Antecedents of Entrepreneurial Career Choice among Chinese College Students

Maxine Xiaohui Ma

A Dissertation Submitted to the Faculty of

The Chicago School of Professional Psychology

In Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in Psychology

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Abstract

Entrepreneurship is an intentional process, where would-be entrepreneurs choose to start a business rather than out of a reflex. The exacerbating situation of structural unemployment of college graduates in China for the last decade necessitates an urgent need to study entrepreneurial intention as a career choice. To build Chinese college students' readiness for an entrepreneurial career, this paper was an investigation of entrepreneurial intention through an integrated cognitive, affective, social and developmental lens. A total sample of 1,707 senior college students from a university in China was taken and quantitative research method was utilized in this study. An empirical model for developing college students' entrepreneurial intention in China was proposed and tested using structural equation modeling. The findings of the study indicated that human capital, social capital and psychological capital all play important roles in developing students' intentions to start an entrepreneurial career in China. Entrepreneurial self-efficacy and emotional intelligence emerged as the biggest predictor of entrepreneurial intention. *Guanxi* moderated emotional intelligence and PsyCap approved to be a precursor to the more domain specific entrepreneurial self-efficacy. Therefore, to foster self-employment and entrepreneurship among college students, universities in China should combine formal entrepreneurship education programs that develop practical entrepreneurial skills required in different stages of entrepreneurial process with training interventions that enhance emotional intelligence skills and positive psychological capital.

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Chapter 1 Nature of the Study

Background

The creation of new business has impact on economic growth, employment and innovation (Acs & Audretsch, 1988; Birch, 1987; Drucker, 1985; Kirchhoff & Phillips, 1988). In China, private firms fuel approximately 70% of its GDP and continue to be the fastest growing segment, which has propelled China's outstanding economic growth along its gradual transition from central planning to marketization since the late 1970s. However, entrepreneurial activities continue to be unattractive to educated youth in China. Compared to other developing countries in Asia, China scores quite low on the proportions of innovative entrepreneurs (Gang, 2005).

China has been experiencing structural unemployment of college graduates for the last decade. Since 1999, China has embarked on higher education expansion, where the number of students enrolled in higher education institution has increased nearly sevenfold, from 1 million in 1998 to 6.99 million in 2013. Although offset by high economic growth rate of nearly 9% every year, the employment rate of college graduates has declined from 90% in 2001 to 68% in 2009 (Zhang & Qi, 2010). In 2013, there were over 3 million new college graduates were unable to secure employment.

Entrepreneurship, as a field of study, has been traditionally focused on the role of stable traits and contextual factors in mobilizing entrepreneurial behavior. However, small explanatory power was found for both approaches (Teoh & Foo, 1997) (Turker & Selcuk, 2009). Intentions, on the hand, have been suggested as a better alternative to predict entrepreneurial behavior (Krueger & Carsrud, 1993). Entrepreneurial Intentions Model (EIM) proposed a theoretical model where self-efficacy was the core intermediary between thoughts concerning venture creation and entrepreneurial intentions. Additionally, empirical studies have showed that

entrepreneurial self-efficacy was positively related to students' intention to pursue entrepreneurial career (Chen, Greene, & Crick, 1998).

Entrepreneurial self-efficacy is a task-specific construct. Entrepreneurial process involves all the functions, activities, and actions associated with identification and implementation of opportunities and ideas (Bygrave & Hofer, 1991). As individual process information, they develop a sense of how capable they are to engage in a certain course of action (Kickul, J., Guandry, Barbosa, & Whitcanack, 2009). Therefore, self-efficacy is best assessed in terms of different phases and stages in this process as different skills and abilities are required (Shepherd & Krueger, 2002).

Within Entrepreneurial Intentions Model, the intention to create a new venture is also a product of one's linear and non-linear thinking. Literature has showed that entrepreneurs' preferred modes of thinking influence multiple dimensions of entrepreneurial activities (Allinson & Hayes, 1996). Hemispheric lateralization describes consciousness as having two modes of awareness. The left brain is responsible for linear thinking, including rational, logical and analytical tendencies, while the right brain is responsible for non-linear thinking, including intuitive, insightful and creative thoughts (Drebin & Holland, 2012). Individuals can be classified as having linear thinking style, nonlinear thinking style or balanced thinking style across both types (Vance, Groves, Paik, & Kindler, 2007).

Previous researches emphasized the role of non-linear thinking, such as intuition and insight, on the venture creation process, characterized by intense use of intuitive thinking heuristics by entrepreneurs (Miner, 1997). However, when entrepreneurs shift to development of viable business plans, marshaling of required resources and implementation of the resulting

enterprise, their information processing is predominantly linear and analytical (Cole, Field, & Harris, 2004; Olson, 1995). Innovation in a complex, turbulent, and unpredictable business environment requires entrepreneurs to be (Mason, 2007). Linear/nonlinear balance or versatility enables flexibility for entrepreneurs focusing on the course of problem assessment through logical and linear thinking, as well as maintaining a holistic view of the big picture with non-linear thinking (Groves, Vance, & Choi, 2011). Constant movements between linear and nonlinear modalities equip entrepreneurs with greater comfort in dealing with uncertainty (Sarasvathy, 2001).

In China, entrepreneurs face opaque bureaucracies, inadequate legal protection for fair competition and difficulties to access limited resources (Sebera & Li, 2006). This complicated and risky landscape necessitates unique skills and abilities in social interactions. *Guanxi*, as the personalized network, plays a critical role in social interactions in China. *Guanxi* affords would-be entrepreneurs with preferential treatment to access and exchange limited resources, reliable information and controlled infrastructure. *Guanxi* also grants individuals the bonding power in building harmonious working environment (Luo, 1997; Luo & Chen, 1997; Wong, 1997; Xin & Pearce, 1996).

One of the core elements of *Guanxi* is the emotional basis (Herrmann-Pillath, 2009). Emotionally intelligent individuals tend to be more aware of the self and society. This awareness plays a critical role in generating trust and reciprocal feelings, which are fundamental elements of *Guanxi* (Chen & Lu, 2007). Additionally, individuals who are better at regulating and using emotions are able to consistently regulate themselves in a relational collectivism scheme to create and stabilize opportunities for successful actions (Herrmann-Pillath, 2009).

Psychology is a three-leg stool, encompassing cognitive, affective, and conative (behavioral) mechanisms. The decision to exploit an opportunity is largely based on the amount of uncertainty and risks an individual perceives (McMullen & Shepherd, 2006). Positive cognitive appraisal generated by PsyCap can facilitate more favorable assessment of the current situations as well as future expectation of success by buffering the human negativity bias (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Positive emotional state generated by PsyCap is instrumental in broadening one's thought-action repertoires by targeting individuals' energy and resources at more challenging and meaningful goals. Additionally, PsyCap is agentic in nature. This agentic drive has the capacity to mobilize both cognitive and affective resources and activate goal-directed course of action to pursue important personal goals, including venture creation (Bandura A. , 2008). Previous empirical study showed that PsyCap as a higher order construct plays a critical role in generating self-perception of leadership that leads to the capability to better withstand challenging environment and realize entrepreneurial ideas (Jensen & Luthans, 2006).

Problem Statement

Despite the exacerbating situation of structural unemployment of college graduates in China for the last decade, few studies have examined entrepreneurship as a career choice among college students in China. Entrepreneurship as a field of study has been traditionally focused on stable traits and contextual factors, which are not malleable and hard to address through entrepreneurial education and training.

Furthermore, the merging concept of Psychological Capital (PsyCap), which is agentic in nature and emphasizes psychological capabilities, has called for a new approach to examine entrepreneurial intention in a developmental sense (Luthans et al., 2007). This study intends to

examine entrepreneurial intention from an integrated approach that encompasses cognitive, affective, social and developmental dimensions.

Purpose of the Study

In an effort to foster self-employment and entrepreneurship in China, this paper aims to study the antecedents of entrepreneurial career choice among Chinese college students through an integrated cognitive, affective, social and developmental lens. Senior college students in a large university located in Northern China are invited to participate in the study. A model to develop college students' entrepreneurial intention will be proposed and quantitative research approach will be utilized to examine the model.

Research Questions and Hypotheses

Research Question 1: What are the cognitive factors that influence entrepreneurial intention?

$H_1$1: Entrepreneurial Self-Efficacy (ESE) has a positive effect on Entrepreneurial Intention (EI), and will emerge as a key predictor of EI.

$H_2$1: Nonlinear Thinking Style has a positive effect on ESE in the Searching Stage, and will emerge as a key predictor of ESE in the early stage of entrepreneurial process.

$H_3$1: Linear thinking style has positive effects on ESE in the Planning, Marshaling and Implementing stages, and will emerge as a key predictor of ESE in the later stages of entrepreneurial process.

$H_4$1: Balanced Linear/nonlinear thinking style has a positive effect on the overall Entrepreneurial Self-Efficacy (ESE), and will emerge as a key predictor of ESE.

Research Question 2: What are the affective factors that influence entrepreneurial intention and what are the unique factors of Chinese entrepreneurship?

$H_1$2: Emotional Intelligence (EIQ) has a positive effect on ESE in the Planning, Marshaling and Implementing stage, and will emerge as a key predictor of ESE in the later stages of entrepreneurial process.

$H_2$2: EIQ has a positive effect on *guanxi*, and will emerge as a key predictor of *guanxi*.

$H_3$2: The positive effect of EIQ on ESE is mediated by *guanxi*, where EIQ affects ESE directly as well as indirectly through *guanxi*.

Research Question 3: Does psychological strengths influence entrepreneurial intention?

$H_1$3: Psychological Capital has a positive effect on EI, and will emerge as a key predictor of EI.

Theoretical Framework

Based on Entrepreneurial Intentions Model (EIM) developed by Boyd and Vozikis, this paper focuses on the concept of self-efficacy as the core intermediary between thoughts that concern self-employment and entrepreneurial intention. In EIM, intentions are a product of one's linear and nonlinear thinking, therefore, this paper also aims to examine the relationships of different thinking styles and self-efficacy in relation to different stages of entrepreneurial process (Boyd & Vozikis, 1994).

Scope of the Study

This study will focus on investigating entrepreneurial intentions among senior college students in a large university in China. Established measures will be adopted and integrated in a questionnaire to examine entrepreneurial intentions from cognitive, affective, social and developmental lenses. Special attentions will be paid on examining both universal factors that affect entrepreneurial intention and unique factors of Chinese entrepreneurship.

Definition of Key Terms

Emotional Intelligence (EIQ). EIQ is defined as the ability to carry out accurate reasoning about emotions and ability to use emotions and emotional knowledge to enhance thought (Mayer, 2006).

Entrepreneurial Intention (EI). EI is defined as the conscious and intended act of new venture design. It is the state of mind directing a person's attention and action towards self-employment as opposed to organizational employment (Bird, 1988).

Entrepreneurial Self-Efficacy (ESE). ESE is defined as the perceived capability of an individual regarding the performance of functions necessary in effectively accomplishing entrepreneurial roles or tasks (Boyd & Vozikis, 1994).

Guanxi. Guanxi is defined as the special treatment between persons which is built based on interactive experiences and followed by specific rules including mutual benefits, reciprocity, favors and face (Zhu & Hong, 2009).

Psychological Capital (PsyCap). PsyCap is defined as an individual's positive psychological state of development and is characterized by general self-efficacy, hope, optimism, and resilience (Luthans, Youssef, & Avolio, 2007).

Thinking Style (TS). Thinking Style is defined as one's preferred manner of using mental abilities to govern daily activities, including understanding and solving problems and challenges (Vance et al., 2007).

Significance of the Study

By examining entrepreneurial intention from an integrated approach, this study makes four major contributions to entrepreneurship study. First, it provides a theoretical explanation, grounded in Entrepreneurial Intentions Model, for the role of self-efficacy and cognition on

entrepreneurial intention. Second, this study has the ability to contribute Chinese entrepreneurship literature by identifying unique characteristics of Chinese entrepreneurship through affective and social lenses. Third, a developmental approach that focuses on psychological strengths is applied in this study for understanding and ultimately predicting entrepreneurial behavior. Finally, an empirical model to develop students' entrepreneurial intention will be proposed and tested in this study, which has practical implications for entrepreneurial education and trainings in China.

Summary

In an effort to foster self-employment and entrepreneurship in China, this paper aims to study the antecedents of entrepreneurial career choice among Chinese college students through an integrated cognitive, affective, social and developmental lens. Chapter 2 will present literature that relates to Entrepreneurial Intention (EI) and Entrepreneurial Self-Efficacy (ESE) and the relationships among EI, ESE, different thinking styles, emotional intelligence and *guanxi*. Chapter 3 will present the methodology used in this study to investigate the relationships among the variables and a model for developing college students' entrepreneurial intention in China will be proposed. Finally, Chapter 4 and 5 will present the findings and implications of the study.

Chapter 2 Literature Review

Introduction

This chapter will present literature that relates to Entrepreneurial Intention (EI) and Entrepreneurial Self-Efficacy (ESE) through an integrated cognitive, affective, social and developmental lens, where special attention is given to: the effects of ESE on EI, the effects of psychological capital on EI, the relationships between different thinking styles and ESE involved in different stages of venture creation, the special role *Guanxi* plays in the venture creation process in China, and the direct and indirect effects of emotional intelligence on ESE. In order to grasp a comprehensive understanding of the factors that influence entrepreneurial intention, the researcher focused on articles that can be divided into five categories: (a) entrepreneurial intentions and behavior, (b) *guanxi* and Chinese entrepreneurship, (c) emotional intelligence and *guanxi*, (d) thinking styles and different activities involved in entrepreneurial process, and (e) relationships between key elements of psychological capital and entrepreneurial intention.

Intention Models and Entrepreneurial Self-Efficacy

Before intention models emerged, literature has shown two main streams on predicting entrepreneurial behavior. First, researchers focused on linking certain personality traits or characteristics such as internal local of control (Bonnett & Furnham, 1991), need for achievement (McClelland, 1961) and tolerance for ambiguity (Teoh & Foo, 1997) with the assumption that entrepreneurs are endowed with unique traits, which make them distinguishable from others (Gürol & Atsan, 2006). Second, studies emphasized the roles of demographic and contextual factors in mobilizing entrepreneurial behavior (Kennedy, Drennan, Renfrow, & Watson, 2003; Wilson, Marlino, & Kickul, 2004). However, small explanatory power has been found from both personality and demographic approaches (Izquierdo & Buelens, 2008).

Intentions, on the other hand, have been suggested as a better alternative to predict entrepreneurial behavior (Krueger & Carsrud, 1993). Entrepreneurial Intention (EI) is the state of mind directing an individual's attention and action towards self-employment as opposed to organizational employment (Bird, 1988). Entrepreneurship is clearly an intentional process, where entrepreneurs choose to start a business rather than out of a reflex. Additionally, intention is conceived as an immediate antecedent of actual behavior especially if the behavior in question is "rare, hard to observe, or involves unpredictable time lag" characteristics (Ajzen, 1991, p. 183), all of which apply to entrepreneurial activities. This portion of literature explores (a) the Entrepreneurial Intentions Model, and (b) the critical role entrepreneurial self-efficacy plays on predicting entrepreneurial intention.

Entrepreneurial Intentions Model (EIM) and Entrepreneurial Intention (EI)

Entrepreneurial Intentions Model (EIM) is an extension of Bird's model of implementing entrepreneurial ideas (Boyd & Vozikis, 1994). Within Bird's original model, the intentional process begins with entrepreneurs' personality characteristics, personal history factors and abilities, which constitute the internal dimension of entrepreneurial intentions (Katz & Gartner, 1988). The external dimension, such as social, political and economic variables, along with the internal dimension create the context for entrepreneurship (Bird, 1988) Entrepreneurial Intention (EI) is also a product of one's both linear and nonlinear thinking about venture creation, each of which is first influenced by the personal and environmental contextual factors (Shook, Priem, & McGee, 2003; See Figure 1).

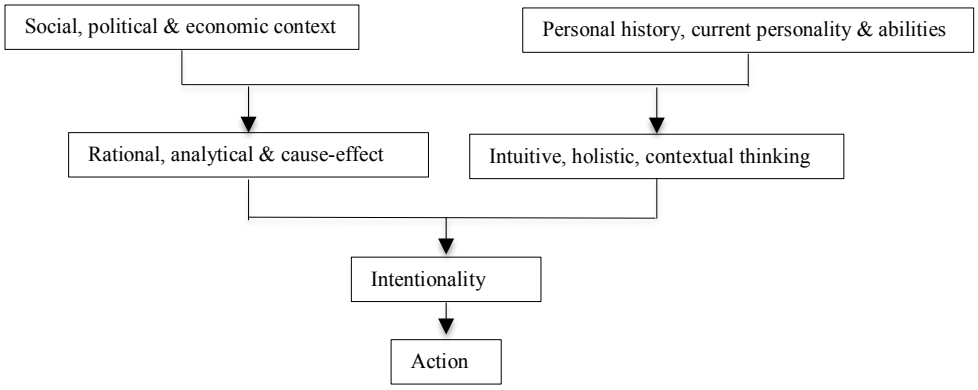

Figure 1. Bird's model.

Rather than seeking to identify a list of contextual factors and stable personality characteristics that influence entrepreneurial intention and behavior, Boyd and Vozikis' Entrepreneurial Intentions Model (EIM) emphasizes self-efficacy as the core intermediary between thoughts that concern self-employment and entrepreneurial intention (Winkel, Vanevenhoven, & Ehrhardt, 2011). Intentions are formed based on the way in which individuals perceive their social and physical environment, as well as the way in which they anticipate the future outcomes of their behavior (Ryan, 1970). Activities, including venture creation, which are perceived as exceeding their abilities are avoided, while activities they judge themselves capable of handling are pursued (Bandura A. , 1997). These perceptions and judgment concerning the probability of success or failure exert a significant influence on the development of entrepreneurial intention (Boyd & Vozikis, 1994). By integrating the concept of self-efficacy, EIM also provides a more dynamic approach that links behavioral intention and actual behavior, as intentions are not an exclusive determinant of behavior without conditions (Sheppard et al., 1988; See Figure 2).

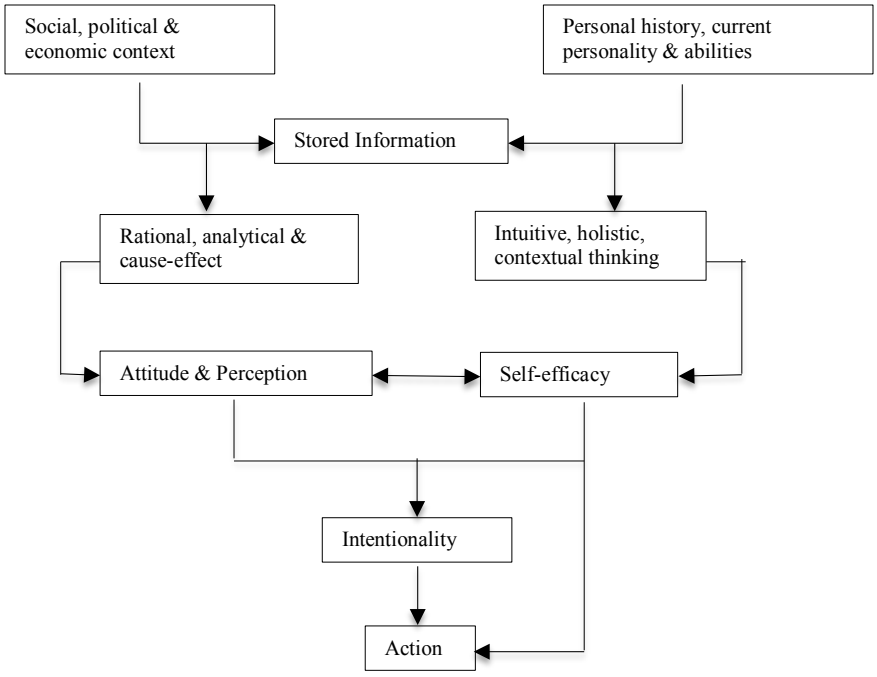

Figure 2. Entrepreneurial intentions model.

Entrepreneurial Self-Efficacy (ESE)

Entrepreneurial Self-Efficacy (ESE) is a construct conceptually similar to Perceived Behavioral Control (PBC) within the framework of the Theory of Planned Behavior. ESE is defined as the perceived capability of an individual regarding the performance of functions necessary in effectively accomplishing entrepreneurial roles or tasks (Boyd & Vozikis, 1994). ESE is concerned not only with the skills themselves but also with the judgments about what one can do with those skills, which focuses more on the internal factors (Bandura A. , 1997). On the other hand, PBC is concerned with how easy or difficult the behavior will be based on the presence of the skills, which focuses more on external factors (Ajzen, 1988).

Empirical studies suggest that ESE is a stronger predictor of intention than PBC (Povey, Conner, Sparks, James, & Shepherd, 2000; Acs & Audretsch, 1988; Adeyemo & Adeleye, 2008; Terry & O'Leary, 1995), as ESE is more likely to mobilize the motivational and cognitive

resources needed to meet given situational demands than PBC, which emphasizes influencing environmental factors (Wood & Bandura, 1989). Hence, ESE is one of the core components and predictors of EI and behaviors (Boyd & Vozikis, 1994; Krueger & Brazeal, 1994).

Psychological Capital (PsyCap) and Entrepreneurial Intention (EI)

Capital refers to the value of assets and resources available for a specific need (Envick, 2004). The field of entrepreneurship has traditionally focused on the role of human capital (i.e., explicit and tacit knowledge) and social capital (i.e., networks and norms) in the venture creation process (Ahmad, Halim, & SRM, 2010; Ajzen, 1988). While human capital represents "what you know" and social capital represents "who you know", Psychological Capital (PsyCap) is an individual's positive psychological state of development that makes a large input into "who you are" and "who you are becoming" (Luthans et al., 2007, p. 20).

PsyCap is characterized by four qualities: (a) self-efficacy, which is the perceived ability or confidence to take on and to succeed at a specific task, (b) hope, which is the determination or energy towards goals and redirecting goals when necessary, (c) optimism, refers to the positive attribution about succeeding now and in the future, and (d) resilience, refers to the extent to which the functioning of a system is unperturbed by incidents (Luthans, Luthans, & Luthans, 2004). Aforementioned entrepreneurial self-efficacy is a domain-specific self-efficacy and is suggested a better indicator within the entrepreneurial domain than general self-efficacy (Luthans, Youssef, & Avolio, 2007). Therefore, this portion of literature will focus on (a) the effects of hope on EI, (b) the effects of optimism on EI, (c) the effects of resilience on EI, and (d) the effects of PsyCap as a higher order construct, on EI.

Hope and Entrepreneurial Intention (EI)

Hope in PsyCap is different from "wishful thinking" (Luthans et al., 2007, p. 66). Hope is a positive motivational state and consists of three key elements: (a) goals, (b) agency or willpower, which is a goal-directed energy and determination, and (c) pathways, which are the "workable routes to the goal" (Snyder, Irving, & Anderson, 1991, p. 287). The pathways component of hope distinguishes hope from wishful thinking that is used in everyday language. There is a reiterative interaction between willpower and pathways component resulting "an upward spiral of hope" (Luthans et al., 2007, p. 66). Willpower motivates the search for pathways, while the creativity, innovation and resourcefulness involved in developing pathways in turn ignite one's energy and sense of control (Snyder, 1993).

Goals need to be specific, measurable, challenging and also achievable (Luthans, Youssef, & Avolio, 2007). Appropriate goal setting affects one's willingness and ability to search for pathways (Latham, 2000). Entrepreneurship is a dynamic process of vision, change and creation (Kuratko & Hodgetts, 2004). The vision (goal) defined by entrepreneurs not only influences the energy (agency) and passion they applied towards the creation and implementation of their ideas, but also affects their ability of developing a viable business plan, marshaling needed resources and managing the resulting enterprise. Additionally, hope affords entrepreneurs with courage and perseverance in a way that they constantly search for creative solutions (pathways) in face of adversity and uncertainty (Markman, Phan, Balkin, & Gianiodis, 2005)

Optimism and Entrepreneurial Intention (EI)

Optimism in PsyCap goes beyond the definition of expecting things to turn out better than probability predicts. Optimism is characterized by an optimistic explanatory style (Luthans, Youssef, & Avolio, 2007). An optimistic individual attributes positive events to personal,

permanent and pervasive causes as opposed to negative events to external, temporary and situation-specific ones (Seligman, 1993). PsyCap optimism is realistic and flexible (Schneider, 2001). PsyCap optimism does not take extremes either in internalizing success in an "illusive ego boost" way (Luthans et al., 2007, p. 96), or externalizing failure to deny responsibilities.

Entrepreneurship is a way of thinking that emphasizes opportunities over threats (Krueger, Reilly, & Carsrud, 2000). The decision to exploit an opportunity is largely based on the amount of uncertainty and risks an individual perceives (McMullen & Shepherd, 2006). High optimism in self-perception is considered to be "endowed with added protection" when dealing with inevitable challenges (Totterdell et al., 2006, p. 80). Individuals with low optimism allow a tendency to think about adversity in a way that makes them feel powerless. Failing to learn from the positives of a situation increases their perception of risk and uncertainty, thus inhibits them to attempt the initiation of new ventures (Simon, Houghton, & Aquino, 1999). On the contrary, realistic and flexible optimism facilitates would-be entrepreneurs to appreciate the positives of a situation and promotes an opportunity seeing in considering self-employment (Schneider, 2001). Furthermore, individuals with high optimism are able to distinguish facts from perceptions, which allow them the benefit of doubt for misfortunes and withhold the confidence to succeed.

Resiliency and Entrepreneurial Intention

Resiliency is defined as "the developable capacity to rebound or bounce back from adversity, conflict and failure or even positive change, progress or increased responsibility" (Luthans, 2002, p. 702). It is a process in which individuals take adaptive actions not only to survive, but also to grow and develop as individuals. This adaptational process consists of three elements: (a) resiliency assets, which are the characteristics in individuals or their situation that

predict a positive outcome in the future (e.g., self-regulation and a sense of humor), (b) risk factors, which are those factors that elevate probability of an undesirable outcome (e.g., stress), and (c) values, which is the underlying belief that "guides, shapes and gives consistency and meaning to one's cognition, emotions and actions" (Luthans et al., 2007, p. 119).

Becoming an entrepreneur is compulsion connected to a higher purpose. It is the purpose and deep belief (values) in entrepreneurs themselves and their ideas enable them to overcome uncertainty and challenges (Gardner, Avolio, & Walumba, 2005). Resilience is required in entrepreneurs' repertoires to cope with stress efficiently on a daily basis and to see growth possibilities even in face of adversity. In good times, those with high resiliency are able to overcome complacency and exploit their existing strengths and abilities (Luthans et al., 2007). More importantly, embracing resiliency necessitates patience and a strong sense of pragmatism. Would-be entrepreneurs with high resiliency are likely to have confidence despite of setbacks and stress while realizing the necessary effort and steps needed to build a new venture.

PsyCap As A Higher Order Construct

PsyCap is a higher order construct that integrates hope, optimism, self-efficacy and resiliency not only additively but also synergistically (Luthans et al., 2007). PsyCap's integration of the four resources is intended to offer a balanced perspective of positivity that is relevant in the decision process to exploit an opportunity. Previous empirical study shows that PsyCap plays a critical role in generating self-perception of leadership that leads to the capability to better withstand challenging environment and realize entrepreneurial ideas (Jensen & Luthans, 2006).

From the cognitive perspective, the positive cognitive appraisal generated by PsyCap can facilitate more favorable assessment of the current situations as well as future expectation of

success by buffering the human negativity bias (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Through the affective lens, the positive emotional state generated by PsyCap is instrumental in broadening one's thought-action repertoires by targeting individuals' energy and resources at more challenging and meaningful goals (Bandura A. , 2008). PsyCap is agentic in nature, which enables individuals the capacity to mobilize both cognitive and affective resources and activate goal-directed course of action to pursue important personal goals, including venture creation (David, Boniwell, & Conley, 2013).

Entrepreneurial Cognition and Entrepreneurial Self-Efficacy

Within the Entrepreneurial Intentions Model, entrepreneurial intention is also a product of one's cognitive process. Cognition is an important theoretical perspective for understanding and explaining human behavior and action (Wofford & Goodwin, 1990). Constructs such as entrepreneurial intention represent the semantic layer of cognition, that is, what we say and do, underneath which is a symbolic level that holds deep beliefs and assumptions. This symbolic layer also represents the critical architecture of how we structure our knowledge and make decisions (Sarasvathy S. , 2001). To better understand what lies beneath entrepreneurial intentions, it is important to understand entrepreneurial cognitions, which refers to the mental models that people use to make assessments, judgments, and decisions involving opportunity evaluation, venture creation and growth (Mitchell, Smith, Morse, Seawright, Peredo, & McKenzie, 2002). This portion of literature explores (a) the linear, nonlinear and balanced linear/nonlinear thinking styles, (b) four entrepreneurial self-efficacies involved in different stages of entrepreneurial process, and (c) the effects of different thinking styles on entrepreneurial self-efficacy.

Linear, Nonlinear, and Balanced Thinking Styles

Entrepreneurs' preferred modes of thinking (i.e., their thinking styles) influence multiple dimensions of entrepreneurial activities (Allinson & Hayes, 1996; Leonard, Scholl, & Kowalski, 1999). Thinking Style (TS) is defined as "one's preferred manner of using mental abilities to govern daily activities, including understanding and solving problems and challenges" (Vance, Groves, Paik, & Kindler, 2007, p. 17). Individuals' thinking styles may influence their preferences for different types of learning, knowledge gathering, information processing and decision-making, all of which entrepreneurs confront on a daily basis. In order to better understand how and why entrepreneurs make certain decision, such as self-employment, researchers have developed multi-and single-dimensional models to explore the exact meaning of the abstract concept of thinking style, including Myers-Briggs Type Indicator (MBTI), the Decision-Style Inventory (DSI) and the Learning Style Inventory (LSI) (Fleming, 1985; McIntyre, Capen, & Minton, 1995; Pennino, 2002; White & Manolis, 1997).

Hemispheric lateralization describes consciousness as having two modes of awareness. The left brain is responsible for linear thinking, encompassing rational, logical and analytical tendencies, while the right brain is responsible for non-linear thinking, consisting of intuitive, insightful and creative thought (Vance, Groves, Paik, & Kindler, 2007). Individuals can be classified as having linear thinking style, nonlinear thinking style or balanced thinking style across both types (Vance, Zell, & Groves, 2008). Linear/Nonlinear Thinking Style Profile (LNTSP) defines linear thinking style as having a preference for (a) external resources, including tangible data and concepts, and (b) the subsequent conscious mental processing characterized by logic and rational thinking to form knowledge and make decisions. Nonlinear thinking style is defined as having a preference for (a) internal resources, including instincts and sensations, and

(b) the subsequent conscious or subconscious mental processing characterized by intuition or insight to form knowledge and make decisions. Balanced linear/nonlinear thinking style is defined as the utilization of metal abilities that relies on both internal and external resources, characterized by flexible and versatile movements between linear and nonlinear modalities (Vance, 2012).

Entrepreneurial Self-Efficacies (ESE) Involved in Different Stages

Entrepreneurship is defined as the creation of new enterprise (Low & MacMillan, 1988), which emphasizes that entrepreneurship is "a process of becoming rather than a state of being" (Bygrave W. D., 1989, p. 21). Entrepreneurial process involves all the functions, activities, and actions associated with identification and implementation of opportunities and ideas (Bygrave & Hofer, 1991). Therefore, self-efficacy is best assessed in terms of different phases and stages in this process as different skills and abilities are required (Bandura A. , 1986; Shepherd & Krueger, 2002). In the process of starting a new venture, entrepreneurial self-efficacy can be segmented into four distinct phases (McGee, Peterson, Mueller, & Sequeira, 2009).

- ESE regarding the searching stage: individual's perceived self-efficacy concerning their abilities to recognize opportunities and generate ideas.
- ESE regarding the planning stage: individual's perceived self-efficacy concerning their ability to evaluate opportunities and develop a business plan.
- ESE regarding the marshaling stage: individual's perceived self-efficacy concerning their ability to convince others to invest in and work for the new business.
- ESE regarding the implementing stage: individual's perceived self-efficacy concerning their ability to manage both people side and financial side of the business.

Different Thinking Styles and ESE

Previous research has emphasized the role of nonlinear thinking such as intuition and insight on the venture creation process, characterized by intense use of intuitive thinking heuristics by entrepreneurs. Non-linear thinking enables new patterns of recognition and makes associations across categories and boundaries (Miner, 1997). Individuals with a strong non-linear thinking style are more likely to identify a potentially viable opportunity that others may overlook, as the use of heuristics helps them reduce the perceived complexity in the given situation, and focus on what they feel is critical instead (Tversky & Kahneman, 1974).

However, when entrepreneurs shift to development of viable business plans, marshaling of required resources and implementation of the resulting enterprise, their information processing is predominantly linear and analytical (Cole, Field, & Harris, 2004; Olson, 1995). Having a linear mode of thinking enables them to evaluate market opportunities with precision and rigor. To convince potential investors requires thorough planning and analysis, including financial forecast and determination of capital needs. The implementation of ideas is a rational, linear multi-step process, focusing on "the needed resources, where they can be obtained and how they should be organized and controlled" (Olson, 1985, p. 29). Linear thinking individuals are also more comfortable in managing daily operation in a more structured environment when shifting to the implementing stage of the new venture process (Brigham, De Castro, & Shepherd, 2007).

Creativity and innovation are central to the entrepreneurial process (Barringer & Ireland, 2006). Innovation in a complex, turbulent, and unpredictable business environment requires entrepreneurs to be adaptive (Mason R. B., 2007). They need to constantly scan the reality with scrutiny in response to external challenges and opportunities posed by environment, while being

spontaneous and assertive with their own personal preference (Vance, Groves, Paik, & Kindler, 2007). Linear/nonlinear balance or versatility enables flexibility for entrepreneurs in zooming in the course of problem assessment through logical and linear thinking, as well as zooming out to maintain a holistic view of the big picture (Vance, Groves, Paik, & Kindler, 2007). Constant movements between linear and nonlinear modalities equip entrepreneurs with greater comfort in dealing with uncertainty. They are able to start down a path in responding to market needs based on available facts and data, while allowing the end goal to emerge through out-of-box thinking and experimentation (Sarasvathy S. , 2001).

Social Capital

The domain of entrepreneurship is a connection between opportunities and enterprising individuals (Shane & Venkataraman, 2000). Entrepreneurs are always a part of an economic and social network, and the creation of the venture is the outcome of many influences, which "evolve over time by leveraging social components (Hite, 2005). The Theory of Planned Behavior depicts the importance of subjective norms, which is a dimension of social capital, in determining entrepreneurial intention. This portion of literature will further explore (a) the dimensions of social capital, and (b) the significant role of *Guanxi* plays in the entrepreneurial process in China.

Dimensions of Social Capital (SC)

Social capital refers to connections between individuals, including social networks and norms of reciprocity and trustworthiness that arise from them (Pohja, 2009). Although sociologists have provided various aspects on the dimensions of social capital, most of them agree that social capital consists of two major conceptual dimensions, which are the objective

networks and the subjective norms among individuals (Paxton, 1999). Subjective norms refer to trust and reciprocal feelings among individuals, while objective networks refer to both formal and informal associations, which are formed and engaged in on a voluntary basis (Xia, 2011).

The Theory of Planned Behavior Model (Ajzen, 1991) postulates that intention to build a new firm can be influenced by three perceptions: attitude, subjective norms and perceived behavior control. Subjective norms refer to individuals' perceptions of how people in their closer environment would approve the venture-creation behavior (See Figure 3). Following this line of research, there is a growing awareness of the importance of social networks and trust in supporting venture creation (Baker, 1990; Uzzi, 1996; Gulati, 1998).

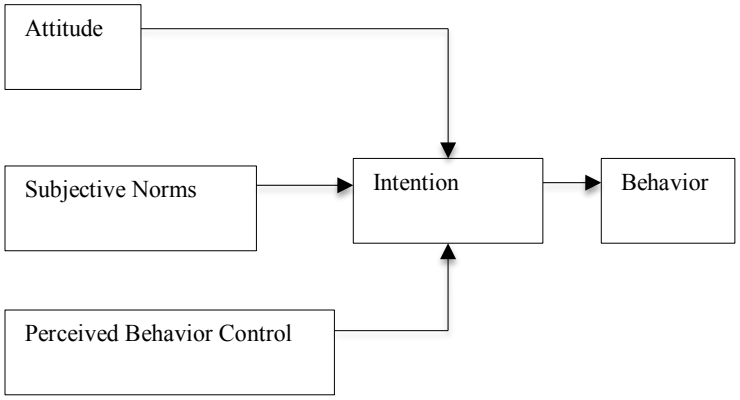

Figure 3. The theory of planned behavior model.

Guanxi

In China, Social Capital takes a special form named *guanxi* (Luo Y. , 1997; Wong Y. H., 2000). The word *guan* originally means "door", *xi* originally means "to tie up" and extended to the meaning of building relationships. *Guanxi* literally means "pass the gate and get connected" (Lee & Dawes, 2005, p. 29). *Guanxi* is embedded in Chinese Confucian hierarchical social theory, in which individuals in the society shall fall into a *guanxi* web naturally to achieve harmony. Although both social capital and *guanxi* involve social networks, *guanxi* emphasizes formalization and hierarchy. It is defined as the special treatments between persons, based on interactive experiences and followed by specific rules including mutual benefits, reciprocity, favors and saving face (Zhu & Hong, 2009).

Guanxi embodies the basic dynamic in a personalized network. The central administration of a large country left *guanxi* as a substitute for institutional support in terms of political strategy and ideology (Buttery & Wong, 1999). *Guanxi* helps to navigate opaque bureaucracies and cope with the absence of a rule of law. By providing alternatives to personal

wealth, security, contracts and legal rights, it is considered a symbol of capital and trust (Lee & Anderson, 2007).

The political and legal difficulties as well as the access to limited resources constitute a complicated and risky environment for Chinese entrepreneurs (Sebera & Li, 2006). In China's business world, *guanxi* implies preferential treatment to exchange and access limited resources, reliable information and controlled infrastructure (Luo Y. , 1997; Luo & Chen, 1997; Wong Y., 1997; Xin & Pearce, 1996). This implies *guanxi* is not only a complementary resource but also the critical element in the context of Chinese entrepreneurship (Hwang K. , 1987).

In the planning, marshaling and implementing stages of venture creation, would-be entrepreneurs require information, capital, skills and labor to start business activities in a timely fashion. *Guanxi* assists to acquire information about market trends, government policies and regulations. When shifting to the marshaling stage, it helps to secure access to laborers, land and approvals from government. *Guanxi* also helps to reduce start-up costs by avoiding business debates and obtaining loans from government (Hwang & Staley, 2005).

Guanxi requires the fulfillment of reciprocal obligations, which is culturally expected by both Confucianism and the new ethics in contemporary China (Yang, 1994). An individual with a strong *guanxi* is considered as having trustworthiness, which is the key attribute in facilitating long-term effective interactions with potential investors and business partners. Furthermore, the mere existence of a business relationship does not guarantee the necessary connectedness that constitutes a harmonious working environment among business partners and employees. *Guanxi* affords entrepreneurs with the primary and binding power of personal relationships by honoring reciprocity and trust (Redding & Ng, 1982). Therefore, individuals having a strong *guanxi*

should perceive that they possess high capabilities in identifying opportunities, gathering market information, marshaling needed resources, and building a harmonious working environment that ensures smooth daily operation.

Emotional Intelligence

Emotional Intelligence is defined as "the ability to monitor one's own and others' feelings, to discriminate among them, and to use this information to guide one's thinking and action" (Salovey & Mayer, 1990, p. 189). It consists of the following four dimensions (Davies, Stankov, & Roberts, 1998).

- Self-Emotions Appraisal is the ability to understand one's own deep emotions and be able to express emotions naturally.
- Others-Emotions Appraisal is the ability to perceive and understand others' emotions.
- Use of Emotions is the ability to harness emotions by directing them toward constructive activities and personal performance.
- Regulation of Emotions is the ability to regulate one's own emotions, enabling a more rapid recovery from psychological distress.

The foundation skills of emotional intelligence are self-awareness, social awareness and self-regulation (Cherniss & Goleman, 2001), which constitute the developmental groundwork for successful relationship management and social skills (Engle & Nehrt, 2011). These social abilities and skills might be especially valuable to entrepreneurs. In the marshaling stage of venture creation, entrepreneurs must form social relationship with all kinds of people from scratch (Baron & Markman, 2003) including potential investors, customers and the founding team. Furthermore, they must do so in a highly uncertain and unstructured environment (Carter,

Gartner, & Reynolds, 1996; Gartner, 1988; Holt, 1992). Emotional intelligence also helps entrepreneurs cope with stress actively and adaptively (Lek, 2011). In the implementing stage, entrepreneurs must deal effectively with day-to-day problems and search for creative solutions. Entrepreneurs with high emotional intelligence can ameliorate stress associated with uncertainty effectively by recognizing potential stressors and redirecting negative emotions toward constructive activities.

Emotional intelligence is critical in building *guanxi* networks in China. One crucial distinction between *guanxi* and Western conceptualization of social relations is that is there is an emotion basis to *guanxi* (Herrmann-Pillath, 2009). Individuals involved in an instrumental relation co-operate merely in order to achieve the immediate goal, while emotional relations are characterized as having commitment to the other person and are considered to be an end in itself as opposed to goal-oriented. Western societies tend to keep emotional and instrumental relations separate because of the assumption that there are potentially mutual negative effects in mixing them. In the Chinese view, emotional relations are an integral part of instrumental relations, as *Guanxi* is the foundation of trust (Herrmann-Pillath, 2009).

In China, *Guanxi* is a triadic concept, including *ganqing*, *renqing* and *mianzi* (face). (Gabrenya & Hwang, 1996; Farrer, 2002). *Ganqing* relates to the awareness of the subjective feeling of emotions, or self-awareness. *Renqing* relates to the awareness of external expression in terms of socially recognized and approved mutual obligations, or social awareness (Herrmann-Pillath, 2009). *Mianzi (face)* refers to the social images of individuals perceived by their social groups. Society exists as a consequence of each individual' self-regulation (Goffman, 1967). In China, *Mianzi* requires strong self-regulation because individuals are not only responsible for their own face but also others in their social network (Ho, 1994). This triadic concept ties self-

awareness, social awareness and self-regulation together by maintaining the emotion quality of instrumental relations (Jacobs, 1982).

Empirical studies conducted in China show that emotional intelligence has played a critical role in generating trust and reciprocal feelings that lead to strong *Guanxi* (Chen & Lu, 2007; Krishna, 2002). An emotionally intelligent individual tends to be more aware of the self and society, and consistently regulates oneself in a relational collectivism scheme to create and stabilize opportunities for successful action (Herrmann-Pillath, 2009). Entrepreneurs with high levels of emotional intelligence can capitalize fully upon the *Guanxi* networks and thus will feel more confident in the overall entrepreneurial self-efficacy.

Summary

An individual's entrepreneurial intention is a key construct in the research on new venture creation. The given literature argues that Entrepreneurial Intention (EI) among Chinese undergraduates depends on the interactions of five constructs: (a) Entrepreneurial Self-Efficacy (ESE), (b) Psychological Capital (PsyCap), (c) Balanced Linear/Nonlinear Thinking Style (BLNTS), (d) *Guanxi,* and (e) Emotional Intelligence.

Intentions are formed based on the way in which people perceive their social and physical environment, as well as the way in which they anticipate the likelihood of success or failure of their behavior. ESE acts as the critical intermediary between thoughts concerning new venture creation and EI. Psychological Capital (PsyCap) is an individual's positive psychological state of development that makes a large input into "who you are" and "who you are becoming". Entrepreneurs' embodiment of high levels of hope, optimism and resilience is clear in the challenging goals they set for themselves, the passion and energy they applied towards the

creation and implementation of their ideas, and the courage and perseverance in searching for creative solutions in face of adversity and uncertainty.

As individuals process information, they develop a sense of how capable they are to engage in a course of action in different stages of new venture creation. Non-linear thinking is predominant in the early stage of entrepreneurial process while linear thinking is predominant in the later stages of entrepreneurial process. Linear/nonlinear balance enables flexibility for entrepreneurs in zooming in the course of problem assessment through logical and linear thinking, as well as zooming out to maintain a holistic view of the big picture. Constant movements between linear and nonlinear modalities equip entrepreneurs with greater comfort in dealing with uncertainty.

In China, social capital takes a special form named *guanxi.* Chinese entrepreneurs face the political and legal difficulties as well as the difficulties in accessing resources. *Guanxi* affords would-be entrepreneurs with preferential treatment to access reliable information and limited resources as well as the primary and binding power of personal relationships, which are the critical viable in planning, marshaling and implementing stages of entrepreneurial process in China. One of the core elements of *guanxi* is the emotional basis where people with higher EI tends to be more aware of the self and society, and consistently regulates oneself in a relational collectivism scheme to create and stabilize opportunities for successful action. Entrepreneurs with high levels of emotional intelligence can capitalize fully upon the *guanxi* networks and thus will feel more confident in the overall entrepreneurial self-efficacy.

Hypothesis 1a: Nonlinear Thinking Style has a positive effect on Entrepreneurial Self-Efficacy in the Searching Stage, and will emerge as a key predictor of self-efficacy in the early stage of entrepreneurial process.

1b: Linear thinking style has positive effects on Entrepreneurial Self-Efficacy in the Planning, Marshaling and Implementing stages, and will emerge as a key predictor of self-efficacy in the later stages of entrepreneurial process.

Hypothesis 2: Balanced Linear/nonlinear thinking style has a positive effect on the overall Entrepreneurial Self-Efficacy (ESE), and will emerge as a key predictor of ESE.

Hypothesis 3: Emotional Intelligence has a positive effect on Entrepreneurial Self-efficacy in the Planning, Marshaling and Implementing stage, and will emerge as a key predictor of self-efficacy in the later stages of entrepreneurial process.

Hypothesis 4: *Guanxi* has positive effects on Entrepreneurial Self-Efficacy in Searching, Planning and Implementing stages, and will emerge as a key predictor of ESE in all stages.

Hypothesis 5a: Entrepreneurial Self-Efficacy has a positive effect on Entrepreneurial Intention (EI), and will emerge as a key predictor of EI.

5b: PsyCap has a positive effect on Entrepreneurial Intention (EI), and will emerge as a key predictor of EI.

5c: There is a positive relationship between balanced Linear/Nonlinear thinking style and Entrepreneurial Self-Efficacy.

5d: Emotional Intelligence has a positive effect on *guanxi*, and will emerge as a key predictor of *guanxi*.

5e: The positive effect of Emotional intelligence on Entrepreneurial Self-Efficacy (ESE) is mediated by *guanxi*, where emotional intelligence affect ESE directly as well as indirectly through *guanxi*.

Chapter 3 Research Design and Method

Chapter Overview

This chapter describes the research design adopted in this study. Sections include: an overview of the proposed hypotheses and research questions, rationale of the adopted research design, target and accessible population, procedures regarding data collection, a detailed description of the instruments used to measure the target constructs, and the proposed analysis. At last ethical concerns and threats to validity will be discussed.

Hypotheses and their Rationales

To answer the research questions, the following hypotheses are proposed:

Cognitive Dimension

H1a: Nonlinear Thinking Style has a positive effect on Entrepreneurial Self-Efficacy in the Searching Stage, and will emerge as a key predictor of self-efficacy in the early stage of entrepreneurial process.

H1b: Linear thinking style has positive effects on Entrepreneurial Self-Efficacy in the Planning, Marshaling and Implementing stages, and will emerge as a key predictor of self-efficacy in the later stages of entrepreneurial process.

H2: Balanced Linear/nonlinear thinking style has a positive effect on the overall Entrepreneurial Self-Efficacy (ESE), and will emerge as a key predictor of ESE.

Affective and Social Dimension

H3: Emotional Intelligence has a positive effect on Entrepreneurial Self-efficacy in the Planning, Marshaling and Implementing stage, and will emerge as a key predictor of self-efficacy in the later stages of entrepreneurial process.

H4: *Guanxi* has positive effects on Entrepreneurial Self-Efficacy in Searching, Planning and Implementing stages, and will emerge as a key predictor of ESE in all stages.

Psychological Dimension and Interactions

H5a: Entrepreneurial Self-Efficacy has a positive effect on Entrepreneurial Intention (EI), and will emerge as a key predictor of EI.

H5b: PsyCap has a positive effect on Entrepreneurial Intention (EI), and will emerge as a key predictor of EI.

H5c: There is a positive relationship between balanced Linear/Nonlinear thinking style and Entrepreneurial Self-Efficacy.

H5d: Emotional Intelligence has a positive effect on *guanxi*, and will emerge as a key predictor of *guanxi*.

H5e: The positive effect of Emotional intelligence on Entrepreneurial Self-Efficacy (ESE) is mediated by *guanxi*, where emotional intelligence affect ESE directly as well as indirectly through *guanxi*.

Research Design

Quantitative design will be utilized in this study, as the purpose of the study is to establish statistically significant conclusions regarding the factors that affect entrepreneurial intention. Also in order to develop an empirical model for developing college students' entrepreneurial intention, quantitative design and related analysis appear to be optimal.

Populations and Sample

The target population for the study is defined as full-time students enrolled in universities in China. The accessible population is defined as senior undergraduate students (4^{th} and 5^{th} grade) in a large university in Northern China during Fall 2014 semester. All 14 departments,

which cover both business and non-business majors, will be selected in this study. Demographic data including gender, major and prior work experience will be recorded for coding in future data analysis.

Buy in from both the university and the sample population will be needed. Although research will be based on volunteering, initial access to the sample need support from the university. Sample population needs to be assured that data gathered in survey will remain confidential and only serve for research purposes.

Procedures

The author will briefly present in Fall 2014 Semester Orientation Meetings conducted by fourteen departments, targeting at approximately 4,000 senior year undergraduate students. Students will be informed about a drawing in which participants will be entered for the chance to win 100 8G USB flash drives. A survey questionnaire consists of 101 items will be administrated online through SurveyGizmo to collect data of the target sample.

Academic PsyCap Questionnaire, LNTSP, *Guanxi* Trait Scale, Entrepreneurial Self-efficacy Scale, WLEIS and EIQ will be counterbalanced in order to void bias. All survey questionnaires and materials will be translated into Chinese by one person, translation checked by a second person, retranslation back into English by a third person, and retranslation checked by a fourth person. Any disagreements will be discussed between persons one and two for translation, and between three and four for retranslation. Unresolvable disputes will be decided by the author.

Validity

As all survey items will be translated from English into Chinese, translation is a major threat against internal validity. Also, survey will be conducted in a single university located in Northern China, convenience sampling might be a threat to external validity of the study.

Instrumentation

Six constructs will be measured in this study. Entrepreneurial intention, Entrepreneurial Sel-Efficacy and *Guanxi* are endogenous variables, whose values are dependent on other variables in the model, while PsyCap, Thinking Styles and Emotional Intelligence are exogenous variables, whose value are independent from the states of other variables in the model.

Endogenous Variables

Entrepreneurial intention (EI). EI is defined as the conscious and intended act of new venture design. It is the state of mind directing a person's attention and action towards self-employment as opposed to organizational employment (Bird, 1988). EI will be measured by Entrepreneurial Intention Questionnaire developed by Liñán and Chen (2009), which consists of 6 items. All items will be rated on a 7-point Likert scale ranging from (1) "Total disagreement" (7) to "Total agreement". Sample items include "I will make every effort to start and run my own business" and "My professional goal is to be an entrepreneur". Higher score indicates higher Entrepreneurial Intention. This instrument has been found to have a high reliability of .94 (Liñán & Chen, 2009).

Entrepreneurial self-efficacy (ESE). ESE is defined as the perceived capability of an individual regarding the performance of functions necessary in effectively accomplishing entrepreneurial roles or tasks (Boyd & Vozikis, 1994). This construct will be measured through Entrepreneurial Self-Efficacy Scale developed by (McGee, Peterson, Mueller, & Sequeira, 2009)

which consists of 19 items and four subscales (Searching, Planning, Marshaling and Implementing). All items will be rated on a 5-point Likert Scale ranging from (1) "Very little" to "Very much" (5). Both total scores and scores or subscales will be utilized in this study. Higher score indicates higher self-efficacy.

The Searching subscale consists of 3 items. For example, "How much confidence do you have in your ability to identify the need for a new product or service". The reliability of this subscale is .84. The Planning subscale consists of 4 items. For example, "how much confidence do you have in your ability to estimate the amount of start-up funds and working capital necessary to start my business" The reliability of this subscale is .84. The Marshaling subscale consists of 3 items. For example, "how much confidence do you have in your ability to make contact with and exchange information with others" The reliability of this subscale is .80. The implementing subscale consists of 9 items. For example, "how much confidence do you have in you ability to recruit and hire employees" The reliability of this subscale is .91.

Guanxi. *Guanxi* is defined as the special treatment between persons which is built based on interactive experiences and followed by specific rules including mutual benefits, reciprocity, favors and face (Zhu & Hong, 2009). *Guanxi* will be measured through Guanxi Trait Scale developed by John Dunning and Chiansu Kim (2008), which consists of 10 items. All items will be rated on a 7-point Likert scale ranging from (1) "Total disagreement" to (7) "Total agreement". Sample items include "A personal connection is developed and reinforced through personal care and commitment" and "I can make use of my contacts' contacts as long as I have a good relationship with my contacts". Higher score indicates higher levels of *Guanxi*. The reliability of the instrument is .76 (Dunning & Kim, 2007).

Exogenous Variables

Thinking style (TS). Thinking style is defined as one's preferred manner of using mental abilities to govern daily activities, including understanding and solving problems and challenges (Vance et al., 2007). TS will be measured through Linear/Nonlinear Thinking Style Profile (LNTSPP) developed by Vance et al. (2007), which consists of 26 items and four subscales: External information Sources (EIS), Internal Information Sources (IIS), Linear Decision Making (LDM) and Nonlinear Decision Making (NDM). EIS and IIS will be rated on a 4-point Likert scale ranging from (0) "Little or no influence on how I behave" to (3) "Very strong influence on how I behave". Sample items include "Concepts" and "Empathy". LDM and NDM will be rated on a 4-point Likert scale ranging from (0) "Rarely or never" to (3) "Very often". Sample items include "I primarily rely on logic when making career decisions" and "when my analysis and intuition are in conflict, I give precedence to my intuitive insights". The reliability across LDM, NDM, EIS, and IIS subscales are .75, .73, .87, and .85, respectively (Vance, Groves, Paik, & Kindler, 2007). Higher scores in EIS and LDM indicate higher linear thinking style while higher scores in IIS and NDM indicate higher nonlinear thinking style. The smaller the disparity between the two sets of scores, the more balanced the thinking style.

Emotional intelligence (EIQ). Emotional Intelligence is defined as the ability to carry out accurate reasoning about emotions and ability to use emotions and emotional knowledge to enhance thought (Mayer, 2006). Emotional Intelligence will be measured through the Wong and Law Emotional Intelligence Scale (WLEIS), which consists of 16 items. All items will be rated on a 5-point Likert scale, ranging from (1) "totally disagreement" to (5) "totally agreement. Sample items include "I always tell myself I am a competent person" and "I can always calm

down quickly when I am very angry". Higher score indicates higher emotional intelligence. The reliability of this scale is .89.

Psychological capital (PsyCap). Psychological Capital is defined as an individual's positive psychological state of development and is characterized by (a) self-efficacy, that is, having confidence to take on and put in the necessary effort to succeed at challenging tasks; (b) hope, that is, persevering toward goals and when necessary, redirecting path to goals in order to succeed; (c) optimism, that is, making a positive attribution about succeeding now and in the future; (d) resilience, that is, when beset by problems and adversity, sustaining and bouncing back and even beyond to attain success (Luthans, Youssef, & Avolio, 2007).

PsyCap will be measured through Academic PsyCap Questionnaire (Luthans, Luthans, & Avey, 2013), which contains 24 items. All items will be rated on a 6-point Likert scale ranging from (1) "Strongly disagree" to (6) "Strongly agree". Sample items include "I feel confident analyzing a long-term problem to find a solution concerning my schoolwork" and "There are lots of ways around any problem concerning my schoolwork". Higher score indicates higher psychological capital. The reliability of this instrument has the range of .89 to .93 from various empirical studies (Luthans, Luthans, & Jensen, 2012).

Data Processing

Structural Equation Modeling (SEM) will be performed through SPSS and AMOS to test the following five models and related hypotheses.

- The following hypotheses were tested in model 1:

Hypothesis 1a: Nonlinear Thinking Style has a positive effect on Entrepreneurial Self-Efficacy in the Searching Stage, and will emerge as a key predictor of self-efficacy in the early stage of entrepreneurial process.

Hypothesis 1b: Linear thinking style has positive effects on Entrepreneurial Self-Efficacy in the Planning, Marshaling and Implementing stages, and will emerge as a key predictor of self-efficacy in the later stage of entrepreneurial process.

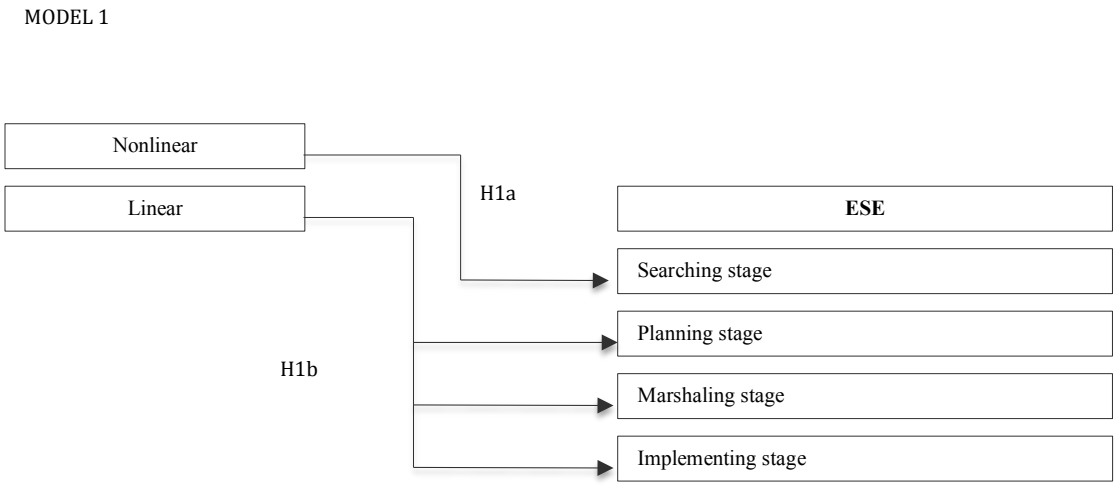

Figure 4. Hypethesis 1 Model.

- The following hypothesis will be tested in model 2:

Hypothesis 2: Balanced Linear/nonlinear thinking style has a positive effect on the overall Entrepreneurial Self-Efficacy (ESE), and will emerge as a key predictor of ESE.

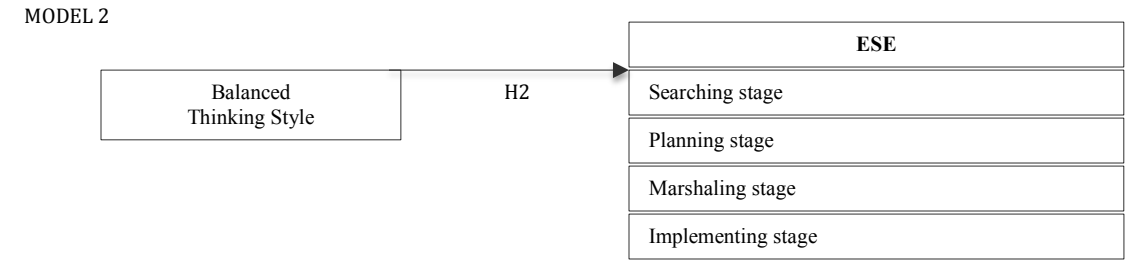

Figure 5. Hypothesis 2 Model.

- The following hypothesis will be tested in model 3:

Hypothesis 3: Emotional Intelligence has a positive effect on Entrepreneurial Self-efficacy in the Planning, Marshaling and Implementing stage, and will emerge as a key predictor of self-efficacy in the later stages of entrepreneurial process.

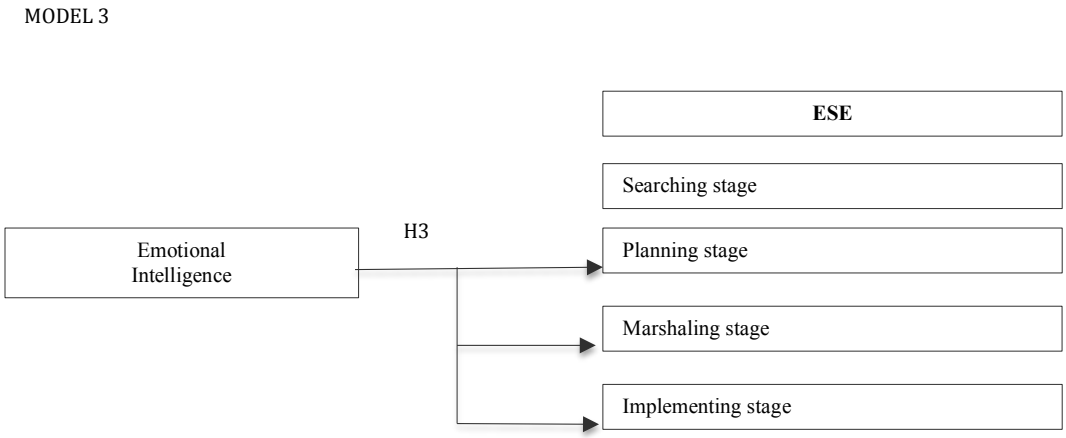

Figure 6. Hypothesis 3 Model.

- The following hypothesis will be tested in model 4:

Hypothesis 4: Guanxi has positive effects on Entrepreneurial Self-Efficacy in Searching, Planning and Implementing stages, and will emerge as a key predictor of ESE in all stages.

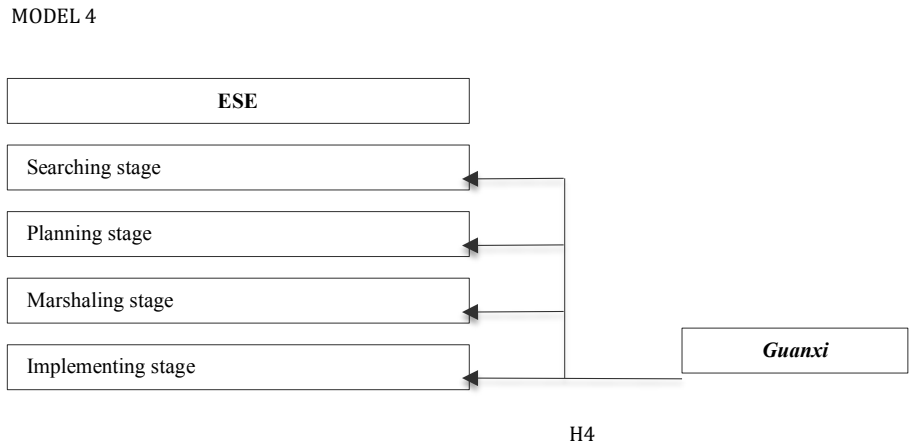

Figure 7. Hypothesis 4 Model.

- The following hypotheses will be tested in model 5:

Hypothesis 5a: *Entrepreneurial Self-Efficacy has a positive effect on Entrepreneurial Intention (EI), and will emerge as a key predictor of EI.*

Hypothesis 5b: *PsyCap has a positive effect on Entrepreneurial Intention (EI), and will emerge as a key predictor of EI.*

Hypothesis 5c: *There is a positive relationship between balanced Linear/Nonlinear thinking style and Entrepreneurial Self-Efficacy.*

Hypothesis 5d: *Emotional Intelligence has a positive effect on guanxi, and will emerge as a key predictor of guanxi.*

Hypothesis 5e: *The positive effect of Emotional intelligence on Entrepreneurial Self-Efficacy (ESE) is mediated by guanxi, where emotional intelligence affect ESE directly as well as indirectly through guanxi.*

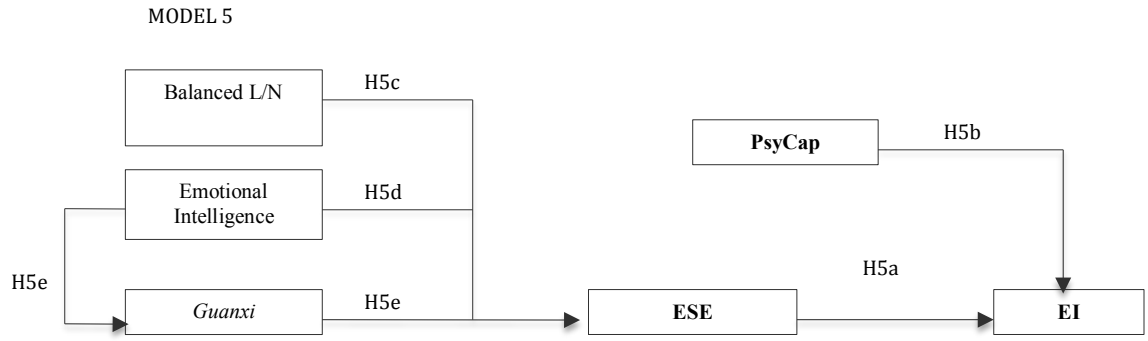

Figure 8. Hypothesis 5 Model.

Assumptions

In this study, the author assumes that all participants will be answering honestly to the survey questions, where the choice they make for the Likert-scale questions are of true reflections of their attitude and opinions.

Limitations

As structural equation modeling will be utilized in this study, a relative large sample is required for the proposed analysis to obtain sufficient statistical power. Appropriate financial reward will be ensured to help increase response rate of the survey. Also participants are invited to complete the survey in university computer labs if access to personal computers is limited.

Ethical Assurances

Each participant will be assigned a study identification number for the purposes of maintaining anonymity of the participants. Informed consent is provided before survey to ensure the understanding of what the participants are agreeing to take part and the participation is entirely voluntary.

Summary

Quantitative research design will be utilized in this study, where a survey questionnaire is administered online to collet data of six constructs using established measures. Target sample

consists of senior college students in a large university located in Northern China. Structural equation modeling will be performed to test the proposed five models and related hypotheses. Procedures adopted will ensure the anonymity of the participants and appropriate rewards are considered to increase the survey response rate.

Chapter 4 Results

Introduction

This chapter describes the results of the statistical analysis used in testing the models and hypotheses. The first section reports data preparation, and the second section demonstrates descriptive statistics including correlations among variables, the normality of the data, and the reliability estimates for the observed variables. The third section discusses the statistical results of the study and findings regarding the tests of the models and hypotheses.

Demographics

A total of 1,767 responses were received. As the sample size was relatively large, listwise deletion was adopted and 60 cases were excluded from data analysis. The final sample consisted of responses from 1,707 senior students.

Categorical Variables

Of the 1,707 participants, 56% were women (*n*=957), and 44% were men (*n*=750). 55.9% of the participants had work experience (*n*=955), and 47.8 % of the participants' parents and friends had entrepreneurial experience (*n*=817). Among the participants, 7.6% were business major students (*n*=130), and 92.4% were non-business major students (*n*=1577). All participants were senior students, including 4th year and 5th year students. Table 1 presents the number of participants by departments.

Table 1.

Participants by department

Variables	*n*	Percentage
School of Science and Information	385	22.6
School of Hydroelectric Power	175	10.3
School of Economics and Management	130	7.6
School of Science	110	6.4
School of Medicine	192	11.2
School of Natural Resources	303	17.8
School of Mechanical and Electrical Engineering	66	3.9
School of Civil Engineering	14	0.8
School of Electronic Information and Electric Engineering	72	4.2
School of Agriculture	57	3.3
School of Urban Design and Architecture	124	7.3
School of Equipment and Manufacturing	20	1.2
School of Liberal Arts	37	2.2
School of Architecture	22	1.3

Table notes: *n*=number of participants

Descriptive Statistics

Overall, the sample demonstrated moderate Entrepreneurial Intention, and preferred more Linear Thinking than Nonlinear thinking. *Guanxi* had the highest kurtosis score (2.63), indicated that the distribution of the responses on this scale was relatively small and centered. Table 2 presents the means, standard deviation skewness and kurtosis scores for all variables.

Table 2.

Descriptive statistics

	Mean	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
PsyCap	4.60	.57	2.42	6.00	-.57	.92
Entrepreneurial Intention	4.66	1.01	1.00	7.00	-.14	-.27
ESE	5.46	.89	1.00	7.00	-.71	1.06
ESE _Searching	5.43	1.07	1.00	7.00	-.81	.78
ESE _Planning	5.32	1.02	1.00	7.00	-.56	.39
ESE _Marshaling	5.52	.99	1.00	7.00	-.94	1.40
ESE _Implementing	5.58	.90	1.00	7.00	-.95	1.56
Guanxi	5.76	.79	1.90	7.00	-1.18	2.63
Emotional Intelligence	3.90	.54	1.81	5.00	-.29	.71
Linear Thinking	42.66	5.94	15.00	52.00	-1.08	1.81
EIS	3.19	.51	1.00	4.00	-1.03	2.38
LDM	3.43	.54	1.00	4.00	-1.13	1.06
Nonlinear Thinking Style	36.71	6.13	13.00	52.00	-.18	.31
IIS	2.91	.55	1.00	4.00	-.40	.64
NDM	2.68	.61	1.00	4.00	-.09	-.25
Balanced Thinking	6.99	5.78	.00	39.00	.92	.92

Correlations

Correlations between measures ranged from -.58 to + .92. Balanced thinking style and Nonlinear Decision Making (NDM) had negative correlations at $r = -.58$, $p < .01$, indicated that individuals having a nonlinear decision making style tended to be more flexible in the movement between linear and nonlinear thinking modes. The overall Entrepreneurial Self Efficacy (ESE) and ESE in the planning stage had the highest positive correlation at $r = .92$, $p < .01$, indicating that individuals had higher confidence in the entrepreneurial activities required at the planning stage tend to have higher confidence in their ability in the overall entrepreneurial process. Table 3 presents the full correlation matrix.

Reliability Test

Reliability tests were performed for all scales. The subscale for Entrepreneurial self-efficacy in Implementing stage yielded the highest score at α = .926, and Entrepreneurial Intention scale yielded the lowest score at α =. 686. Three items of PsyCap scale were removed respectively (PS20R, PS13R, and PS23R), resulted in increased score at α = .936. Three items of Guanxi scale were removed respectively (QX10, QX9, and QX3), resulted in increased score at α = .860. Table 4 presents Cronbach's Alpha scores for all variables after adjustment.

Table 3.

Cronbach's alpha

Variables	Original	After
PsyCap	.896	.936
Entrepreneurial Intention	.686	.686
ESE	.957	.957
ESE_ Searching	.863	.863
ESE_ Planning	.866	.866
ESE_ Marshaling	.823	.823
ESE_ Implementing	.926	.926
Linear Thinking	.873	.873
EIS	.863	.863
LDM	.788	.788
Nonlinear Thinking	.850	.850
IIS	.873	.873
NDM	.783	.783
QuanXi	.836	.860
Emotional Intelligence	.909	.909

Table 4.

Correlation matrix

	Psy Cap	EI	ESE	ESE_S	ESE_P	ESE_M	ESE_I	Linear	EIS	LDM	Non Linear	IIS	NDM	Balance	QX	EIQ
PsyCap	1.00															
EI	.41	1.00														
ESE	.65	.58	1.00													
ESE_S	.55	.54	.89	1.00												
ESE_P	.56	.54	.92	.79	1.00											
ESE_M	.61	.51	.90	.71	.76	1.00										
ESE_I	.61	.48	.88	.67	.75	.78	1.00									
Linear	.45	.27	.42	.35	.34	.40	.41	1.00								
EIS	.39	.24	.35	.30	.29	.33	.34	.92	1.00							
LDM	.41	.23	.38	.32	.30	.38	.38	.80	.50	1.00						
Nonlinear	.19	.09	.21	.18	.19	.17	.21	.36	.39	.19	1.00					
IIS	.22	.12	.23	.20	.20	.20	.22	.44	.50	.22	.88	1.00				
NDM	.06	.01	.09	.08	.09	.07	.10	.07	.06	.07	.73	.33	1.00			
Balance	.16	.11	.12	.10	.08	.13	.13	.43	.34	.41	-.54	-.35	-.58	1.00		
QX	.50	.33	.62	.48	.51	.61	.63	.46	.38	.43	.27	.27	.14	.12	1.00	
EIQ	.60	.42	.67	.55	.58	.63	.64	.41	.37	.35	.20	.22	.09	.14	.57	1.00

Note. N = 1,707; correlations greater than .06 are statistically significant ($p < .05$)

Models and Hypotheses

Initial Analysis

Specification. Twelve factors were created in Amos, including (a) a 21-item scale for PsyCap, (b) a 6-item scale for Entrepreneurial Intention, (c) a 7-item scale for Quanxi, and (d) a 16-item scale for Emotional Intelligence. Entrepreneurial Self-efficacy was divided into four factors: (e) a 3-item subscale for the Searching stage, (f) a 4-item subscale for the Planning stage, (g) a 3-item subscale for the Marshaling stage, and (h) a 9-item subscale for the Implementing stage. Linear thinking style was divided into two factors: (i) an 8-item subscale for External Information Source (EIS), and (j) a 5-item subscale for Linear Decision Making (LDM), while Nonlinear thinking style was divided into (k) an 8-item subscale for Internal Information Source (IIS) and (j) a 5-item subscale for Nonlinear Decision Making (NDM).

Identification. There were more than three items for each factor and the number of known parameters (p (p+1) /2 = 4560) was more than the number of unknown parameters (95+95+66 = 256), therefore, this model is over-identified (df = 4304).

Estimation. A sign of good fit was indicated by three goodness of fit indices: Comparative Fit Index (CFI) of .95 or higher, the Tucker Lewis Index (TLI) of .95 or higher and the Root Mean Square Error of Approximation (RMSEA) of less than .080. The original model fit does not meet all three model fit indices (CFI = .808, TLI = .801, RMSEA = .049). See Figure 1.

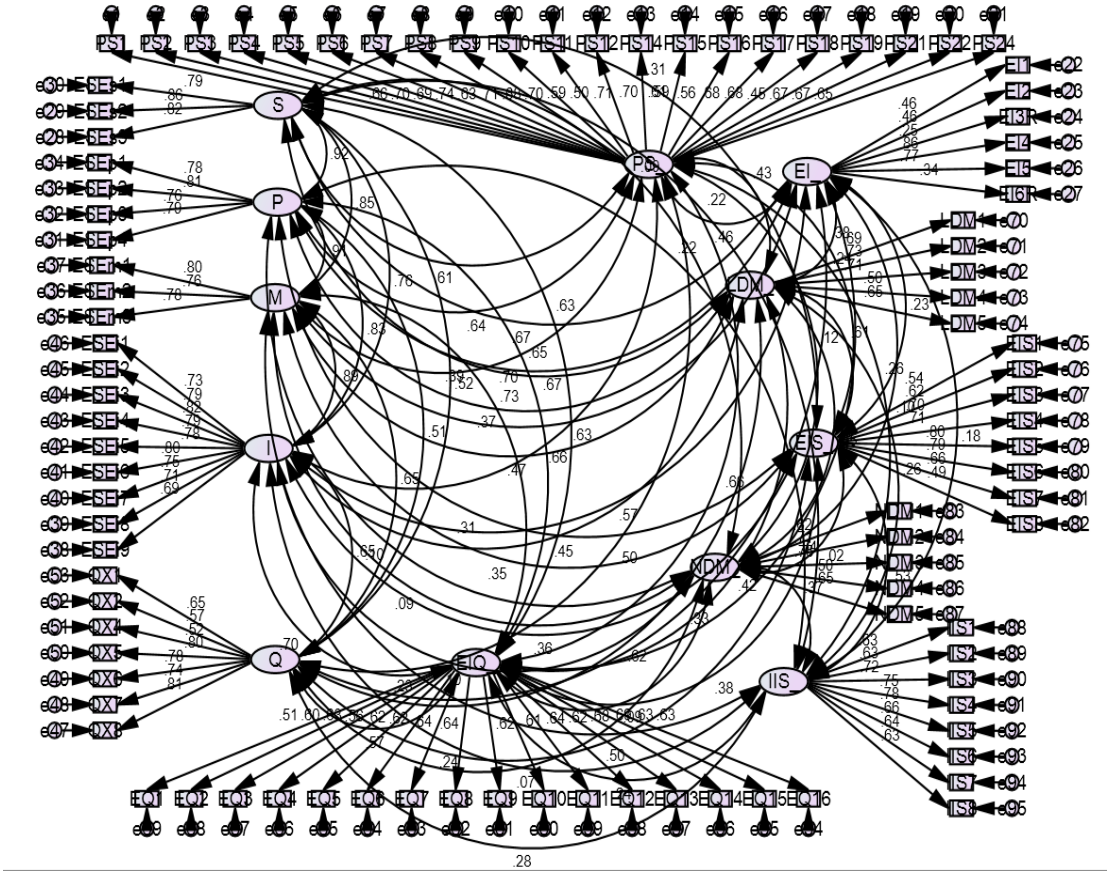

Figure 9. Original CFA Model Fit.

Two-phase SEM Analysis

Since the overall measurement model did not provide a good fit to the data, a two-phase SEM analysis was conducted for each hypothesized model to determine to which the misfit was attributed.

Model 1 Measurement Phase. To test hypothesis 1a and 1b, ten variables, including (a) External Information Source (EIS), (b) Linear Decision Making (LDM), (c) Internal Information Source (IIS), (d) Nonlinear Decision Making, (e) Entrepreneurial Self-Efficacy in the Searching stage (ESE_ Searching), (f) ESE in the Planning stage (ESE_ Planning), (g) ESE in the Marshaling stage (ESE_ Marshaling), and (h) ESE in the Implementing stage (ESE_ Implementing) were included in a CFA model. (i) Linear Thinking Style (LTS) and (j) Nonlinear

Thinking Style (NTS) were created as second latent factors in this measurement model. The initial CFA model did not yield a good fit (CFI = .874, TLI = .866, RMSEA = .059), as NTS did not emerge as a second later factor for NDM (β = .175, ρ = .131), and IIS (β = 2.115, ρ = .131).

To improve the measurement model, Nonlinear Thinking Style was removed from the CFA model and direct relationships were established through the subscales of NTS and ESE_ Searching. Also, one item (EIS8) with extremely low loadings was excluded from the model (< .50). At last, residual terms of items within the same factor in this model were allowed to freely covary. These resulted in an improved model in Figure 2, and the modified CFA model satisfied all three goodness-of-fit indices (CFI = .957, TLI = .951, RMSEA = .036).

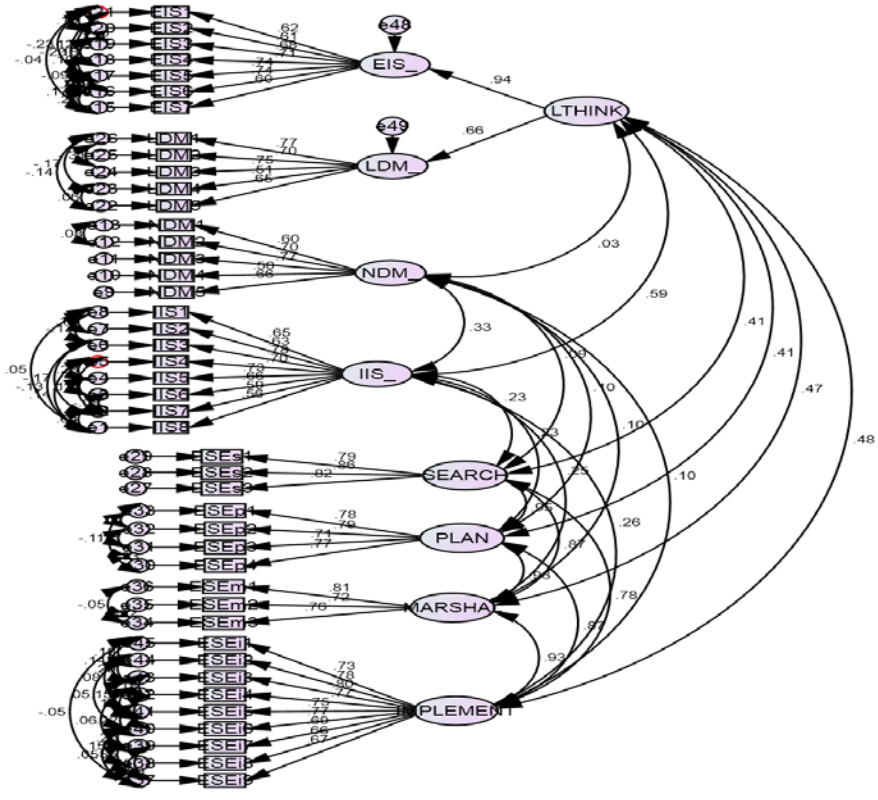

Figure 10. Measurement Model 1.

Model 1 Structural Phase. With a good-fit measurement model, the structural phase consisted of replacing the nonstructural covariances among thinking styles and entrepreneurial self-efficacy in different stages with the hypothesized structure indicated in Hypothesis 1a and 1b and re-analyzing the data. The proposed model yield a good fit and satisfied all three goodness of fit indices (CFI = .951, TLI = .956, RMSEA = .035).

H1a was partially supported, where NDM had no effect on ESE_ Searching (β = .044, ρ = .136) and EIS had a positive effect on ESE_ Searching (β = .36, ρ < .001). Hypothesis 2b was supported, where Linear Thinking Style had strong positive effects on ESE_ Planning (β = .94, ρ < .001), ESE_ Marshaling (β =1.01, ρ < .001), and ESE_ Implementing (β = .92, ρ < .001). The standardized regression coefficient between ESE_ Marshaling and LTS was larger than one, indicating that there was certain degree of multicollinearity in the data, that is, two or more variables were highly correlated. However, the presence of multicollinearity does not affect the efficacy of extrapolating the model to new data (Deegan, 1978). Linear Thinking Style emerged as the key predictor of ESE in the later stages of entrepreneurial process (R^2 = .98, R^2 = 1.03, R^2 = .85). Figure 3 presents the model.

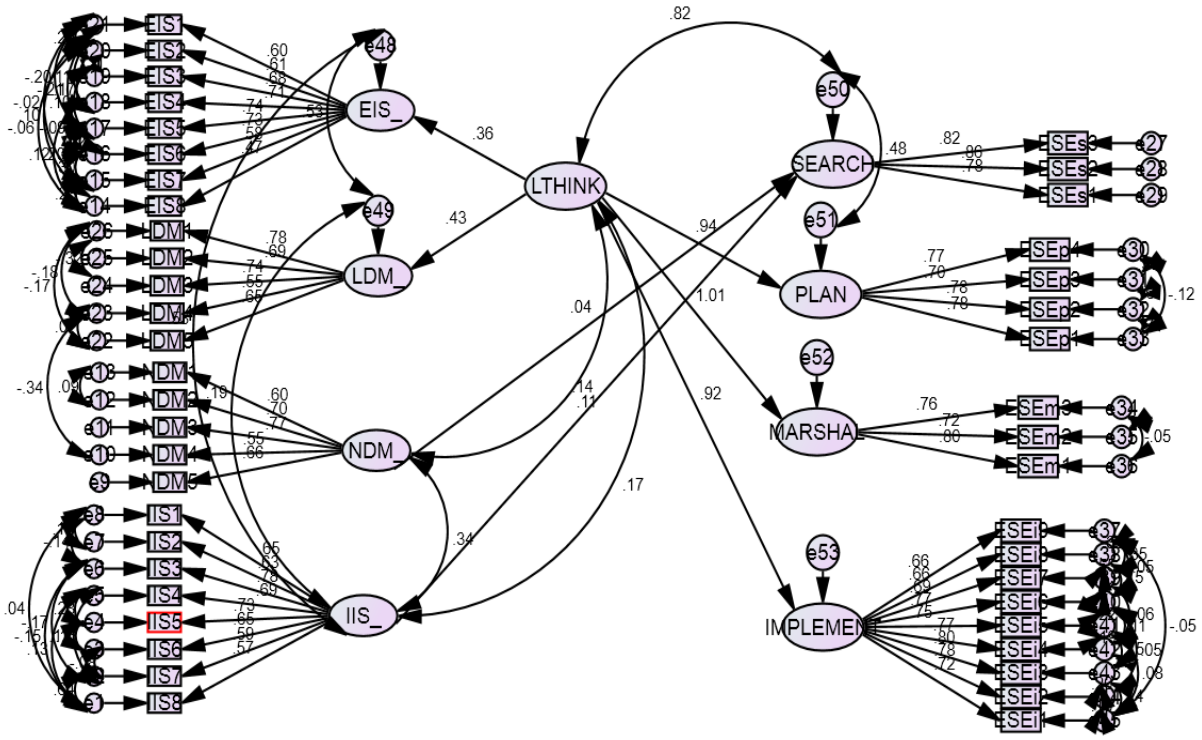

Figure 11. Structural Model 1.

Model 2 Measurement Phase. Balanced Linear/nonlinear Thinking style and ESE in the four stages were included in a CFA model, where overall ESE was created as second latent factor, supported by ESE_ Searching, ESE_ Planning, ESE_ Marshaling, and ESE_ Implementing. The measurement model in Figure 4 yielded a good fit and met all three model-fit indices (CFI = .972, TLI = .965, RMSEA = .051).

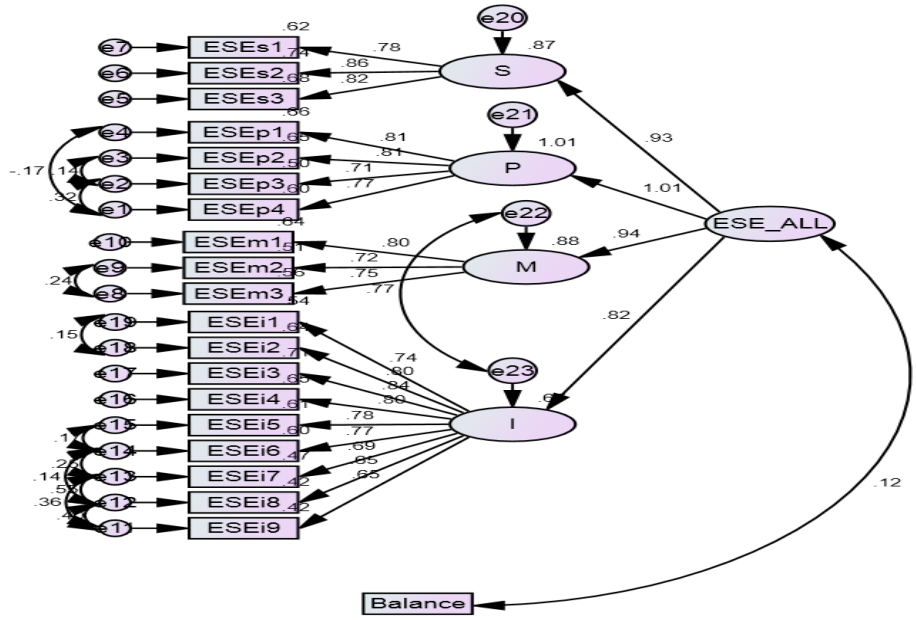

Figure 12. Measurement Model 2.

Model 2 Structural Phase. With a good-fit measurement model, the structural phase consisted of replacing the covariances between balanced thinking style and overall entrepreneurial self-efficacy with the hypothesized structure indicated in Hypothesis 2 and re-analyzing the data. The proposed model yielded a good fit and met all three model fit indices (CFI = .972, TLI = .965, RMSEA = .051).

Hypothesis 2 was not supported where balanced thinking style had a negative effect (the more balanced thinking, the smaller the score) on the overall ESE ($\beta = .12$, $\rho < .001$). Balanced thinking style did not emerge as the key predictor of overall ESE ($R^2 = .01$). Figure 5 presents the structural model.

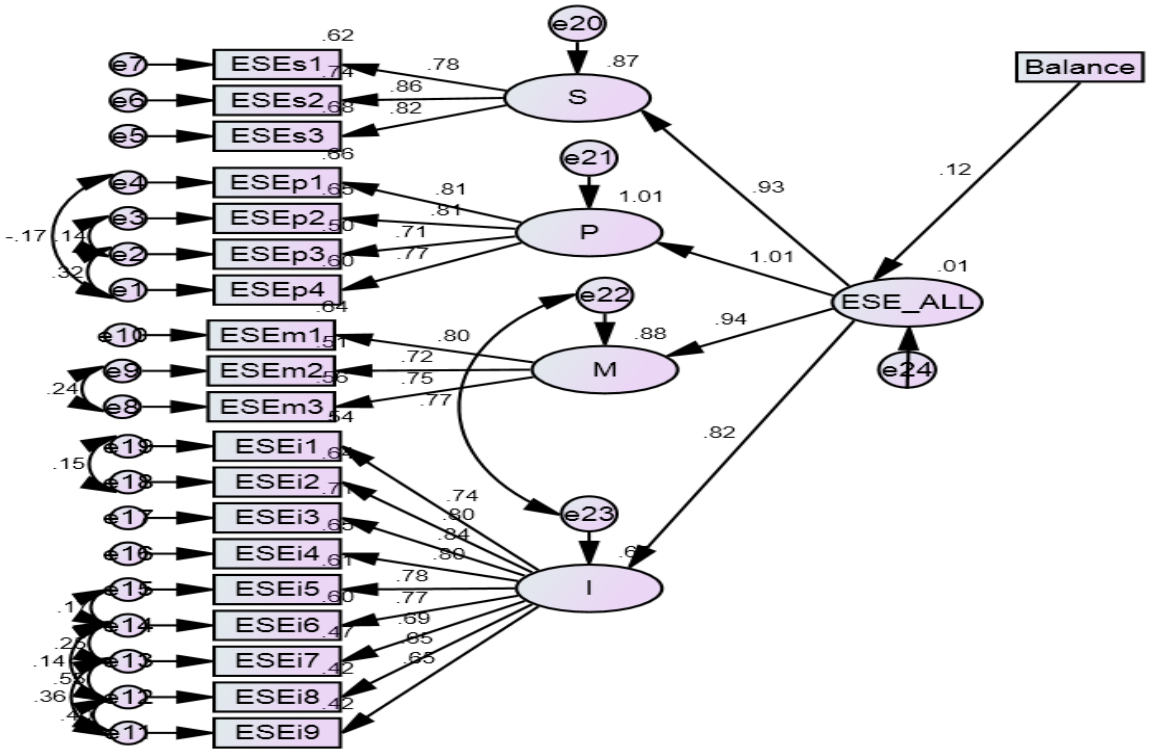

Figure 13. Structural Model 2.

Model 3 Measurement Phase. Emotional Intelligence, ESE_ Planning, ESE_ Marshaling, and ESE_ Implementing were included in a CFA model to test the measurement portion of hypothesis 3. The model in Figure 6 yielded good fit and satisfied all three model fit indices (CFI = .972, TLI = .967, RMSEA = .037).

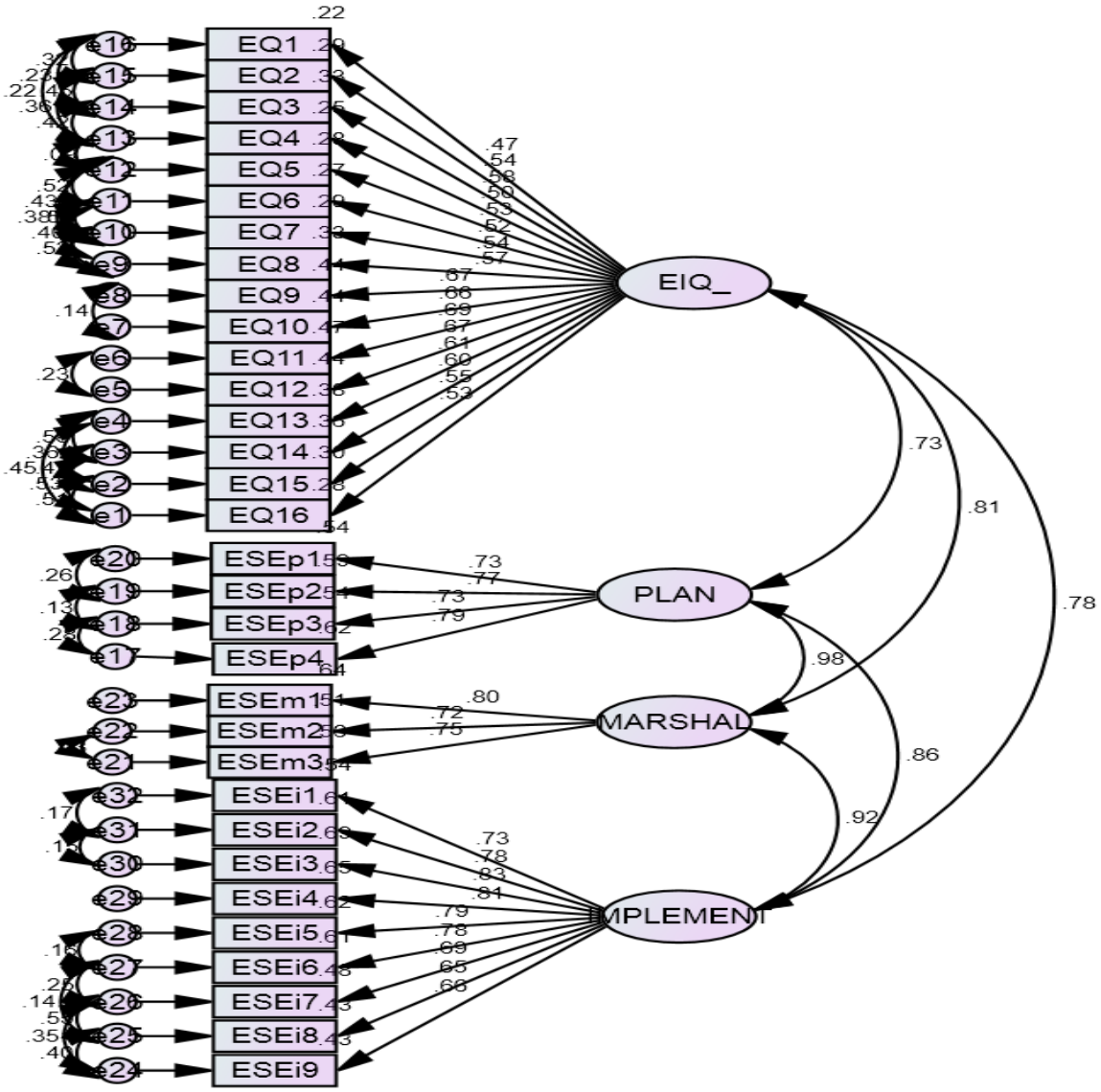

Figure 14. Measurement Model 3.

Model 3 Structural Phase. With a good-fit measurement model, the structural phase consisted of replacing the covariances among Emotional Intelligence, ESE_ Planning, ESE_ Marshaling and ESE_ Implementing with the hypothesized structure indicated in Hypothesis 3 and re-analyzing the data. The proposed model in Figure 7 yielded good fit and met all three goodness of fit indices (CFI = .959, TLI = .952, RMSEA = .044).

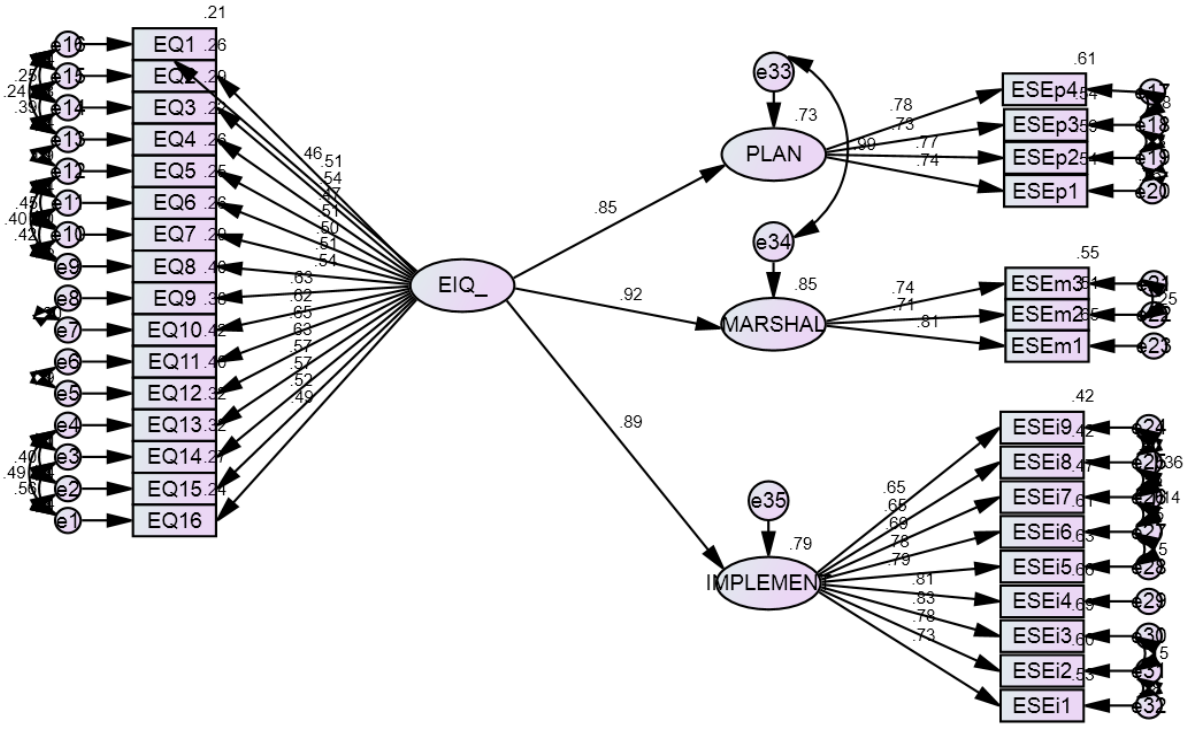

Figure 15. Structural Model 3.

Hypothesis 3 was supported. Emotional Intelligence had strong positive effects on Entrepreneurial Self-Efficacy in the Planning stage ($\beta = .85$, $\rho < .001$), Marshaling stage ($\beta = .92$, $\rho < .001$) and implementing stage ($\beta = .89$, $\rho < .001$). Emotional intelligence emerged as a key predictor of entrepreneurial self-efficacy in the later stages of entrepreneurial process ($R^2 = 0.85$, $R^2 = 0.92$, $R^2 = 0.89$).

Model 4 Measurement Phase. *Guanxi*, ESE_ Searching, ESE_ Planning, ESE_ Marshaling, and ESE_ Implementing were included in a CFA model to test the measurement portion of hypothesis 4. The measurement model in Figure 8 yielded good fit and satisfied all three model fit indices (CFI = .959, TLI = .951, RMSEA = .052).

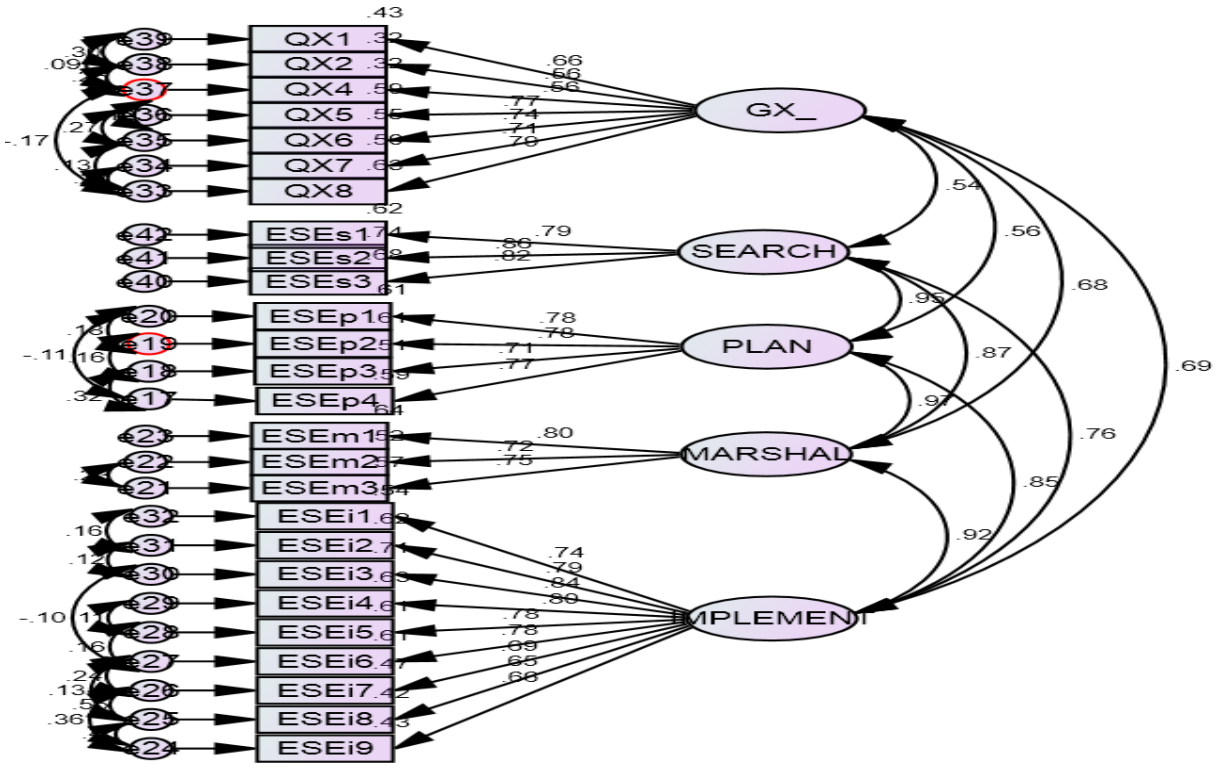

Figure 16. Measurement Model 4.

Model 4 Structural Phase. With a good-fit measurement model, the structural phase consisted of replacing the covariances among *Guanxi*, ESE_ Searching, ESE_ Planning, ESE_ Marshaling and ESE_ Implementing with the hypothesized structure indicated in Hypothesis 4 and re-analyzing the data. The proposed model in Figure 9 yielded good fit and met all three goodness of fit indices (CFI = .964, TLI = .956, RMSEA = .049).

Hypothesis 4 was supported. *Guanxi* had strong positive effects on Entrepreneurial Self-Efficacy in the Searching stage ($\beta = .78$, $\rho < .001$), Planning stage ($\beta = .85$, $\rho < .001$), Marshaling stage ($\beta = .96$, $\rho < .001$), and Implementing stage ($\beta = .96$, $\rho < .001$). *Guanxi* emerged as a key predictor of Entrepreneurial Self-efficacy in all four stages ($Rs^2 = .61$, $Rp^2 = .73$, $Rm^2 = .91$, $Ri^2 = .92$).

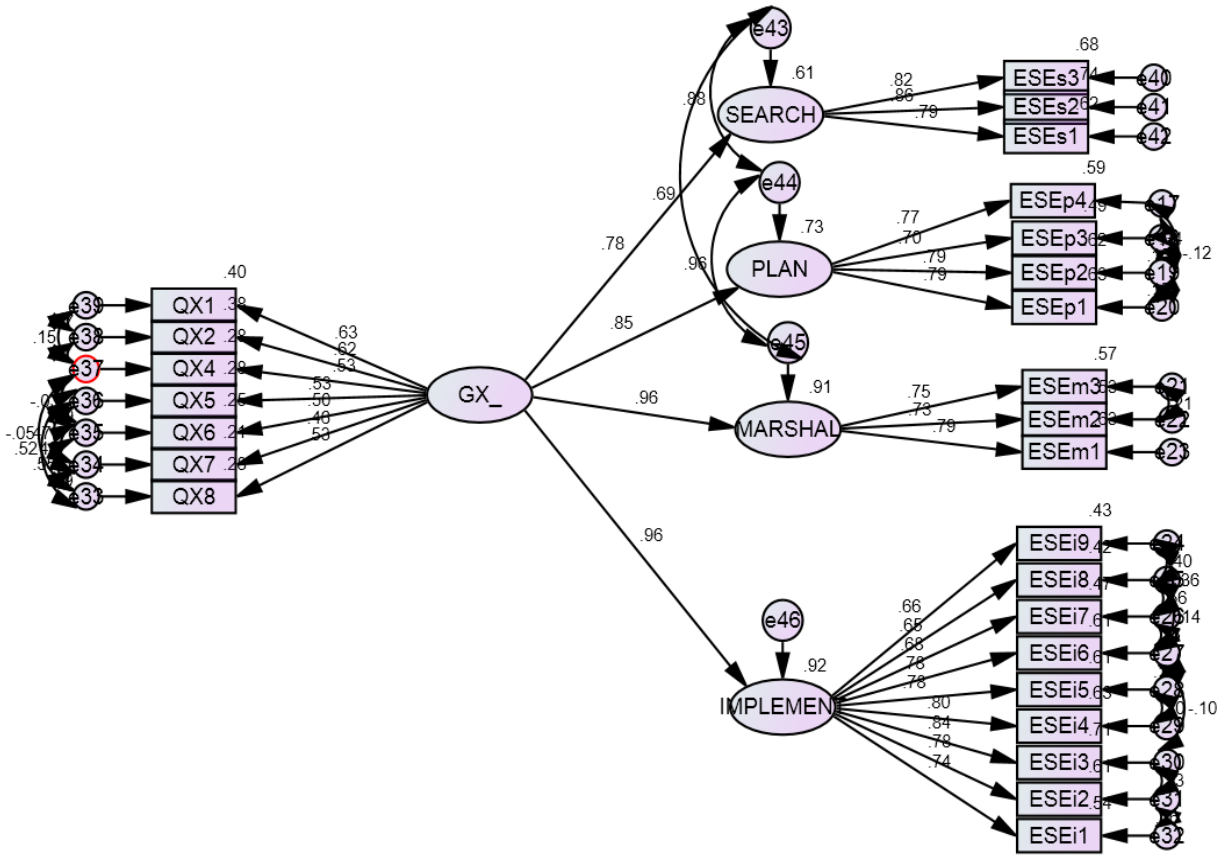

Figure 17. Structural Model 4.

Model 5 Measurement Phase. Balanced Linear/nonlinear thinking style was removed from the final model, as there was no hypothesized relationship between Balanced Thinking Style and overall Entrepreneurial Self-efficacy according to the results of previous analysis. Entrepreneurial Intention, PsyCap, *Guanxi* and Emotional intelligence were included in a CFA model as latent variables. The overall Entrepreneurial Self-efficacy was entered as a second order latent variable, supported by ESE_ Searching, ESE_ Planning, ESE_ Marshaling, and ESE_ Implementing. The measurement model in Figure 10 yielded a good fit and met all three goodness of fit indices (CFI = .956, TLI = .952, RMSEA = .031).

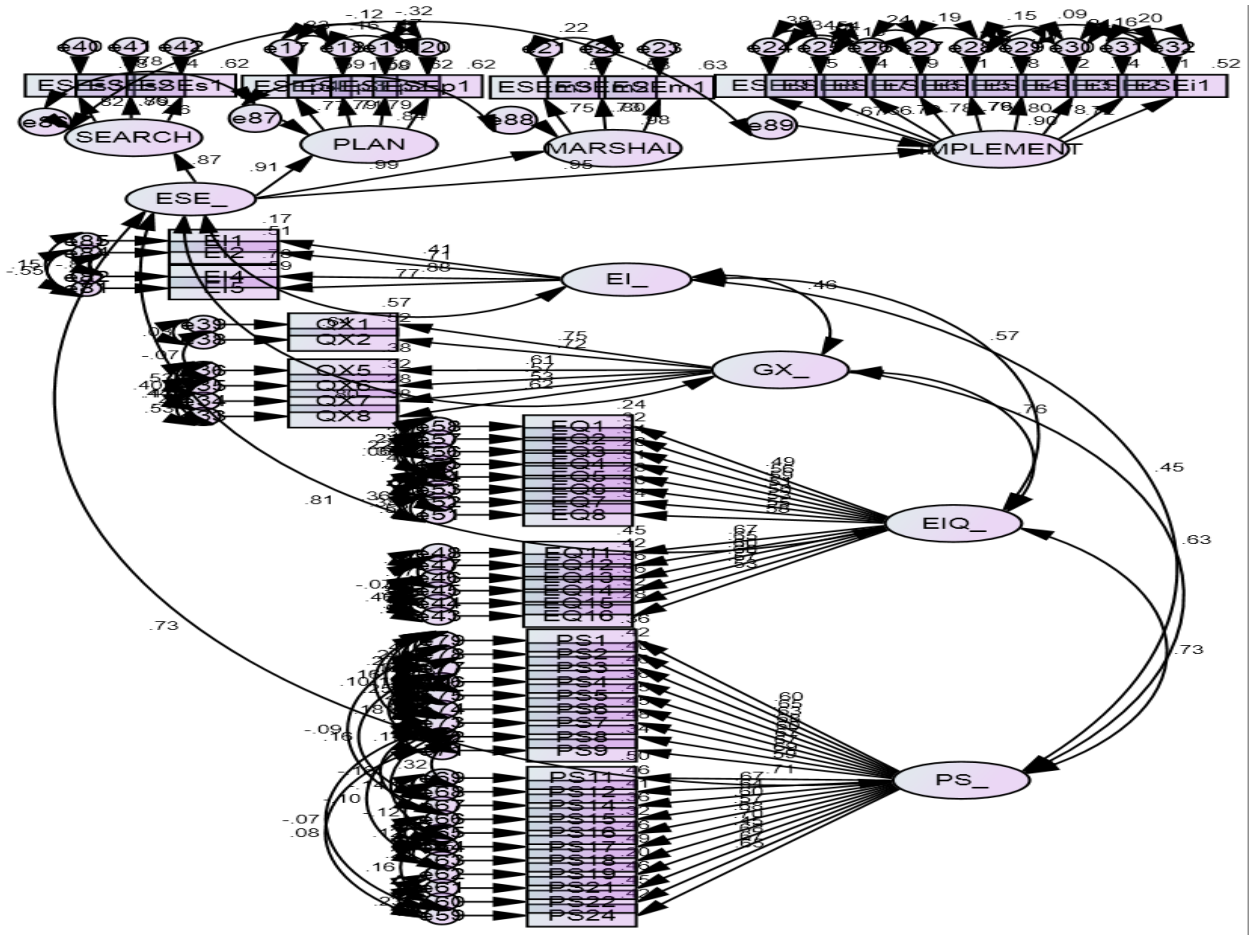

Figure 18. Full Measurement Model.

Model 5 Structural Phase. Besides the variables included in the measurement model, control variables, including Gender, Work Experience and Subjective norms were also entered in the structural model. The proposed model in Figure 11 yielded a good fit and satisfied all three goodness of fit indices (CFI = .954, TLI = .950, RMSEA = .030).

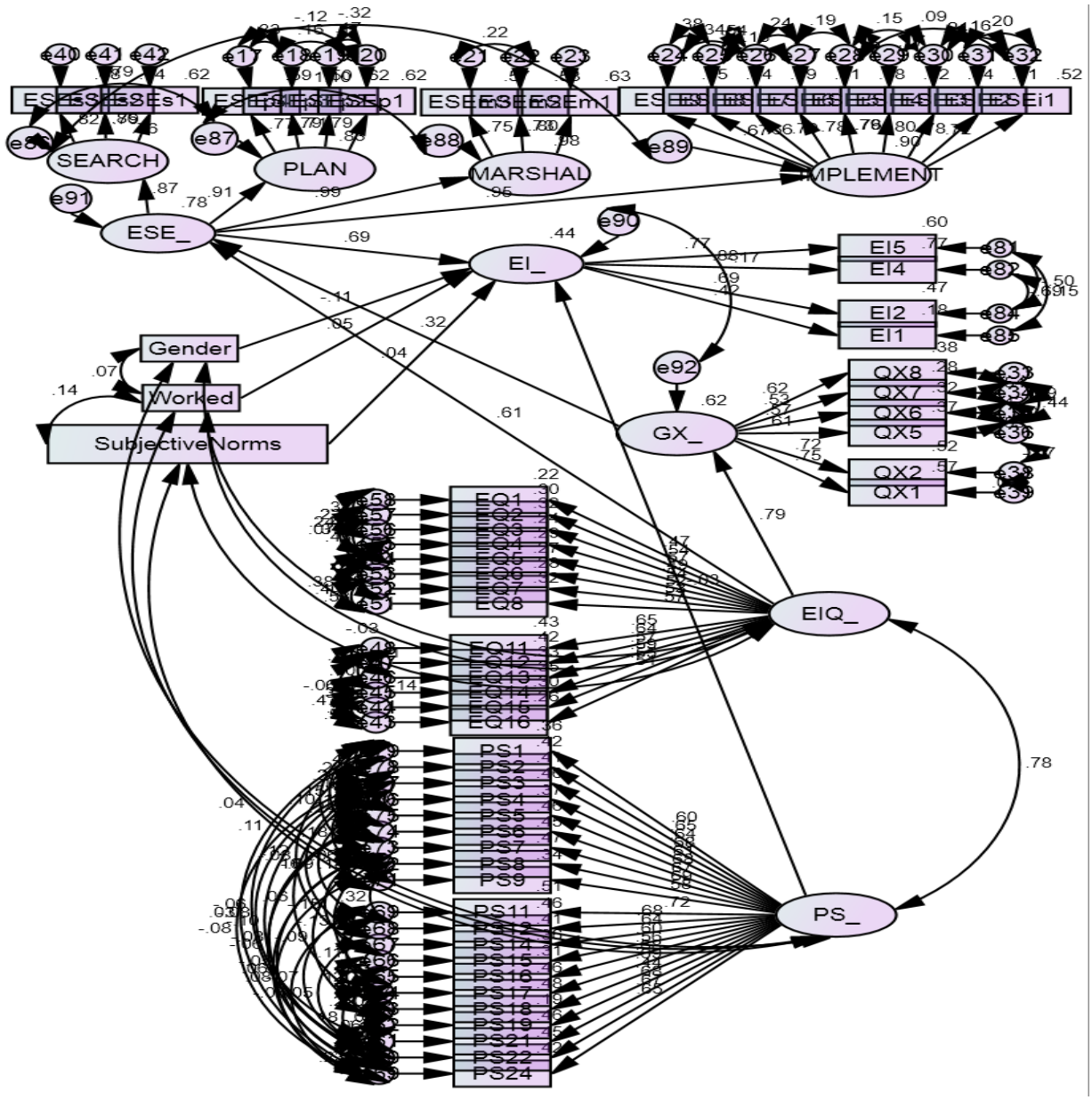

Figure 19. Full Structural Model.

Hypothesis 5a was supported. There was a strong positive relationship between overall Entrepreneurial Self-Efficacy (ESE) and Entrepreneurial Intention ($\beta = .69$, $\rho < .001$) and ESE emerged as the key predictor of Entrepreneurial Intention ($R^2 = .47$). Hypothesis 5b was not supported. There was no direct relationship between Psychological Capital and Entrepreneurial Intention ($\beta = -.03$, $\rho = .361$). Hypothesis 5c was supported. Emotional Intelligence had a strong

positive effect on *guanxi* ($\beta = .79, \rho < .001$), and emerged as the key predictor of *guanxi* ($R^2 = .62$). Hypothesis 5d was supported, and the effect of Emotional Intelligence on ESE was partially mediated by *guanxi*. Emotional intelligence affected ESE directly ($\beta = .86, \rho < .001$), as well as indirectly through *guanxi*, The significance of indirect effect was tested through bootstrapping. ($\beta = .25, \rho < .001$).

Regarding the control variables, significant differences among Gender, Work experience and Entrepreneurial family background were found on entrepreneurial Intention ($\beta_G = -.15, \rho < .001$; $\beta_W = .053, \rho < .05$; $\beta_E = .039, \rho < .05$). These differences were further analyzed through ANOVA (see discussion section).

Final Model

Mediation Analysis. To investigate the potential mediation effect Psychological Capital (PsyCap) on Entrepreneurial Intention (EI) through Entrepreneurial Self-Efficacy (ESE), a four-step mediation analysis was adopted.

- Step 1: The path from ESE to EI was removed to test whether there was an effect between PsyCap and EI that might be mediated. In Figure 12, PsyCap had a positive effect on EI ($\beta = .47, \rho < .001$).

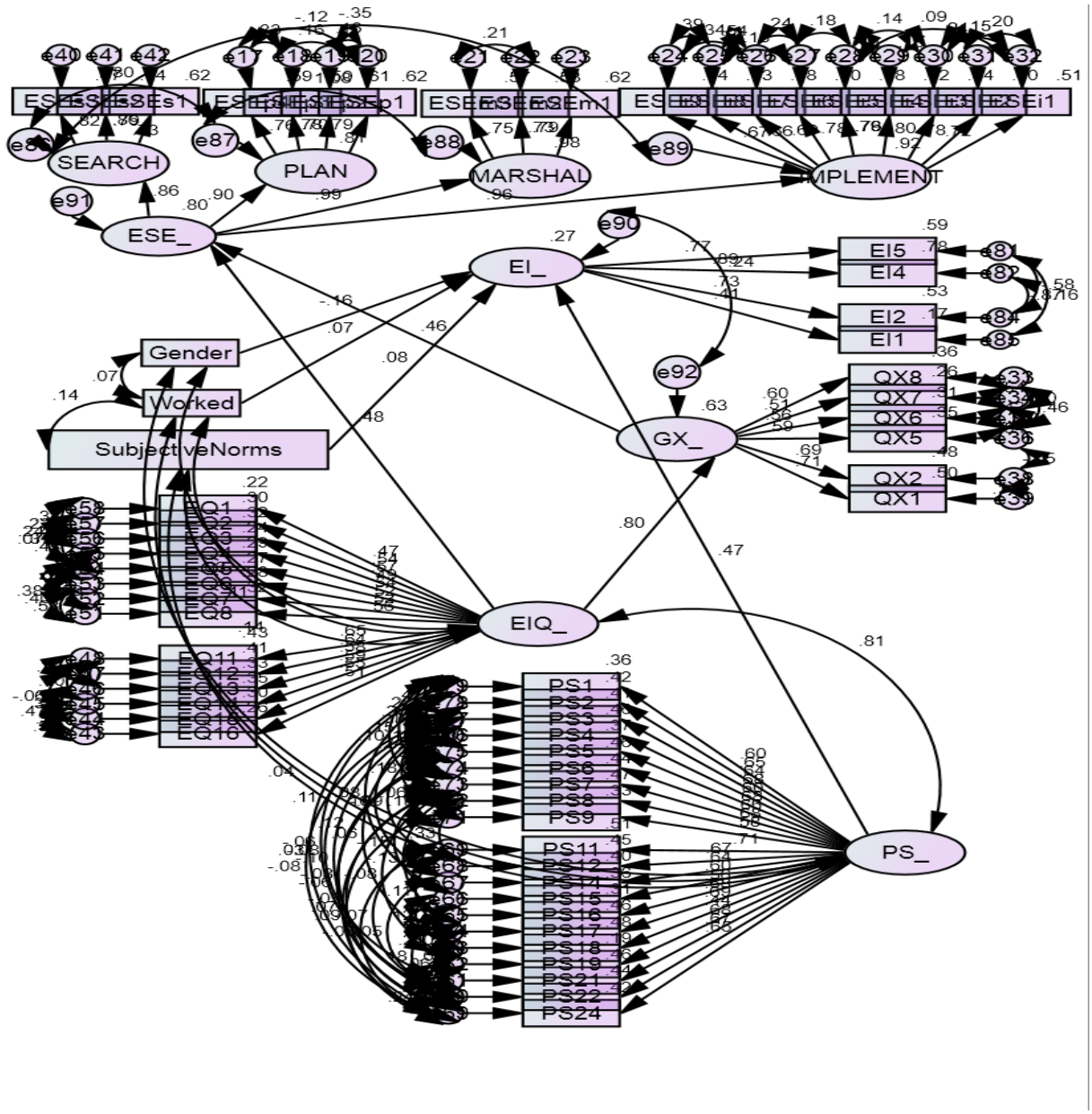

Figure 20. Mediation Model_ Step 1.

- Step 2: ESE was treated as an outcome variable to test whether PsyCap was correlated with ESE. In Figure 13, PsyCap had a positive effect on ESE ($\beta = .25, \rho < .001$).

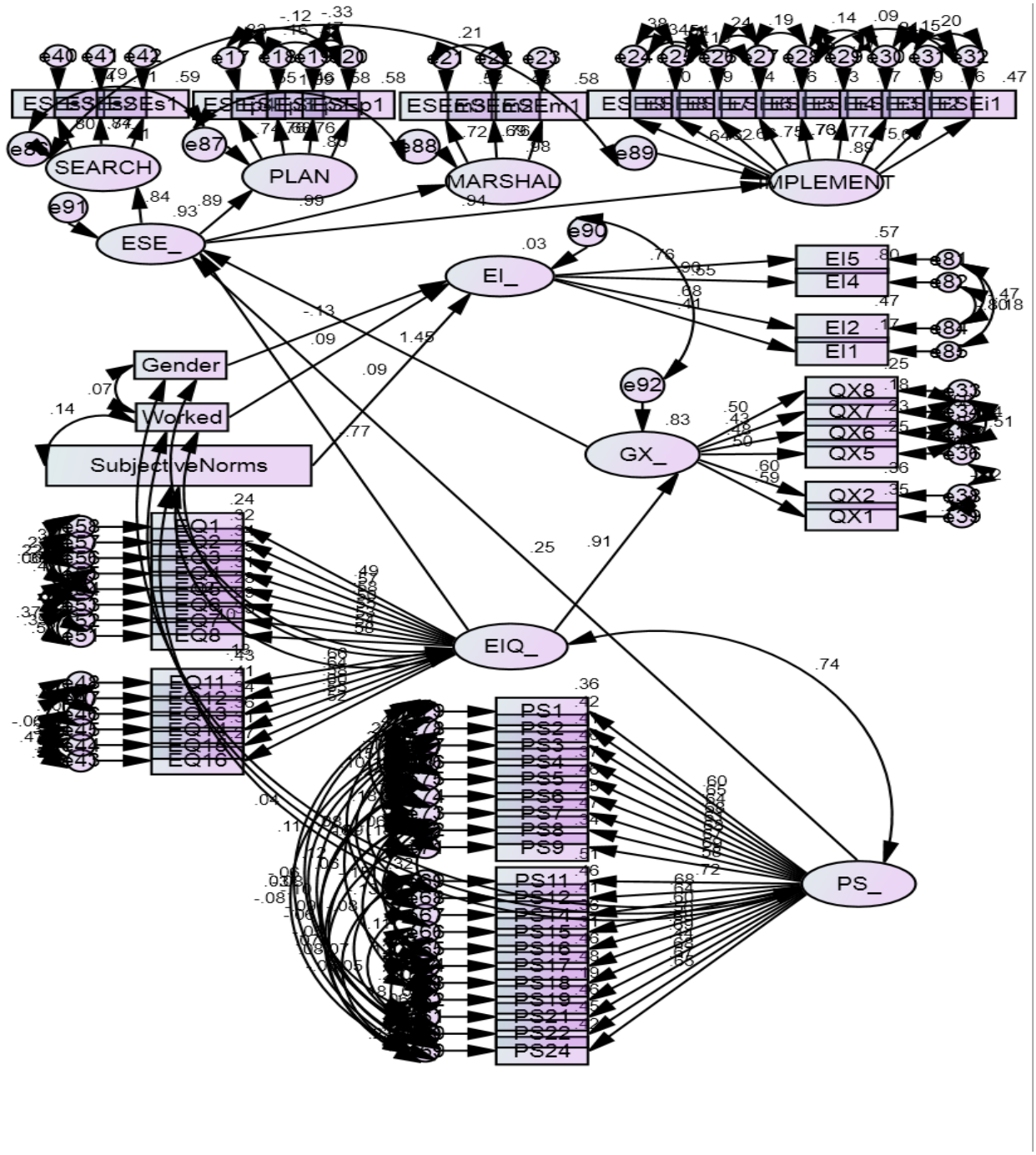

Figure 21. Mediation Model_ Step 2.

- Step 3: EI was treated as an outcome variable to test whether ESE was correlated with EI. PsyCap was controlled to establish the effect of ESE on EI. In Figure 14, ESE had a

positive effect on EI (β = .69, ρ < .001) and PsyCap had no effect on EI (β = -.03, ρ = .361).

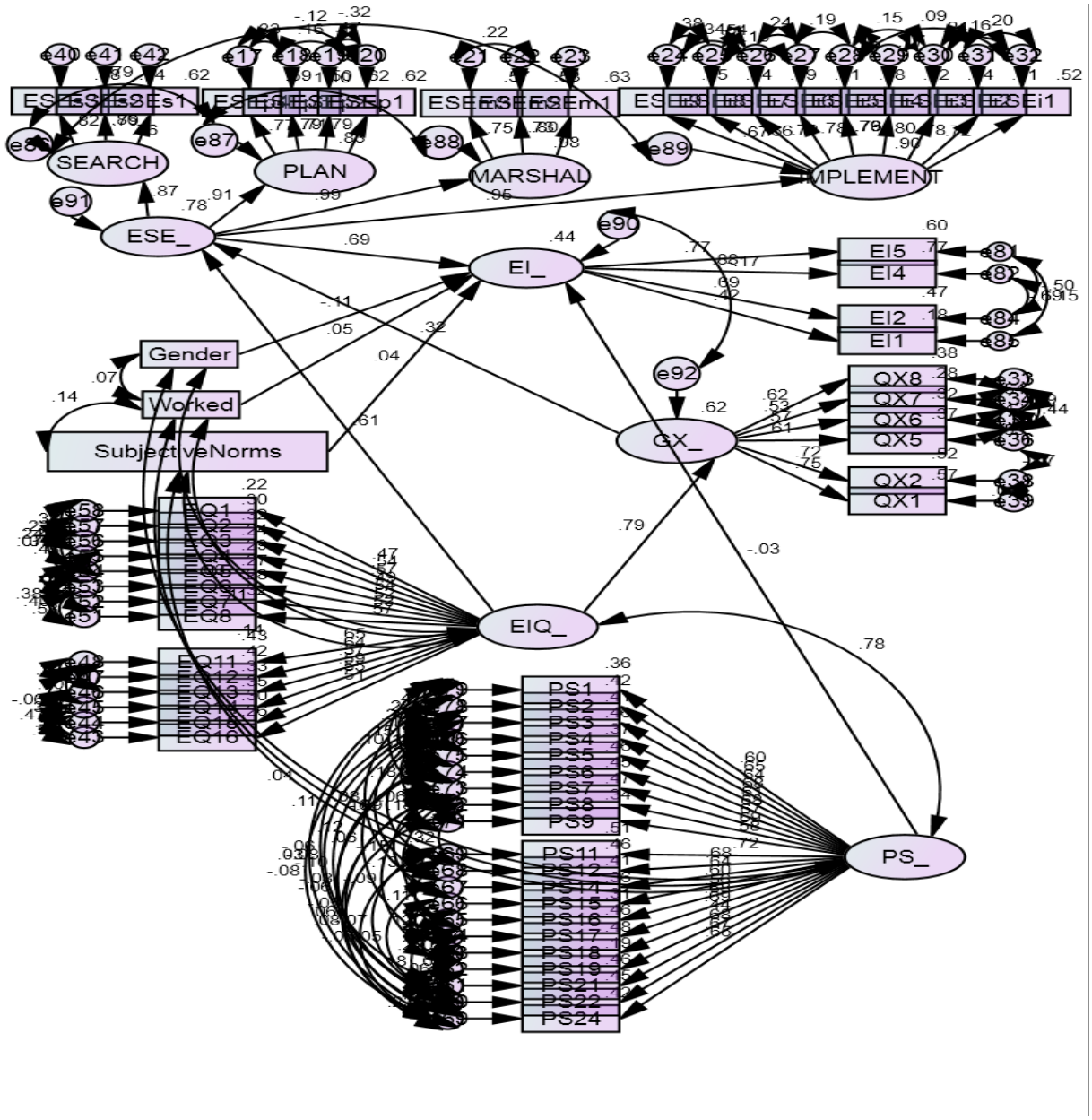

Figure 22. Mediation Model_ Step 3.

- Step 4: Bootstrapping was performed to test the significance of the indirect effect from PsyCap to EI, and Psychological Capital had a positive effect on Entrepreneurial intention that was fully mediated by Entrepreneurial Self-Efficacy, and the indirect effect

was statistically significant ($\beta = .162$, $\rho < .001$). The final model in Figure 15 yielded an improved model fit and satisfied all three goodness of fit indices (CFI = .955, TLI = .950, RMSEA = .030).

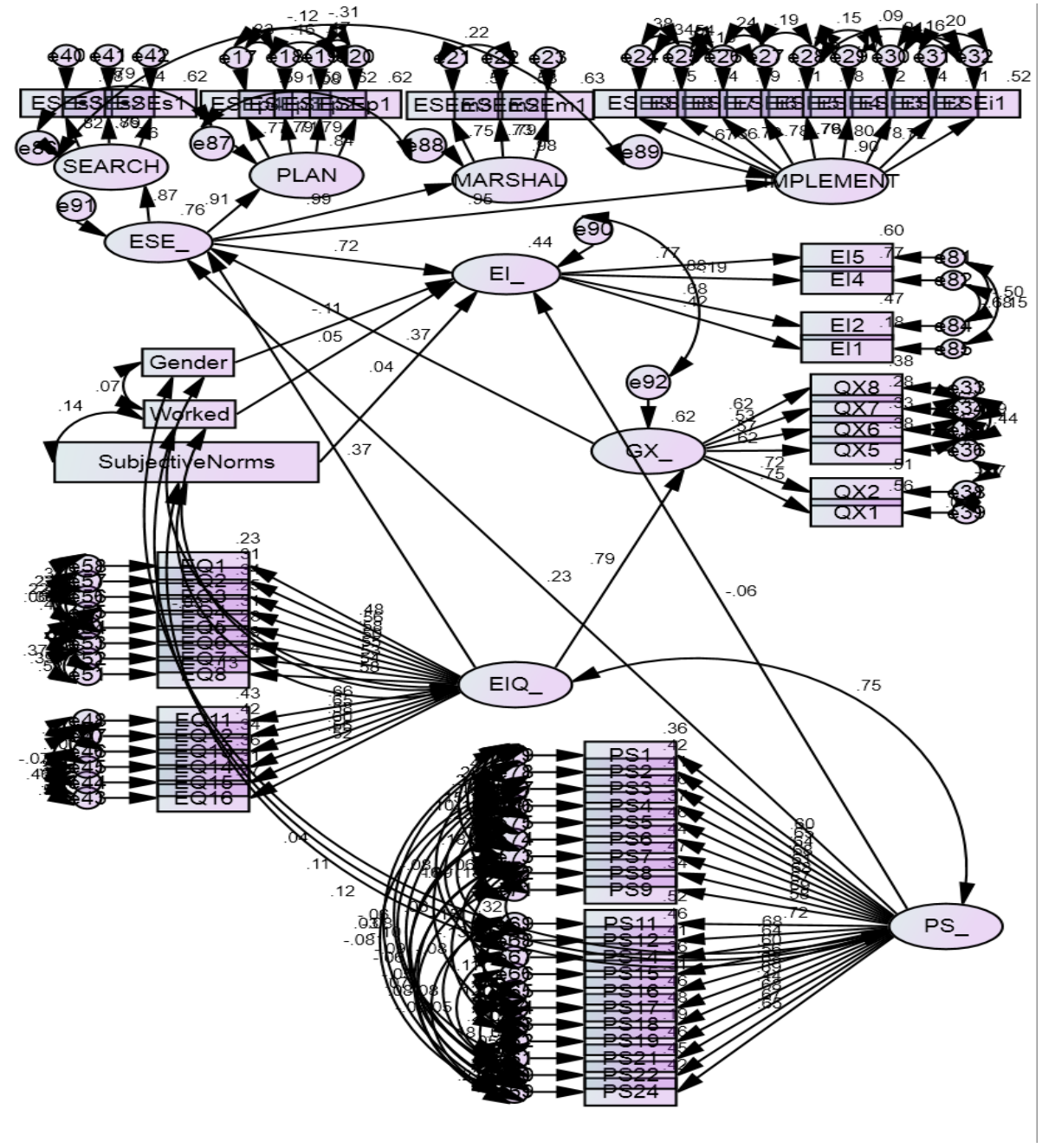

Figure 23. Final Model.

Chapter Summary

The final sample consists of 1,707 senior students. A two-phase structural equation analysis was performed for each hypothesized models, as well as a four-step mediation analysis. Entrepreneurial self-efficacy and emotional intelligence emerged as the biggest predictor of entrepreneurial intention. *Guanxi* moderated emotional intelligence and PsyCap approved to be a precursor to the more domain specific entrepreneurial self-efficacy.

Chapter 5 Discussion

Introduction

China has been experiencing structural employment of college graduates for the last decade. Each year, approximately 3 million or 32% of all college students are unable to secure jobs in the first year after graduation. While creation of new business has great impact on economic growth, employment and innovation, entrepreneurial activities continue to be unattractive to educated youth in China, especially when compared to other developing countries in Asia. This paper aims to examine entrepreneurial intention among Chinese college graduating seniors in an effort to foster entrepreneurship in China by building their readiness for an entrepreneurial career among psychological, cognitive, affective and social dimensions.

Interpretation of Findings and Implications

The Psychological Dimension

Psychological Capital, or PsyCap, is comprised of general self-efficacy, hope, optimism and resiliency, which are individuals' positive psychological states of development (Avolio & Luthans, 2006). Although there was a strong positive relationship between Entrepreneurial Intention (EI) and PsyCap ($\beta = .47$, $\rho < .001$), this positive effect was fully mediated by Entrepreneurial Self-efficacy (ESE), where all of the significant variance of the relationship was accounted for by the direct effect from ESE to Entrepreneurial Intention.

It seems logical that, within the context of entrepreneurship, Entrepreneurial Self-Efficacy that measures the degree of certainty about individuals' ability to successfully launch an entrepreneurial venture is a stronger predictor of Entrepreneurial Intention than the general self-efficacy, hope, optimism and resiliency. However, an individual' general positive psychological states of development did have a positive effect on the perceived ability to accomplish relevant

tasks required in the venture creation process, which in turn affected the attitude towards entrepreneurship as a career choice. Similar to Jensen and Luthans' study (2006), when aligning entrepreneurial goals with general positive psychological state, PsyCap becomes more valuable in generating self-perception of leadership that leads to the capability to better withstand challenging environment and realize entrepreneurial ideas. It is also consistent with the study, where the relationship between PsyCap and Entrepreneurial Intention can be enhanced by formal entrepreneurship education that emphasizes on entrepreneurial skill development in the venture creation process (Sebora & Tantiukoskula, 2014).

The Cognitive Dimension

Entrepreneurs' preferred modes of thinking influence multiple dimensions of entrepreneurial activities (Allinson & Hayes, 1996; Aldrich & Zimmer, 1986). In this study, individuals were classified as having Linear Thinking Style (LTS), Nonlinear Thinking Style (NTS) or Balanced Thinking Style (BTS). LTS was measured through External Information Sources (EIS) and Linear Decision Making (LDM), while NTS was measured through Internal Information Sources (IIS) and Nonlinear Decision Making (NDM).

Linear Thinking Style emerged as the key driver of Entrepreneurial Self-Efficacy (ESE) in the later stages of entrepreneurial process which consisted of the Planning stage (R^2 = .98), Marshaling stage (R^2 = 1.03) and Implementing stage (R^2 = .85). Nonlinear Thinking Style (NTS) did not emerge as the key driver of ESE in the early stage of entrepreneurial process. However, Internal Information Source (IIS), one of the two dimensions of NTS, had positive effect on ESE in the Searching stage (R^2 = .13), indicating that IIS, such as intuition and insight, was helpful in the early stage of entrepreneurial process that involves opportunity identification. It is consistent with Baldacchino's study, where intuition is most effective when used together

with analysis in a versatile cognitive strategy, i.e. the utilization of both high levels of intuitive and analytical thinking styles (Baldacchino, 2013).

An unanticipated outcome of this study was that Balanced Thinking Style did not emerge as the driver of the overall Entrepreneurial Self-efficacy (R^2 = .01), while Linear Thinking Style appeared to play a critical role in all stages of entrepreneurial process. This suggests that obtaining traditional linear-oriented entrepreneurial education may actually facilitate the development of entrepreneurial intention. Therefore, to build a student's cognitive readiness for an entrepreneurial career, mere utilization of intuitive and nonlinear thinking to identify opportunities was not sufficient. Relevant business acumen and skills would need to be present to prepare students for future entrepreneurship and the likelihood of success for entrepreneurial career need to be perceived through analytical and rational thinking. On the other hand, people who naturally have linear thinking tendencies should incorporate elements of nonlinear thinking, such as, insight and intuition, which are crucial to entrepreneurs who must "generate novel and useful idea for business ventures" (Ward, 2004, p. 173).

The Affective and Social Dimension

In order to effectively increase perceived feasibility and desirability towards entrepreneurship, it is important to target both the cognitive and affective bases of Entrepreneurial Self-Efficacy. Emotional Intelligence (EIQ), as the key element in successful relationship management and social skills development (Engle & Nehrt, 2011), emerged as the key driver of Entrepreneurial Self-Efficacy (R^2 = .37). Similar to Phillath's study (2009), in a collectivist country, like China, the awareness of the "self" and "society" generated by EIQ was found critical in self-regulating in a relational collectivism scheme to create and stabilize opportunities for successful actions. Thus, emotionally intelligent individuals were more

confident in their ability to accomplish relevant tasks required during the venture creation process.

EIQ not only had a direct effect on Entrepreneurial Self-Efficacy, but also had an indirect effect on ESE through *guanxi.* As the personalized social network in China, *guanxi* emerged as the second predictor of Entrepreneurial Self-efficacy ($R^2 = .10$). *Guanxi* not only affords would-be entrepreneurs with preferential treatment to access reliable information and limited resources, but also provides the primary and binding power of personal relationships. As a result, it has direct impact on perceived feasibility of an entrepreneurial career.

There was also a strong relationship between Emotional intelligence and *Guanxi* ($\beta = .79$, $\rho < .001$), indicating that individuals with high levels of EIQ can capitalize fully upon their *guanxi* networks, therefore they feel more confident in the overall entrepreneurial self-efficacy. It seems logical that increasing emotional intelligence not only improves future venture performance (Shepherd, 2004), but also fosters attitude towards entrepreneurship as a career choice, because individuals with stronger relationships can easily gain access to more resources.

Control Variables

Statistically significant differences were found between women and men, where women reported higher tendency in choosing an entrepreneurial career than men ($F = 21.84$, $\rho < .001$). Also students with work experiences exhibited higher entrepreneurial tendency ($F = 34.36$, $\rho < .001$). While there was no statistically significant difference between business-major students and non-business-major students ($F = 3.57$, $\rho =. 060$), students with parents who owned a business reported higher entrepreneurial intention ($F = 50.01$, $\rho < .001$). It is consistent with the Planned Behavior Theory, where Subjective Norms, defined as the beliefs about whether people of importance approve of certain behavior, plays an important role in facilitating the attitudes

towards the target behavior. Therefore, the stronger the students perceive entrepreneurship as normative or standard in their family, the more likely they will choose entrepreneurship as a career.

Recommendations

Study Limitations

There were some limitations inherent in this study that had potential impact on the quality of the findings and the ability to effectively answer the proposed hypotheses. Most notably, convenience sampling was adopted in the study, where the survey was conducted within one university located in Northern China during Fall 2014 semester. As the target population was full-time students enrolled in universities in China, the study inadvertently excluded a great proportion of the population, and the accessible sample may not be representative of the entire population. Future research might incorporate multiple universities and diverse groups in terms of geographic locations, socioeconomic status, etc.

Second, surveys were distributed with time constraints (four weeks) in this study. Unlike interviews, where respondents can ask clarifying questions, respondents in the study had limited range of response categories, thereby limiting the ability to obtain a rich profile of target topic. A greater depth of information can be obtained by integrating qualitative and quantitative methods in future research. While interviews that elicit richer information would add greater insight into participants' attitudes and opinions, inquiry before surveys would help participants gain a better understanding of the survey items.

Third, all instruments were translated into Chinese in the study. Although the translation team consists of bilingual professionals, linguistic equivalence is often not sufficient to guard against threats to internal validity. A pilot study can be conducted in future research to check

linguistic equivalence, functional equivalence, cultural equivalence and metric equivalence of the survey items. Also a pilot study adopted in future research could help identify potential factors that influence entrepreneurial intention to be included in subsequent quantitative study.

Future Research

Built on the findings from this study, there are several areas of interest can be further investigated in future research. First, contrary to Luthans' (2006) study, Psychological Capital was found highly correlated with Emotional Intelligence. Additional research is needed to address the relationship between the two concepts among different cultural groups. For example, a comparative study can be conducted using samples from both U.S., and China, to further explore potential cultural factors that influence the development of those two constructs.

Second, women exhibited higher Entrepreneurial Intention than their counterparts. It is contrary to the previous study conducted (Carter, William, Kelly, & Elizabeth, 2003), where men rated financial success and innovation significantly higher than did women, and Rasli's study (Rasli, Khan, & Malekifa, 2013), where men had higher entrepreneurial intention than females. As this study is quantitative in nature, future research might integrate both quantitative and qualitative methods, where interviews that elicit richer information could add greater insight on participants' attitude and opinions. For example the following questions can be asked to further explore the concept of entrepreneurship in local context: Why do you want to choose entrepreneurship as a career? And why not? What does entrepreneurship mean to you? Financial success and innovation? Or freedom and life style?

Third, although there was no significant relationship between Balanced Thinking Style (BTS) and Entrepreneurial Self-Efficacy, further research is needed to investigate the different scenario of Balanced Thinking Style. Within the Linear Nonlinear Thinking Style Profile

(LNTSP) frame work, BTS could fall into one of the six categories: (a) Medium External Information Source & Medium Linear Decision Making, (b) Medium Internal Information Source & Medium Linear Decision Making, (c) Medium External Information Source & Medium Nonlinear Decision Making, (d) Medium Internal Information Source & Medium Nonlinear Decision Making, (e) High External Information Source & High Nonlinear Decision Making, and (f) Higher Internal Information Source & High Linear Decision Making. Therefore, it is imperative to understand how different combinations in information source and processing could lead to different types of balance and the relationships between those "balances" and entrepreneurial intention.

Fourth, Emotional Intelligence was found critical in fostering attitude towards entrepreneurship as a career choice. A compelling research direction would be on methods of education and trainings that are most effective in building the skills. For example, the most effective approach for developing the skills to utilize emotions to facilitate thinking and actions, which is more associated with nonlinear thinking style might differ from the most effective approach for developing the skills to regulate emotions which is more associated with linear thinking style (Vance, Groves, White, & Hess, 2013). Future research is needed to investigate how to improve different aspects of EIQ in relation to different thinking styles through curricular and pedagogical design, and what kind of roles should various stakeholders (i.e., teachers, psychologist and school counselors) play in this process.

Finally, although intentions precede actions, a gap between entrepreneurial intentions and actions is to be expected. Future research should focus on the relationship between entrepreneurial intention and actual entrepreneurial behavior. For example, a longitudinal study

can be conducted in the future to capture the changes of entrepreneurial intention over time and factors that influence the subsequent formation of entrepreneurial actions from intentions.

Conclusion

Entrepreneurship is an intentional process, where would-be entrepreneurs choose to start a business rather than out of a reflex. Entrepreneurial Self-Efficacy was found to be the core intermediary between thoughts that concern self-employment and entrepreneurial intention. To build college students' readiness for an entrepreneurial career, this paper investigated the psychological, cognitive, affective and social factors that impact entrepreneurial intention. The findings of the study indicated that human capital, social capital and psychological capital all play important roles in developing students' intentions to start a entrepreneurial career in China.

Universities in China should involve in an early stage in the curricular and pedagogical design in order to increase students' awareness of entrepreneurship as a career choice. Second, curriculum that enhances practical entrepreneurial skills that required in different stages of entrepreneurial process should be introduced. Third, training interventions that develop emotional intelligence skills and positive psychological capital should be incorporated with formal entrepreneurship education programs. Due to the critical role university plays in influencing attitudes, perceived ability and future career aspiration of Chinese youth, it is imperative for universities and government policymakers in China to work together to prepare college students' readiness for an entrepreneurial career cognitively, affectively, socially and developmentally to face the fast changing and competitive job market in a transitional economy.

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