preparation, incubation, insight, and evaluation. Later, Kao (1989) added elaboration to the model to highlight the importance of advancing a creative idea.

However, most of the definitions for entrepreneurial opportunity are problematic. For instance, many researchers (e.g., Shane and Venkataraman, 2000) adopted Casson's (1982) definition of entrepreneurial opportunities as "those situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production." This requires that entrepreneurial opportunities generate profit. For those firms that never turn a profit, if we are to use the above definition, we must assume that no opportunity existed for the founding entrepreneurs. Another example, Timmons (1994) argues that an opportunity "has the qualities of being attractive, durable, and timely and is anchored in a product or service which creates or adds value for its buyer or end user" (1994: 87). However, the very use of the terms attractive, durable, *timely*, and window of opportunity can only be applied post hoc, after the first movers (1) have developed a market and there is some data to support future opportunities or (2) have become successful (Singh, 2000).

In this study, I adopt a definition of opportunity which is close to Singh's definition of opportunity. Singh (2000) states that an entrepreneurial opportunity should be defined as a feasible, profit-seeking, potential venture that provides an innovative new product or service to the market, improves on an existing product/service, or imitates a profitable product/service in a

less-than-saturated market. This definition, especially its use of the word “venture” will likely remind people of new venture creation. However, this study believes that opportunity exists in both new venture creation and within existing firms. Hence, opportunity in this study is defined as a feasible, profit-seeking, potential undertaking that provides an innovative new product or service to the market, improves on an existing product/service, or imitates a profitable product/service in a less-than-saturated market. Opportunity recognition is defined as the cognitive process (or processes) through which individuals conclude that they have identified an opportunity.

Previous research has had at least two different camps on whether opportunity recognition is the result of a deliberate search or a ‘discovery’ process. Herron and Sapienza (1992) believe that it results from an active search of the entrepreneur. Kirzner (1973) on the other hand considered it a discovery process without pre-planning. Bhave (1994) suggested there were two types of opportunity recognition: one in which the decision to venture preceded the recognition of an opportunity, consistent with an active search for an opportunity, and one in which the opportunity was ‘discovered’ prior to the decision to venture. For both of the two types, the alertness and capability to recognize the opportunity is essential. It is not the purpose of this study to study the number of definitions or camps. However, the study will focus on the opportunity recognition alertness/ability and its impact on the individual’s intent to create a new venture.

To successfully recognize an opportunity, entrepreneurs must somehow gather, interpret, and apply information about specific industries, technologies, markets, government policies, and other factors necessary to the project in question (Ogden & Baron, 2007). Archdvili et al (2003)

suggests that such information plays a crucial role in both current and subsequent pursuit of the opportunity. Shane (2000, 2003) also suggests that relevant information is essential in recognizing an opportunity. Similarly, Sarasvarthy et al. (1998) and Busenitz (1996) note that some entrepreneurs succeed in identifying the opportunity because they gather and process information differently–perhaps more effectively than other people. Baron (2006) believes that entrepreneurs are able to recognize opportunities because they have a superior pattern of cognitive structures that help them identify the opportunities.

Pro-activeness

Proactiveness has been defined as a forward-looking perspective characteristic of a marketplace leader that has the foresight to seize opportunities in anticipation of future demand (Dess & Lumpkin, 2005). Used as a firm-level construct, proactiveness often refers to a firm's efforts to seize new opportunities, monitor trends, identify the future needs of existing customers, and anticipate changes in demand or emerging problems that can lead to new venture opportunities (Miller, 1983; Covin & Slevin, 1989; Dess & Lumpkin, 1996). Proactiveness involves not only recognizing changes but also being willing to act on those insights ahead of the competition (Lumpkin & Dess, 1997). Such a forward-looking perspective is important for companies that seek to be industry leaders or change the very nature of competition in their industry, as proactiveness is especially effective at creating competitive advantages because it puts competitors in the position of having to respond to successful initiatives (Dess and Lumpkin, 2005).

Previous research on entrepreneurial orientation did not differentiate between proactiveness and competitive aggressiveness, even though they are two separate constructs. As a matter of fact, in the probably-most-cited piece on entrepreneurial orientation by Covin and Slevin (1989), the 3–item proactiveness scale used in the Covin and Slevin (1989) study is identical to the "competitive aggressiveness" scale used in a 1990 study by Covin and Slevin. Although a proactive stance relative to competitors may be vital to entrepreneurial success, Covin and Slevin's approach seems to have minimized important differences between competitive aggressiveness and proactiveness (Dess & Lumpkin, 1997).

Lumpkin and Dess (1997) suggest that proactiveness and competitive aggressiveness are distinct concepts with unique definitions. Trying to be consistent with Miller and Friesen's (1978) view of proactiveness as shaping the environment by introducing new products and technologies, and with Venkatraman's (1989) definition of proactiveness as "seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle" (Venkatraman, 1989: 949), Lumpkin and Dess emphasize proactiveness as a forward–looking perspective characteristic of a marketplace leader that has the foresight to act in anticipation of future demand. In contrast, competitive aggressiveness stresses the intensity of a firm's efforts to outperform industry rivals and is often characterized by a strong offensive posture directed at overcoming competitors and may be quite reactive as when a firm aggressively enters a market that a rival has identified.

Based on the distinctions discussed above, proactiveness could be treated as a response to opportunities whereas competitive aggressiveness can be treated as a response to threats. These

distinct roles are noted by Chen and Hambrick (1995: 457) who suggest that "a firm should be both proactive and responsive in its environment in terms of technology and innovation, competition, customers and so forth. Proactiveness involves taking the initiative in an effort to shape the environment to one's own advantage; responsiveness involves being adaptive to competitors' challenges."

Moving from a firm-level construct to an individual-level construct, proactiveness in this study will be defined as an individual's forward-looking perspective characteristic of a potential entrepreneur that has the foresight to seize opportunities to create a new venture or engage in entrepreneurial projects in a existing firm. This forward-looking perspective will help the potential entrepreneur envision the benefits of being engaged in entrepreneurial activities. Actually Kickul and Gundry (2002) found some association between proactiveness and entrepreneurial activity. However, Krueger (2005) disputes it because of its lack of theoretical foundation.

Need for Achievement

In an interview with Forbes, McClelland (1961) stated, "We've spent twenty years studying just this [why one businessman succeeds and another fails], twenty years in the laboratory doing very careful research, and we've isolated the specific thing. We know the exact type of motivation that makes a better entrepreneur. Not necessarily a better head of General Motors; I'm talking about the man who starts a business." He went on to say that the specific characteristic is the individual's need for achievement (Ko, 1983).

With evidence showing that the rate of economic growth of a number of different countries over the period from 1925 to 1950 was significantly correlated with the degree to which need for achievement themes were found in stories in widespread use in children's books in the respective cultures, McClelland (1957) argued that high achievement motivation should be associated with successful entrepreneurship.

Since the pioneering work of McClelland (1961), the need to achieve (n ach) has been argued by many researchers (Sexton and Bowman, 1985; Hamada & Aboud, 1971; Decal & Lyons, 1979) to be associated with entrepreneurial behaviors. Often these researchers argue with the logic that high achievers set challenging goals and value feedback as a means of assessing goal accomplishment, and compete with their own standards of excellence and continuously seek to improve their performance. However, there has also been a great amount of research which has found only weak association between the need for achievement and entrepreneurship behavior. For example, Hull, Bosley, and Udell (1980) found that need for achievement was a weak predictor of prospective entrepreneurs. Roberts (1989) found that not all technological entrepreneurs have high need-for-achievement, despite common assumptions of this particular drive. As a matter of fact, he found that the median technical entrepreneur has only moderate need for achievement.

Why is the gap between expectation and evidence? This may be a result of the poor use of research design (e.g., inappropriate use of instruments) or because of the poor conceptualization, or the combination of both. Some research (e.g., Durand & Shea, 1974; Johnson, 1990; Kock, 1965; McClelland, 1961; McClelland & Winter, 1969; Morris & Fargher, 1974; Wainer & Rubin, 1969) tended to use the Thematic Apperception Test (TAT). Others

(Ahmed, 1985; Begley & Boyd, 1987; Cromie & Johns, 1983; Hornaday & Aboud, 1971; Hornaday & Bunker, 1970; Perry et al., 1986), on the other hand, have used Edward's Personal Preference Schedule (EPPS) (Edwards, 1959) and Lynn's Achievement Motivation Questionnaire (Lynn, 1969). However, these studies have been carried out on already established entrepreneurs and have been conducted without any consideration that there could exist any gender-specific differences (Hansemark, 2003). As a matter of fact, Fineman (1977) even points out that no validity had been shown for the EPPS, and Lynn (1969), in the report about the test construction of Lynn's Achievement Motivation Questionnaire, could not establish statistically significant differences between managers and entrepreneurs. This might partially explain the gap. It may be that the personal characteristic was developed after or maybe because of the entrepreneurial activity, and was not an important prerequisite for entrepreneurship.

Risk-taking Propensity

According to Brockhaus (1980), the propensity for risk taking is defined as the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation.

Such a definition might best describe the situation that faces the potential entrepreneur when he decides to establish a new business venture. For entrepreneurs, risk is a central element in a variety of decision contexts, including those dealing with entry into new ventures or new markets (Dickson, 1992; Timmons 1994), and new product introductions (Devinney, 1992).

Indeed, the uncertain nature of consumer and competitive responses to most entrepreneurial decisions makes consideration of risk an everyday task for most entrepreneurs, as well as for investors whose funds make possible entrepreneurs' pursuit of their dreams (Hall & Hofer 1993; Raquel & Richards 1992). Ray (1994) states that opportunities, which some see as the heart of entrepreneurship, cannot be fully understood without a careful consideration of risk, because pursuing opportunities without regard to the resources currently under control is risky and waiting until the resources are under control will increase the risk that the opportunity will disappear or be captured by another. According to Burch (1986), "The antithesis of the entrepreneur is a person who never loses because he or she never puts himself or herself at risk."

The literature on entrepreneurship has often portrayed the entrepreneur as a risk-taker with expectation of receiving a profit as reward for this risk-bearing (Mises, 1963; Palmer, 1971). McClelland (1961) demonstrated that certain personality characteristics, such as willingness to take risks, usually associated with the entrepreneurial role. His later work (e.g., McClelland, 1967) found that extreme risk or complete safety did not provide entrepreneurs with an incentive. He theorized that entrepreneurs function best in situations offering moderate risk of failure, presumably because they believe that such risk can be reduced by increased effort or skill. Finding that entrepreneurs work no harder than others on routine tasks or tasks that do not deviate from traditional methods, he posited the entrepreneur as a moderate risk-taker. Webster (1977) also concluded that entrepreneurs are moderate risk-takers, but pointed out that this characteristic does not differentiate them very much from other kinds of managers, a point that was reinforced by Sexton and Bowman (1985).

Empirical studies on risk-taking behavior among entrepreneurs have reported weak and mixed findings, as discussed in the previous sections. Realizing that research examining the risk-taking propensities of entrepreneurs and managers has produced conflicting findings and no consensus, which is holding the progress of entrepreneurship field, Steward and Roth (2001) did a meta-analysis concerning risk propensity differences between entrepreneurs and managers. Results indicate that entrepreneurs have a higher risk propensity than that of managers. This same study also shows that large differences exist between entrepreneurs who are growth-oriented and those who only focus on producing family income. Following this study (Steward and Roth, 2001), Miner and Raju (2004) did a meta-analysis using another group of studies not included in the Stewart and Roth (2001). Their results showed that entrepreneurs (and those with a growth orientation) are more risk avoidant. What a contrast!

In seeking to develop a consensus definition of entrepreneurship, Gartner (1990, p. 21) identifies a theme organized around individuals with perceived unique personality characteristics and abilities and risk taking is on top of the list. However, in a study of entrepreneurial types in new Spanish firms, Lafuente and Salas (1989) do not see risk-taking as an attribute of entrepreneurs in general or a function of the new venture development process within an economy. Webster (1976) is one of the few who refers to entrepreneurs as risk-avoiders.

Why the gap again? Low and Macmillan (1988) believe that it is "perhaps more insightful to view entrepreneurs as capable risk managers whose abilities defuse what others might view as high risk situations" and Ruhnka and Young (1991) echoed that risk is relative and contextual and it is not simply an economic function or a behavioral attribute, but it is part of a strategic process in new venture development. There are also other researchers (March & Shapira,

1987; Palich & Bagby, 1995; Saravathy et al., 1998; Simon et al., 2000) who hold that risk perception, rather than risk propensity, might explain why individuals start ventures, and thus a general measure of risk taking is likely to be highly misleading. This seems to be consistent with several studies that emphasized the importance of risk perception in explaining risky action (Lieberman & Montgomery 1988; Nutt 1986; and Staw, 1991). Some actually proposed that managers proceed with an action because they do not perceive the action's riskiness (Hahnemann & Lovallo, 1993; March & Shapira, 1987). It is also found that risk taking is strongly associated with opportunity and threat perceptions, especially in less-novel situations where decision makers have signals about their competence and thus the feasibility of that possible opportunity (Krueger and Dickson, 1994).

The four predictors in this study (i.e., opportunity recognition skills, proactiveness, need for achievement and risk-taking propensity) have been presumed to be associated with new venture creation. Therefore, consistent with Ajzen's (1991) Theory of Planned Behavior, I offer the following hypothesis:

Hypothesis 2: *Opportunity recognition, proactiveness, need for achievement and risk-taking propensity are positively related to entrepreneurial intent.*

If entrepreneurial orientation is supposed to be the commonality of all those potential psychological individual differences that lead to entrepreneurial intentions and ultimately entrepreneurial behaviors, then the four predictors of the intent should also be associated with entrepreneurial orientation. Therefore, I hypothesize:

Hypothesis 3: *Opportunity recognition, proactiveness, need for achievement and risk-taking propensity are positively related to entrepreneurial orientation.*

The literature suggests that the findings of the relationships between these predictors and new venture creation are quite weak and oftentimes mixed. An individual with high score in one of them (opportunity recognition skills, proactiveness, need for achievement and risk-taking propensity) does not necessarily want to create a new venture. Only he who has an entrepreneurial orientation (i.e., a favorable attitude towards the entrepreneurial activity) is likely to create a new venture. For instance, one who has a strong risk-taking propensity but does not have an entrepreneurial orientation might choose to undertake another cause (e.g., drug trafficking) which is also risky. Therefore, I hypothesize that those people who possess these four elements are more likely to have the intent to create a new venture or engage in entrepreneurship within a firm, with entrepreneurial orientation as the mediating variable.

Hypothesis 4: *Entrepreneurial orientation mediates the relationship between opportunity recognition, proactiveness, need for achievement and risk-taking propensity and entrepreneurial intent.*

Cultural and Situational Factors

Previous research (e.g., Hofstede, 1980; Adler et al., 1992; Fang, 2000) has suggested that countries can be different in many different aspects and those differences may have implications for the business activities between those countries. Weber (1904) argued that at the society level, differences in entrepreneurial activity can be explained by cultural and religious factors. Shane (2001) argues that the political environment of the society also impact the level of entrepreneurial activities in a society. This section of the study will attempt to discuss three

aspects of differences (i.e., culture, religion and political climate) between the United States and China that might lead to individuals' different entrepreneurial orientation and entrepreneurial intent.

Culture has been considered an essential element for business research (Hofstede, 1980). Adler et al. (1992) suggests that any study involving Chinese business activities without discussing culture would be inappropriate. Franke, Hofstede and Bond (1991) argued that differences in cultural values, rather than in material and structural conditions, are ultimate determinants of human organization and behavior, and thus of economic growth. Using samples of 18 and 20 nations, Franke et al demonstrated that cultural indices explain more than 50 percent of the international differences in economic growth rates for the periods of 1965-80 and 1980-87.

Researchers have had different opinions on the impact of culture on entrepreneurial activities. Some research suggests that entrepreneurs across cultures are more similar to each other than to their non-entrepreneurial counterparts in their own countries. For example, McGrath et al. (1992) discovered that entrepreneurs, regardless of nationality or cultural background, share a predictable set of values that are different from those non-entrepreneurs. Similarly, Baum et al. (1993) found that differences between Israeli entrepreneurs and non-entrepreneurs in their attitudes toward achievement, affiliation, autonomy, and dominance were greater than between Israeli and American entrepreneurs. However, others (e.g., Thomas & Muller, 2000) argue that while entrepreneurs might share some universal traits, others might be more culture specific.

According to Shane (1992), two aspects of culture should have an influence on entrepreneurship. The first aspect, the extent to which a society stresses social hierarchy, should decrease entrepreneurship because a hierarchical society has less communication, decentralization, and trust, all of which are necessary for entrepreneurship. Second, individualistic societies should be more entrepreneurial than collectivistic ones. Individualistic societies support more freedom, less loyalty, and psychological characteristics of independence, achievement, and non-conformity, all of which are thought to be necessary for entrepreneurship. Previous authors (e.g., Redding, 1980; Hofstede, 1980; Shane, 1992) suggest that as a society, the United States is much less hierarchical and much more individualistic than China. This may imply that the former is encouraging entrepreneurship more than the latter.

Besides culture, religion is another factor that may differentiate the entrepreneurship level in the United States from that in China. The major religions in China are quite different from Christianity in the United States (e.g., Weber, 1951; Soothill, 1913). While the religion in the United States contributes to entrepreneurship (e.g., Weber, 1904), many elements of the Chinese religions seem to discourage entrepreneurship. The three pillars of religion in China are Confuciousism, Taoism and Buddhism. While Buddhism is more concerned about the afterlife, Confuciousim and Taoism seem to focus on the current life, and are probably more relevant to entrepreneurship. One major doctrine of Taoism is about "Doing Nothing". In other words, what human beings are attempting to accomplish are in a sense futile efforts, since the nature will decide the outcome. A major creed of Confuciousism is "to absolutely obey and never challenge the authorities." Depending on the area/province in question, one or more of them may play a more important role than others. Confucius himself was born in what is now the Shandong

Province, where I got majority of the entrepreneur sample. Jiangsu Province, where I obtained the Chinese college student sample, is adjacent to Shandong Province. Therefore, it will be no surprise that the two doctrines mentioned will influence the individuals' entrepreneurial orientation and entrepreneurial intent in these areas.

The third element that might impact the entrepreneurship activities is the political climate. Previous research has argued that a favorable political climate (e.g., a democratic society, a freer society, private ownership, property rights security, financial liberalization, and active political reforms) should produce more entrepreneurial activities (Shane, 2001). However, there is little empirical evidence on this. The anecdotal evidence (e.g., the media) seems to suggest that the United States has more elements of the political climate than China.

All the above-mentioned factors (i.e., culture, religion and political climate) seem to suggest that the United States is more favorable to entrepreneurship than China. Therefore, I propose the following hypothesis:

Hypothesis 5: *On average, U.S. college students will have a stronger entrepreneurial orientation and entrepreneurial intent than Chinese college students.*

Research in the entrepreneurship (e.g., Shapero & Sokol, 1982; de Wit & van Winden, 1989) has found that the employment status of the parent may influence the children's choice on whether to become self-employed. Brockhaus (1982) cited four studies suggesting entrepreneurs tend to have entrepreneurial fathers. Cooper and Dunkelberg (1984) reported 47.5% of 1,394 entrepreneurs had parents who owned a business. Jacobowitz and Vidler (1982) found that 72% of mid-Atlantic state entrepreneurs had parents or close relatives who were self-employed. Shapero and Sokol (1982) reported that 50 to 58% of company founders in U.S. had self-

employed fathers (at a time when self-employed were only 12% of the workforce). Waddell (1983) found that 63 percent of the female entrepreneurs in his study had fathers who started their own businesses and 36 percent had self-employed mothers.

Attempting to explain the phenomenon, many authors have suggested that role models are important in the decision to start a business (Cooper and Dunkelberg 1984; Cooper 1986; Holland 1973; Krueger, 1993; Shapero and Sokol, 1982; Timmons 1986; Waddell 1983). Cooper (1986) reported that firm founders were influenced by role models in their decision to become entrepreneurs. Brockhaus and Horwitz (1986) conclude that, ". . . from an environmental perspective, most entrepreneurs have a successful role model, either in their family or the work place" (p. 43).

Some researchers (e.g., Scherer, Adams, and Wiebe 1988; Scherer et al. 1989) have used Social Learning Theory to investigate the link between a parent role model and the development of preference for an entrepreneurial career. These results suggest that even in the presence of a low-performing entrepreneurial role model, the most salient factor for entry into an entrepreneurial career remains the parental role model. Scott and Twomey (1988) also found a link between the parental role model and preference for self-employment, offering additional evidence for the role model relationship. Scherer et al. (1989) note, however, that additional studies may be needed as their results may be affected by the predominantly rural location of their subjects.

The social resource theory or network theory has also been used to describe the start-up process (Aldrich & Zimmer, 1986; Johannisson, 1988; 1998). Aldrich et al. (1997) assert that parents can provide two sorts of capital: (a) “entrepreneurial capital, encompassing the

traditional notion of “human capital” but focusing specifically on attitudes, values, skills and emotions that are relevant to business ownership” (p.8), and (b) financial capital, such as passing on an existing business or making loans and gifts enabling the business start-up. These resources can be seen as part of both personal and social resources depending on the degree of control that the adult child can exercise (Delmar, 2001). In order to examine which resources were provided, Aldrich et al. interviewed 229 small business owners. They found that children of self-employed did benefit from higher financial and physical capital. They found only weak support for their hypothesis that entrepreneurial capital is more important for the children of self-employed than financial and physical capital. These results can be contrasted with Lye’s (1996) findings that exchanges of emotional support and companionship have been shown to be frequent, whereas exchanges of practical assistance are rare.

Both the role models theory and the social resource theory seem to increase the entrepreneurial orientation and entrepreneurial intent. Entrepreneurial parents provide both interest, critical experience (Bandura, 1986, 1991) and entrepreneurial and financial capital (Aldrich et al., 1997). Parents function as carriers of values, emotions and experiences towards entrepreneurship. Knowing that they can get what they need (e.g., motivation, encouragement, vicarious experience and capital etc) from their entrepreneurial parents, individuals will likely have more confidence to judge their perceived capabilities in relation to the attainment of others. The greater the assumed similarities between the role model and the observer, the more persuasive are the role model’s successes and failures (Delmar, 2001). Hence, parents are persuasive as role models because the child can assume close similarity. Those whose parents are

entrepreneurs seem to have more confidence in being entrepreneurial. This confidence leads to high entrepreneurial orientation and entrepreneurial intent. Therefore, I hypothesize:

Hypothesis 6: *College students whose parents are entrepreneurs will have a stronger entrepreneurial orientation and entrepreneurial intent than those whose parents are not entrepreneurs.*

CHAPTER IV. RESEARCH METHODOLOGY

Protocol and Sample

This study concerns the development and testing of individuals' entrepreneurial orientation and its relationships with entrepreneurial intent, and four individual difference predictors (e.g., opportunity recognition, proactiveness, need for achievement and risk-taking propensity). Electronic and paper and pencil surveys were used. The sample consists of both entrepreneurs and potential entrepreneurs from China and the United States. Each of them filled in the questionnaire designed for this study.

This study utilized four samples: (1) entrepreneurs from China, (2) college students in China whose parents are entrepreneurs, (3) college students in China whose parents are not entrepreneurs, and (4) college students in the United States whose parents may or may not be entrepreneurs.

Entrepreneurs in China

For the entrepreneur sample, four colleagues in different cities of China distributed questionnaire to the respective groups and collect the results. Their goal was to collect data from 250 Chinese entrepreneurs. One colleague (herself an entrepreneur in Liaoning, China) and her husband (director of an economy development zone in the same area) distributed surveys to all the business owners that they could reach in their district. These entrepreneurs were from many different industries such as high-tech, retail, and manufacturing. Using the directories of the Economic Development Zone, they identified a list of companies with an email address first and

sent those companies the electronic version of the survey together with an information sheet explaining the purpose of the study. For those without an email address, my colleagues sent them a paper-version of the survey together with a business reply envelope. The entrepreneurs were asked to mail back the completed survey as soon as they could.

Another colleague in Beijing (himself an entrepreneur), who does not have access to company directories, distributed surveys in person to local business owners of manufacturing and retail industries. He provided the two survey options (i.e., paper and pencil, and computer versions) to the entrepreneurs.

A third colleague (an insurance sales person) distributed surveys to small business owners in high-tech businesses she can access in Nanjing. These entrepreneurs were her insurance clients for the past decade. In the same manner, she provided the same two options to the entrepreneurs. Given the fact that these entrepreneurs are in the high-tech business, everybody should be comfortable using the computer version.

A fourth colleague, who is the president of Association of Women Small Business Owners in Shandong Province, China, distributed questionnaires to all the members of the association. These women entrepreneurs are from many different industries such as high-tech, retail, and manufacturing etc. She first identified those members with an email address and sent a copy of the survey together with information sheet. To those without an email address, a hard copy of the survey and information sheet was sent. They were asked to the return the completed survey as soon as they could.

Chinese College Students

In order to collect data from a sample of college students in China, two colleagues in China helped conduct the survey. One was from Nanjing, another from Shanghai. The former teaches in two universities: Nanjing Normal University and Jiangsu College of Economics and Trade. He sent out the survey to around 4,000 students in both universities. The colleague in Shanghai sent out survey to 1,000 students in his university. As the Internet is very popular with all students, the computer version of the survey was utilized. My colleagues first sent an email requesting participation in survey to all students in the introductory management class, which has a couple of hundreds in size each session. Typically, these students are from the College of Business as well as other colleges of the university. Students in the targeted class are juniors or seniors and the majority of them are majoring in business. Given the nature of professor-students relationship in China, in which students very rarely decline the professors' request, it was not an issue at all to have enough participants.

- **Group 1 --** For those students whose parents are not entrepreneurs, my colleague simply sent them the survey and the information sheet, asking them to send the completed survey back as soon as they could.
- **Group 2--** For those students whose parents are entrepreneurs, my colleague asked each student to complete the survey and take home a copy to his parent to complete. Each student was supposed to return two copies of the completed survey to my colleague, one for himself and the other for his parent.

Those surveys conducted of the entrepreneurs in China were recorded before the data was returned from China. Each of my professor colleagues hired a graduate student to record both the

entrepreneur questionnaires and the college students' questionnaire using Excel. Two additional graduate students were hired to verify the accuracy of the recording. After the processing was completed, my professor colleague sent the file to me via electronic mail.

US College Students

For the student sample in the United States, I forwarded a copy of the survey together with the information sheet to all students in an introductory management class at a state university in southeastern United States. The enrollment in this class is around 600. This sample included students from all colleges and departments of the university, but the majority of students were business majors. Typically, they were juniors or seniors. Before the survey was distributed, the instructor briefly introduced the purpose the survey and requested the participation of the students at the beginning of a session of the class. The students were asked to return the survey electronically as soon as they could to the principal investigator of the study. The goal was to collect 500 copies of filled questionnaire from this group of students. These students would receive extra course credits for completing the survey.

Measures

Pilot Study

To assure that the measures have a reasonable reliability, I conducted a pilot study. The survey was sent out to 100 students in Pamplin College of Business at Virginia Tech Blacksburg campus. Sixty five copies of the completed questionnaire were returned. A reliability analysis

was done. Changes were made for those items that looked out of place or where there was low coefficient alpha reliability. As a result of the data, changes were made to the items for entrepreneurial orientation and opportunity recognition.

Entrepreneurial Orientation

Entrepreneurial orientation (EO) is an individual's attitude towards entrepreneurial activity. No existing measures of individual entrepreneurial orientation exist. As a result, a new measure was constructed for use in this study.

As noted by Kreiser et al (2002), the most widely utilized operationalization of EO in both the entrepreneurship and strategic management literature was developed by Covin and Slevin (1989), based on the earlier work of Khandwalla (1977) and Miller and Friesen (1982). It assesses the entrepreneurial orientation of firms. In developing this measure, Covin and Slevin theorized that the three dimensions of EO—innovation, proactiveness and risk taking should be aggregated together when conducting research in the field of entrepreneurship (Covin & Slevin. 1989, p. 79). While this operationalization has shown reliability and validity in numerous studies (e.g., Barringer & Bluedorn, 1999; Becherer & Maurer, 1997; Naman & Slevin, 1993), some researchers (e.g., Knight, 1997; Lumpkin & Dess, 1996; Zahra, 1993a) has raised concerns about to the psychometric properties of the measure. Among them, Dess, Lumpkin, and McGee (1999) and Lumpkin and Dess (1996) called in question the dimensionality of the measure and the interdependence of the sub-dimensions, proposing two additional dimensions—autonomy and competitive aggressiveness—be added to the Covin and Slevin conceptualization. .

Multi-dimensionality is an issue with the EO construct, but adding two more dimensions (i.e., competitive aggressiveness and autonomy) to the original three does not necessarily solve the problem. The problem is the multi-dimensionality. Multi-dimensional constructs create conceptual and measurement problems. All measurement theory and measurement practice is based on a reflective model—one in which a unidimensional construct is assumed to cause scores on the items used to assess it. As a result, scores of several items all intended to measure a single construct should be highly correlated. Evidence that they are not highly correlated is evidence that the measure does not have good construct validity. Multidimensional constructs imply that a single broad construct is based on several dimensions. The traditional view of dimensions is that they are not, or may not be, highly correlated.

For instance, if two or more dimensions of any construct are very highly correlated (e.g., $r = 0.9$), there will be little difference between finding for these dimensions. The existence of highly correlated dimensions creates redundancy, as none of them increases the incremental predictability. So, if dimensions are highly correlated, there may be little to need to retain them. On the other hand, when measures of two dimensions are not highly correlated (e.g., $r = 0.01$), there is little evidence to suggest that each actually captures part of the desired construct. In fact there are no recognized methods for determining the construct validity of multi-dimensional constructs when dimensions are not highly correlated. In most instances, each dimension of a multi-dimensional construct could generally be considered to be an independent predictor of the dependent variable; otherwise there would be little reason to consider it independently. Further, recognizing each dimension as its own construct typically results in greater prediction of the

dependent variable than when all items capture each dimension are dumped together to form a single index.

Therefore, I define entrepreneurial orientation as a uni-dimensional, individual-level construct. All items in the questionnaire about this construct were written using this definition as a guide. Items were designed items to capture the single dimension of entrepreneurial orientation, rather than elements innovation, proactiveness and risk-taking as done in the organizational-level measures of entrepreneurial orientation found in previous research. Participants rated these items on a seven-point Likert scale, with 1 = strongly disagree to 7 = strongly agree. Sample items include: (1) I am often among those first who have new ideas and are willing to sacrifice current interests to pursue a cause despite the risks involved, (2) I am always happy to be involved in a high-return project, and when that happens, I usually have the end in mind and know what to do next and disregard any risks, (3) People around me would perceive me as a front-runner to capitalize on any opportunity available, regardless of the degree of potential risks. A full listing of the items used to assess entrepreneurial orientation can be found in the Appendix. The pilot study had a different list of items, which also appear in the Appendix. It showed a coefficient alpha of .89, which indicates a high reliability. However, I suspected that the items were too close to entrepreneurial intent. This new list of items was thus created.

Entrepreneurial Intent

Entrepreneurial intent is the state of mind that directs and guides the actions of the entrepreneur toward the development and the implementation of new business concepts (Bird, 1988). Katz and Gartner (1988) observed that intentions include a dimension of location: the

entrepreneur's intention (internal locus) and intentions of other stakeholders, markets, and so forth (external locus). Some previous research (e.g., Chen et al., 1998) has used entrepreneurial intent as a dependent variable.

For entrepreneurial intent, previous researchers have used varying number of items in the questionnaire and achieved different reliabilities. For instance, Chen et al (1998) used five items and had a reliability of 0.92; Zampetakis and Moustakis (2006) used two items and had a reliability of 0.78; Zhao et al (2005) used four items and had a reliability of 0.86. In this study, I used eight items for the questionnaire. The rationale for using eight items (more than the previous studies) in this study is that increasing the number of items will help increase the coefficient of reliability. Sample items include: (1) I will start my own business in the near future, (2) I am enthusiastic about starting my own business, (3) With enough resources, I would have set up my own company. The pilot study shows a coefficient alpha of .94, which indicates a very high reliability.

Individual Difference Variables

Individual difference variables in this study include opportunity recognition skill, proactiveness, need for achievement and risk-taking propensity. There is also a mediating variable, entrepreneurship orientation. The measures for the individual difference variables are derived from the previous research, while the measure of entrepreneurial orientation will be developed in this study.

Opportunity recognition

In this study, opportunity in this study is defined as a feasible, profit-seeking, potential undertaking that provides an innovative new product or service to the market, improves on an

existing product/service, or imitates a profitable product/service in a less-than-saturated market. Opportunity recognition is defined as the cognitive process (or processes) through which individuals conclude that they have identified an opportunity. This variable was measured by six items selected from previous research (Singh et al., 1999) relating both to the ability to recognize opportunities (e.g., I can recognize new venture opportunities in industries where I have no personal experience) and to alertness to opportunities when they exist (I have a special alertness or sensitivity toward new venture opportunities). Participants rated these items on a seven-point Likert scale, with 1 = strongly disagree to 7 = strongly agree. The pilot study shows a coefficient alpha of .91, which indicates a high reliability. The original items include that associated with new venture creation. To make sure that opportunity recognition ability does not have to necessarily mean that in the new venture creation process, some items were modified.

Proactiveness

Proactiveness is defined as a forward-looking perspective characteristic of a marketplace leader that has the foresight to seize opportunities in anticipation of future demand (Dess & Lumpkin, 2005). Previous research (e.g., Covin & Slevin, 1989; Lumpkin & Dess, 1996) have used proactiveness predominantly as a firm-level construct. Since this variable is used at the individual level, I adopted the items used by Kickul and Gundry (2002) who derived their items from Bateman and Crant's (1993) scale, which aimed to test the individual proactiveness personality. Sample items include: (1) "1 enjoy facing and overcoming obstacles to my ideas"; (2) "Nothing is more exciting than seeing my ideas turn into reality'; (3) "I excel at identifying opportunities"; (4) "I love to challenge the status quo"; and (5) "I can spot a good opportunity long before others can." Participants will rate these items on a seven-point Likert scale, with 1 =

strongly disagree to 7 = strongly agree. Bateman and Crant (1993) report internal reliabilities (Cronbach's alpha) ranging from .87 to .89 for their 17-item scale. The five items selected for this study had internal reliability of 0.95. The pilot study shows a coefficient alpha of .61, which indicates an acceptable reliability.

Need for Achievement

Need for Achievement (n-Ach) refers to an individual's desire for significant accomplishment, mastering of skills, control, or high standards (McClelland et al., 1958). Different measures have been used for n-Ach. The thematic apperception test (TAT), the Edwards Personal Preference Test (EPPS), and Miner Sentence Completion Scale (MSCS) are some of the more frequently used measures. Begley and Boyd (1987) reported a reliability of 0.67 using the EPPS for their study. However, according to Collins, Locke, and Hanges (2000), the first and only meta-analysis of n-Ach and entrepreneurship studies (Shane et al., 2003), there are no significant differences in the predictive validity of three different measures of n-Ach (TAT, questionnaires, and the Miner Sentence Completion Scale).

For this study, items to assess Need for Achievement were derived from McClelland et al (1958), Goldberg, L. R. (1999), and Goldberg et al. (2006). Participants were asked to indicate where they would rate themselves on the scale from 1 to 7. Sample items include: (1) I seldom compete with others -- I frequently engage in competitive activity where winning or doing better than someone else is the primary concern. (2) I strive for more ordinary success -- I strive for unique, extraordinary, and creative accomplishments which are marks of success, (3) I just do enough work to get by -- I always do more than what’s expected of me. The pilot study shows a coefficient alpha of .78, which indicates an acceptable reliability.

Risk-taking Propensity

The propensity for risk taking is defined as the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation (Brockhaus, 1980). There are many different measures for risk-taking propensity (e.g., Slovic, 1972; Thomas & McDaniel 1990). Questionnaires used in previous studies on entrepreneurship and risk-taking behavior (e.g., Brockhaus,1980; Krasner & Ray, 1984) have been based around some choice dilemma questions (CDQ). A recent meta-analysis (Stewart & Roth, 2001) also seems to confirm that Choice Dilemmas Questionnaire (CDQ) as one of the popular measures used. However, the standard CDQ is not only quite ethnocentric in that some situations would not translate in any form of cross-cultural research, but even the idea of explicitly formulating probabilities for risk may be culturally specific (Ray, 1994). These is also reason to suspect that respondents dealing with complex risk situations with which they are unfamiliar will transfer risk-related feelings from one situation to another in ways unrelated to their actual risk-taking behavior (MacCrimmon & Wehrung, 1986). Furthermore, Reingen (1976) found that 30% of a sample of college students in the United States did not correctly comprehend what the CDQ was asking them.

Therefore, in this study, where samples span different cultures, I used the questions from International Personality Item Pool, which was designed with an international perspective by Goldberg, L. R. (1999), and Goldberg et al.(2006). Participants were asked to indicate where they would rate themselves on the scale from 1 to 7. Sample items include: (1) When confronted

with decision-making situations involving uncertainty, I typically adopt a cautious, “wait-and-see” posture in order to minimize the probability of making costly decisions --- When confronted with decision-making situations involving uncertainty, I typically adopt a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities, (2) I always avoid dangerous situations --- I always seek adventure, (3) I would never make a high risk investment --- I am willing to try anything once. The pilot study shows a coefficient alpha of .86, which indicates a high reliability.

Translation procedures

McGorry (2000) summarized the four methods of instrument translation: one way translation, double translation/back translation, committee translation, and decentering translation. One-way translation is the simplest of translation methods used by researchers in the field. A translator reviews the instrument in its original language and translates the instrument into the target language. Nothing else or no one else is involved. Double translation involves at least two bilingual individuals who participate independently in the translation process. In this process, the instrument in the original language is translated by a translator into the target language. A second independent translator takes the results from the previous step and independently translates the instrument back to the original language. The researcher then compares the two versions of the instrument in the original language for any inconsistencies, mistranslations, meaning, cultural gaps and/or lost words or phrases. If any differences are found the researcher can consult with the translators to find out why this occurred and/or how the

instrument can be revised. This process has been described as one of the most adequate translation processes (Marin & Marin, 1991). A committee translation process involves two bilingual translators independently translating the instrument, then arriving at consensus on a final format, followed by a third translator choosing the version that most closely captures the meaning of the original language version (Marin & Marin, 1991). In decentering translation, there is a constant comparison of the two instruments, and modifications are made to the first to account for limitations of the target language. This method involves actual revision of the original instrument to fit the new research situation.

A central concern of every translation is to produce the cultural equivalent of an instrument (Werner & Campbell, 1970), or an instrument that has the same connotative meaning as the original instrument. As indicated above, instruments (e.g., CDQ) created in one culture may not describe the experience of individuals in another culture. Most research often mentions the method of translation of choice without discussing the issue of survey translation in detail (Homburg et al., 1999; Unger & Molina, 1999; Hofstede et al., 1999). This may contribute to a translation that is linguistically correct but culturally inappropriate. To avoid the problem, Marsula (1978) and Rogler (1989) suggest that researchers immerse themselves in the culture of the ethnic group that they are studying, to learn how the group perceives the environment and other individuals around them. Others such as Brislin et al. (1973) and Wesley and Karr (1966) have suggested that key informants and/or researchers be identified who are knowledgeable about the culture and can assist the researcher in learning about the culture and provide assistance in developing a culturally appropriate instrument. Doing so will probably help to make

sure that the subjects are responding to a culturally equivalent version of an instrument and the results are not due to some function of translation of the instrument (Brislin, 1970).

Research (e.g., Brislin, 1970; Kim & Lim, 1999) has shown the validity of back-translation. The validity of using back-translation has been established by previous management studies using Chinese data (e.g., Shenkar & Ronen, 1987; Baired, Lyles, & Wharton, 1990; Adler & Campbell, 1989; Adler, Brahm., & Graham, 1992). In this study, I used the combination of back-translation and committee translation, hoping to achieve more than by using only the back-translation. Specifically, the English version of the questionnaire was translated into Chinese by a bilingual doctoral candidate majoring in management. The Chinese version was then translated back into English by another bilingual who is a Chinese native and has a Master degree in North America. Different Chinese and English translations were compared to detect significant misunderstanding or confusion due to translation. The revised Chinese translation was then reviewed by two other Chinese scholars in the management field. A final version came out after all differences were resolved by consensus.

CHAPTER V. RESULTS

Results for Hypotheses

The data collected and analyzed in this study include responses from entrepreneurs and college students. All entrepreneurs were from China. This includes one group from Jiangsu Province (N = 143) and another from Shandong Province (N = 194). A total of 2,000 copies of survey were sent out. Three hundred fifty were returned. That indicates a response rate of 17.5%. Thirteen were dropped because at least 25 items were missing or impossible numbers (e.g., 34 or 27 appeared). A total of 337 were usable. College student data were collected in the U.S. and China. The U.S. students (N = 489) are all from one university (i.e., Virginia Tech). A total of 496 were turned in. Due to such errors as those above, seven were dropped and 489 were usable. The Chinese students are from three different sources: Nanjing Normal University (N = 260), Jiangsu College of Economy and Trade (N = 145) and Shanghai University of Finance (N = 551). A total of 2,000 surveys were sent out and 994 were returned. That indicates a response rate of 49.7%. Thirty eight were dropped due to similar reasons as above and 956 were usable.

I compared the descriptive statistics for each subsample to determine whether the sub-samples could be combined. Descriptive statistics (e.g., means, standard deviations, zero-order correlations and the coefficient alpha) for each subsample are reported in Tables 5, 6, 7, 9, and 10. These data suggests that these sub-samples can be combined, even though there are some differences. For instance, the student sample from Nanjing Normal University has a higher mean and lower standard deviation when compared with the other two Chinese student samples.

Examination of a bivariate scatter plot of EI and EO in this particular student sample looks quite similar to the scatter plot for the entrepreneurs showed in Figures 4 suggests that this sample is truncated, with few low values and no extreme value in either direction. However the zero order correlations do not change greatly from one subsample to another. Therefore, despite the difference in means and standard deviations between this sample and the others, there is not sufficient reason to exclude it. Primary tests of the hypotheses will be based on a combined sample, which includes all the entrepreneurs and all the college students. However, follow-up analysis will be run to determine the consistency of the findings across major subsamples (i.e., US students, Chinese students and Chinese entrepreneurs).

Hypothesis 1 states entrepreneurial orientation is positively related to entrepreneurial intent. To test this hypothesis, I used the combined sample (N = 1782) and examined the zero-order correlation between entrepreneurial orientation and entrepreneurial intent. As reported in Table 1, the correlation between entrepreneurial orientation and entrepreneurial intent is r = .50.

To assure that the results are consistent across samples and that it was reasonable to combine them, I also examined the relationships across various subsamples. The subsamples produce very similar results. For example, for the U.S. students sample, the relationship is r = .53 as reported in Table 3. Using only the Chinese students, the relationship is r = .51 as reported in Table 4. For the Chinese entrepreneurs, the relationship is r = .46 as reported in Table 8. These results appear to offer strong support for the hypothesis that entrepreneurial orientation is positively related to entrepreneurial intent.

Hypothesis 2 states opportunity recognition, proactiveness, need for achievement and risk-taking propensity are positively related to entrepreneurial intent. Again, I used the entire

sample to test this hypothesis and examined the zero-order correlation between each of the four predictors and entrepreneurial intent. As reported in Table 1, the zero-order correlations between entrepreneurial intent and the four predictors mentioned above are r = .50 (opportunity recognition), r = .31 (proactiveness), r = .21 (need for achievement) and r= .25 (risk-taking propensity).

Here again to assure the consistency of the results across samples, I examined the relationships across some subsamples. The subsamples provide similar results, though they are not as consistent as the relationship between entrepreneurial orientation and entrepreneurial intent. For the U.S. students, the respective zero order correlations (i.e., correlation between entrepreneurial intent and opportunity recognition, correlation between entrepreneurial intent and proactiveness, correlation between entrepreneurial intent and need for achievement, correlation between entrepreneurial intent and risk-taking propensity) are r =.55, r = .31, r = .20, and r =.32 (see Table 3). For the Chinese students, the respective correlations are r = .47, r = .29, r = .18, and r = .20 (see Table 4). For the Chinese entrepreneurs, the respective correlations are r = .48, r = .39, r = .40, and r = .20 (see Table 8). For Chinese entrepreneurs, the relationship between need for achievement and entrepreneurial intent is stronger than that for the college students (r = .40 vs. r = .20 and r = .18). Also, the U.S. students are different from their Chinese counterparts and entrepreneurs in that for them the relationship between risk-taking propensity and entrepreneurial intent is stronger (r =.32 vs. r = .20). Despite the variation, these results support the hypothesis that opportunity recognition, proactiveness, need for achievement and risk-taking propensity are positively related to entrepreneurial intent.

Aside from the zero-order correlations, I also examined the joint effects of the four predictors and how they are associated with an individual's entrepreneurial intent. Among the statistics available to report the joint effect (i.e., R, R^2, adjusted R and adjusted R^2), multiple correlation R was chosen because unlike R^2 and adjusted R^2, R is directly comparable to the zero-order correlation. In other words, use of R facilitates comparisons between single independent variable and multiple independent variables associated with dependent variables. Also since the entire sample size is large (N = 1782), there is very little difference between R^2 and adjusted R^2. For instance, adjusted R differ very little from R (i.e., $\Delta R = .01$).

The overall level of association of entrepreneurial intent and the four predictors is R = .51. For the U.S. college students (see Table 18), the level of association with the four predictors is R = .56. For the Chinese college students (see Table 21), the relationship is R = .49. Using the Chinese entrepreneur sample (see Table 24), the relationship is R = .54. Despite the variance, all these results seem to be consistent across the samples.

As shown in Table 1 and noted above, entrepreneurial intent has stronger association with opportunity recognition than with other three individual difference factors. To see the incremental contribution of each of the four predictors, I examined how the R changes when each of the four individual difference factors was added last to a regression model to predict entrepreneurial intent. Using the combined sample, the value of the increment in R is $\Delta R = .18$, $\Delta R = .01$, $\Delta R = 0$, and $\Delta R = 0$ when opportunity recognition, proactiveness, need for achievement and risk-taking propensity respectively were added last, as reported in Table 12. For the U.S. college students , the value is $\Delta R = .20$, $\Delta R = .01$, $\Delta R = 0$, and $\Delta R = .01$ when opportunity recognition, proactiveness, need for achievement and risk-taking propensity were

added last, as reported in Table 18. For the Chinese college students, the comparable values are $\Delta R = .19$, $\Delta R = .02$, $\Delta R = .01$, and $\Delta R = .01$, as reported in Table 21. For the Chinese entrepreneur sample, the values are $\Delta R = .03$, $\Delta R = .05$, $\Delta R = 0$, and $\Delta R = .01$, as reported in Table 24. These results suggest that while the other three factors are associated with entrepreneurial intent, opportunity recognition seems to be the one that accounts for a great deal of the variance in entrepreneurial intent for the college students, whereas proactiveness and opportunity recognition are for the entrepreneurs. .

Overall, these results support the hypothesis that opportunity recognition, proactiveness, need for achievement and risk-taking propensity are positively related to entrepreneurial intent.

Hypothesis 3 states opportunity recognition, proactiveness, need for achievement and risk-taking propensity are positively related to entrepreneurial orientation. For this hypothesis, I examined the zero-order correlations between each of the four predictors and entrepreneurial orientation. As reported in Table 1, the zero-order correlations between entrepreneurial orientation and the four predictors mentioned above are $r = .67$ (opportunity recognition), $r = .43$ (proactiveness), $r = .34$ (need for achievement) and $r = .42$ (risk-taking propensity) respectively. These are bigger than for EI.

The subsamples provide similar results. For the U.S. students, respective correlations (i.e., correlation between entrepreneurial orientation and opportunity recognition, correlation between entrepreneurial orientation and proactiveness, correlation between entrepreneurial orientation and need for achievement, correlation between entrepreneurial orientation and risk-taking propensity) are $r = .72$, $r = .43$, $r = .30$ and $r = .51$ as reported in Table 3. For the Chinese students, the respective correlations are $r = .60$, $r = .37$, $r = .26$ and $r = .31$ as reported in Table 4.

For the Chinese entrepreneurs, the respective correlations are r = .63, r = .41, r = .36 and r = .26 as reported in Table 8. These findings are consistent with the findings for the combined sample, supporting the hypothesis that opportunity recognition, proactiveness, need for achievement and risk-taking propensity are positively related to entrepreneurial orientation.

Similar to Hypothesis 2, I also examined the joint effect of the four individual difference factors on entrepreneurial orientation. The overall level of association of entrepreneurial orientation and the four predictors is R = .70. Using the U.S. college students (see Table 18), the relationship is R = .75. For the Chinese college students (see Table 21), the relationship is R = .62. Using the Chinese entrepreneur sample (see Table 24), the relationship is R = .65. Despite some variance across samples, these results seem to be quite consistent.

The previous hypothesis suggests that entrepreneurial intent has stronger association with opportunity recognition than with other three individual difference factors. Does that remain true when predicting entrepreneurial orientation? To find it out, I did a similar analysis and compared the multiple Rs when each of the four predictors is added last with the multiple R when all of them are included. Using the combined sample, the value of the increment to R is $\Delta R = .22$, $\Delta R = .01$, $\Delta R = 0$, and $\Delta R = .01$ for each of opportunity recognition, proactiveness, need for achievement and risk-taking propensity, as reported in Table 13. For the U.S. college students, the value is $\Delta R = .21$, $\Delta R = 0$, $\Delta R = 0$, and $\Delta R = .02$ for each of opportunity recognition, proactiveness, need for achievement and risk-taking propensity, as reported in Table 19. For the Chinese college students, the value is $\Delta R = .22$, $\Delta R = .01$, $\Delta R = 0$, and $\Delta R = 0$ for opportunity recognition, proactiveness, need for achievement and risk-taking propensity respectively, as reported in Table 22. For the Chinese entrepreneur sample, the value is $\Delta R = .22$, $\Delta R = 0$, $\Delta R =$

0, and $\Delta R = 0$ for opportunity recognition, proactiveness, need for achievement and risk-taking propensity, as reported in Table 34.

These results suggest that all four predictors are positively related to entrepreneurial orientation, as hypothesized. Further, as was true for entrepreneurial intent, opportunity recognition is more strongly associated with entrepreneurial orientation than the other individual differences examined. As a matter of fact, these four individual differences seem to have stronger association with entrepreneurial orientation than with entrepreneurial intent, both individually (i.e., r) and in total (R).

Hypothesis 4 states entrepreneurial orientation mediates the relationship between opportunity recognition, proactiveness, need for achievement and risk-taking propensity and entrepreneurial intent. As recommended by Baron and Kenny (1986), a series of regression models should be estimated to test for mediation: first, regress the mediator on the independent variable; second, regress the dependent variable on the independent variable; and third, regress the dependent variable on both the independent variable and on the mediator. If the third (the relationship between DV is regressed on both IV and the mediator) is smaller than the second (when DV is only regressed on IV), it signals a mediation effect. Following the procedure, entrepreneurial orientation is regressed on a predictor first. To make sure the predictor is related with entrepreneurial orientation. Then, entrepreneurial intent is regressed on the predictor, to make sure the predictor is related with entrepreneurial intent. Finally, entrepreneurial intent is regressed on entrepreneurial orientation and the predictor at the same time, to see the relationship when EI is regressed on both the predictor and entrepreneurial orientation. This analysis was run separately for all four predictors.

Results for these analyses are reported in Tables 12, 13 and 14. All four predictors showed that they are related with entrepreneurial orientation, which meets the first condition mentioned above by Baron and Kenny (1986). I began by examining whether EO mediates the relationship between opportunity recognition and entrepreneurial intent. Regressing entrepreneurial intent on opportunity recognition results in a regression coefficient of $\beta = .50$. When entrepreneurial orientation is added to the model, the regression coefficient for relationship between opportunity recognition and entrepreneurial intent drops to $\beta = .29$, suggesting partial mediation of the relationship. This relationship is depicted in Figure 8.

Regressing entrepreneurial intent on proactiveness, the regression coefficient is $\beta = .31$. When entrepreneurial orientation is added to the model, the regression coefficient for proactiveness is $\beta = .12$, suggesting a partial mediation on the relationship. Figure 9 depicts such mediated relationship.

Regressing entrepreneurial intent on need for achievement, the regression coefficient is $\beta = .21$. When entrepreneurial orientation is added to the model, the regression coefficient for need for achievement is $\beta = .04$, which is much smaller than $\beta = .21$, suggesting almost full mediation of the relationship. Figure 10 depicts such mediated relationship.

Regressing entrepreneurial intent on risk-taking propensity, the regression coefficient is $\beta = .25$. When entrepreneurial orientation is added to the model, the regression coefficient for risk-taking propensity is $\beta = .05$, which is much smaller than $\beta = .25$, suggesting almost full mediation of the relationship. Figure 11 was drawn to represent such mediated relationship.

The sub-samples provide similar pattern of results, as reported in Tables 15, 16, and 17, i.e., after adding entrepreneurial orientation to the regression model, the regression coefficients

between the four predictors and entrepreneurial intent were greatly reduced except for opportunity recognition. The results after adding entrepreneurial orientation to the model for proactiveness, need for achievement and risk-taking propensity are quite small, close to zero. However, it's not true at all for opportunity recognition, whose relationship with entrepreneurial intent did not reduce as much as the other three individual differences. In other words, entrepreneurial orientation may not account for all the variance in the four predictors, especially opportunity recognition. The entrepreneur sample shows close to full mediation only for risk-taking propensity, not for the other three individual differences.

Hypothesis 5 states U.S. college students will have a stronger entrepreneurial orientation and entrepreneurial intent than Chinese college students. I tested this hypothesis by comparing the samples of college students from China and the United States (see Table 43). Mean level of entrepreneurial orientation for the U.S. college students is M = 4.50 (SD = 1.07) and that for Chinese college students is M = 4.16 (SD = .80). Mean level of entrepreneurial intent for the U.S. students is M = 4.03 (SD = 1.71) and that for Chinese students is M = 4.26 (SD = 1.12). Therefore, these data suggest that U.S. college students have higher entrepreneurial orientation but lower entrepreneurial intent than the Chinese students sampled. Hence Hypothesis 5 is only partially supported.

Hypothesis 6 states college students whose parents are entrepreneurs will have a stronger entrepreneurial orientation and entrepreneurial intent than those whose parents are not entrepreneurs. I used data for all the college students to examine this hypothesis. Mean levels of entrepreneurial orientation and entrepreneurial intent are compared for those students whose parents are entrepreneurs and those of students whose parents are not entrepreneurs. As shown

in Table 43, those students whose parents are entrepreneurs have a higher mean level of the entrepreneurial orientation, M = 4.54 (SD = .89) than those students whose parents are not entrepreneurs, M = 4.20 (SD = .89). In terms of entrepreneurial intent, those students whose parents are entrepreneurs have a higher mean level, M = 4.54 (SD = 1.31), as compared with those whose parents are not entrepreneurs, M = 4.10 (SD = 1.32). This supports the hypothesis that college students whose parents are entrepreneurs will have a stronger entrepreneurial orientation and entrepreneurial intent than those whose parents are not entrepreneurs.

This pattern was observed in both the U.S. and Chinese student sample. Using the U.S. students (see Table 43), the numbers show a similar pattern for entrepreneurial orientation and entrepreneurial intent. Those college students whose parents are entrepreneurs have a mean level of the entrepreneurial orientation M = 4.79 (SD = .97) while those whose parents are not entrepreneurs have a somewhat lower level (M = 4.37, SD = 1.05). In terms of entrepreneurial intent, those students whose parents are entrepreneurs have a mean level M = 4.60 (SD = 1.62) while those whose parents are not entrepreneurs have a mean level M = 3.73 (SD = 1.64).

For Chinese students, results are similar to those of the U.S. sample, as indicated in Table 43. Those Chinese college students whose parents are entrepreneurs have a mean level of entrepreneurial orientation M = 4.27 (SD = .70) while those whose parents are not entrepreneurs have a mean level M = 4.14 (SD = .82). In terms of entrepreneurial intent, those students whose parents are entrepreneurs have a mean level M = 4.47 (SD = .83) while those whose parents are not entrepreneurs have a mean level M = 4.22 (SD = 1.16).

The results above appear to support the hypothesis that college students whose parents are entrepreneurs will have a stronger entrepreneurial orientation and entrepreneurial intent than those whose parents are not entrepreneurs.

Finally, higher entrepreneurial orientation is believed to lead to higher entrepreneurial intent, which in turn leads to new venture creation. Those who already have created a new venture should have higher entrepreneurial orientation than those who have not yet started a new venture. To test whether this is true or not, I compared the mean levels of entrepreneurial orientation for Chinese entrepreneurs with those for Chinese college students. The results in Table 44 show that entrepreneurs have a higher mean level of entrepreneurial orientation M = 4.63 (SD = .72) than was found for Chinese college students, a mean level M = 4.16 (SD = .80).

Summary of Findings

The empirical results support the hypothesis that entrepreneurial orientation is positively related to entrepreneurial intent. Second, the individual differences (i.e., opportunity recognition, proactiveness, need for achievement and risk-taking propensity) are found to be positively related to entrepreneurial intent and entrepreneurial orientation. This supports hypothesis 2 and hypothesis 3. Third, the findings support the hypothesis that entrepreneurial orientation partially mediates the relationship between the individual differences and entrepreneurial intent. However, since none of the coefficients was zero (two of them are close to zero), the mediation is only partial.

The findings also support the hypothesis that those students whose parents are entrepreneurs have a higher level of entrepreneurial orientation than those students whose parents are not entrepreneurs. The findings do not fully support hypothesis 5, which states that the U.S. college students have a higher level of entrepreneurial orientation and entrepreneurial intent than the Chinese college students. To be more specific, the results reveal that the U.S. college students were found to have higher entrepreneurial orientation, but a lower entrepreneurial intent. Looking further into the analysis, it is found that the U.S. students whose parents are entrepreneurs still have higher entrepreneurial intent than their Chinese counterparts. It is those students whose parents are not entrepreneurs that have lower entrepreneurial intent than the corresponding Chinese students.

CHAPTER VI. DISCUSSION

The results of this study provide evidence that entrepreneurial orientation plays an essential role in our understanding of individual differences, entrepreneurial intent and their relationships. An objective of this research was to develop and test a measure of entrepreneurial orientation. Results from correlation, regression and mediation analysis across all samples reveal that the measure developed does appear to capture the intended construct. However, the relationship between individual differences (especially opportunity recognition) and entrepreneurial intent is only partially mediated. This suggests a need to further explore the validity of the measures of entrepreneurial orientation and how opportunity recognition plays its role in this relationship. Limitations and implications for future research are also discussed.

Entrepreneurial orientation

Entrepreneurial orientation is conceptualized as a unidimensional measure of one's attitude toward starting a new venture. Its advantage over entrepreneurial intent, an alternative continuous measure, is that entrepreneurial orientation is less impacted by context. The strong associations of entrepreneurial orientation with all other indicators have marked implications. First of all, the results showed that entrepreneurial orientation, the four individual differences and entrepreneurial intent are positively related with each other. This shows support for Hypotheses 1, 2 and 3. It also establishes a necessary, though not sufficient condition, for the expectation that individual differences cause entrepreneurial orientation, which them leads to

entrepreneurial intent—strong associations between these measures. In addition, while the four individual difference predictors are strongly associated with entrepreneurial intent, the association between entrepreneurial orientation and entrepreneurial intent is even stronger. This suggests that entrepreneurial orientation may capture the influence of additional individual differences beyond the four individual differences examined here. That is, it possesses something that the individual differences could not account for.

Further, the four individual difference variables examined in this study are more strongly associated with entrepreneurial orientation than they are with entrepreneurial intent. This suggests that individual differences are stronger predictors of entrepreneurial orientation. That is consistent with the expectation that entrepreneurial orientation is less context-dependent than entrepreneurial intent. In other words, context might have attenuated the association between the individual differences and entrepreneurial intent.

The expectation that high entrepreneurial orientation, in appropriate context, will lead to high entrepreneurial intent is met. This study supposes that those individuals high in entrepreneurial orientation will be more likely to develop entrepreneurial intent given appropriate contexts whereas those individuals low in entrepreneurial orientation will be less likely to develop entrepreneurial intent even given a favorable context. In other words, high entrepreneurial orientation is necessary but not sufficient for the creation of entrepreneurial intent. Figures 1 to 7 depict the relationships between entrepreneurial orientation and entrepreneurial intent across samples. As is indicated by the bivariate scatter plot, relatively few of those individuals with low entrepreneurial orientation have high entrepreneurial intent.

Results of the mediation analysis showed that entrepreneurial orientation almost fully mediates the relationship between proactiveness, need for achievement, risk-taking propensity and entrepreneurial intent. This provides more evidence that entrepreneurial orientation captures the variance these individual differences share with entrepreneurial intent: nearly full mediation signals that it is capturing the essence of what predicts entrepreneurial intent in these three predictors.

However, as reported in Hypothesis 4, entrepreneurial orientation only partially mediates the relationship between opportunity recognition and entrepreneurial intent. While other three individual differences are closer to being fully mediated, opportunity recognition is far from that. The correlation and regression analysis (see Tables 1 through 11) indicate that something in opportunity recognition is not captured by entrepreneurial orientation. This could suggest that there may be something in opportunity recognition that is important to predicting entrepreneurial intent that is not accounted for in entrepreneurial orientation. It may also suggest potential problems with the measurement of opportunity recognition, which is addressed in the next section. The failure of entrepreneurial orientation to fully mediate the relationship between opportunity recognition and entrepreneurial intent was unexpected and requires further investigation.

Opportunity recognition

In this study, opportunity recognition demonstrates very strong associations with entrepreneurial orientation and entrepreneurial intent. The capacity of individual to recognize

Opportunities appears to be the dominant individual difference that is associated with entrepreneurial orientation and entrepreneurial intent, much stronger than any other individual difference predictor. This is consistent with the expectations of some researchers. For example, Kirzner (1979) believed that opportunity recognition should be the core of entrepreneurship. However, opportunity recognition has been an under-researched area of entrepreneurship (Venkataraman, 1997). From my review of the literature, this study appears to be only the second to empirically examine this relationship. Both studies suggest opportunity recognition is strongly associated with the process of starting new ventures.

A closer examination of the correlations among all items in the scales assessing opportunity recognition, entrepreneurial orientation and entrepreneurial intent indicates that items 4 and item 5 of the opportunity recognition scale have a higher correlation with entrepreneurial intent than with entrepreneurial orientation. The items are (4) I enjoy just thinking about and/or looking for new business opportunities, (5)I often think of new business ideas when I am totally relaxed, doing something unrelated to business. These are the only two items that demonstrate these relationships. It may be possible that these items are capturing aspects of contexts that are associated with entrepreneurial intent that are not components of individual differences.

Do Chinese students have higher entrepreneurial intent?

In these data, Chinese students reported higher level of entrepreneurial intent than their U.S. counterparts. In addition, unlike other samples reported, they have higher levels of

entrepreneurial intent than entrepreneurial orientation. One possible reason may be that they may have no other options but to be their own boss. Especially with the recent strong support for new venture creation by the Chinese government, students may see this as a primary employment option. A government report from 2008 (Blue Book of China's Economy, 2008) shows that about 30% of the 5.6 million college graduates that year did not get a job by the time they graduated and 18% were still unemployed six months after they graduated from college. On the other hand, the unemployment rate in 2008 was only around 2.6% for college students in the United States (Bureau of Labor Statistics). Facing the threat of unemployment and instability, the Chinese central government is making every effort to increase employment. Encouraging entrepreneurship is becoming a government policy. As a matter of fact, the government has changed its hostile attitude towards entrepreneurship and tried to instill the "entrepreneurship spirit" primarily as a means of removing unemployment as a source of social instability.

An unanswered question is whether higher entrepreneurial intent translates into higher rates of new venture creation. For those individuals with low entrepreneurial orientation but high entrepreneurial intent, they may feel forced by external forces to start a new venture. Whether they will start their own business and whether those businesses will succeed at the same rate as individuals with higher entrepreneurial orientation remains an empirical question.

Construction of the entrepreneurial orientation scale

This study provides initial evidence of the validity and reliability of a scale designed to assess individual entrepreneurial orientation. Results show that the measure has a respectable

reliability. Depending on the sample used, the coefficient alpha ranges from α = .79 for the combined sample, α = .80 for the overall student sample, α = .85 for the U.S. students, α = .76 for the Chinese students. α = .84 for students from Nanjing Normal University, α = .77 for students from Shanghai University of Finance, α = .72 for Jiangsu College of Economics and Trade, to α = .71 for Chinese entrepreneurs. Nunnaly (1978) suggests that a scale with a coefficient alpha reliability less than α = .70 can and should be improved. While the measure of entrepreneurial orientation developed here meets this standard.

Item 6 of entrepreneurial orientation is less highly correlated with the other items of entrepreneurial orientation (see Table 11). More work on this and other items may lead to insights on how to improve the reliability of future versions of this scale. It is not possible to confirm the validity of any construct. However, the results from this study did not disconfirm the validity of entrepreneurial orientation and offer data that is consistent with the expected property of the construct.

Limitations

With its contributions, this study has some limitations that may impact the generalizability of the results. First of all, both China and the U.S. are vast in areas. China has at least 56 different ethnic groups, each with its unique culture and customs. The U.S. has at least 152 ethnic groups according to Gale Encyclopedia of Multicultural America (2000). Previous research (e.g., Fairlie, 1999) has shown that there exists a different degree of entrepreneurship among different ethnic groups in the United States. What I selected in the study consists of just a

very tiny fraction of the population. As a matter of fact, the student sample employed in this study already showed that they are not always the same with each other. One group shows a higher level of entrepreneurial orientation and intent, but smaller standard deviation, close to those of the entrepreneur group. The results of using college students from just a few universities may not necessarily generalize to all Chinese students.

Second, this study is not longitudinal. Probably the best possible scenario to study which individuals become involved in creating new ventures is through longitudinal studies, in which the predictors, antecedents and the contexts of new venture creation are studied over time. This study is only about one aspect of the process, i.e., individual's propensity to start new ventures. To understand the whole process takes many studies of other antecedents and contexts over time. Single studies like this one are probably only one of the first steps.

Third, this study relies on self-report data. Whitley (2001) summarizes three potential limitations. A basic issue is people's ability to make accurate self-reports. A second limitation is that people might not be willing to make totally accurate reports. Finally, self-reports depend on the verbal skills of the respondents. In other words, people's ability, willingness and verbal skills may impact the validity of self reports. Given the relatively lower education level of many Chinese entrepreneurs (Djankov et al., 2006), the first and the third limitation might play a role in this study. Given the tradition that Chinese government has had enormous control on everything, people may tend not to tell what they really think.

Another consideration for Chinese sample is the possible influence of Confucian thinking. Confucian thinking teaches people to choose the "middle way", instead of going to the extremes.

In the case of this study, it might suggest that Chinese people may generally tend to choose option “4” in 1 to 7 scales. However, there is not convincing evidence showing this in the data.

Implications for the future research

Results from this study offer several implications for the future research in the area of new venture creation. First of all, given the strong association of entrepreneurial orientation for entrepreneurial intent, individuals’ entrepreneurial orientation should be a new focus of research. Since those with low entrepreneurial orientation will hardly possess high entrepreneurial intent, the focus of both the researchers and practitioners should be on those with high entrepreneurial orientation. When studying contexts, focus should be on contexts matching those individuals with high entrepreneurial orientation. Studying individuals with low entrepreneurial orientation, or contexts matching them will less likely produce favorable results.

Also, given the prominent position of entrepreneurial orientation and opportunity recognition found in this study, future research should pay more attention to the process of EO formation and opportunity recognition. Perhaps finding out the stability and malleability of those will offer more insight whether we can train entrepreneurs or not. Maybe then we will know more about whether it is worthwhile to continue the debate of whether entrepreneurs are born or made. Specifically future studies may want to look at how individuals progress on their way to become entrepreneurs or why only some of them make it while others don’t. For instance, in 12 months, 24 months, 36 months, 48 months and 60 months respectively, a survey can be sent to

some random samples across different countries. The new studies will study whether, how and why their entrepreneurial orientation changes over time and lead to new venture creation.

In addition, in this study entrepreneurial orientation was measured using self perceptions. Future research could examine alternative approaches for assessing it. For instance, to overcome the potential influence of social desirability, sometimes associated with perceptual measures, future research may consider using the third parties. Another approach may be the use of biographical data, which employ items that are more objective. Previous research (e.g., Kuschnereit & Spinner, 1997) has suggested that a well-constructed bio-data instrument is less susceptible to error due to rater biases or the halo effect.

The partial mediation role of entrepreneurial orientation in the relationship between opportunity recognition and entrepreneurial intent suggests that there might be other individual difference factors that could have been included in the study. Previous researchers (e.g., Schumpeter, 1934) suggested the importance of innovation. Therefore, future research may include an individual's degree of innovativeness to gauge his or her entrepreneurial orientation or entrepreneurial intent.

Conclusion

This study reviewed the new venture creation literature and found that the empirical evidence is rather weak and inconsistent as to what predict an individual's decision to start a business. Two obstacles are identified, the issues of low base rate when using behavior and context when using entrepreneurial intent. This study proposes a divide and conquer strategy,

i.e., to use a framework involving an individual's entrepreneurial orientation, which is supposed to be continuous and context-free. Samples of entrepreneurs and college students from the United States and China were used to test the framework. The empirical results seem to suggest that this counter strategy is viable. If confirmed by more future studies, the individual entrepreneurial orientation should facilitate the prediction of the behavior of new venture creation.

In addition to entrepreneurship orientation, an individual's ability to identify the opportunities seems to be another promising area of research on entrepreneurship. Among the four individual differences listed, opportunity recognition seems to be the best predictor of an individual's decision to start a new business. Future research should move on to the process of opportunity recognition and how the process leads to an individual's behavior of new venture creation.

REFERENCES

Acs, Z., & Storey, D. (2004). Introduction, Entrepreneurship and Economic Development. Regional Studies, 38(8), 871-877.

Adler, N. J., & Campbell, N. (1989). In search of appropriate methodology, From outside the People's Republic of China looking in. Journal of International Business Studies, 20, 61-74.

Adler, N. J., Brahm, R., & Graham, J. L. (1992). Strategy implementation, A comparison of face-to-face negotiations in the People's Republic of China and the United States. Strategic Management Journal, 13, 449-466.

Ahlstrom, D., Foley, S., Young, M. N. & Chan, E. S. (2005). Human Resource Strategies in Post WTO China. Thunderbird International Business Review, 47(3), 263–85

Aldrich, H. E. (1990). Using an ecological perspective to study organizational founding rates. Entrepreneurship Theory and Practice, 14, 7-24.

Ahmed, S. U. (1985). nAch, risk-taking propensity, locus of control and entrepreneurship. Personality and Individual Differences, 6(6), 781–782.

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ, Prentice-Hall.

Ajzen, I. (1987). Attitudes, traits, and actions, Dispositional prediction of behavior in personality and social psychology. In L. Berkowitz (Ed.), Advances in experimental social psychology, Vol. 20, 1–63. New York, Academic Press.

Ajzen, I. (1988). Attitudes, personality, and behavior. Homewood, IL, Dorsey Press.

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-211.

Alridge, D.P. (1999). Guiding philosophical principles for a Duboisian-based African American educational model. The Journal of Negro Education, 68, 182-199.

Amit, R., Muller, E., & Cockburn, I. (1995). Opportunity costs and entrepreneurial activity. Journal of Business Venturing, 10(2), 95-106.

Andrews, K.R. (1971). The concept of corporate strategy. Homewood, IL, Irwin.

Antoncic, B., & Hisrich, R. D. (2001) Intrapreneurship, Construct refinement and cross-cultural validation. Journal of Business Venturing 16, 495–527

Archdvili, A., Cardozo, R., & Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. Journal of Business Venturing, 18, 105–123.

Argote, L., Seabright, M. A. & Dyer, L.(1986). Individual versus group use of base-rate and individuating information. Organizational Behavior and Human Decision Processes, 38, 65–75.

Argote, L., Devadas, R., & Melone, N. (1990). The base-rate fallacy: Contrasting processes and outcomes of group and individual judgment. Organizational Behavior and Human Decision Processes, 46(2), 296-310.

Atkinson, J. W. (1958). Motives in fantasy, action, and society. Princeton, N. J., Van Nostrand.

Audretsch, D. & Acs, Z. (1994) New firm startups, technology, and performance of small technology-based firms. Small Business Economics, 16, 439-449.

Audretsch, D. & Fritsch, M. (1994). The geography of firm births in Germany. Regional Studies, 28(4), 359-365.

Baird, I.S., Lyles, M.A., Ji, S., & Wharton, R. (1991). Joint Venture Success: A Sino-U.S. Perspective. In Organization and Management in China, 1979-1990. (125-134), ed, Shenkar, O. Armonk, NY, M.E. Sharpe, Inc.

Bar-Hillel, M. (1973). On the subjective probability of compound events. Organizational Behavior and Human Performance, 9, 396-406.

Bar-Hillel, M. (1979). The role of sample size in sample evaluation. Organizational Behavior and Human Performance, 24, 245-257.

Bar-Hillel, M. (1980). The base-rate fallacy in probability judgments. Acta Psychologica, 44, 211-233

Bar-Hillel, M. & Fischhoff, B. (1981). When do base rates affect predictions? Journal of Personality and Social Psychology, 41, 671-680

Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational Behavior. A measure and correlates. Journal of Organizational Behavior, 14, 103-118.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research, Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.

Baron, R.A. (1998). Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than other People. *Journal of Business Venturing*, 13, 275-294.

Baron, R. A. & Shane, S. C. (2005). Entrepreneurship, a process perspective, Thomson South-Western, Mason, OH (2005).

Baron, R. A. (2006). Opportunity recognition as pattern recognition, How entrepreneurs connect the dots to identify new business opportunities. Academy of Management Perspectives, 104– 119.

Baron, R. A. & Markman, G. D. (2000). Beyond social capital: How social skills can enhance entrepreneurs' success. Academy of Management Executive, 14, 106-116.

Baron, R. A. & Markman, G. D. (2003). Beyond social capital: The role of entrepreneurs' social competence in their financial success. Journal of Business Venturing, 18, 41-60.

Baron, R. A., & Markman, G. D. (1999). The role of personal appearance Entrepreneurs' Financial Success, Effects and Mediating Mechanisms. Manuscript submitted for publication.

Barringer, B. R. & Bluedorn, A. C. (1999). The relationship between corporate entrepreneurship and strategic management. Strategic Management Journal, 20, 421–444.

Baumol, W. (1968). Entrepreneurship in economic theory. American Economic Review Papers and Proceedings, pp. 64–71.

Baumol, W. (1999). Having your cake, how to preserve universal-service cross subsidies while facilitating competitive entry. Yale Journal on Regulation, 16(1), 1-17.

Baumol, W.J. (2002). The Free-Market Innovation Machine: Analyzing the Growth Miracle of Capitalism, Princeton UP, Princeton, NJ (2002).

Baumol, W.J. (1990). Entrepreneurship, Productive, unproductive, and destructive. Journal of Political Economy. 98(5), 893-921.

Bates, D. S. (1995b). Jumps and stochastic volatility, exchange rate processes implicit in PHLX Deutschemark options. Review of Financial Studies.

Becherer, R. C. & Maurer, J. G. (1997). The moderating effect of environmental variables on the entrepreneurial and marketing orientation of entrepreneur-led firms. Entrepreneurship Theory and Practice, 22, 47–58.

Begley, T. M., & Boyd, D. P. (1987). Psychological characteristics associated with performance in entrepreneurial firms and small businesses. Journal of Business Venturing, 2, 79-93.

Begley, T. M.(1995). Using founder status, age of firm, and company growth rate as the basis for distinguishing entrepreneurs form managers of smaller businesses. Journal of Business Venturing, 10, 249–263.

Begley, T.M. & Boyd, D.P. (1987). A comparison of entrepreneurs and managers of small business firms. Journal of Management, 13, 99–108.

Bhave, M.P. (1994). A process model of entrepreneurial venture creation. Journal of Business Venturing, 9, 223– 242.

Bird, B.J. (1988). Implementing entrepreneurial ideas: The case for intention. Academy of Management Review, 13(3), 442-453.

Bird, B.J. (1992). The operation of intentions in time: The emergence of the new venture. Entrepreneurship Theory and Practice, 17(1), 11–20.

Black, S., & Strahan, P. (2000). Entrepreneurship and bank credit availability, working paper, Federal Reserve Bank of New York, US.

Borjas, G. J., & Bronas, S. G. (1989). Consumer discrimination and self-employment. Journal of Political Economy, 97(3), 581-605.

Boswell, J. (1973). The Rise and Decline of Small Firms. Allen and Unwin, London.

Brislin, R. W. (1970) Back translation for cross-cultural research. Journal of Cross Cultural Psychology, 1, 185-216.

Brislin, R.W., Lonner, W.J. & Thorndike, R.M. (1973). Cross Cultural Research Methods. John Wiley & Sons, New York, NY.

Brockhaus, R. H., Sr. (1980). Psychological and environmental factors which distinguish the successful from the unsuccessful entrepreneur: A longitudinal study. Academy of Management Proceedings, 368–372.

Brockhaus, R. H. (1980a). The effect of job dissatisfaction on the decision to start a business. Journal of Small Business Management, 18(1), 37-43.

Brockhaus, R. H. (1980b). Risk taking propensity of entrepreneurs. Academy of Management Journal, 23, 509-520.

Brockhaus, R. H. (1982). The psychology of the entrepreneur. In C. A. Kent, D. L. Sexton, & K. H. Vesper (Eds.), Encyclopedia of entrepreneurship (pp. 39-56). Englewood Cliffs NJ, Prentice-Hall.

Brockhaus, R. H., & Nord, W. R. (1979). An exploration of factors affecting the entrepreneurial decision: Personal characteristics vs. environmental conditions. Proceedings of the National Academy of Management, 364-368.

Brodsky, M. A. (1993). Successful female corporate managers and entrepreneurs: similarities and differences. Group and Organization Management, 18(3), 366.

Bruno, A. V., & Tyebjee, T. T. (1982). The environment for entrepreneurship. In Encyclopedia of Entrepreneurship, eds. Kent, C.A., Sexton, D.L., & Vesper, K.H. Englewood Cliffs, NJ, Prentice-Hall.

Bugental, J. (1980). Being levels of therapeutic growth. In Walsh, R.N. & Vaughn, F (Eds.), Beyond ego (pp. 190-195). Los Angels, J.P. Tarcher.

Burch, J. G. (1986). Profiling the entrepreneur. Business Horizons, 34(5), 13-16.

Burgelman, R.A. (1983). Corporate entrepreneurship and strategic management: Insights from a process study. Management Science, 29(12),1349–1364.

Burgelman, R.A.(1985). Managing the new venture division, Research findings and implications for strategic management. Strategic Management Journal, 6(1),39–54.

Busenitz, L. (1996). Research in entrepreneurial alertness. Journal of Small Business Management, 35, 35– 44.

Butler, J. & C. Herring (1991). Ethnicity and entrepreneurship in America: Toward and explanation of racial and ethnic group variations in self employment. Sociological Perspectives, 34, 79-94.

Bygrave, W. D. & Hofer, C. W. (1991). Theorizing about entrepreneurship. Entrepreneurship Theory and Practice, 16, 13-22.

Cagetti, M & Nardi, D. (2006). Entrepreneurship, Frictions, and Wealth. Journal of Political Economy, 114(5), 835-870.

Caird, S. (1991). Testing Enterprising Tendency in Occupational Groups. British Journal of Management, 2(4), 177-186.

Cappelli, P., & Sherer, P.D. (1991). The missing role of context in OB: The need for a meso-level approach. In Cummings, L.L. & Staw, B. M. (Eds), Research in Organizational Behavior. 13, 55-110. Greenwich, CT, JAI Press.

Carree, M. A., & Thurik, A. R.(2002). The Impact of Entrepreneurship on Economic Growth. International Handbook of Entrepreneurship Research, edited by Zoltan Acs and David Audretsch.

Carroll, J. S., & Siegler, R, S. (1977). Strategies for the use of base-rate information. Organizational Behavior & Human Performance, 19(2), 392-402.

Carver, R. P. (1978). The case against statistical significance testing. Harvard Educational Review, 48(3), 378-399.

Casson, M. (1982). The entrepreneur. Totowa, NJ, Barnes & Noble Books.

Chandler, A. D. (1962). Strategy and structure: Chapters in the history of American industrial enterprise. Cambridge, MA, MIT Press.

Chen, C. C. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? Journal of Business Venturing, 13, 295-316.

Chen, M. J.,& Hambrick, D. C. (1995). Speed, stealth, and selective attack: How small firms differ from large firms in competitive behavior. Academy of Management Journal, 38, 453-482.

Chew, K. K. & Koh, H. C. (1993). Personality characteristics of entrepreneurs: A test of the locals at the Singapore International Monetary Exchange. Journal of Small Business & Entrepreneurship, 10(3), 59–68.

Child, J. (1995). Changes in the structure and prediction of earning in Chinese state enterprises during the economic reform. International Journal of Human Resource Management, 6(1), 1–30.

Child, J. (1996). Management in China During the Age of Reform. In J. Child and Lu Yuan (eds.) Management issues in China, International Enterprises. London, UK.

Cho, W. Y., Choy, H. K. & Lim, W. K. (1994). A study of psychological, personal and demographic characteristics of students taking the subject "Entrepreneurship and Enterprise Development." In Final Year Students Research Project, School of Accountancy & Business, Nanyang Technological University, Singapore.

Cole A. H (1949). Entrepreneurship and Entrepreneurial History. In, Livesay, H. C. (ed) (1995) Entrepreneurship and the Growth of Firms, Vol. I. Edward Elgar, Hants, pp 100–22.

Collins, C. J., Hanges, P. J. & Locke, E. A. (2004). The relationship of achievement motivation to entrepreneurial behavior: A meta-analysis. Human Performance,17(1), 95-117.

Collins, C., Locke, E., & Hanges, P. (2000). The relationship of need for achievement to entrepreneurial behavior, a meta-analysis. Working paper, University of Maryland, College Park, MD.

Collins, O., & Moore, D. (1970). The organization makers. New York, Appleton-Century-Crofts.

Cooper, A. C., (1981). Strategic management: New ventures and small business. Long Range Planning, 14(5), 39-45.

Cooper, A. C., & Dunkelberg, W. C. (1986). Entrepreneurship and paths to business ownership. Strategic Management Journal, 7,53-68.

Cooper, A. C., Dunkelberg, W. C. & Woo, C. Y., (1988). Entrepreneurs' perceived chances for success. Journal of Business Venturing, 3, 97–108.

Cooper, A. C., Folta, T. B. & Woo, C. (1995). Entrepreneurial information search. Journal of Business Venturing, 10,107–120.

Covin, J. G., & Slevin, D. P. (1988). The influence of organization structure on the utility of entrepreneurial top management style. Journal of Management Studies, 25, 217–234.

Covin, J. G., & Slevin, D. P. (1989). Strategic Management of Small Firms in Hostile and Benign Environments. Strategic Management Journal, 10(1), 75-87.

Covin, J.G., & Slevin, D.P. (1991). A conceptual model of entrepreneurship as firm behavior. Entrepreneurship, Theory and Practice, 16(1), 7-24.

Cromie, S. (1987). Motivations of aspiring male and female entrepreneurs. Journal of Occupational Behavior, 8, 251–261.

Cromie, S., & Johns, S. (1983). Irish entrepreneurs, some personal characteristics. Journal of Occupational Behaviour, 4, 317–324.

Dahlqvist, J., Davidsson, P., & Wiklund, J. (2000). Initial conditions as predictors of new venture performance: A replication and extension of the Cooper et al. study. Enterprise and Innovation Management Studies, 1(1), 1-17.

Davidsson, P., Lindmark, L., & Olofsson, C. (1994a). New firm formation and regional development in Sweden. Regional Studies, 28 (4).

Davidsson, P., Lindmark, L. & Olofsson, C. (1994b). Entrepreneurship and economic development: The role of small firm formation and expansion for regional economic well-being. Journal of Enterprising Culture, 1, 347-366.

Decal, J. F., & Lyons, P. R. (1979). A comparison of selected personal characteristics of minority and nonminority female entrepreneurs. Journal of Small Business Management, 17, 22-29.

Dess, G. G., & Lumpkin, G. T. (2005). The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship. Academy of Management Executive, 19(1).

Dess, G. G., Lumpkin, G. T., & Covin, J. G. (1997). Entrepreneurial strategy making and firm performance: Tests of contingency and configurational models. Strategic Management Journal, 18, 677–695.

Dess, G. G., Lumpkin, G. T., & McGee, J. E. (1999). Linking corporate entrepreneurship to strategy, structure, and process: Suggest research directions. Entrepreneurship Theory and Practice, 23(3), 85-102.

Devlin, R. A., Grafton, R. Q, & Rowlands, D.(1998). Rights and wrongs: A property rights perspective of Russia's market reforms. Antitrust Bulletin, 43(1), 275-297.

Devinney, T. M.(1992). New products and financial risk changes. Journal of Product Innovation Management, 3, 222–231.

Dickson, P. R. (1992). Toward a general theory of competitive rationality. Journal of Marketing, 56, 69–83.

Ding, D., Fields, D., & Akhtar, S. (1997). An empirical study of human resource policies and practices in foreign-invested enterprises in China: The case of Shenzhen Special Economic Zone. International Journal of Human Resource Management, 8(5), 595–613.

Dobbin, F., & Dowd, T. (1997). How policy shapes competition: Early railroad foundings in Massachusetts. Administrative Science Quarterly, 42, 501-529.

Douglas, E. J. and Shepherd, D. A. (2000). Entrepreneurship as a utility maximizing response. Journal of Business Venturing, 15, 231-251.

Drucker, P. (1985). Entrepreneurship and Innovation. In Practice and Principles, Harper Business, New York, NY (1985).

Durand, D., & Shea, D. (1974). Entrepreneurial activity as a function of achievement motivation and reinforcement control. The Journal of Psychology, 88, 57-63.

Edwards, A. L.(1959). Edwards Personal Preference Schedule. New York, The Psychological Corporation.

Edwards, A. (1959). Manual for the Edwards personal preference schedule. New York, The Psychological Corporation.

Edwards, J., & Bagozzi, R. (2000). On the nature and direction of relationships between constructs and measures. Psychological Methods, 5(2), 155-174.

Erikson T. (1998). A study of career choice intentions among a cohort US MBAs- The Ajzen model. Euro PME Conference, Rennes (France).

Estrin, S, & Wright, M. (1999). Corporate governance in the former Soviet Union: An overview. Journal of Comparative Economics, 27(3), 398–421.

Evans, D., & Leighton, L.(1989). Some empirical aspects of entrepreneurship. American Economic Review, 79, 519-535.

Farrell, G. (2005). Bo Knows, Entrepreneurs are born, not made. *The Greenville News*. *http,//greenvilleonline.com/news/business/2005/01/23/2005012357233.htm*. Accessed on June 2, 2005.

Fayolle, A. & Gailly, B. (2004). Using the theory of planned behavior to assess entrepreneurship teaching programs, a first experimentation. IntEnt2004 Conference, Naples (Italy), 5-7 July.

Fazzari, S. M., Hubbard, R.G & Petersen, B. C. (1988). Financing constraints and corporate investment. Brookings Papers on Economic Activity, 1, 151–195.

Fiet, J. (2002). The Systematic Search for Entrepreneurial Discoveries. Quorum Books.

Fineman, S.(1977). The achievement motive construct and its measurement, where are we now? British Journal of Psychology, 68, 1–22.

Fishbein, M., & Ajzen, 1. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading. MA, Addison-Wesley.

Forlani, D, & Mullins, J. W. (2000). Perceived risks and choices in entrepreneur's new venture decisions. Journal of Business Venturing, 15, 305–322.

Gaglio, C. M., & Taub, R.P. (1992). Entrepreneurs and opportunity recognition. In, N.C Churchill, N.C., Birley, S., Bygrave, W., Muzyka, D., and Wetzel, W.E. Editors, Frontiers of Entrepreneurship Research, Babson College, Wellesley, MA (1992), pp. 136–147.

Gartner, W. B. (1985). A conceptual framework for describing the phenomenon of new venture creation. The Academy of Management Review, 10(4), 696-706.

Gartner, W. B., Carland, J. W., Carland, H.F., & Ann, J. C. (1988). 'Who is an entrepreneur?' is the wrong question. American Journal of Small Business, 12(4), 11-36.

Gartner, W. B. (1988). Who is the entrepreneur? is the wrong question. American Journal of Small Business, 12,11-32.

Gartner, W. (1989). Some suggestions for research on entrepreneur traits and characteristics. Entrepreneurship Theory and Practice, 14, 27-37.

Gartner, W. B., & Thomas, R. J. (1989). Factors which influence a new firm's ability to accurately forecast new product sales. In Brockhaus, R.H., Sr.,

Churchill, N.C., Katz, J.A., Kirchhoff, B.A., Vesper, K.H., and Wetzel, W.E. (Eds.), Frontiers of Entrepreneurship Research, pp. 408-421. Wellesley, MA, Babson College.

Gartner, W. B. (1990). What are we talking about when we talk about entrepreneurship? Journal of Business Venturing, 5 (1), 15-28.

Gartner, W. B., Shaver, K. G., Gatewood, E. & Katz, J. A. (1994). Finding the entrepreneur in entrepreneurship. Entrepreneurship Theory & Practice, 18, 5–9.

Gentry, W., & Hubbard, R. (2000). Tax policy and entrepreneurial entry. American Economic Review Papers and Proceedings. 90(2), 283-292.

Gerhart, B.(2005). Human resource systems in Ostroff, C., and Judge, T. Perspectives on Organizational Fit, New Jersey , Erlbaum.

Ginsberg, A. (1985). Measuring changes in entrepreneurial orientation following industry deregulation: The development of a diagnostic instrument. In Roberts, G.B. (ed.). Proceedings, Discovering entrepreneurship. Marietta, GA, U.S. Affiliate of the International Council for Small Business.

Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), Personality psychology in Europe, vol. 7 (pp. 7-28). Tilburg, The Netherlands, Tilburg University Press.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The international personality item pool and the future of public-domain personality measures. Journal of Research in Personality, 40, 84–96.

Goodall, K., & Warner, M. (1999). Enterprise reform, labor-management relations and human resource management in a multinational context: Empirical evidence from Sino-Foreign joint ventures. International Studies of Management and Organization, 29(30), 21–36.

Grant, D. (1996). The political economy of new business formation across the American States: 1970-1985. Social Science Quarterly, 77(1), 28-42.

Greenberger, D. B, & Sexton, D. L. (1988). An interactive model of new venture initiation. Journal of Small Business Management, 26(3),1-7

Guth, W. D., & Ginsberg, A. (1990). Guest editors' introduction: Corporate entrepreneurship. Strategic Management Journal, 11,5–15.

Hall, J., & Hofer, C. W. (1993). Venture capitalists' decision criteria in new venture evaluation. Journal of Business Venturing, 8, 25–42.

Hansemark, O. C. (1997). Objective versus projective measurement of need for achievement: The relation between TAT and CMPS. Journal of Managerial Psychology, 12(4), 280–289.

Hansemark, O. C. (1998). The effects of an entrepreneurship programme on need for achievement and locus of control of reinforcement. International Journal of Entrepreneurial Behavior and Research, 4(1), 28–50.

Hansemark, O. C. (1998). Need for achievement, locus of control and the prediction of business start-ups: A longitudinal study. Journal of Economic Psychology, 24, 301–319.

Harper, D. (1997). An Austrian framework for public policy. Working Paper of New York University.

Hart, M., & Gudgin, G. (1994). Spatial variations in new firm formation in the Republic of Ireland: 1980-1990. Regional Studies, 38(4), 367-380.

Hébert, R. F., & Link, A. N. (1989). In search of the meaning of entrepreneurship. Small Business Economics, 1(1), 39-49.

Hills, G. E., Lumpkin, G. T., & Singh, R. P. (1997). Opportunity recognition, Perceptions and behaviors of entrepreneurs. Frontiers of Entrepreneurship Research, 17, 168-182.

Hisrich, R. D., & Peters, M. P. (1991). Entrepreneurship, Starting, Developing, and Managing a New Enterprise. (2 ed.), Richard D. Irwin Inc., Homewood.

Ho, T. S. & Koh, H. C. (1992). Differences in psychological characteristics between entrepreneurially inclined and non-entrepreneurially inclined accounting graduates in Singapore. Entrepreneurship, Innovation and Change, 1(2), 243–254.

Hofstede, F., Steenkamp, J. B. E. M. & Wedel, M.(1999). International market segmentation based on consumer-product relations. Journal of Marketing Research, 36(1), 1-17.

Homburg , C., Workman, J. P. Jr. & Krohmer, H. (1999). Marketing's influence within the firm. Journal of Marketing, 63(2), 1-17.

Hornaday, J. A., & Aboud, J. (1971). Characteristics of successful entrepreneurs. Personnel Psychology, 24, 141-153.

Hornaday, J. A., & Aboud, J. (1973). Characteristics of successful entrepreneurs. Personnel Psychology, 24,141–153.

Hornaday,J . & Bunker. C. (l970). The nature of the entrepreneur. Personnel Psychology, 23, 47-54.

Hoskisson, R., Eden, L., Lau, C. M. & Wright, M. (2000). Strategy in emerging economies. Academy of Management Journal, 43, 249–67.

Huang, Y. (2008). Capitalism with Chinese Characteristics, Entrepreneurship and the State. Cambridge University Press, London, UK.

Hayek, F. A. (1945). The use of knowledge in society. American Economic Review, 35, 519–530.

Hayek, F.A. (1995). Money and capital. A reply.

Herron, L., & Sapienza, H. J. (1992). The entrepreneur and the initiation of new venture launch activities. Entrepreneurship Theory and Practice, 17(1), 49-55.

Highfield, R., & Smilery, R. (1987). New business start and economic activity. International Journal of Industrial Organization, 5, 51-66.

Hisrich, R.D., and Peters, M.P. (1984). Internal venturing in large corporations. In J.A. Hornaday et al., eds., Frontiers of Entrepreneurship Research. Wellesley, MA: Babson College.

Hisrich, R.D., and Peters, M.P. (1998). Entrepreneurship: Starting, Developing, and Managing a New Enterprise (4th Ed.). Chicago,IL: Irwin.

Hornsby, J.S., Naffziger, D.W., Kuratko, D.F., & Montagno, R.V. (1990). Developing an intrapreneurial assessment instrument for an effective corporate entrepreneurial environment. Strategic Management Journal, 11, 49–58.

Hornsby, J.S., Naffziger, D.W., Kuratko, D.F., & Montagno, R.V. (1993). An interactive model of the corporate entrepreneurship process. Entrepreneurship: Theory and Practice, 17(2), 29–37.

Hull, D. L., Bosley, J. J., & Udell, G. G. (1980). Renewing the hung for heffalump, Identifying potential entrepreneurs by personality characteristics. Journal of Small Business, 18, 11-18.

Ireland, D. R., Reutzel, C. R., & Webb, J. W. (2005). From the editors: Entrepreneurship research in AMJ: What has been published, and what might the future hold? Academy of Management, 48(4), 556–564.

Jackson, D. N. (1974). Personality Research Form Manual. Port Huron, Research Psychologists Press. Rev.ed.

James, W. (1950). The principles of psychology, Vol. 2. New York, Dover.

Johansson, E. (2000). Self-employment and liquidity constraints: Evidence from Finland. Scandinavian Journal of Economics, 102(1), 123-134.

Johnson, B. R. (1990). Toward a multidimensional model of entrepreneurship: the case of achievement motivation and the entrepreneur. Entrepreneurship, Theory and Practice, 14(3), 39-54.

Judd, C. M. & Kenny, D. A. (1981). Process Analysis, estimating mediation in treatment evaluations. Evaluation Review, 5(5), 602-619.

Kahneman, D., & Lovallo, D. (1993). Timid choices and bold forecasts: a cognitive perspective on risk taking. Management Science, 39(1), 17–31.

Kanter, R. M. (1984). The Change Masters. New York, NY, Touchstone, Simon & Schuster.

Kanter, R. M. (1989). When Giants Learn to Dance. New York, NY, Simon & Schuster.

Kanter, R. M., & Richardson, L. (1991). Engines of progress, designing and running entrepreneurial vehicles in established companies ---The enterprize program at Ohio Bell, 1985–1990. Journal of Business Venturing, 6(3),209–229.

Katz, J., & Gartner, W. B. (1988). Properties of emerging organizations. Academy of Management Review, 13, 429-441.

Kao, J. (1989). Entrepreneurship, creativity, and organization. Englewood Cliffs, NJ, Prentice-Hall.

Khandwalla, P. (1977). The Design of Organizations. Harcourt, Brace, Jovanovich, New York.

Kickul, J., & Gundry, L. K. (2002). Prospecting for strategic advantage: The proactive entrepreneurial personality and small firm innovation. Journal of Small Business Management, 40(2), 85-97.

Kirchhoff, B. A., & Phillips, B. D. (1988). The effect of firm formation and growth on job creation in the United States. Journal of Business Venturing, 3(4), 261-272.

Kirzner, I. (1973). Competition and Entrepreneurship. University of Chicago Press, Chicago, IL, US.

Kirzner, I. (1979). Perception, Opportunity, and Profit. Chicago, University of Chicago Press.

Kirzner, I. (1997). Entrepreneurial discovery and the competitive market process, an Austrian approach. The Journal of Economic Literature, 35, 60–85.

Knight, G. A. (1997). Cross-cultural reliability and validity of a scale to measure firm entrepreneurial orientation. Journal of Business Venturing, 12, 213–225.

Knight, F. (1921), Risk, Uncertainty and Profit, Houghton, Mifflin, Boston.

Kock, S. W. (1965). Management and Motivation, Doctoral dissertation, The Swedish School of Economics, Helsinki.

Koh, W. T. H. (2006). Love, altruism and the family. Household Economics and the Asian Family. Marshall Cavendish International.

Kolvereid, L. (1996). Prediction of employment status choice intentions. Entrepreneurship Theory & Practice, 21 (1), 47-57.

Krasner, O.J., & Ray, D. M. (1984). Perceptions of risk and problems in the robotics and biotechnology industry. Babson Research Conference on Entrepreneurship.

Kreiser, P. M., Marino, L.D., & Weaver, K. M. (2002). Assessing the psychometric properties of the entrepreneurial orientation scale, a multi-country analysis. Entrepreneurship Theory Practice, 26(4), 71–94.

Krueger, N. (1993). The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. Entrepreneurship, Theory and Practice, 18(1), 5–21.

Krueger, N., Jr., & Dickson, P. R. (1994). How believing in ourselves increases risk taking, perceived self-efficacy and opportunity recognition. Decision Sciences, 25(3), 385–400.

Krueger, N. F., & Carsrud, A. L. (1993). Entrepreneurial intentions, applying the theory of planned behavior. Entrepreneurship and Regional Development, 5, 315–330.

Krueger, N.F., Reilly, M.D., & Carsrud, A.L. (2000), Competing models of entrepreneurial intentions. Journal of Business Venturing, 15 (5/6), 411-432.

Kyrö, P., & Carrier, C. (2005). Entrepreneurial learning in universities, bridges across borders. in Kyrö, P. and Carrier, C. (Ed.), The dynamics of learning entrepreneurship in a cross-cultural university context, University of Tampere, Hämmeenlinna, 14-43.

Lafuente, A.,& Salas, V. (1989). Types of entrepreneurs and firms: The case of new Spanish firms. Strategic Management Journal, 10, 17–30.

Lahteenmaki, S., Storey, J., & Vanhala, S.(2006). HRM and company performance, the use of measurement and the influence of economic cycles. Human Resource Management Journal, 8(2), 51-65.

Landström, H., Frank, H., & Veciana, J. M. (1997). Entrepreneurship and small business research in Europe — An ECSB survey. Aldershot, UK: Avebury.

Lau, C. M. (1998). Strategic orientation of chief executives in state-owned enterprises in transition. In Hitt, M, Ricart, J and Nixon, R.(Eds) Managing strategically in an interconnected world, 101-118. Chichester, UK, John Wiley & Sons.

Lee, D. Y., & Tsang, E. W. K. (2001). The effects of entrepreneurial personality, background and network activities on venture growth. Journal of Management Studies, 38(4), 583 – 602.

Lee, S. H., & Wong, P. K. (2004). An exploratory study of technopreneurial intentions, a career anchor perspective. Journal of Business Venturing, 19, 7–28.

Lieberman, M. B., & Montgomery, D. B. (1988). First-mover advantages. Strategic Management Journal, 9, 41-58.

Lieberman, M. B. ,& Montgomery, D. B. (1991). Strategy of market entry: To pioneer or follow? In Glass, H.E. (ed.), Handbook of Business Strategy (2nd ed.), Warren, Gorham & Lamont, New York, pp. 2-29.

Leibenstein, H. (1968). Entrepreneurship and development. American Economic Review, 38(2), 72–83.

Long, W., & McMullan, W. E. (1984). Mapping the new venture opportunity identification process. Frontiers of Entrepreneurship Research. Wellesley, MA, Babson College, 567-590.

Low, M., & MacMillan, I., (1988). Entrepreneurship, past research and future challenges. Journal of Management, 14, 139–161.

Lu, Y., & Bjorkman, I. (1997). HRM Practice in China–Western Joint Ventures, MNC Standardization versus Localization. International Journal of Human Resource Management, 8(5), 614–28.

Lumpkin, G. T. & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21(1), 135–172.

Lynn, R. (1969). An achievement motivation questionnaire. British Journal of Psychology, 60, 529–534.

MacMillan, I. C. (1982). Seizing competitive initiative. The Journal of Business Strategy, Spring. 43-57.

MacCrimmon, K. R., & Wehrung, D. A. (1986). Taking Risks: The Management of Uncertainty. New York, The Free Press.

March, J. G., & Shapira, Z. (1987). Managerial perspectives on risk and risk taking. Management Science, 33, 1404–1418.

Marin, G., & Marin, B. V. O. (1991). Research with Hispanic Populations, Applied Social Research Series, Vol. 23, Sage Publications, Beverly Hills, CA.

Marsula, A.J. (1978). Thoughts on cross-cultural studies on the epidemiology of depression. Cultural and Medical Psychiatry, 2, 343-57.

Master, R., & Meier, R. (1988). Sex differences and risk taking propensity of entrepreneurs. Journal of Small Business Management, 1, 31-35.

May, R. (1975). The Courage to Create. New York, Bantam Books.

MacMillan, I., & Katz, J. (1992). Idiosyncratic milieus of entrepreneurship research: The need for comprehensive theories. Journal of Business Venturing, 7, 1–8.

McMillan, J., & Woodruff, C. (2002). The central role of entrepreneurs in transition economies. Journal of Economic Perspectives,16(3), 153-170.

McClelland, D. C. (1957). Community Development and the Nature of Human Motivation: Some Implications of Recent Research. Harvard University Press. MA.

McClelland, D. C., Baldwin, A. L., Bronfenbrenner, U., & Strodbeck, F. L. (1958). Talent and society: New perspectives in the identification of talent. Princeton, NJ, D. Van Nostrand.

McClelland, D. C. (1965). N Achievement and entrepreneurship: A longitudinal study. Journal of Personality and Social Psychology, 1(4), 389-392.

McClelland, D. C. (1961). The Achieving Society. Princeton, N. J., Van Nostrand.

McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L.(1953). The Achievement Motive. New York, Appleton-Century-Crofts.

McClelland, D. C. (1967). The Achieving Society. The Free Press, New York, NY.

McClelland, D. C., & Winter, D. G. (1969). Motivating Economic Achievement. New York, The Free Press.

McClelland, D. C. (1985). Human Motivation. Glenview, IL, Scott, Foresman & Co.

McDaniel, B. A. (2002). Entrepreneurship and Innovation: An Economic Approach. M.E. Sharpe, New York.

McGorry, S. Y. (2000). Measurement in a cross-cultural environment, survey translation issues. Qualitative Market Research: An International Journal, 3(2), 74-81.

McKinney, G., & McKinney, M. (1989). Forget the corporate umbrella—Entrepreneurs shine in the rain. Sloan Management Review, 30(4), 77–82.

Mesch, G.S., & Czamanski, D. (1997). Occupational closure and immigrant entrepreneurship: Russian Jews in Israel. Journal of Socio-Economics, 26(6), 597–610.

Mezias, J.,& Mezias, S. (2000). Resource partitioning, the founding of specialist firms, and innovation: The American feature film industry, 1912-1929. Organization Science, 11(3), 306-322.

Miller, D. & Friesen, P. (1978). Archetypes of strategy formulation. Management Science, 24, 921–933.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. Management Science, 29, 770-791.

Miller, D., & Friesen, P. (1982). Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. Strategic Management Journal, 3(1), 1-25.

Miller, D., & Friesen, P. (1983). Strategic-making and environment: The third link. Strategic Management Journal, 4(3), 221-235.

Miller, G. A., Galanter, E., & Pribram, K. H.(1960). Plans and the Structure of Behavior. New York, Holt.

Miner, J. B., and Raju, N. S. (2004). Risk propensity differences between managers and entrepreneurs and between low and high-growth entrepreneurs: A reply in a more conservative vein. Journal of applied Psychology, 89, 3-13.

Mises, L. V. (1963). Human Action (Chicago, Regnery), orig. pub. 1949.

Morris, M. H., & Paul, G. W. (1987). The relationship between entrepreneurship and marketing in established firms. Journal of Business Venturing, 2(3), 247-259.

Morris, J. L., & Fargher, K.(1974. Achievement drive and creativity as correlates of success in small business. Australian Journal of Psychology, 26(3), 217–222.

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*, 16, 51-75.

Naman, J. L., & Slevin, D. P.(1993). Entrepreneurship and the concept of fit: A model and empirical tests. Strategic Management Journal, 14, 137–153.

Nelson, J., Tilley, C., & Walker, L. (1998). Transforming Post-communist Political Economies. Washington, DC, National Academy Press.

Nutt, P. C. (1986). Tactics of implementation. Academy of Management Journal, 29, 230-261.

Ozgen, E., & Baron, R. A. (2007). Social sources of information in opportunity Recognition: Effects of mentors, industry networks, and professional forums. Journal of Business Venturing, 22, 174– 192.

Palich, L. E., & Bagby, D. R. (1995). Using cognitive theory to explain entrepreneurial risk-taking, challenging conventional wisdom. Journal of Business Venturing, 10, 425–438.

Palmer, M. (1971). The application of psychological testing to entrepreneurial potential. California Management Review, 13(3), 38.

Peng., M. W. (1997). Firm growth in transitional economies: Three longitudinal cases from China, 1989-96. *Organization Studies,* 18, 385-413.

Peng, M.W., & Heath, P.S. (1996). The growth of the firm in planned economies in transition, Institutions, organizations, and strategic choice. Academy of Management Review, 21(2), 492-528.

Penning, J. (1982a). Organizational birth frequencies: An empirical investigation. Administrative Science Quarterly, 27, 120-144.

Perry, C., Macarthur, R., Meredith, G., & Cunnington, B. (1986). Need for achievement and locus of control of Austrian small business owner-managers and super-entrepreneurs. International Small Business Journal, 4(4), 55–64.

Peters, T., & Waterman, R. (1982). In Search of Excellence. New York, Harper & Row.

Pinchot, G. III (1985). Intrapreneuring. New York, NY, Harper & Row.

Porter, M. E. (1980). Competitive strategy. New York, Free Press.

Porter, M. E. (1985). Competitive Advantage.The Free Press, New York, 1985.

Ray, D. M. (1994). The role of risk-taking in Singapore. Joumal of Business Venturing, 9, 157-177.

Reingen, P. H. (1976). Do subjects understand the choice dilemmas questionnaire? Journal of Social Psychology, 99,303-304.

Reynolds, P.D.(1987). New firms: Societal contribution versus survival potential. Journal of Business Venturing, 2, 231-246.

Reynolds, P. D., (1994). Autonomous firm dynamics and economic growth in the United States, 1986-1990. Regional Studies, 28(4), 429-442.

Reynolds, P. D., & White, S. (1997). The entrepreneurial process. Greenwich, CT, Greenwood Press.

Reynolds, P. D., & Maki, W.R. (1990). Business Volatility and Economic Growth, Project Report prepared for the US Small Business Administration (Contract SBA 3067-0A-88).

Reynolds, P. D., & Storey, D.J. (1993). "Regional Characteristics Affecting Small Business Formation, a Cross-National Comparison", ILE Notebooks, Local initiatives for Employment Creation, No. 18, Paris, OECD.

Reynolds, P. D. (1997).Who start new firms? – Preliminary explorations of firms-in-Gestation. *Small Business Economics*, 9 (5), 449-462.

Riquelme, H., & Rickards, T. (1992). Hybrid conjoint analysis, an estimation probe in new venture decisions. Journal of Business Venturing, 7,505–518.

Roberts, E. B. (1983).Business Planning in the Start-up High Technology Enterprise. In Hornaday, J.A., Timmons, J.A., and Vesper, K.H.(eds). Frontiers of Entrepreneurship Research, Preceedings of the 1983 Conference on Entrepreneurship Research. Wellesley, Mass, Boston College. 107-117.

Roberts, E. B. (1989). The personality and motivations of technological entrepreneurs. Journal of Engineering and Technology Management, 6, 5-23.

Roberts, E. B. (1991). The Technological Base of the New Enterprise. Research Policy, 20(4), 283-297.

Robinson, R. B., & Pearce, J. A. (1986). Product life-cycle considerations and the nature of strategic activities in entrepreneurial firms. Journal of Business Venturing, 1, 207–224.

Robinson, R. B., Salem, M. Y., Logan, J. R., & Pearce, J. A. (1986). Planning activities related to independent retail firm performance. American Journal of Small Business, 11 (1), 19–26.

Robinson, P. B., Stimpson, D. V., Huefner, J.C., & Hunt, H. K. (1991). An attitude approach to the prediction of entrepreneurship. Entrepreneurship Theory and Practice, 15, 13–31.

Robinson, P. B., & Sexton, E. A. (1994). The effect of education on self-employment success. Journal of Business Venturing, **9,** 141–156.

Rogler, L. H. (1989). The meaning of culturally sensitive research in mental health. American Journal of Psychiatry, 146, 296-303.

Rogoff, E. G., Lee, M., & Suh, D. (2004). "'Who Done It?' Attributions by entrepreneurs and experts of the factors that cause and impede small business success," *Journal of Small Business Management,* 42(4), 364-376.

Ruhnka, J. & Young, J. (1991). Some hypotheses about risk in venture capital investing. Journal of Business Venturing, 6, 115–133.

Rule, E. G., & Irwin D. W. (1988). Fostering intrapreneurship: The new competitive edge. The Journal of Business Strategy, 9(3), 44–47.

Rokeach, M. (1960). The open and closed mind. New York, Basic Books.

Sahlman, W. (1990). The Structure and governance of venture capital organizations. Journal of Financial Economics, 27, 473-521.

Sandberg, W. R., & Hofer, C. W. (1987). Improving new venture performance: The role of strategy, industry structure, and the entrepreneur. Journal of Business Venturing, 2, 5–28.

Sanders, J. M., & Nee, V. (1996). Immigrant self-employment: The family as social capital and the value of human capital. American Sociological Review, 61(2), 231-249.

Sapienza, H. J. (1991). Comets and duds: Characteristics distinguishing high- and low-performing high-potential ventures. *Frontiers of Entrepreneurial Research*. 6, 124-138.

Sarasvathy, D., Simon, H., & Lave, L. (1998). Perceiving and managing business risks, differences between entrepreneurs and bankers. Journal of Economic Behavior and Organization, 33, 207–225.

Schafer, D. S., (1990). Level of entrepreneurship and scanning source usage in very small businesses. Entrepreneurship Theory and Practice, 15(1), 19–31.

Schendel, D., & Hofer, C.W. (1979). Strategic Management. Boston, Little, Brown.

Schmidt, F. L. (1996). Statistical significance testing and cumulative knowledge in psychology: Implications for training of researchers. Psychological Methods, 1(2), 115-129.

Schmidt, F.L. (1999). Measurement Theory and Methods. Class Notes for 6J-273.

Sheppard, B., Hartwick, J., & Warshaw, P. (1988). The theory of reasoned action, a meta-analysis of past research with recommendations and future research. Journal of Consumer Research, 15, 325-344.

Schneider, B., Hanges, P. J., Smith, D. B., & Salva, A. N. (2003). Which comes first, Employee attitudes or organizational financial and market performance? Journal of Applied Psychology, 88(5), 836–851.

Schollhammer, H. (1981). The Efficacy of Internal Corporate Entrepreneurship Strategies. In Vesper, K.H. ed., Frontiers of Entrepreneurship Research. Wellesley, MA, Babson College.

Schollhammer, H. (1982). Internal Corporate Entrepreneurship. In Kent, C.A., Sexton, D.L., & Vesper, K.H. (Eds.). Encyclopedia of entrepreneurship, 209-223. Englewood Cliffs, NJ, Prentice Hall.

Schumpeter, J. A. (1934). The Theory of Economic Development, Harvard University Press. Cambridge, MA.

Schumpeter, J. A. (1936). The Theory of Economic Development. Cambridge University Press, Cambridge, U.K.

Schuler, R. S. (1997).Human Resource Management. In Warner, M. (ed.) Concise International Encyclopedia of Business and Management. London, International Thomson Business Press, pp. 243–63.

Schuler, R. S., & Huber, V. L. (1993). Personnel and Human Resource Management, 5th edn. St Paul, MN, West Publishing Co.

Schuler, R. S., & Rogovsky, N. (1998). Understanding compensation practice variations across firms: The impact of national culture. Journal of International Business Studies. 29(1), 159-177.

Scott, W. R. (1987). The adolescence of institutional theory. Administrative Science Quarterly, 32, 493-511.

Scott, W. R. (1995). Institutions and Organizations. Sage, Thousand Oaks, CA.

Searle, J. R. (1970). Speech Acts: an essay in the philosophy of language. Cambridge, University Press.

Sexton, D. L., & Bowman, N. B. (1985). The entrepreneur: A capable executive and more. Journal of Business Venturing, 1, 129-140.

Sexton, D. L., & Bowman, N. B. (1986). Validation of a personality index, comparative psychological characteristics analysis of female entrepreneurs, managers, entrepreneurship students, and business students. Frontiers of entrepreneurship research (pp. 513–528). Wellesley, MA, Babson College.

Shane, S., Kolvereid, L., & Westhead, P.(1991). An exploratory examination of the reasons leading to new firm formation across country and gender. Journal of Business Venturing, 6, 431–446.

Shane, S. (1996). Hybrid organizational arrangements and their implications for firm growth and survival, A study of new franchisors. Academy of Management Journal, 39(1), 216-234.

Shane, S. (2000). Prior knowledge and discovery of entrepreneurial opportunities. Organization Science, 11, 448–469.

Shane, S. (2003). A General Theory of Entrepreneurship: The Individual-Opportunity Nexus. Edward Elgar, Cheltenham, UK.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. Academy of Management Review, 25, 217-226.

Shane, S, Locke, E. A., & Collins, C. J. (2003). Entrepreneurial motivation. Human Resource Management Review, 13(2), 257-279.

Shane, S., & Khurana, R., (2001). Career experiences and firm foundings. Paper presented at the Academy of Management Meetings.

Shane, S., & Khurana, R. (2003) Bringing individuals back in: the effects of career experience on new firm founding. Industrial and Corporate Change, 12(3), 519-543.

Shapero, S. (1982). The Social Dimension of Entrepreneurship. Encyclopedia of Entrepreneurship; 1982, Englewood Cliffs, N.J. , Prentice-Hall.

Shapero, A. (1975). The displaced, uncomfortable entrepreneur. Psychology Today November .

Shaver, K.G. (1995). The entrepreneurial personality myth. *Business & Economic Review,* 41(3), 20-23.

Shefsky, L. E. (1996). *Entrepreneurs are Made not Born*. New York, Glencoe/Mcgraw-Hill.

Shenkar, O., & Ronen, S. (1987). Structure and importance of work goals among managers in People's Republic of China. Academy of Management Journal, 30, 564-576.

Shepherd, D.A., Douglas, E. J., & Shanley, M.(2000). New venture survival: Ignorance, external shocks, and risk reduction strategies. Journal of Business Venturing, 15(5), 393-410.

Shook, C. L., Priem, R. L., & McGee, J. E. (2003). Venture Creation and the Enterprising Individual: A Review and Synthesis. Journal of Management, 29(3), 379–399

Simon, M., Houghton, S. M., & Aquino, K. (2000). Cognitive biases, risk perception, and venture formation: How individuals decide to start companies. Journal of Business Venturing, 15, 113–134.

Singh, R. P., Hills, G. E., & Lumpkin, G. T. (1999). New venture ideas and entrepreneurial opportunities: Understanding the process of opportunity recognition. Working paper.

Singh, R. P. (2000). Entrepreneurial Opportunity Recognition Through Social Networks. New York, Garland.

Slovic, P. (1972). Information processing, situation specificity, and generality of risk-taking behavior. Journal of Personality and Social Psychology, 22, 128-134.

Smith-Hunter, A., (2003). Diversity and Entrepreneurship: Analyzing Successful Women Entrepreneurs. Lanham, Maryland, University Press of America.

Spangler, W. D. (1992). The validity of questionnaire and TAT measures of achievement: Two meta-analyses. Psychological Bulletin,112, 140-154.

Staw B. M. (1991). Dressing up like an organization, when psychological theories can explain organizational action. Journal of Management, 17, 805–19.

Stevenson, H. H., & Gumpert, D. E. (1985). "The heart of entrepreneurship", Harvard Business Review , 85(2), 85-93.

Stevenson, H. H., & Jarillo, J .C. (1990). A paradigm of entrepreneurship, Entrepreneurship management. Strategic Management Journal, 11, 17-27.

Stevenson, H. H., & Jarillo-mossi, J. C. (1986). "Preserving entrepreneurship as companies grow", Journal of Business Strategy, 7(1), 10-23.

Stewart, W. H., Jr., & Roth, P. L. (2001) Risk propensity differences between entrepreneurs and managers, A meta-analytic review. Journal of Applied Psychology. 86, 145-153.

Stinchcombe, A. (1965). Social Structure and Organizations In March, J.G. (Ed.), Handbook of Organizations (pp. 142-193). Chicago, Rand McNally.

Stopford, J.M., and Baden-Fuller, C.W.F. (1994). Creating corporate entrepreneurship. Strategic Management Journal, 15(7), 521–536.

Storey, D. J. (1982). Entrepreneurship and the New Firm. London , Croom Helm.

Storey, D. J., & Johnson, J. (1987). Job Generation and Labour Market Change, London, MacMillan.

Storey, D. J. (1994b). Understanding the Small Business Sector, London, Routeledge.

Sweezy, P. M. (1943). Professor Schumpeter's Theory of Innovation. The Review of Economics and Statistics, 25(1), 93-96

Tan, C. M. and Tay, S. T. (1994). Factors contributing to the growth of SMEs: The Singapore case. In, 5th Endec World Conference on Entrepreneurship, pp. 150–155.

Taylor, P. J. (2001) Measurement of the World City Network. Urban Studies. 39(13).

Thomas, J. B., & McDaniel, R.R. (1990). Interpreting strategic issues: Effects of strategy and the information-processing structure of top management teams. Academy of Management Journal, 33, 286-306.

Timmons, J.A., Muzyka, D.F., Stevenson, H.H., & Bygrave, W.D. (1987). Opportunity recognition, the core of entrepreneurship. In, N.C Churchill et al., Editors, Frontiers of Entrepreneurship Research, Babson College, Wellesley, MA (1987).

Timmons, J. A. (1994). New Venture Creation: Entrepreneurship for the 21st Century (4th ed.). Burr Ridge, IL, Irwin.

Tversky, A., & Kahnemann, D. (1973). Judgement under uncertainty, Heuristics and biases. Science, 185, 1124–1131.

Unger, J. and Molina, G. (1999). The UCLA multidimensional condom attitudes scales, validity in a sample of low-acculturated Hispanic women. Hispanic Journal of Behavioral Sciences, 21(2), 199-211.

van Stel, A., Carree, M, & Thurik, R. (2005). The effect of entrepreneurial activity on national economic growth. Small Business Economics, 24(3), 311-321.

Veciana, J.M., Aponte, M., & Urbano, D.(2005). University students' attitudes towards entrepreneurship, a two countries comparison. International Entrepreneurship and Management Journal, 1 (2), 165-182.

Venkataraman, S. (1997). The distinctive domain of entrepreneurship research, an editor's perspective. In, J Katz and R Brockhaus, Editors, Advances in Entrepreneurship, Firm Emergence, and Growth vol. 3, JAI Press, NY. pp. 119–138.

Venkatraman, N. (1989). The concept of fit in strategy research: toward verbal and statistical correspondence. Academy of Management Review 14(3), 423–444.

Vesper, K. H. (1984). Three faces of corporate entrepreneurship. In J.A.Hornaday et al., eds., Frontiers of Entrepreneurship Research. Wellesley, MA: Babson College.

Vesper, K. H. (1990). New Venture Strategies (Rev. Ed.). Englewood Cliffs, NJ: Prentice-Hall.

Wallas, G. (1926) The Art of Thought. Harcourt, Brace world. NewYork, NY.

Watkinson, J. (2004). Entrepreneurs, born or made? A conversation with Herb Kelleher of Southwest Airlines. http,//www.babsoninsight.com/contentmgr/showdetails.php/id/584.

Wainer, H. A., & Rubin, I. M. (1969) Motivation of research and development entrepreneurs, determinants of company success. Journal of Applied Psychology, 53(3), 178–184.

Webster, F. A. (1976). A model for new venture initiation: A disclosure on rapacity and the independent entrepreneur. Academy of Management Review, 1(1), 26-37.

Webster, F. A. (1977) Entrepreneurs and ventures, An attempt at classification and clarification. Academy of Management Review. 2,54-61.

Werner. O., & Campbell, D. T. (1970). Translating, working through interpreters and the problem of decentering. In Cohen, R.N. (Ed.), A Handbook of Methods in Cultural Anthropology, American Museum of Natural History, New York, NY.

Wesley, F. and Karr, C. (1966). Problems in establishing norms for cross-cultural comparisons. International Journal of Psychology, 1, 257-62.

Wiklund, J. (1999). The sustainability of the entrepreneurial orientation--performance relationship. Entrepreneurship Theory and Practice, 24(1), 37-49.

Wooten, K. C., Timmerman, T. A., & Folger, R. (1999). The use of personality and the five-factor model to predict new business Ventures: From outplacement to start-up. Journal of Vocational Behavior. 54(1), 82-101.

Wortman, M. S. (1987). Entrepreneurship, An integrating typology and evaluation of the empirical research in the field. Journal of management. 13(2), 259-279.

Zacharakis, A. L., Meyer, G.D., & DeCastro, J. (1999). Differing perceptions of new venture failure: A matched exploratory study of venture capitalists and entrepreneurs. Journal of Small Business Management, 37(3), 1-14.

Zahra, S. A. (1991). Predictors and financial outcomes of corporate entrepreneurship: An exploratory study. Journal of Business Venturing, 6(4), 259–285.

Zahra, S. A. (1993). A conceptual model of entrepreneurship as firm behavior: A critique and extension. Entrepreneurship, Theory and Practice, 17(4), 5-21.

Zahra, S. A. (1996a). Governance, ownership, and corporate entrepreneurship, The moderating impact of industry technological opportunities. Academy of Management Journal, 39, 1713–1735

Zampetakis, L. A., & Moustakis, V. (2006). Linking creativity with entrepreneurial intentions, A structural approach, The International Entrepreneurship and Management Journal, 2(3), 413-428.

Zeigarnik. B. (1927). Das Bebahen erledigter und unerlidigter Handlungen. Psychologische Forschung, 9, 1-85.

Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. Journal of Applied Psychology, 90(6),1265–1272.

Zheng, C, Morrison, M, & O'Neill, G. (2006). An empirical study of high performance HRM practices in Chinese SMEs. International Journal of Human Resource Management, 17, 1772-1803.

TABLES

Table 1

Descriptive Statistics for the Combined Sample
(Means, Standard Deviation and Correlations among All Variables Using All Entrepreneurs and All College Students as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.48	.62	-							
Parents	.24	.50	.33	-						
OppRecog	4.27	.89	.13	.07	.84					
EO	4.34	.89	.10	.10	.67	.79				
EI	4.30	1.30	.07	.06	.50	.50	.94			
ProAct	4.33	.92	.11	.10	.45	.43	.31	.74		
Nachieve	4.55	1.08	.07	.09	.35	.34	.21	.70	.84	
Risk	4.27	1.00	.09	.08	.40	.42	.25	.55	.58	.83

Notes:
N=1782. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 2

Descriptive Statistics for All the College Students
(Means, Standard Deviation and Correlations among All Variables Using All College Students as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.44	.64	-							
Parents	.28	.54	.34	-						
OppRecog	4.20	.92	.11	.04	.85					
EO	4.27	.92	.09	.08	.67	.80				
EI	4.19	1.35	.05	.05	.48	.49	.95			
ProAct	4.24	.92	.09	.07	.42	.41	.27	.74		
Nachieve	4.46	1.10	.06	.08	.33	.32	.16	.69	.85	
Risk	4.20	1.01	.07	.06	.41	.43	.24	.55	.58	.83

Notes:
N=1445. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 3

Descriptive Statistics for the U.S. Students
(Means, Standard Deviation and Correlations among All Variables Using the U.S. Students as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.67	.83	-							
Parents	.47	.69	.48	-						
OppRecog	4.46	1.10	-.02	-.03	.88					
EO	4.50	1.07	-.03	-.01	.72	.85				
EI	4.04	1.71	.02	.07	.55	.53	.97			
ProAct	4.49	.97	-.05	-.03	.44	.43	.31	.73		
Nachieve	4.93	1.20	-.12	-.09	.31	.30	.20	.67	.86	
Risk	4.50	1.14	-.09	-.04	.46	.51	.32	.59	.55	.86

Notes:
N=489. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 4

Descriptive Statistics for the All Chinese Students
(Means, Standard Deviation and Correlations among All Variables Using All Chinese Students as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.32	.47	-							
Parents	.18	.40	.01	-						
OppRecog	4.07	.78	.18	.01	.83					
EO	4.16	.80	.16	.07	.60	.76				
EI	4.27	1.12	.15	.08	.47	.51	.92			
ProAct	4.11	.86	.14	.08	.38	.37	.29	.73		
Nachieve	4.23	.97	.13	.12	.27	.26	.18	.68	.82	
Risk	4.04	.90	.14	.06	.30	.31	.20	.49	.57	.80

Notes:
N=956. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 5

Descriptive Statistics for the Students from NJNU
(Means, Standard Deviation and Correlations among All Variables Using Chinese Students from Nanjing Normal University as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.34	.48	-							
Parents	.45	.50	-.10	-						
OppRecog	4.02	.60	.31	-.05	.87					
EO	4.28	.56	.30	-.01	.65	.84				
EI	4.42	.55	.34	.01	.54	.54	.78			
ProAct	4.31	.56	.38	.01	.59	.59	.58	.84		
Nachieve	4.61	.48	.34	-.04	.49	.47	.35	.58	.67	
Risk	4.24	.50	.42	-.04	.52	.49	.49	.61	.64	.80

Notes:
N=260. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 6

Descriptive Statistics for the Students from SUF
(Means, Standard Deviation and Correlations among All Variables Using Chinese Students from Shanghai University of Finance as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.36	.48	-							
Parents	.09	.32	.04	-						
OppRecog	4.08	.88	.16	.08	.84					
EO	4.10	.89	.17	.07	.61	.77				
EI	4.16	1.29	.16	.09	.48	.49	.94			
ProAct	4.11	.93	.06	.03	.39	.32	.28	.71		
Nachieve	4.21	1.05	.01	.02	.31	.27	.20	.69	.83	
Risk	4.04	1.02	.05	.01	.31	.34	.22	.49	.57	.82

Notes:
N=551. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 7

Descriptive Statistics for the Students from JCET
(Means, Standard Deviation and Correlations among All Variables Using Chinese Students from Jiangsu College of Economy and Trade as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.17	.37	-							
Parents	.03	.18	.12	-						
OppRecog	4.14	.66	.12	-.09	.87					
EO	4.17	.81	-.08	-.02	.55	.72				
EI	4.41	1.56	-.02	-.01	.51	.60	.93			
ProAct	3.74	.92	.04	-.04	.23	.40	.21	.72		
Nachieve	3.58	.94	.29	-.02	.18	.13	.11	.56	.81	
Risk	3.68	.84	.14	-.01	.19	.03	.01	.25	.39	.70

Notes:
N=145. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 8

Descriptive Statistics for the Chinese Entrepreneurs
(Means, Standard Deviation and Correlations among All Variables Using Chinese Entrepreneurs as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.65	.48	-							
Parents	.10	.30	.03	-						
OppRecog	4.57	.66	.06	.04	.67					
EO	4.63	.72	.00	.06	.63	.71				
EI	4.80	.90	.06	.09	.48	.46	.87			
ProAct	4.74	.83	-.00	.11	.44	.41	.39	.70		
Nachieve	4.91	.88	-.01	.11	.39	.36	.40	.71	.78	
Risk	4.58	.89	.01	.11	.25	.26	.20	.46	.50	.76

Notes:
N=337. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 9

Descriptive Statistics for the Entrepreneurs from Jiangsu Province (Means, Standard Deviation and Correlations among All Variables Using Chinese Entrepreneurs from Jiangsu Province as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.69	.46	-							
Parents	.08	.28	.09	-						
OppRecog	4.62	.40	.00	-.02	.74					
EO	4.65	.46	-.12	.09	.52	.74				
EI	4.62	.49	-.03	.08	.53	.71	.84			
ProAct	4.65	.47	.00	.04	.46	.58	.50	.78		
Nachieve	4.85	.51	-.07	.03	.53	.62	.47	.64	.75	
Risk	4.56	.49	-.06	.09	.51	.60	.57	.55	.70	.81

Notes:
N=143. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 10

Descriptive Statistics for the entrepreneurs from Shandong Province (Means, Standard Deviation and Correlations among All Variables Using Chinese Entrepreneurs from Shandong Province as Sample)

	Mean	Std	Gender	Parents	OppRecog	EO	EI	ProAct	Nachieve	Risk
Gender	.62	.49	-							
Parents	.12	.32	.12	-						
OppRecog	4.54	.80	.08	.04	.66					
EO	4.61	.86	.05	.05	.65	.71				
EI	4.93	1.09	.12	.06	.49	.43	.87			
ProAct	4.81	1.01	.00	.08	.45	.38	.36	.68		
Nachieve	4.96	1.07	.02	.16	.37	.32	.38	.72	.80	
Risk	4.60	1.09	.05	.17	.21	.20	.14	.45	.47	.76

Notes:
N=194. Numbers on the diagonal are coefficient alpha reliability. Gender refers to whether an individual is a male or female: 1 = male, 0 = female. Parents refer to whether an individual has parents that are entrepreneurs: 1= has parent who is an entrepreneur, 0 = does not have parent who is an entrepreneur. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 11

Correlations among Items of OR, EO and EI for the Entire Sample
(Correlations among Items of Opportunity Recognition, Entrepreneurial Orientation and Entrepreneurial Intent Using the Entire Sample)

	OR1	OR2	OR3	OR4	OR5	OR6	OR7	EO1	EO2	EO3	EO4	EO5	EO6	EI1	EI2	EI3	EI4	EI5	EI6	EI7
OR1	-																			
OR2	.58	-																		
OR3	.29	.45	-																	
OR4	.33	.40	.60	-																
OR5	.28	.31	.46	.56	-															
OR6	.35	.41	.43	.46	.53	-														
OR7	.23	.30	.45	.42	.46	.52	-													
EO1	.20	.26	.42	.43	.40	.44	.46	-												
EO2	.29	.32	.34	.38	.35	.38	.39	.56	-											
EO3	.24	.30	.35	.34	.28	.31	.35	.38	.46	-										
EO4	.32	.42	.41	.39	.36	.40	.37	.43	.50	.51	-									
EO5	.26	.29	.32	.41	.38	.36	.30	.42	.40	.37	.47	-								
EO6	.34	.35	.21	.30	.24	.28	.21	.21	.27	.19	.31	.43	-							
EI1	.21	.20	.37	.45	.39	.33	.31	.37	.29	.33	.33	.42	.19	-						
EI2	.20	.17	.32	.45	.39	.31	.27	.34	.29	.22	.30	.40	.26	.69	-					
EI3	.24	.21	.29	.46	.41	.29	.24	.28	.26	.21	.27	.43	.36	.61	.75	-				
EI4	.22	.19	.33	.47	.43	.33	.27	.34	.28	.22	.32	.40	.31	.67	.79	.80	-			
EI5	.19	.14	.27	.38	.35	.28	.23	.29	.25	.24	.27	.37	.27	.63	.74	.74	.76	-		
EI6	.21	.19	.37	.47	.39	.35	.28	.33	.29	.30	.36	.39	.19	.65	.69	.65	.72	.68	-	
EI7	.17	.13	.31	.42	.38	.29	.27	.36	.28	.28	.30	.35	.19	.61	.65	.62	.69	.65	.71	-

Notes:
N=1782. OR refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent.

Table 12

Results of Predicting EI for the Combined Sample
(Results of Regression Analysis Predicting Entrepreneurial Intent Using All Entrepreneurs and All College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.50(.02)					.47	.44(.02)	.45(.02)	.44(.02)
ProAct		.31(.02)			.29(.03)		.11(.03)	.15(.03)	.15(.03)
Nachieve			.21(.02)		.08(.03)	.00		.06(.03)	.07(.03)
Risk				.25(.02)	.14(.03)	.06	.02(.03)		.04(.03)
R^2	.25	.10	.04	.06	.11	.25	.26	.26	.26
Adj R^2	.25	.10	.04	.06	.11	.25	.26	.26	.26
R	.50	.31	.21	.25	.33	.50	.51	.51	.51

Notes:
N=1782. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 13

Results of Predicting EO for the Combined Sample
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using All Entrepreneurs and All College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.67(.02)					.60(.02)	.58(.02)	.60(.02)	.58(.02)
ProAct		.43(.02)			.31(.03)		.10(.02)	.15(.03)	.12(.03)
Nachieve			.34(.02)		.03(.03)	.04(.02)		.02(.02)	-.03(.03)
Risk				.42(.02)	.27(.03)	.16(.02)	.13(.02)		.14(.02)
R^2	.45	.19	.12	.17	.23	.48	.49	.47	.49
Adj R^2	.45	.19	.11	.17	.23	.48	.48	.47	.49
R	.67	.46	.34	.42	.48	.69	.70	.69	.70

Notes:
N=1782. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 14

Mediational Relationship for the Combined Sample
(Results of Mediational Relationship Analysis Using All Entrepreneurs and All College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
OppRecog	.50(.02)	.29(.03)							.44(.02)	.27(.03)
ProAct			.31(.02)	.12(.02)					.15(.03)	.11(.03)
Nachieve					.21(.02)	.04(.02)			.07(.03)	.07(.03)
Risk							.25(.02)	.05(.02)	.04(.02)	.00(.03)
EO		.31(.03)		.45(.02)		.49(.02)		.48(.02)		.29(.03)
R^2	.25	.30	.10	.27	.04	.25	.06	.26	.26	.30
Adj R^2	.25	.30	.10	.26	.04	.25	.06	.25	.26	.30
R	.50	.55	.31	.52	.21	.50	.25	.51	.51	.55

Notes:
N=1782. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 15

Results of Predicting EI for All College Students
(Results of Regression Analysis Predicting Entrepreneurial Intent Using All College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.48(.02)					.47(.03)	.45(.03)	.45(.03)	.44(.03)
ProAct		.27(.03)			.27(.04)		.07(.03)	.14(.03)	.13(.03)
Nachieve			.16(.02)		.12(.04)	.04(.03)		.09(.03)	.11(.03)
Risk				.24(.03)	.16(.03)	.07(.03)	.02(.03)		.05(.03)
R^2	.23	.07	.02	.06	.09	.24	.24	.24	.24
Adj R^2	.23	.07	.02	.06	.09	.23	.24	.24	.24
R	.48	.27	.16	.24	.30	.49	.49	.49	.49

Notes:
N=1445. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 16

Results of Predicting EO for All College Students
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using All College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.67(.02)					.59(.02)	.57(.02)	.60(.02)	.57(.02)
ProAct		.41(.02)			.29(.03)		.09(.02)	.15(.03)	.12(.03)
Nachieve			.32(.03)		.06(.03)	.02(.02)		.02(.03)	.04(.03)
Risk				.43(.02)	.30(.03)	.17(.02)	.14(.02)		.16(.03)
R^2	.45	.17	.10	.18	.23	.48	.48	.47	.48
Adj R^2	.45	.17	.10	.18	.23	.48	.48	.47	.48
R	.67	.41	.32	.43	.48	.69	.69	.68	.69

Notes:
N=1445. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 17

Mediational Relationship for All College Students (Results of Mediational Relationship Analysis Using All College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
OppRecog	.48(.02)	.28(.03)							.44(.03)	.27(.03)
ProAct			.27(.03)	.08(.03)					.13(.03)	.10(.03)
Nachieve					.16(.02)	0(.02)			.11(.03)	.10(.03)
Risk							.24(.03)	.03(.03)	.05(.03)	0(.03)
EO		.31(.03)		.46(.03)		.49(.02)		.48(.03)		.30(.03)
R^2	.23	.29	.07	.25	.02	.24	.06	.24	.24	.29
Adj R^2	.23	.29	.07	.25	.02	.24	.06	.24	.24	.29
R	.48	.54	.27	.50	.16	.49	.24	.49	.49	.54

Notes:
N=1445. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 18

Results of Predicting EI for U.S. College Students
(Results of Regression Analysis Predicting Entrepreneurial Intent Using the U.S. College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.55(.04)					.51(.04)	.49(.04)	.51(.04)	.49(.04)
ProAct		.31(.04)			.22(.06)		.06(.04)	.10(.04)	.08(.06)
Nachieve			.20(.04)		.08(.06)	.01(.05)		.03(.05)	.05(.05)
Risk				.33(.04)	.24(.05)	.09(.05)	.06(.05)		.07(.05)
R^2	.30	.01	.04	.10	.13	.31	.31	.31	.31
Adj R^2	.30	.01	.04	.10	.12	.30	.30	.30	.30
R	.55	.31	.20	.32	.36	.55	.56	.55	.56

Notes:
N=489. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 19

Results of Predicting EO for U.S. College Students
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using the U.S. College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.72(.03)					.62(.03)	.61(.04)	.66(.03)	.61(.04)
ProAct		.43(.04)			.24(.06)		.04(.04)	.13(.04)	.07(.05)
Nachieve			.30(.04)		.09((.05)	.02(.04)		.01(.04)	.05(.04)
Risk				.51(.04)	.42(.05)	.23(.04)	.20(.04)		.22(.04)
R^2	.52	.18	.09	.26	.29	.56	.56	.54	.56
Adj R^2	.52	.18	.09	.26	.29	.56	.56	.53	.56
R	.72	.43	.30	.51	.54	.75	.75	.73	.75

Notes:
N=489. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 20

Mediational Relationship for U.S. College Students
(Results of Mediational Relationship Analysis Using the U.S. College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
OppRecog	.55(.04)	.35(.05)							.49(.04)	.33(.06)
ProAct			.31(.04)	.10(.04)					.08(.06)	.06(.06)
Nachieve					.20(.04)	.04(.04)			.05(.05)	.04(.05)
Risk							.33(.04)	.07(.04)	.07(.05)	.02(.05)
EO		.28(.05)		.48(.04)		.51(.04)		.49(.04)		.26(.06)
R^2	.30	.34	.01	.29	.04	.28	.10	.28	.31	.34
Adj R^2	.30	.33	.01	.28	.04	.28	.10	.28	.30	.33
R	.55	.58	.31	.54	.20	.53	.32	.53	.56	.58

Notes:
N=489. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 21

Results of Predicting EI for All Chinese College Students (Results of Regression Analysis Predicting Entrepreneurial Intent Using All Chinese College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.47(.03)					.45(.03)	.42(.03)	.42(.03)	.42(.03)
ProAct		.29(.03)			.28(.04)		.12(.03)	.15(.04)	.15(.04)
Nachieve			.18(.03)		.06(.04)	.04(.04)		.04(.04)	.05(.04)
Risk				.20(.03)	.10(.04)	.04(.04)	.01(.03)		.03(.04)
R^2	.22	.08	.03	.40	.08	.22	.23	.24	.24
Adj R^2	.22	.08	.03	.39	.08	.22	.23	.23	.23
R	.47	.29	.18	.20	.30	.47	.48	.48	.49

Notes:
N=956. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 22

.Results of Predicting EO for All Chinese College Students
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using All Chinese College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.60(.03)					.55(.03)	.52(.03)	.53(.03)	.52(.03)
ProAct		.37(.03)			.31(.04)		.13(.03)	.16(.04)	.15(.04)
Nachieve			.26(.03)		.06(.04)	.05(.03)		.01(.04)	.04(.04)
Risk				.31(.03)	.19(.04)	.12(.03)	.09(.03)		.10(.03)
R^2	.36	.14	.07	.10	.16	.38	.39	.38	.39
Adj R^2	.36	.13	.07	.10	.16	.37	.38	.38	.38
R	.60	.37	.26	.31	.40	.61	.62	.62	.62

Notes:
N=956. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 23

Mediational Relationship for All Chinese College Students
(Results of Mediational Relationship Analysis Using All Chinese College Students as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
OppRecog	.60(.03)	.26(.03)							.42(.03)	.24(.04)
ProAct			.29(.03)	.11(.03)					.15(.04)	.10(.04)
Nachieve					.18(.03)	.05(.03)			.05(.04)	.04(.04)
Risk							.20(.03)	.05(.03)	.03(.04)	.01(.03)
EO		.36(.03)		.47(.03)		.50(.03)		.50(.03)		.34(.04)
R^2	.22	.31	.08	.27	.03	.26	.40	.26	.24	.31
Adj R^2	.22	.30	.08	.27	.03	.26	.39	.26	.23	.30
R	.47	.55	.29	.52	.18	.51	.20	.51	.49	.55

Notes:
N=956. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 24

Results of Predicting EI for Students from NJNU
(Results of Regression Analysis Predicting Entrepreneurial Intent Using Chinese Students from Nanjing Normal University as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.54(.05)					.40(.06)	.26(.07)	.31(.06)	.28(.06)
ProAct		.58(.05)			.47(.07)		.33(.06)	.42(.07)	.36(.07)
Nachieve			.35(.06)		.09(.07)	.04(.07)		.05(.06)	.13(.07)
Risk				.49(.05)	.26(.07)	.31(.07)	.15(.07)		.21(.07)
R^2	.29	.33	.12	.24	.37	.35	.41	.39	.41
Adj R^2	.29	.33	.11	.24	.36	.34	.40	.39	.41
R	.54	.58	.35	.49	.61	.59	.64	.63	.64

Notes:
N=260. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 25

Results of Predicting EO for Students from NJNU
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using Chinese Students from Nanjing Normal University as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.65(.05)					.51(.06)	.44(.06)	.44(.06)	.43(.06)
ProAct		.59(.05)			.42(.07)		.26(.06)	.27(.06)	.25(.06)
Nachieve			.47(.06)		.13(.07)	.13(.06)		.10(.06)	.07(.06)
Risk				.49(.05)	.15(.07)	.14(.06)	.10(.06)		.07(.06)
R^2	.42	.34	.22	.24	.38	.46	.49	.49	.49
Adj R^2	.41	.34	.22	.24	.37	.45	.48	.48	.48
R	.65	.59	.47	.49	.62	.68	.70	.70	.70

Notes:
N=260. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 26

Mediational Relationship for Students from NJNU
(Results of Mediational Relationship Analysis Using Chinese Students from Nanjing Normal University as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
OppRecog	.54(.05)	.32(.07)							.28(.06)	.19(.07)
ProAct			.58(.05)	.40(.06)					.36(.07)	.31(.07)
Nachieve					.35(.06)	.12(.06)			.13(.07)	.14(.07)
Risk							.49(.05)	.30(.06)	.21(.07)	.19(.07)
EO		.34(.07)		.31(.06)		.49(.06)		.40(.06)		.22(.07)
R^2	.29	.35	.33	.40	.12	.31	.24	.36	.41	.44
Adj R^2	.29	.35	.33	.39	.11	.30	.24	.35	.41	.43
R	.54	.60	.58	.63	.35	.55	.49	.60	.64	.66

Notes:
N=260. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 27

Results of Predicting EI for Students from SUF
(Results of Regression Analysis Predicting Entrepreneurial Intent Using Chinese Students from Shanghai University of Finance as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.48(.04)					.44(.04)	.42(.04)	.43(.04)	.42(.04)
ProAct		.28(.04)			.26(.06)		.10(.05)	.14(.04)	.13(.05)
Nachieve			.20(.04)		.05(.06)	.02(.05)		.03(.05)	.05(.06)
Risk				.22(.04)	.12(.05)	.07(.05)	.04(.04)		.05(.05)
R^2	.23	.08	.04	.05	.09	.23	.23	.23	.23
Adj R^2	.22	.08	.04	.05	.08	.22	.23	.23	.23
R	.48	.28	.20	.22	.30	.48	.48	.48	.48

Notes:
N=551. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 28

Results of Predicting EO for Students from SUF
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using Chinese Students from Shanghai University of Finance as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.61(.03)					.55(.04)	.54(.04)	.56(.04)	.54(.04)
ProAct		.32(.04)			.22(.06)		.03(.04)	.07(.05)	.05(.05)
Nachieve			.27(.04)		.03(.06)	0(.04)		.04(.05)	.03(.05)
Risk				.34(.04)	.25(.05)	.17(.04)	.16(.04)		.17(.04)
R^2	.37	.10	.07	.12	.15	.39	.39	.38	.39
Adj R^2	.37	.10	.07	.12	.14	.39	.39	.37	.39
R	.61	.32	.27	.34	.39	.63	.63	.61	.63

Notes:
N=551. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 29

Mediational Relationship for Students from SUF
(Results of Mediational Relationship Analysis Using Chinese Students from Shanghai University of Finance as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
OppRecog	.48(.04)	.28(.05)							.42(.04)	.25(.05)
ProAct			.28(.04)	.14(.04)					.13(.05)	.11(.05)
Nachieve					.20(.04)	.07(.04)			.05(.06)	.04(.05)
Risk							.34(.04)	.06(.04)	.05(.05)	0(.05)
EO		.32(.05)		.44(.04)		.47(.04)		.46(.04)		.31(.05)
R^2	.23	.29	.08	.26	.07	.24	.05	.24	.23	.29
Adj R^2	.22	.29	.08	.25	.07	.24	.05	.23	.23	.28
R	.48	.54	.28	.51	.27	.49	.22	.49	.48	.54

Notes:
N=551. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 30

Results of Predicting EI for Students from JCET
(Results of Regression Analysis Predicting Entrepreneurial Intent Using Chinese Students from Jiangsu College of Economy and Trade as Sample)

Variables	Model1	Model2	Model3	Model4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.51(.07)					.52(.07)	.50(.07)	.49(.07)	.50(.08)
ProAct		.21(.08)			.22(.10)		.12(.08)	.12(.09)	.12(.09)
Nachieve			.11(.08)		.00(.11)	.06(.08)		-.05(.09)	-.01(.09)
Risk				.00(.08)	-.06(.09)	-.12(.08)	-.12(.08)		-.12(.08)
R^2	.26	.04	.01	0	.05	.27	.28	.27	.28
Adj R^2	.25	.04	.00	-.01	.03	.25	.26	.25	.26
R	.51	.21	.11	.00	.21	.52	.53	.52	.53

Notes:
N=145. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 31

Results of Predicting EO for Students from JCET
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using Chinese Students from Jiangsu College of Economy and Trade as Sample)

Variables	Model1	Model2	Model3	Model4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.55(.07)					.56(.07)	.51(.07)	.50(.07)	.51(.07)
ProAct		.40(.08)			.48(.09)		.32(.07)	.38(.08)	.39(.08)
Nachieve			.13(.08)		-.13(.10)	.07(.08)		-.17(.08)	-.14(.08)
Risk				.03(.08)	-.04(.08)	-.10(.08)	-.15(.07)		-.11(.07)
R^2	.31	.16	.02	.00	.18	.32	.40	.40	.42
Adj R^2	.30	.15	.01	-.01	.16	.30	.39	.39	.40
R	.55	.40	.13	.03	.42	.56	.64	.64	.65

Notes:
N=145. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 32

Mediational Relationship for Students from JCET
(Results of Mediational Relationship Analysis Using Chinese Students from Jiangsu College of Economy and Trade as Sample)

Variables	Model1	Model2	Model3	Model 4	Model5	Model6	Model7	Model 8	Model 9	Model 10
OppRecog	.51(.07)	.25(.08)							.50(.08)	.26(.08)
ProAct			.21(.08)	-.04(.07)					.12(.09)	-.06(.09)
Nachieve					.11(.08)	.03(.07)			-.01(.09)	.06(.08)
Risk							.00(.08)	-.02(.07)	-.12(.08)	-.07(.07)
EO		.46(.08)		.62(.07)		.60(.07)		.60(.07)		.48(.09)
R^2	.31	.40	.04	.36	.01	.36	0	.36	.28	.41
Adj R^2	.30	.40	.04	.36	.00	.35	-.01	.35	.26	.39
R	.55	.64	.21	.60	.11	.60	.00	.60	.53	.64

Notes:
N=145. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 33

Results of Predicting EI for Chinese Entrepreneurs
(Results of Regression Analysis Predicting Entrepreneurial Intent Using All Chinese Entrepreneurs as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.48(.05)					.38(.05)	.38(.05)	.36(.05)	.36(.05)
ProAct		.39(.05)			.23(.07)		.23(.06)	.10(.07)	.11(.07)
Nachieve			.40(.05)		.25(.07)	.26(.06)		.19(.07)	.20(.07)
Risk				.20(.05)	-.03(.06)	-.03(.05)	0(.05)		-.04(.05)
R^2	.23	.15	.16	.04	.18	.28	.27	.29	.29
Adj R^2	.23	.15	.15	.04	.18	.28	.26	.28	.28
R	.48	.39	.40	.20	.43	.53	.52	.53	.54

Notes:
N=337. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 34

Results of Predicting EO for Chinese Entrepreneurs
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using All Chinese Entrepreneurs as Sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
OppRecog	.63(.04)					.57(.05)	.56(.05)	.55(.05)	.55(.05)
ProAct		.41(.05)			.29(.07)		.14(.05)	.12(.06)	.11(.06)
Nachieve			.36(.05)		.12(.07)	.11(.05)		.06(.06)	.05(.06)
Risk				.26(.05)	.06(.06)	.06(.05)	.06(.05)		.05(.05)
R^2	.40	.17	.13	.07	.18	.42	.42	.42	.42
Adj R^2	.40	.17	.13	.07	.17	.41	.42	.42	.42
R	.63	.41	.36	.26	.43	.65	.65	.65	.65

Notes:
N=337. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 35

Mediational Relationship for Chinese Entrepreneurs
(Results of Mediational Relationship Analysis Using All Chinese Entrepreneurs as Sample)

Variables	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	Model9	Model 10
OppRecog	.48(.05)	.31(.06)							.36(.05)	.24(.06)
ProAct			.39(.05)	.24(.05)					.11(.07)	.09(.06)
Nachieve					.40(.05)	.26(.05)			.20(.07)	.19(.07)
Risk							.20(.05)	.08(.05)	-.04(.05)	-.06(.05)
EO		.26(.06)		.36(.05)		.36(.05)		.44(.05)		.22(.06)
R^2	.23	.27	.15	.26	.16	.27	.04	.22	.29	.31
Adj R^2	.23	.27	.15	.26	.15	.27	.04	.21	.28	.30
R	.48	.52	.39	.51	.40	.52	.20	.47	.54	.56

Notes:
N=337. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 36

Results of Predicting EI for Entrepreneurs from Jiangsu Province
(Results of Regression Analysis Predicting Entrepreneurial Intent Using Chinese Entrepreneurs from Jiangsu Province as Sample)

Variables	Model1	Model2	Model3	Model4	Model 5	Model6	Model7	Model8	Model 9
OppRecog	.53(.07)					.32(.08)	.28(.08)	.35(.08)	.29(.08)
ProAct		.50(.07)			.27(.09)		.19(.08)	.27(.09)	.22(.09)
Nachieve			.47(.08)		-.01(.11)	.02(.10)		.10(.09)	-.09(.10)
Risk				.57(.07)	.43(.10)	.39(.09)	.32(.08)		.36(.09)
R^2	.28	.25	.22	.32	.37	.40	.43	.37	.43
Adj R^2	.28	.24	.21	.32	.36	.39	.42	.36	.42
R	.53	.50	.47	.57	.61	.64	.66	.61	.66

Notes:
N=143. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 37

Results of Predicting EO for Entrepreneurs from Jiangsu Province
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using Chinese Entrepreneurs from Jiangsu Province as Sample)

Variables	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	Model9
OppRecog	.52(.07)					.22(.08)	.22(.07)	.22(.07)	.18(.08)
ProAct		.58(.07)			.27(.08)		.31(.08)	.27(.08)	.24(.08)
Nachieve			.62(.07)		.25(.09)	.31(.09)		.33(.09)	.20(.10)
Risk				.60(.07)	.28(.09)	.27(.09)	.32(.08)		.23(.09)
R^2	.27	.34	.38	.36	.48	.47	.48	.47	.50
Adj R^2	.27	.33	.38	.36	.47	.46	.47	.46	.48
R	.52	.58	.62	.60	.69	.68	.70	.69	.71

Notes:
N=143. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 38

Mediational Relationship for Entrepreneurs from Jiangsu Province
(Results of Mediational Relationship Analysis Using Chinese Entrepreneurs from Jiangsu Province as Sample)

Variables	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	Model 9	Model10
OppRecog	.53(.07)	.23(.07)							.29(.08)	.20(.07)
ProAct			.50(.07)	.13(.07)					.22(.09)	.10(.08)
Nachieve					.47(.08)	.05(.08)			-.09(.10)	-.19(.09)
Risk							.57(.07)	.23(.07)	.36(.09)	.24(.08)
EO		.59(.07)		.63(.07)		.68(.08)		.57(.07)		.52(.08)
R^2	.28	.54	.25	.51	.22	.50	.32	.53	.43	.57
Adj R^2	.28	.53	.24	.50	.21	.49	.32	.53	.42	.55
R	.53	.73	.50	.72	.47	.71	.57	.73	.66	.76

Notes:
N=143. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 39

Results of Predicting EI for Entrepreneurs from Shandong Province
(Results of Regression Analysis Predicting Entrepreneurial Intent Using Chinese Entrepreneurs from Shandong Province as Sample)

Variables	Model1	Model2	Model3	Model4	Model 5	Model 6	Model 7	Model8	Model 9
OppRecog	.49(.06)					.41(.07)	.41(.07)	.40(.07)	.40(.07)
ProAct		.36(.07)			.20(.10)		.19(.08)	.03(.09)	.05(.09)
Nachieve			.38(.07)		.27(.10)	.26(.07)		.21(.09)	.24(.09)
Risk				.14(.07)	-.08(.08)	-.07(.07)	-.03(.07)		-.07(.09)
R^2	.24	.13	.14	.02	.17	.29	.27	.29	.29
Adj R^2	.24	.13	.14	.01	.15	.28	.26	.28	.28
R	.49	.36	.38	.14	.41	.54	.52	.54	.54

Notes:
N=194. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 40

Results of Predicting EO for Entrepreneurs from Shandong Province
(Results of Regression Analysis Predicting Entrepreneurial Orientation Using Chinese Entrepreneurs from Shandong Province as Sample)

Variables	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	Model9
OppRecog	.65(.06)					.62(.06)	.60(.06)	.60(.06)	.60(.06)
ProAct		.38(.07)			.32(.10)		.10(.07)	.09(.08)	.08(.08)
Nachieve			.32(.07)		.08(.10)	.07(.07)		.03(.08)	.02(.08)
Risk				.20(.07)	.02(.08)	.04(.06)	.03(.06)		.03(.06)
R^2	.42	.15	.10	.04	.15	.43	.44	.44	.44
Adj R^2	.42	.14	.10	.04	.14	.43	.43	.43	.43
R	.65	.38	.32	.20	.39	.66	.66	.66	.66

Notes:
N=194. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 41

Mediational Relationship for Entrepreneurs from Shandong Province
(Results of Mediational Relationship Analysis Using Chinese Entrepreneurs from Shandong Province as Sample)

Variables	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	Model 9	Model 10
OppRecog	.49(.06)	.37(.08)							.40(.07)	.30(.08)
ProAct			.38(.07)	.23(.07)					.05(.09)	.03(.09)
Nachieve					.32(.07)	.27(.07)			.24(.09)	.23(.09)
Risk							.20(.07)	.06(.07)	-.07(.09)	-.08(.07)
EO		.20(.08)		.34(.07)		.35(.07)		.42(.07)		.17(.08)
R^2	.42	.26	.15	.23	.10	.25	.04	.19	.29	.31
Adj R^2	.42	.26	.14	.23	.10	.25	.04	.18	.28	.29
R	.65	.51	.38	.48	.32	.50	.20	.44	.54	.56

Notes:
N=194. OppRecog refers to opportunity recognition. EO refers to entrepreneurial orientation. EI refers to entrepreneurial intent. ProAct refers to proactiveness. Nachieve refers to need for achievement. Risk refers to risk-taking propensity.

Table 42

EO and EI for Students from the U.S. Students and China
(Comparison of Entrepreneurial Orientation and Entrepreneurial Intent between the U.S. Students and Chinese Students)

		U.S. Students	Chinese Students
Entrepreneurial Orientation	Mean	4.50	4.16
	SD	1.07	.80
	N	489	956
Entrepreneurial Intent	Mean	4.03	4.27
	SD	1.71	1.12
	N	489	956

Table 43

EO and EI for Students from the U.S. Students and China
(Comparison of Entrepreneurial Orientation and Entrepreneurial Intent between the U.S. Students and Chinese Students)

	Parents		All Students	U.S. Students	Chinese Students
Entrepreneurial Orientation	Have business	Mean	4.54	4.79	4.27
		SD	.89	.97	.70
		N	349	184	165
	Have no business	Mean	4.20	4.37	4.14
		SD	.89	1.05	.82
		N	1,056	279	777
Entrepreneurial Intent	Had business	Mean	4.54	4.60	4.47
		SD	1.31	1.62	.83
		N	349	184	165
	Have not business	Mean	4.10	3.73	4.22
		SD	1.32	1.64	1.16
		N	1,056	279	777

Table 44

EO and EI for Students and Entrepreneurs in China
(Comparison of Entrepreneurial Orientation between the Chinese Entrepreneurs and Chinese Students)

		Chinese Entrepreneurs	Chinese Students
Entrepreneurial Orientation	Mean	4.63	4.16
	SD	.72	.80
	N	337	956

Table 45

Some Examples to Verify the Intent to Behavior Relationship

Behavior	*Intention-behavior Correlation*
Cooperation in Prisoner's Dilemma game (Ajzen, 1971)	0.82
Having an abortion (Smetana and Adler, 1980)	0.96
Using birth control pills (Ajzen and Fishbein, 1980)	0.85
Breast- vs. bottle-feeding (Manstead et al., 1983)	0.82
Smoking marijuana (Ajzen et al., 1982)	0.72
Attending church during the Easter holiday (King, 1975)	0.90
Voting choice in presidential election (Ajzen and Fishbein, 1980)	0.80

FIGURES

Figure 1

Growth in US Exports to Top 15 Markets 2000-2007

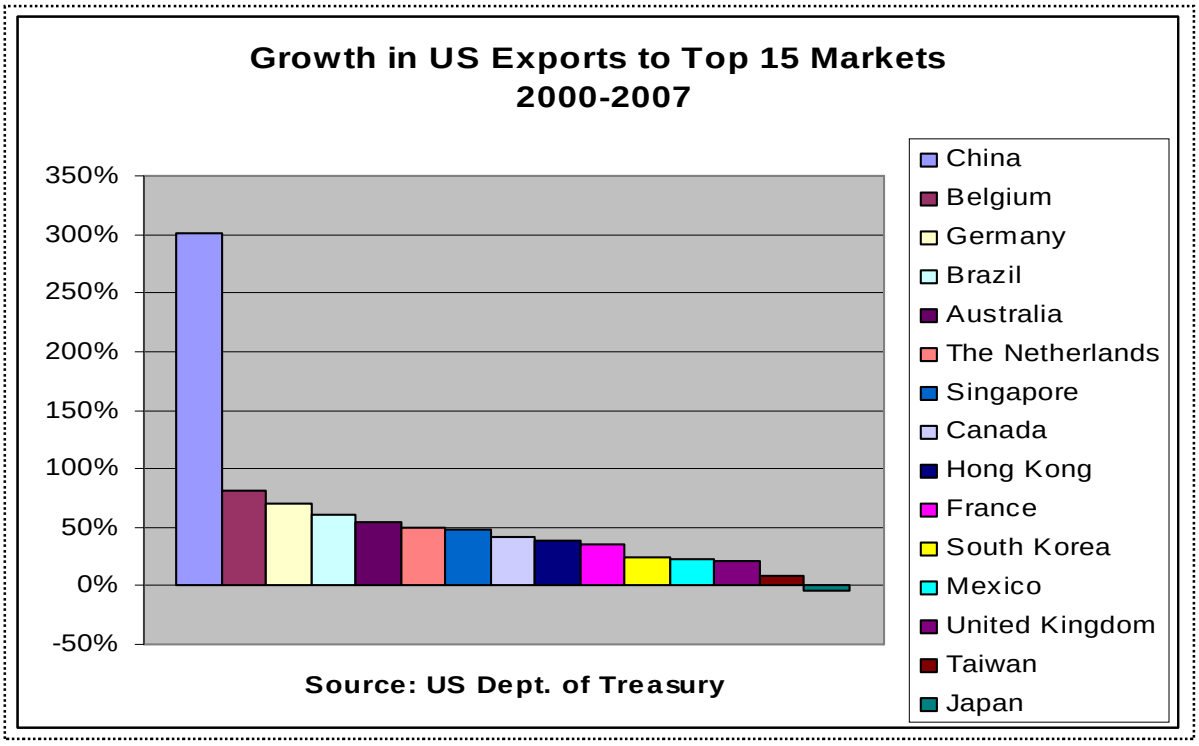


Figure 2

Research Domain for New Venture Creation

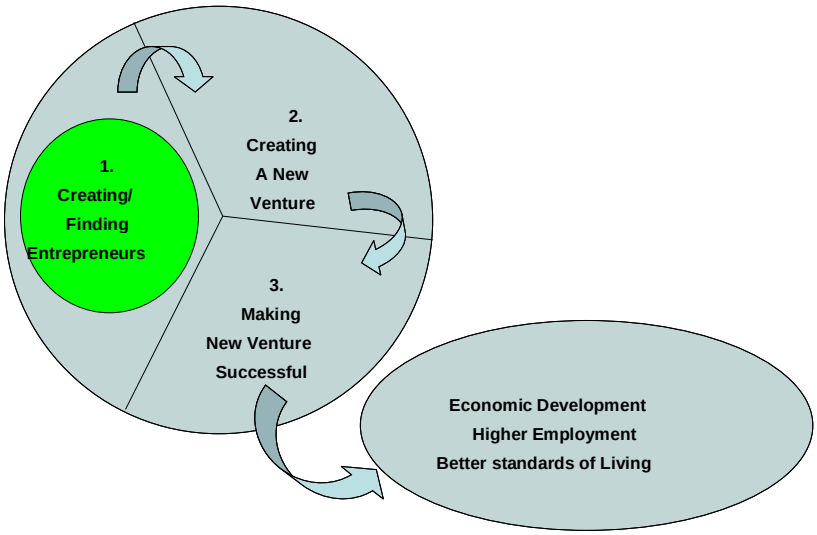


Figure 3

Combinations of Individual Factors and Contexts

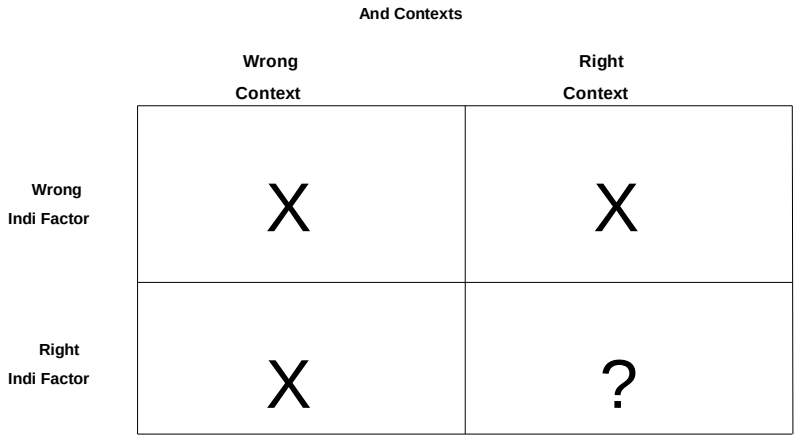


Figure 4

Overall Model for This Study

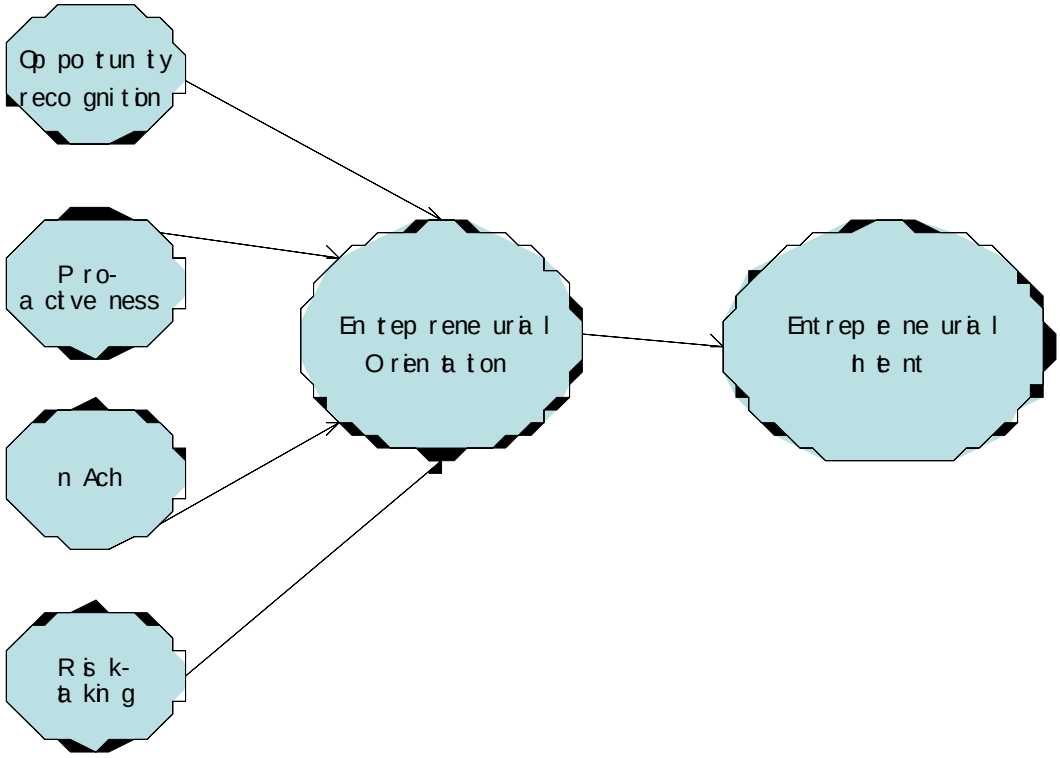
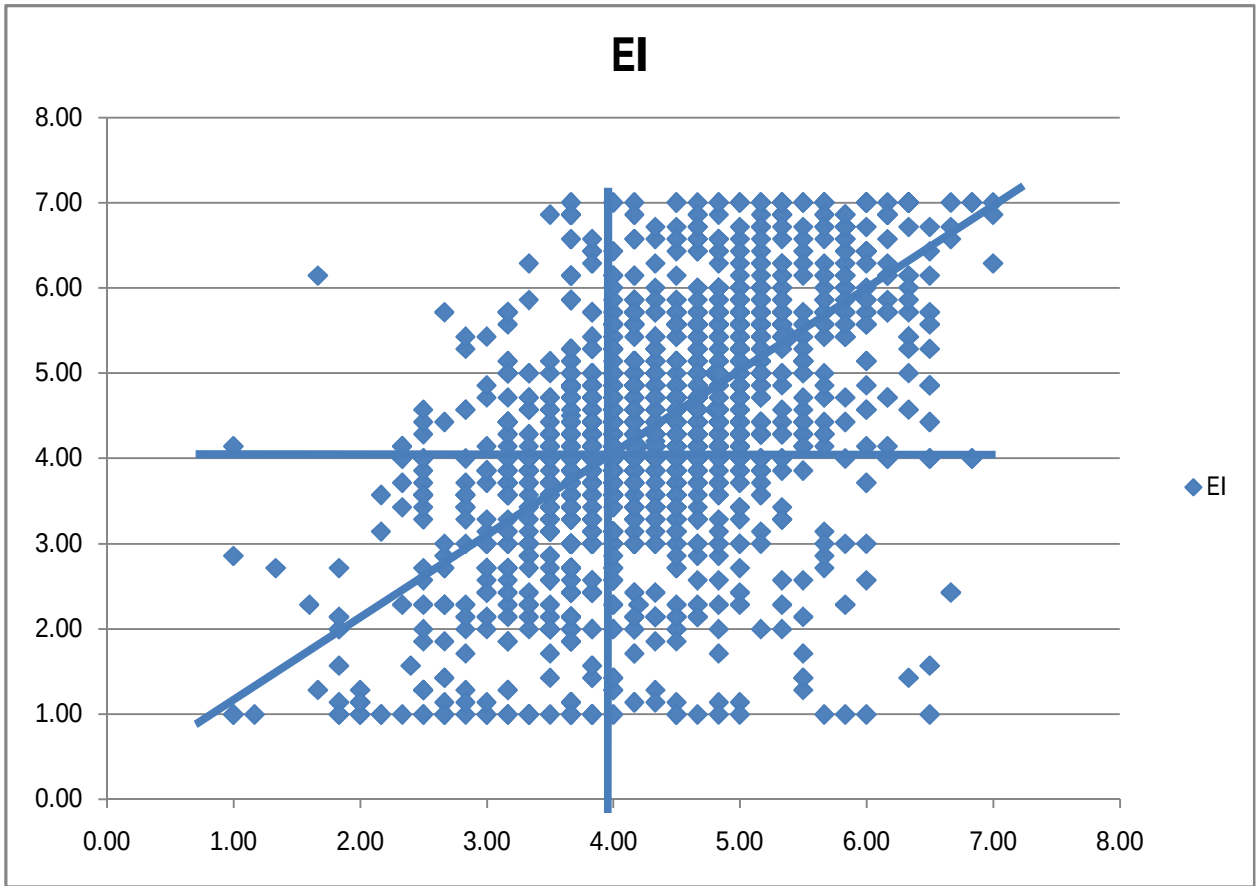


Figure 5

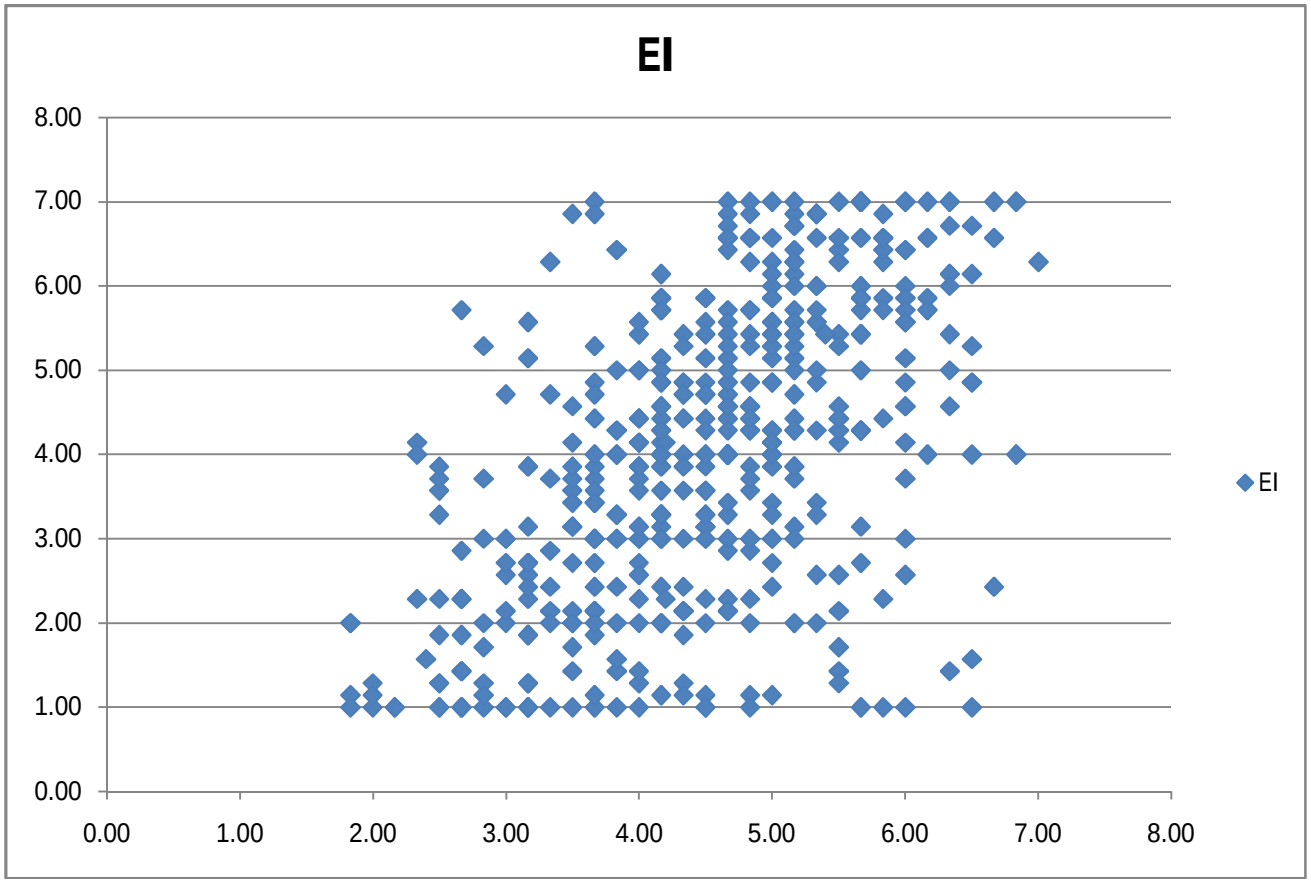
EI and EO in Scatter Plot for the Entire Sample



Notes:
The horizontal values are for entrepreneurial orientation (EO). The vertical values are for entrepreneurial intent (EI).

Figure 6

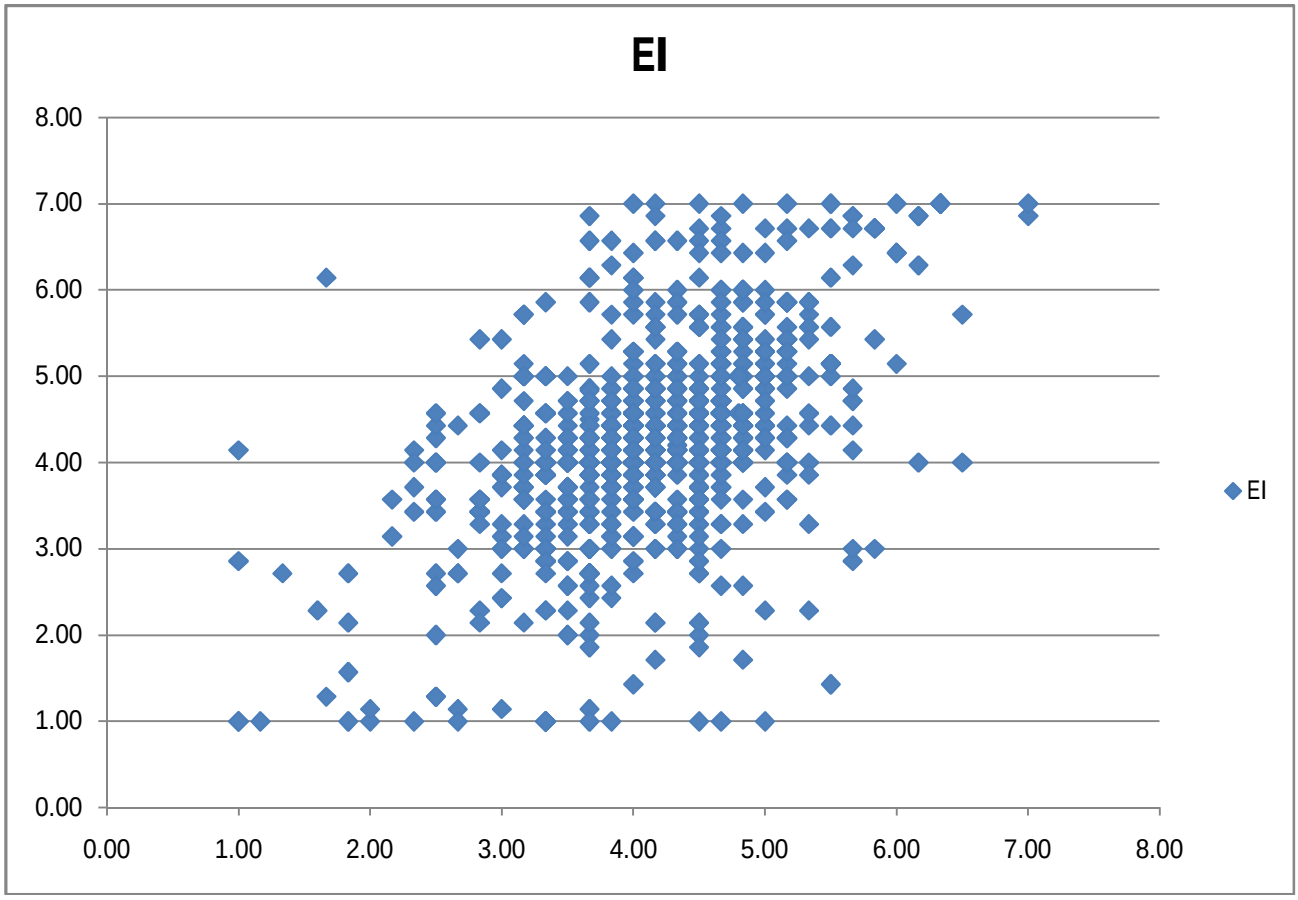
EI and EO in Scatter Plot for the U.S. Students



Notes:
The horizontal values are for entrepreneurial orientation (EO). The vertical values are for entrepreneurial intent (EI).

Figure 7

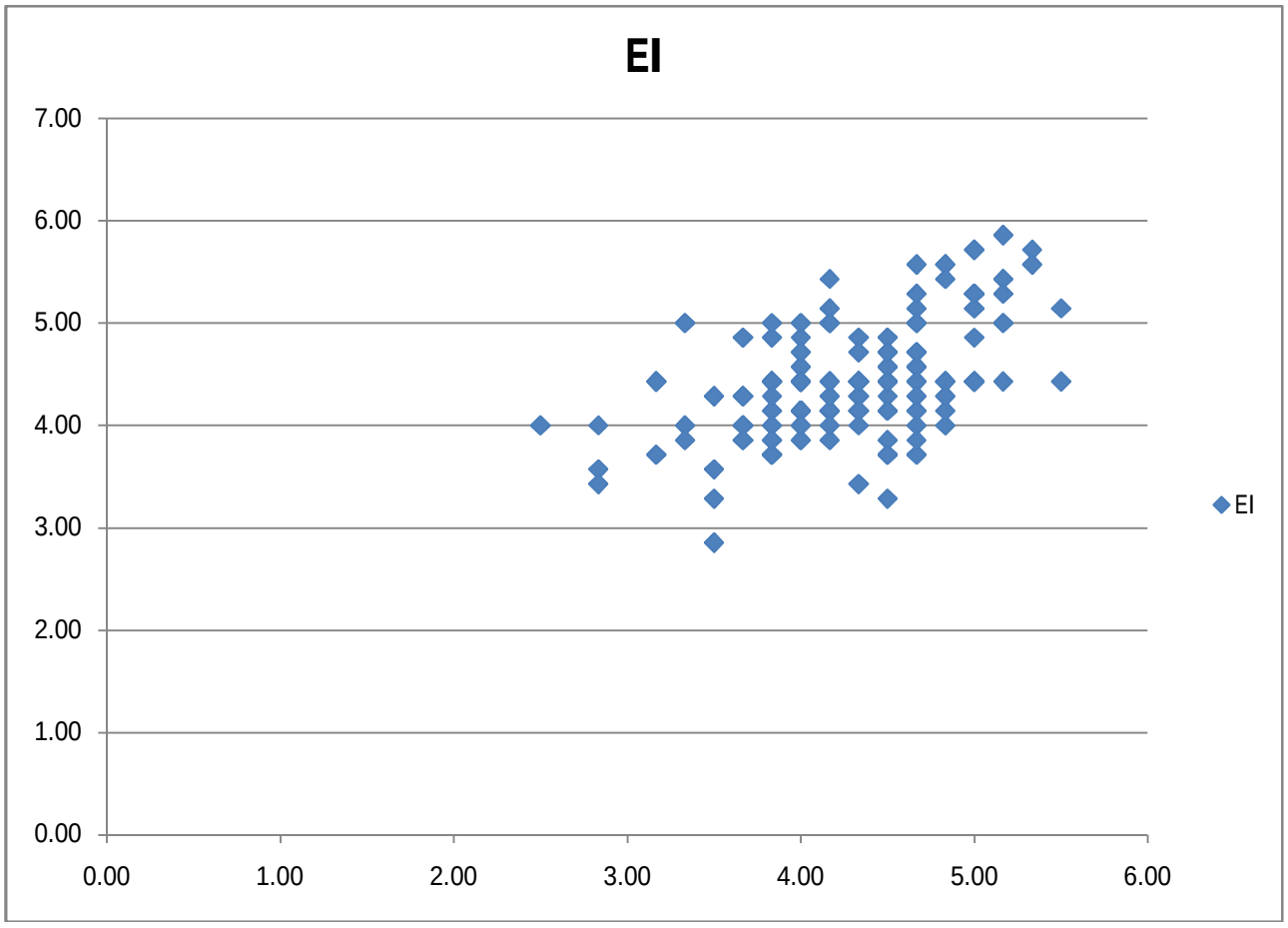
EI and EO in Scatter Plot for All Students



Notes:
The horizontal values are for entrepreneurial orientation (EO). The vertical values are for entrepreneurial intent (EI).

Figure 8

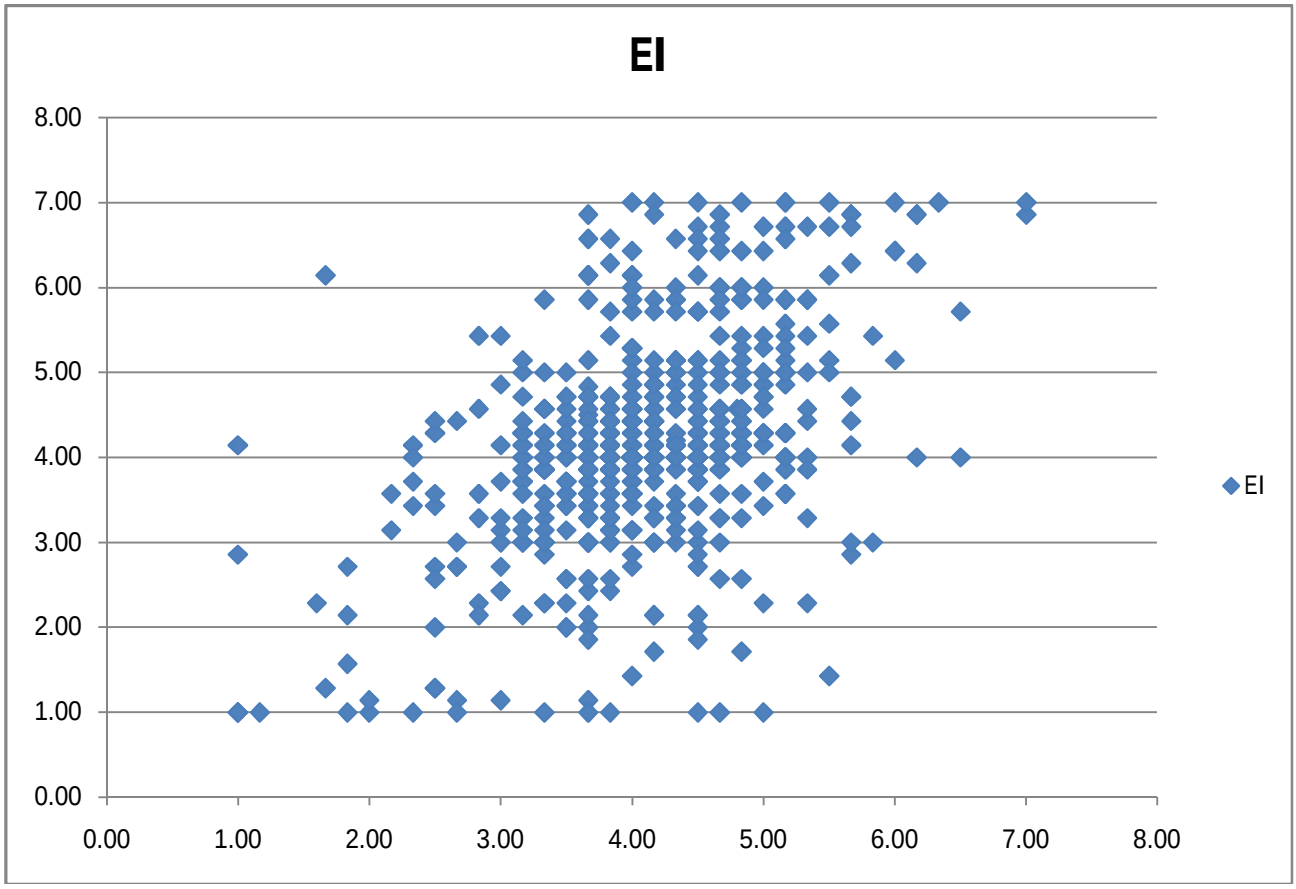
EI and EO in Scatter Plot for the Students from NJNU



Notes:
The horizontal values are for entrepreneurial orientation (EO). The vertical values are for entrepreneurial intent (EI).

Figure 9

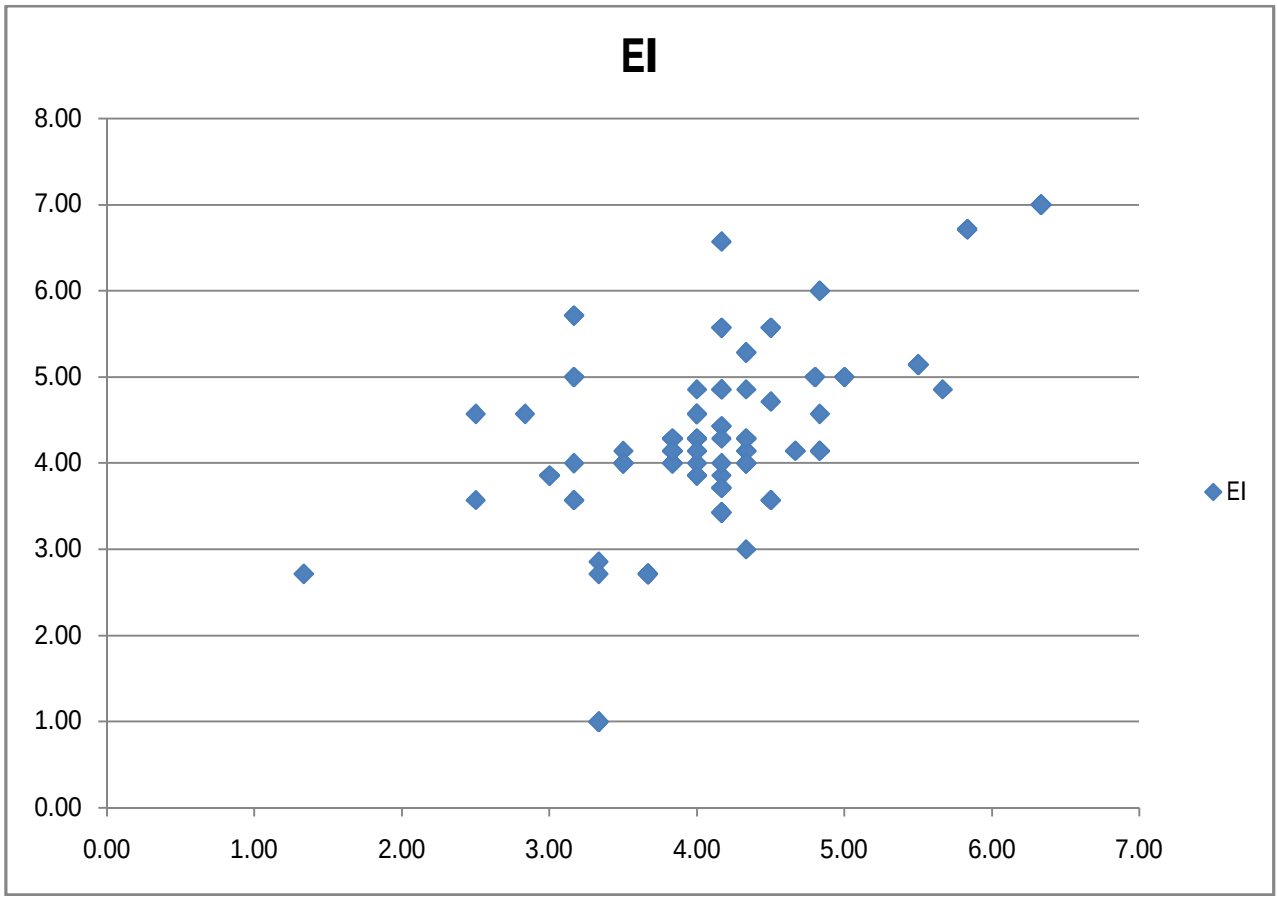
EI and EO in Scatter Plot for the Students from SUF



Notes:
The horizontal values are for entrepreneurial orientation (EO). The vertical values are for entrepreneurial intent (EI).

Figure 10

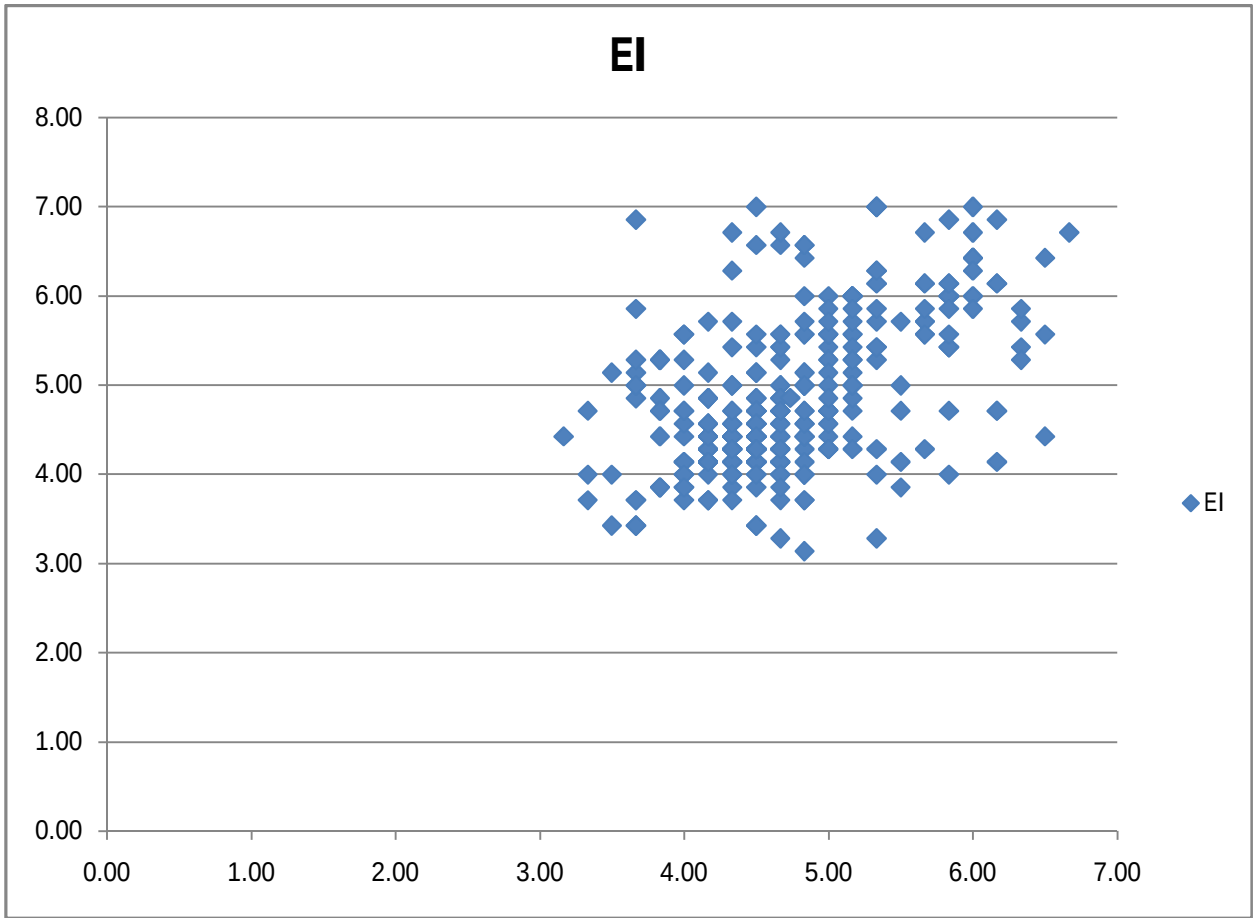
EI and EO in Scatter Plot for the Students from JCET



Notes:
The horizontal values are for entrepreneurial orientation (EO). The vertical values are for entrepreneurial intent (EI).

Figure 11

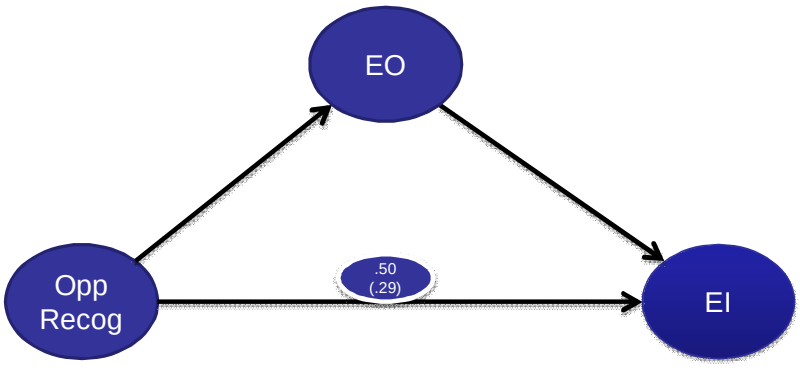
EI and EO in Scatter Plot for the Chinese Entrepreneurs



Notes:
The horizontal values are for entrepreneurial orientation (EO). The vertical values are for entrepreneurial intent (EI).

Figure 12

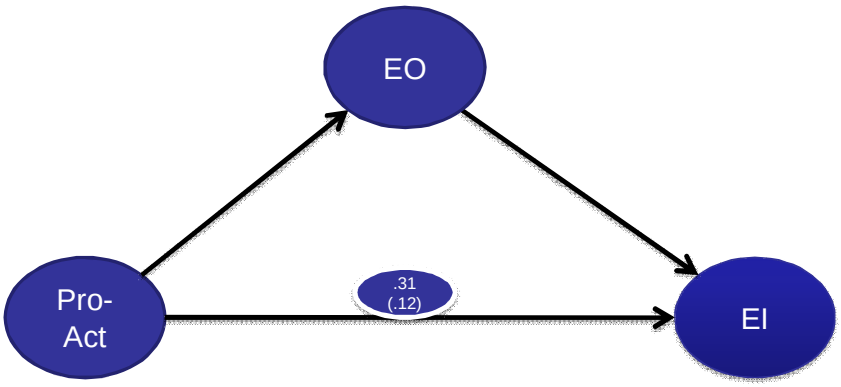
EI and Opportunity Recognition with EO as Mediator



Notes:
.50 refers to the relationship without EO as the mediator, .29 refers to the relationship with EO as the mediator.

Figure 13

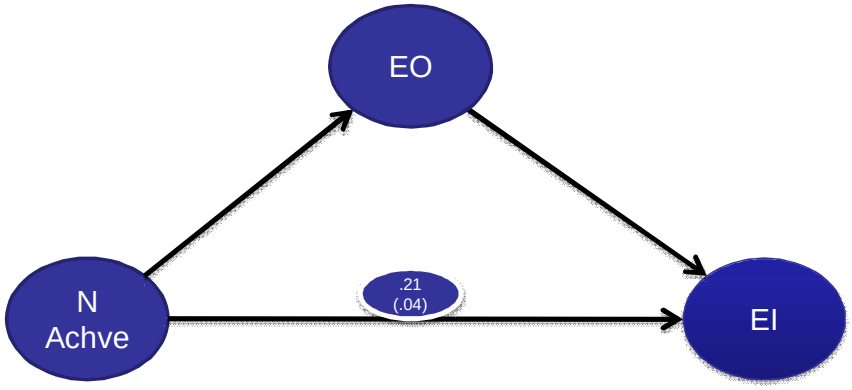
EI and Proactiveness with EO as Mediator



Notes:
.31 refers to the relationship without EO as the mediator, .12 refers to the relationship with EO as the mediator.

Figure 14

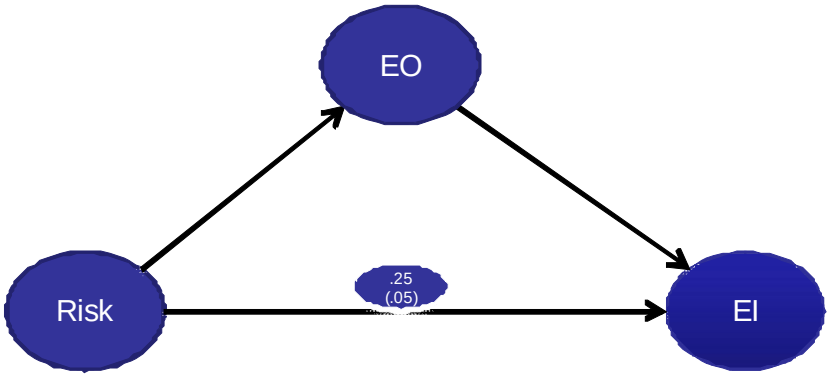
EI and n-Ach with EO as Mediator



Notes:
.21 refers to the relationship without EO as the mediator, .04 refers to the relationship with EO as the mediator.

Figure 15

EI and Risk with EO as Mediator



Notes:
.25 refers to the relationship without EO as the mediator, .05 refers to the relationship with EO as the mediator.

APPENDICES

A) Questionnaire for the Survey

Opportunity Recognition

Read each of the following items carefully and try to decide how true the statement is in describing you.

Check only one box for each statement.
SD=Strongly Disagree=1, MD=Moderately Disagree=2, D=Disagree=3,
N=Neutral=4, A=Agree=5, MA=Moderately Agree=6, SA=Strongly Agree=7.

Statement	1	2	3	4	5	6	7
1. I have a special alertness or sensitivity toward opportunities.							
2. I would describe myself as opportunistic.							
3. "Seeing" potential new business opportunities comes very naturally for me.							
4. I enjoy just thinking about and/or looking for new business opportunities.							
5. I often think of new business ideas when I am totally relaxed, doing something unrelated to business.							
6. While going about routine day-to-day activities, I see potential opportunities all around me.							
7. I can recognize potential opportunities where I have no personal experience.							

Proactiveness

Read the items below and indicate where you would rate yourself on the scale from 1 to 7.
Check only one box for each item.

Statement	1	2	3	4	5	6	7	Statement
1. I typically respond to actions which competitors initiate.								I typically initiate actions which competitors respond to.
2. I am never the first to introduce anything new.								I am always the first to introduce something new.
3. I typically seek to avoid competitive clashes, preferring a "live-and-let-live" posture.								I typically adopt a very competitive, "undo-the-competitors" posture
4. I have a strong tendency to "follow the leader" in many things.								I have a strong tendency to be ahead of other competitors in many things.
5. I believe that unfortunate events occur because of bad luck.								I believe that my success depends on ability rather than luck.
6. I always do things at the last minute.								I am always prepared.

Need for Achievement

Read the items below and indicate where you would rate yourself on the scale from 1 to 7.

Check only one box for each item.

Statement	1	2	3	4	5	6	7	Statement
1. I seldom compete with others.								I frequently engage in competitive activity where winning or doing better than someone else is the primary concern.
2. I strive for more ordinary success.								I strive for unique, extraordinary, and creative accomplishments which are marks of success
3. I concentrate more on short-term and daily tasks.								I set difficult and long-term goals for myself which I attempt to reach.

4. I just do enough work to get by.								I always do more than what's expected of me.
5. I put little time and effort into my work.								I plunge into tasks with all my heart.
6. I am not motivated to succeed.								I want to be the very best of myself.
7. I shirk my duties whenever possible.								I continue until everything is perfect.

Risk-taking Propensity

Read the items below and indicate where you would rate yourself on the scale from 1 to 7. Check only one box for each item.

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Statement**
1. I have a strong proclivity for low-risk projects (with normal and certain rates of return).								I have a strong proclivity for high-risk projects (with chances of very high returns).
2. I believe that, owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior.								I believe that, owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the one's objectives.
3. When confronted with decision-making situations involving uncertainty, I typically adopt a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions.								When confronted with decision-making situations involving uncertainty, I typically adopt a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.

4. I always avoid dangerous situations.								I always seek adventure.
5. I would never make a high risk investment.								I am willing to try anything once.
6. I always stick to the rules.								I know how to get around the rules.
7. I would never go hang-gliding or bungee-jumping.								I enjoy being reckless.

Entrepreneurial Orientation

Read each of the following items carefully and try to decide how true the statement is in describing you.

Check only one box for each statement.
SD=Strongly Disagree=1, MD=Moderately Disagree=2, D=Disagree=3,
N=Neutral=4, A=Agree=5, MA=Moderately Agree=6, SA=Strongly Agree=7.

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. I am often among those first who have new ideas and are willing to sacrifice current interests to pursue a cause despite the risks involved.							
2. I enjoy having new ways of doing things before everybody else, and I don't mind the potential risks.							
3. I am always happy to be involved in a high-return project, and when that happens, I usually have the end in mind and know what to do next and disregard any risks.							
4. I see myself as somebody who recognized, and take advantage of the opportunity which potentially has high returns as well as risks.							
5. I often bask in the thought of having a new, but risky idea, overcoming all the obstacles, enjoying the ups and downs, eventually getting what I want.							

6. I would feel tremendous satisfaction after taking on a very challenging task, sacrificing a great deal of my interests, but accomplishing my goal after all the exploration and hard work.							

Entrepreneurial Intent

Read each of the following items carefully and try to decide how true the statement is in describing you.

Check only one box for each statement.
SD=Strongly Disagree=1, MD=Moderately Disagree=2, D=Disagree=3,
N=Neutral=4, A=Agree=5, MA=Moderately Agree=6, SA=Strongly Agree=7.

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. I will start my own business in the near future.							
2. It is has been my intent to start my own business.							
3. Starting my own business is an attractive idea to me.							
4. I am enthusiastic about starting my own business.							
5. It is desirable for me to start my own business.							
6. I spent a lot of time thinking about owning my own business.							
7. Owning my own business is the best alternative for me.							

Intrapreneurial Intent

Read each of the following items carefully and try to decide how true the statement is in describing you.

Check only one box for each statement.
SD=Strongly Disagree=1, MD=Moderately Disagree=2, D=Disagree=3,
N=Neutral=4, A=Agree=5, MA=Moderately Agree=6, SA=Strongly Agree=7.

Statement	1	2	3	4	5	6	7
1. When working for a company, I would enthusiastically help with the development of a new product or a new market.							
2. If I work for a company, I would be happy to be involved in any entrepreneurial behavior of the firm.							
3. I would take initiative in doing anything that might have high return for the company I am working for, even though the task might be risky.							
4. Starting a new branch, or a spinoff for the company I am working for would be fun for me.							

B) Actual Survey (English Version)

Read each of the following items carefully and try to decide how true the statement is in describing you. Check only one box for each statement.

SD=Strongly Disagree=1, MD=Moderately Disagree=2, D=Disagree=3,
N=Neutral=4, A=Agree=5, MA=Moderately Agree=6, SA=Strongly Agree=7.

Statement	1	2	3	4	5	6	7
1. I have a special alertness or sensitivity toward opportunities.							
2. I would describe myself as opportunistic.							
3. "Seeing" potential new business opportunities comes very naturally for me.							
4. I enjoy just thinking about and/or looking for new business opportunities.							
5. I often think of new business ideas when I am totally relaxed, doing something unrelated to business.							
6. While going about routine day-to-day activities, I see potential opportunities all around me.							
7. I can recognize potential opportunities where I have no personal experience.							
8. I am often among those first who have new ideas and are willing to sacrifice current interests to pursue a cause despite the risks involved.							
9. I enjoy having new ways of doing things before everybody else, and I don’t mind the potential risks.							
10. I am always happy to be involved in a high-return project, and when that happens, I usually have the end in mind and know what to do next and disregard any risks.							
11. I see myself as somebody who recognizes, and takes advantage of opportunities which potentially have high returns as well as risks.							
12. I often bask in the thought of having a new, but risky idea, overcoming all the obstacles, enjoying the ups and downs, eventually getting what I want.							

13. I would feel tremendous satisfaction after taking on a very challenging task, sacrificing a great deal of my interests, but accomplishing my goal after all the exploration and hard work.							
14. I will start my own business in the near future.							
15. It is has been my intent to start my own business.							
16. Starting my own business is an attractive idea to me.							
17. I am enthusiastic about starting my own business.							
18. It is desirable for me to start my own business.							
19. I spent a lot of time thinking about owning my own business.							
20. Owning my own business is the best alternative for me.							
21. I intend to help start a new division for the company I work for.							
22. I plan to involve myself in launching a new product for the company I work for.							
23. My plan would be to help open a new market for the company I work for.							
24. It is my intent to be innovative no matter what I do for the company.							
25. Engaging in innovative ways of doing things would be my intent if I work for a company.							
26. My plan would be to always seek novel ways of doing things, hoping doing so would bring high returns to the company.							

Read the items below and indicate where you would rate yourself on the scale from 1 to 7(1 is closest to the left column statement, 7 is the closest to the right column, 4 is neutral). Check only one box for each item.

Statement	1	2	3	4	5	6	7	Statement
27. I typically respond to actions that others initiate.								I typically initiate actions which competitors respond to.
28. I am never the first to introduce anything new.								I am always the first to introduce something new.
29. I typically seek to avoid competitive clashes, preferring a "live-and-let-live" posture.								I typically adopt a very competitive, "undo-the-competitors" posture
30. I have a strong tendency to "follow the leader" in many things.								I have a strong tendency to be ahead of other competitors in many things.
31. I believe that unfortunate events occur because of bad luck.								I believe that my success depends on ability rather than luck.
32. I always do things at the last minute.								I am always prepared.
33. I seldom compete with others.								I frequently engage in competitive activity where winning or doing better than someone else is the primary concern.
34. I strive for more ordinary success.								I strive for unique, extraordinary, and creative accomplishments which are marks of success.
35. I concentrate more on short-term and daily tasks.								I set difficult and long-term goals for myself which I attempt to reach.
36. I just do enough work to get by.								I always do more than what's expected of me.

37. I put little time and effort into my work.								I plunge into tasks with all my heart.
38. I am not motivated to succeed.								I want to be the very best of myself.
39. I shirk my duties whenever possible.								I continue until everything is perfect.
40. I have a strong proclivity for low-risk projects (with normal and certain rates of return).								I have a strong proclivity for high-risk projects (with chances of very high returns).
41. I believe that, owing to the nature of the environment, it is best to explore it gradually via incremental behavior.								I believe that, owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the one's objectives.
42. When confronted with decision-making situations involving uncertainty, I typically adopt a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions.								When confronted with decision-making situations involving uncertainty, I typically adopt a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.
43. I always avoid dangerous situations.								I always seek adventure.
44. I would never make a high risk investment.								I am willing to try anything once.
45. I always stick to the rules.								I know how to get around the rules.

Choose the one that is appropriate

46. My Gender	1 (Male)	2 (Female)
47. One of my parents created his/her own business.	1 (yes)	2 (No)

C) Actual Survey (Chinese Version)

我的性别	男	女
我的联系方式		
我父亲(或母亲)有自己的公司	是	否

仔细阅读下列选项，在最合适的地方（从 1 到 7）画钩。

1 = 完全不同意 2 = 很不同意 3 = 不同意 4 = 中立 5 = 同意 6 =很同意 7 =完全同意

	1	2	3	4	5	6	7
1．我对任何机会都非常敏感。							
2．我觉得自己善于抓住机会。							
3．发现创业机会对我来说很自然。							
4．我喜欢思考，寻找创业的机会。							
5．当我完全放松做着与生意无关的事的时候，我通常会想起新的生意机会。							
6．进行日常活动时，我会随处看到潜在的机会。							
7．即使在我没有任何经验的领域，我也能发现机会。							
8．我通常最先有新的想法，愿以牺牲当前利益去尝试做值得做的事，尽管这样做有风险。							
9．我喜欢先于别人，用新的方法做事，不在乎这样做的潜在风险。							
10．我总是喜欢从事高回报项目，而且每次都知道自己要做什么，该怎么做，风险对我来说无所谓。							
11．我能发现并利用高回报，高风险的机会。							
12．我经常独自想象自己有个新奇的，却有些冒险的主意，克服所有的困难，经历失败的挫折和成功的喜悦，最终达到自己的目标。							
13．每当我开始一项艰巨的任务，牺牲大量的当前利益，经过各种探索和磨难而最终得以成功时，我感到无比的幸福和满意。							
14．在不久的将来我会建立自己的公司。							
15．我一直想建立自己的公司。							
16．有自己的公司对我很有诱惑力。							

17．对建立自己的公司我充满热情。							
18．我非常希望有自己的公司。							
19．我花了好多时间考虑拥有自己的公司。							
20．自己做老板是我最好的选择。							
21．我打算为我的公司创立一个新部门。							
22．我计划帮助我的公司开发新产品。							
23．我打算为我的公司开辟一个新市场。							
24．不管为公司做什么事，我都打算创新。							
25．如果在公司上班，我将参与公司创新活动。							
26．如果在公司上班，我将一直寻求新的方式做事，希望这样能为公司带来高的回报。							

仔细阅读下列选项，在最合适的地方（从 1 到 7）画钩.

	1	2	3	4	5	6	7	
27.通常竞争对手主动出击，我只是被动回应。								通常我主动出击竞争对手被动回应。
28. 我从来不最先介绍新事物。								我总是最先介绍新事物。
29.我通常避免争执，抱着一种与世无争的生活态度。								我非常喜欢竞争，期望战胜一切对手。
30. 在好多事上，我是跟着别人走。								在好多事上，我总是走在竞争对手前面。
31. 我相信不成功是由于运气不好。								我相信成败取决于一个人的能力，而非运气。
32. 我做事总拖到最后一刻。								我做任何事都作充分准备。
33. 我很少与别人竞争。								我非常频繁参与有竞争性的活动。
34. 我追求的是非常平凡的小成就。								我追求独特，非凡，具有创造性的成就。
35. 我更注重短期，日常的工作。								我总是为自己订立长期，具有挑战性的目标。

36. 我通常是得过且过。								我总是超出预期的完成任务。
37. 在工作上我投入很少的时间和精力。								我全身心地投入工作。
38. 我没有成功的动力。								我总是想使自己尽可能的更好。
39. 一有机会，我就逃避责任。								我总是不停的努力，直到一切尽善尽美。
40.我非常倾向从事风险低，回报低，但很稳定的项目。								我非常倾向从事风险高，回报也高的项目。
41.我相信人们应该小心谨慎，循序渐进的探索自然，从而达到自己目的。								我相信人们应该大胆的，采取各种行为达到自己的目的。
42.当不确定因素影响行为决策时，我通常采取“小心谨慎，等等看”的姿态，以减少犯错误的可能性。								当不确定因素影响行为决策时，我通常采取“大胆，激进的”行为，以提高利用潜在机会的可能性。
43. 我总是避免有风险的环境。								我总是喜欢冒险。
44. 我从不做高风险投资。								任何事情我都愿意尝试一下。
45. 我永远循规蹈矩。								我知道如何规避任何制度条文。

D) Map of China